

The Lake Lothing (Lowestoft) Third Crossing Order 201[*]



Document 6.3: Environmental Statement Volume 3 Appendices

Appendix 12B

Interpretative Environmental Ground Investigation Report

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Suffolk County Council

LAKE LOTHING THIRD CROSSING

Interim Interpretative Environmental Ground Investigation Report





Suffolk County Council

LAKE LOTHING THIRD CROSSING

Interim Interpretative Environmental Ground Investigation Report

FIRST ISSUE - PUBLIC

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1 INTRODUCTION

1.1 TERMS OF REFERENCE

- 1.1.1. An assessment of contaminated land including associated risks, constraints and liabilities has been undertaken to support a DCO application and design of the Scheme.
- 1.1.2. This interim report has been prepared with the ground investigation information available at the time of reporting. The Engineers logs in Annex C have not been finalised and the groundwater levels in Section 5.2.5 relate to the data collected during the first two groundwater monitoring visits. However, this report (and appendices 12A and 12C and chapter 12 of the ES) take account of the fact that groundwater was encountered during the ground investigation, and the results of sampling of that groundwater. The information to be added to section 5 will provide more detail of the groundwater encountered, but this will not affect the results of the assessment or the recommendations suggested. The report will be updated once this information is available.

1.2 SCHEME DESCRIPTION

- 1.2.1. The scheme involves the construction, operation and maintenance of a new bascule bridge highway crossing linking the areas north and south of Lake Lothing in Lowestoft, hereafter referred to as the Lake Lothing Third Crossing ("the Scheme").
- 1.2.2. The Scheme would provide a new single-carriageway road crossing of Lake Lothing, consisting of a multispan bridge with associated approach roads, and would comprise:
 - An opening bascule bridge over the Port of Lowestoft, in Lake Lothing;
 - On the north side of Lake Lothing, a bridge over Network Rail's East Suffolk Line, and a reinforced earth embankment joining that bridge, via a new roundabout junction, to the C970 Peto Way, between Rotterdam Road and Barnards Way; and
 - On the south side of Lake Lothing, a bridge over the northern end of Riverside Road including the existing access to commercial property (Nexen Lift Trucks) and a reinforced earth embankment (following the alignment of Riverside Road) joining this bridge to a new roundabout junction with the B1531 Waveney Drive.
- 1.2.3. The Scheme would be approximately 1 kilometre long and would be able to accommodate all types of vehicular traffic as well as non-motorised users, such as cyclists and pedestrians.
- 1.2.4. The opening bascule bridge design would allow large vessels to continue to use the Port of Lowestoft.
- 1.2.5. A new control tower building would be located immediately to the south of Lake Lothing, on the west side of the new highway crossing, to facilitate the operation of the opening section of the new bascule bridge.
- 1.2.6. The Scheme would also entail:-
 - The following changes to the existing highway network:
 - The closure of Durban Road to vehicular traffic at its junction with Waveney Drive;
 - The closure of Canning Road at its junction with Riverside Road, and the construction of a replacement road between Riverside Road and Canning Road to the west of the Registry Office; and
 - A new access road from Waveney Drive west of Riverside Road, to provide access to property at Riverside Business Park;
 - Improvements to Kimberley Road at its junction with Kirkley Run; and
 - Part-signalisation of the junction of the B1531 Victoria Road / B1531 Waveney Drive with Kirkley Run.
 - The provision of a pontoon for use by recreational vessels, located to the east of the new highway crossing, within the Inner Harbour of Lake Lothing; and
 - Works to facilitate the construction, operation and maintenance of the Scheme, including the installation of road drainage systems; landscaping and lighting; accommodation works for accesses to premises; the diversion and installation of utility services; and temporary construction sites and access routes.
- 1.2.7. The works required for the delivery of the Scheme are set out in Schedule 1 to the draft DCO (application document reference 3.1), where they are referred to as "the authorised development", with their key component parts being allocated reference numbers, which correspond to the layout of the numbered works



as shown on the Works Plans (application document reference 2.4). The General Arrangement Plans (application document reference 2.2) illustrate the key features of the Scheme.

1.2.8. The figure below provides a diagrammatic representation of the Scheme:



Figure 1 - Location of the Scheme in Lowestoft

1.3 PROJECT SCOPE

- 1.3.1. To assist in meeting the terms of reference at stated in Section 1.1, the scope of the study reported on in this report comprised:
 - Land based site investigation carried out between July 2017 and April 2018.
 - Post site works gas and groundwater monitoring and water sampling.
 - Laboratory chemical analysis of recovered soil samples and groundwater samples.
 - Marine sampling of lake bed sediments and surface water samples from within Lake Lothing.
 - Generic quantitative risk assessment (GQRA) of potentially sensitive receptors with respect to ground and groundwater contamination.
 - Refinement of the preliminary conceptual site model (CSM) that was developed in the WSP Ltd (formerly Mouchel Ltd) Environmental Desk Study Report (presented as Appendix 12A to the Environmental Statement).
 - Piling Works Risk Assessment (presented as Appendix 12C to the Environmental Statement)
 - Provision of recommendations with respect to the management and mitigation of potential ground contamination constraints or liabilities which are identified.
- 1.3.2. A geotechnical assessment has also been undertaken for outline pile foundation and highway design purposes which will be reported separately.

1.4 LEGISLATIVE CONTEXT AND GUIDANCE

- 1.4.1. The project was undertaken in the legislative and policy context of:
 - The Planning Act 2008
 - National Policy Statement for National Networks
 - National Policy Statement for Ports
 - The National Planning Policy Framework (2012)



- 1.4.2. The following good practice and statutory guidance was considered and the contaminated land assessment was undertaken in general accordance with:
 - Environment Agency 'Model Procedures for the Management of Land Contamination', CLR11 (2004)
 - British Standard 'Investigation of Potentially Contaminated Sites Code of Practice', BS EN 10175:2011
 - British Standard 'Code of Practice for Ground Investigations', BS 5930:2015
 - CIRIA 'Contaminated Land Risk Assessment. A guide to good practice', C552 (2001)
 - Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance', PB13735 (2012)
 - CIRIA 'Assessing Risks Posed by Hazardous Ground Gases to Buildings', C665 (2007)

1.5 SOURCES OF INFORMATION

1.5.1. The following relevant sources of information were used in the production of this report. Information from these sources relating to the underlying ground conditions has also been included in Sections 2, 3, 4 and 5 of this report, where appropriate:

Table 1 - Sources of Information

Source	Report		
Reports	Environmental Desk Study Report dated June 2018 (presented as Appendix 12A to the Environmental Statement)		
Public Information	British Geological Survey BGS 'Geology of Britain' online viewer. Environment Agency website		
Notes:	The report contains British Geological Survey materials ©NERC 2017 and Environment Agency information ©Environment Agency and database right.		



2 SITE SETTING

2.1 SITE DESCRIPTION AND CURRENT USE

- 2.1.1. For the purposes of this report, the site is defined as the order limits as defined in the Application.
- 2.1.2. The site is currently occupied by highways, vacant land and commercial / industrial businesses. Further details are provided in the Environmental Desk Study Report (presented as Appendix 12A of the Environmental Statement).
- 2.1.3. Table 2 below summarises the site details presented in the Environmental Desk Study Report.

Table 2 - Summary of Site Details

Detail	Comment
Site Location	The irregular shaped site is located in the centre of Lowestoft to the north and south of Lake Lothing. The site is bounded to the south by Waveney Drive and to the north by Denmark Road. In the south east, the boundary is marked by the roundabout junction between the A12 and Waveney Drive and also the adjacent dock area. In the south west, the boundary is within a former industrial site immediately to the west of the Waveney District Council offices. In the north east, the boundary is at the end of Commercial Road and in the north west, the boundary is at the roundabout junction between Denmark Road and Peto Way.
National Grid reference	653884, 292755 (centre of the site)
Site Description and Current Use	The southern area of the site comprises highways (including Waveney Drive, Riverside Road and Canning Road); a commercial property, residential properties, hard standing including car parking and areas of derelict land including a dock wall. The northern area of the site comprises highway (including Denmark Road), part of a Wickes DIY store, railway land including track and sidings; hard standing including quayside and areas of derelict land. The centre of the site comprises the Lake Lothing watercourse and docks.
Area	Approximately 21 hectares
Site Setting and Surrounding Area	North; residential properties, small commercial / industrial park and a small play park East; Commercial Park, industrial area associated with the port / quayside, the East Suffolk Rail Lines and residential properties. South; residential properties and a small commercial park. West; derelict land, port / quayside industrial land and commercial properties.
Topography and Ground Cover	The site is generally flat with a slight increase in height at the northern boundary. The ground cover is largely hard standing.
Drainage & Flooding	The Lake Lothing watercourse is recorded as a Primary River and there is a culverted watercourse beneath the south east part of the site. Much of the site is within the Zone 3 and Zone 2 floodplains. The risk of flooding from the river and the sea varies from high in the centre of the site to medium and low towards the edges of the site.
Embankments & Slopes	None of any significance.
Trees & Vegetation (including invasive species)	The only vegetation recorded during the walkover were landscaping hedges and bushes / scrub on the vacant sites. No invasive species were confirmed during the walkover, although due to access restrictions at some locations, not all of the site was accessible. Ecological surveys have been undertaken and are reported in Chapter 11 of the Environmental Statement.



Detail	Comment
Foundations, Retaining Walls & Basements Evident on site	There is the significant possibility of foundations, retaining walls and basements being present on site due to former buildings, particularly adjacent to the Lake Lothing.
Visual Observations of Contamination or Ground Subsidence No visual signs of contamination were noted during the site walkover all Environmental Desk Study report highlights the adjacent Council offices remediated for asbestos prior to construction and the Northumbrian Wasite had hydrocarbon remediation undertaken, both to the satisfactory of Regulators.	
Geology The regional BGS 1:50,000 geological map and information available of on-line Geology of Britain Viewer (www.bgs.ac.uk) indicates the area of Limits occupied by Lake Lothing is underlain by Tidal River or Creek Diclay and silt. Immediately adjacent to the Lake are alluvium deposits of clay, silt, sand and gravel. Beyond this towards Denmark Road in the Waveney Drive in the south the site is underlain by sand of the Happis Glacigenic Formation. The BGS 1:50,000 geological map indicates that the Crag Group (sand the underlying geology across the site.	
Hydrogeology and Hydrology	Lake Lothing splits the Order Limits in two and is recorded as a Primary River. At this point it is estuarine and is not separated from the sea by any locks. No other surface water features are present. No surface water or potable water abstractions are present within 2km of the Order Limits. The superficial deposits underlying the Order Limits are classified as a Secondary (A) Aquifer with permeable layers. These are defined by the Environment Agency as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. The underlying bedrock is classified as a Principal Aquifer. These are defined by the Environment Agency as layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. The nearest active groundwater abstraction is approximately 1,300m to the north west of the Order Limits.

2.2 SITE HISTORY

2.2.1. The following site history summary has been taken from the Environmental Desk Study Report which includes a more detailed site history.

NORTHERN SITE AREA

- 2.2.2. The earliest map provided by GroundSure dated 1883 indicates the site to be predominantly agricultural land with some small buildings and a railway line adjacent to the waterfront area.
- 2.2.3. Some industrial development occurred in the early 1900's including a railway and associated land through the centre of the site and timber yard at the western end. However, no significant changes occurred until the 1970's when most of the railways had been dismantled and by 1992, a new road (Peto Way) had been constructed through the site.

SOUTHERN SITE AREA

2.2.4. The earliest map provided by GroundSure dated 1883 indicates the site to be predominantly agricultural land with marsh and mudflats. By the early 1900's, many of the mudflats are no longer marked and formal waterfront wharfs appear to be present in the waterside area. Some industry is present including unlabelled

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works. By 1926 industrial development including a railway spur line had occurred across a large part of the site. The site remained largely industrial, including canning and processing works, ice works and boatbuilding until circa 2002 when the access roads for Riverside Business Park were constructed.

2.3 SURROUNDING LAND USES

- 2.3.1. Surrounding the northern site area are;
 - The North Quay Retail Park,
 - An industrial estate, containing numerous depots and factories,
 - Unspecified tanks and depot facilities are recorded on the north shore of Lake Lothing,
 - Hopper silos
 - Residential housing
- 2.3.2. Surrounding the southern site area are;
 - Unspecified factories or works
 - Dock and wharf facilities
 - Hopper silos
 - Pumping station
 - Petrol stations
 - Residential housing

2.4 POTENTIAL SOURCES OF CONTAMINATION ON-SITE CONTAMINATION SOURCES

2.4.1. The following potential historical on-site sources of contamination have been identified with anticipated contaminants derived in accordance with site-specific interpretation of Department of Environment Industry Profiles:

Table 3 - Areas of Potential Contamination (APC)

APC No.	APC Type	Anticipated Contaminants in Soil & / or Groundwater			
APC1	Former railway lines, sidings and depots	Metals and metalloids, cyanides, ammonia, nitrates, sulphates and sulphides involved in a range of chemical processes formerly taking			
APC2	Former timber yard	place on site. It is likely these contaminants are present within the soil although some compounds are soluble and therefore may also be			
APC3	Former ship yards and dock works including above ground storage tanks	present with the groundwater and soil leachate samples. Petroleum hydrocarbons (TPH), PCBs, benzene, toluene, ethylbenzene, xylene (BTEX), polyaromatic hydrocarbons (PAH), Volatile Organic Compounds (VOC) and semi-VOC (SVOC), phenolic compounds, resins arising from fuel spillages and former onsite chemical processes. It is likely these compounds if present will be found within groundwater and leachate samples. Some of the volatile compounds such as solvents			
APC4	Former coal yard and depot				
APC5	Former Raglan preservatives and ice works	may be present as mobile gases. Made ground associated with the development of the site for its former industrial uses resulting in potential ground gas contaminants (methane			
APC6	Former allotments	and carbon dioxide). Ground gases are considered likely in the former landfill areas.			
APC7	Former landfill/refuse tip and spoil areas	Made ground also has the potential to contain asbestos. The presence of buried former structures and foundations may also be			
APC8	Former depots	source of contaminants.			
APC9	Potentially contaminated silts				



OFF-SITE CONTAMINATION SOURCES

- 2.4.2. Within the surrounding area, the following potential sources of contamination are identified in the GroundSure report (Annex B of the Environmental Desk Study Report) that could migrate onto the site are:
 - Former and current shipbuilding and dock works surrounding Lake Lothing
 - Former oil mill to the east of the site
 - Former electric light works to the north of the site
 - Former tram depot to the north of the site
 - Former coal yard to the west of the site
 - Former creosoting factory to the west of the site
 - Former iron works east of the site
 - Contaminated silts within Lake Lothing
 - Former bus building factory to the north of the site
 - Former gasworks to the south east.



3 GROUND INVESTIGATION

3.1 PRELIMINARY CONCEPTUAL SITE MODEL

- 3.1.1. The preliminary conceptual site model (CSM) from the Environmental Desk Study Report identified a number of potential contaminant sources which are summarised in Section 2.4. The preliminary CSM also identified a number of plausible contaminant linkages (PCLs) that, without necessary protection and/or remediation, could put the following identified receptors at risk of significant exposure:-
 - Site users Future site users, visitors and maintenance workers.
 - Adjacent site users Residents and users of nearby properties
 - Controlled waters Principal and Secondary (A) aquifers and surface watercourses
 - On site infrastructure Buildings, foundations and buried services.
 - Marine Ecology Vertebrates and invertebrates within Lake Lothing

3.2 RATIONALE AND SCOPE

- 3.2.1. The rationale for the site investigation scope was to provide geotechnical and geo-environmental information for design and to inform the DCO process. The scope was developed to also provide information to refine the preliminary Conceptual Site Model outlined in the Environmental Desk Study Report presented as Appendix 12A to the Environmental Statement.
- 3.2.2. The main ground investigation works were land based but some water and sediment sampling works were also carried out in Lake Lothing itself and for distinction are referred to as marine investigation works.
- 3.2.3. Further details on the scope of works are presented in Annex B.

LAND BASED GROUND INVESTIGATION

- 3.2.4. The land based ground investigation was undertaken by the Applicants appointed contractor, Geosphere Ltd between 24th July 2017 and 25th April 2018. The geo-environmental aspects of the investigation are reported here for the purposes of the design and the DCO process and comprised the following:-
 - Cable percussion boreholes
 - Machine excavated trial pits
 - Window Samples
 - Hand dug trial pits / inspection pits
 - Installation of gas and groundwater monitoring wells in selected boreholes
 - Soil sampling from the boreholes, trial pits and window samples for the purpose of chemical testing
 - Gas and groundwater monitoring and groundwater sampling and chemical testing following completion of the intrusive works
- 3.2.5. In addition to the above, cone penetration testing and CBR (California Bearing Ratio) testing was also undertaken for the purposes of geotechnical assessment and will be reported separately by the WSP Ltd Geotechnical team.
- 3.2.6. The as-built exploratory hole locations are presented on Drawing 1069948-WSP-ENG-LL-SK-LE-0020 Sampling Locations Regulations 5(2)(a) Figure 12.2. Table 4 presents the scope of geo-environmental intrusive works undertaken.

Table 4 - Summary of Ground Investigation Intrusive Works

Exploratory Hole Type	Reference	Depth	Purpose
29 Cable Percussion Borehole	ВНС	2.9m – 50m	General site conditions and also targeting deeper ground conditions.
17 Machine excavated Trial Pits	TPC	1.5m - 3.2m	General site conditions where deep ground condition information is not required.
14 Window Samples	WSC	0.75m - 5.0m	Window samples were added during the works at locations where boreholes were to be drilled at a later date for the



Exploratory Hole Type	Reference	Depth	Purpose
			purpose of gaining information from the shallow ground conditions earlier in the programme.
5 Hand Dug Trial Pits	IPC	1.2m - 1.5m	Inspection pit extended from 1.2m depth with hand auger equipment to avoid the use of percussive equipment in areas where buried services were suspected.

3.2.7. The scope of the field works and chemical testing suites are discussed in further detail in Annex B. The findings of the ground investigation are discussed in Sections 4 to 7 and inform the refined conceptual site model which is presented in Section 8.

MARINE BASED SAMPLING

- 3.2.8. The marine based sampling was carried out by CMS-Geotech Ltd between 9th April 2018 and 23rd April 2018 as a separate contract to the land based ground investigation. This work was primarily to inform the sediment modelling assessment undertaken by WSP Ltd and is reported separately (Appendix 17C to the Environmental Statement), but the following aspects were included to support this Interpretative Environmental Ground Investigation Report for the purposes of assessing whether the lake bed sediments are contaminated and to assess potential offshore or onshore disposal routes for any excavated sediments. The marine sampling comprised the following:-
 - Surface water sampling at four locations from Lake Lothing waterbody,
 - Sampling of sediments from below the lake bed level at nominal 1m intervals to 4m depth from 12 vibrocore locations,
 - 48 grab samples from the top layer of lake bed sediments.
- 3.2.9. The scope of the marine based sampling works and chemical testing suites are discussed in further detail in Annex B. Factual information provided by CMS-Geotech Ltd comprising chemical test results and vibrocore logs is presented in Annex D. The assessment of the chemical test results is discussed in Section 6 and is used to inform the refined conceptual site model which is presented in Section 7.



4 GROUND CONDITIONS ASSESSMENT

4.1 GROUND CONDITIONS ENCOUNTERED ON-SITE

- 4.1.1. The exploratory hole locations are presented on Drawing 1069948-WSP-ENG-LL-SK-LE-0020 Sampling Locations Regulations 5(2)(a) Figure 12.2 presented in Annex A and the exploratory logs are provided in Annex C.1.
- 4.1.2. The findings summarised below generally confirm the anticipated strata identified in the Environmental Desk Study Report (presented as Appendix 12A to the Environmental Statement).

MADE GROUND NORTHERN SITE AREA

- 4.1.3. Made ground was recorded at all exploratory hole locations and varied in thickness from 0.6m to 3.6m, although the base of the made ground in BHC06A was not found at 2.9m depth and may therefore be deeper. The made ground was generally granular and heterogeous in nature and was composed of detritus including concrete, charcoal, clinker, brick, tile, metal (including reinforcing bar), ash, asphalt, glass, wood, soot, pottery and cast iron.
- 4.1.4. The thickness of made ground varied across the site with no particular areas recording thicker made ground than others. It was expected that the thickest made ground would be encountered closest to the Lake Lothing quay walls where ground levels were expected to have been raised to create the quayside but this was not indicated on the Draft Engineers logs.

MADE GROUND SOUTHERN SITE AREA

- 4.1.5. Made ground was recorded at all exploratory hole locations and varied in thickness from 0.75m to at least 3.7m, although this same location (BHC13 located close to the southern side of Lake Lothing) recorded possible made ground to in excess of 6.0m depth). The made ground was generally granular and heterogeous in nature and was composed of detritus including concrete, charcoal, clinker, brick, tile, metal (including reinforcing bar), ash, asphalt, glass, wood, soot, pottery and cast iron. Fragments of potential asbestos containing materials were recorded at TPC23 close to the Council offices.
- 4.1.6. The thickness of made ground varied across the southern site area although made ground was generally thickest closer to the Lake Lothing quay walls where ground levels are expected to have been raised historically to create the quayside.

CONCRETE & UNDERGROUND STRUCTURES

- 4.1.7. Solid concrete up to at least 0.6m thick (maximum thickness recorded in BHC27 located close to the southern side of Lake Lothing) and asphalt / flexible surfacing up to 0.2m thick was recorded at a number of locations both at and below the surface. BHC101 located close to the southern side of Lake Lothing recorded concrete 2.0m thick where it varied from crumbling degraded concrete to solid layers. Three disused six inch pipes were located in the inspection pit for this borehole at a depth of 0.7m.
- 4.1.8. A small diameter clay pipe (possibly a redundant land drain) was encountered at WS101 and was infilled with clay with a hydrocarbon odour.
- 4.1.9. Another redundant pipe was recorded in TPC06 but no details of any infilling were provided.
- 4.1.10.

NATURAL STRATA

Alluvium Deposits

- 4.1.11. Alluvial deposits have been encountered predominantly to the north of the Lake encountered as both granular and cohesive material.
- 4.1.12. The Granular Alluvium was generally recorded as dark grey, brown and yellow silty, clayey, gravely fine to medium Sand with a strong natural organic odour. The gravels are described as angular to rounded flints.
- 4.1.13. The Cohesive Alluvium was generally recorded as dark grey and black sandy and silty Clay with some shell fragments. The material was described to have a strong natural organic odour.



Happisburgh Glacigenic Formation

- 4.1.14. The Happisburgh Glacigenic Formation was encountered across the entire site, generally as medium dense to dense Sands, flint Gravels and gravelly Sand. At the top of the strata the material is described as being light and pale orange and brown but becomes darker and grey at depth.
- 4.1.15. Clay banding was encountered within the Sand matrix at varying depth but usually towards the base of the strata. It is generally light to dark grey laminated silty sometimes sandy Clay, with some incidences of flint gravels.

Crag Group

4.1.16. The Crag Group was encountered underlying the Happisburgh Glacigenic Formation across the entire site and generally comprise dense to very dense dark grey medium grained sand with frequent white fine shell fragments, with some fine gravel and occasional clay layers.

VISUAL AND OLFACTORY EVIDENCE OF CONTAMINATION

4.1.17. The presence of volatile organic compounds was assessed by Geosphere Ltd at each exploratory hole using a Photo-Ionisation Detector (PID). The results are presented on the Draft Engineers logs in Annex C.1. Most results were zero and the maximum concentration of 486ppm was recorded in WSC05.

All results above 10 ppm are presented in the Table below.

Table 5 – Summary of VOC Exceedances > 10ppm

Exploratory Hole reference	Approximate Depth (m)	Strata Type	VOC Reading(s) (ppm)	
BHC06	0.5	Made ground	122	
BHC13	2.0	Made ground	34	
	3.0	Made ground	19	
BHC17	0.2	Topsoil	12	
	0.4	Made ground	23	
	2.5	Clay	163	
BHC19	2.0	Sand	35	
	3.0	Sand	33	
BHC22	0.3	Made ground	53	
	0.5	Made ground	98	
BHC102	0.3	Concrete	62	
	2.5	Gravel	40	6
	10.5	Sand	33	75
BHC103	4.5	Sand	25	7
	7.0	Sand	13	6
WSC05	2.5	Clay	486	
	3.5	Sand	72	



4.1.18. Other than the man-made detritus recorded within the made ground, visual and olfactory evidence of contamination was recorded by the Geosphere Ltd at the following locations. Further detail is provided on the Draft Engineers logs presented in Annex C.1.

Table 6 - Summary of Visual and Olfactory Evidence of Contamination

Exploratory Hole reference Comment		Strata Type	Impacted Strata Depth (m bgl)
BHC04	Sulphurous and hydrocarbon odours and black staining.	Made ground	0.6m – 1.3m
BHC06	Hydrocarbon odour and black staining	Possible made ground	0.3m – 1.25m
	Sheen on ground water	Possible made ground	1.0m
BHC13	Hydrocarbon odour and black staining	Made ground and possible made ground	1.2m – 6.0m
BHC101	Hydrocarbon odour	Concrete, made ground and natural sand.	0.2m – 4.0m
	Sheen on groundwater	Made ground	2.1m
BHC102	Hydrocarbon odour	Made ground and natural gravel and sand	0.17m - 12.2m
BHC103	Hydrocarbon odour, sheen and staining	Natural sand	1.5m – 3.5m
WSC101 Hydrocarbon odour		Redundant pipe within made ground	0.6m
WSC103	Hydrocarbon odour	Natural sand	2.4m – 4.0m
TPC103	Sulphurous and hydrocarbon odours	Made ground and natural sand	1.2m – 2.2m

4.1.19. From the information presented in the table above, it would appear that the locations exhibiting hydrocarbon odours are located in two distinct areas of the site. One is in the southern part of the site and is located immediately between Riverside Road and Lake Lothing and is the location of the former East Anglia Ice Works, a tyre depot, a cold store and a boat building yard which was located to the east and may have encroached partly onto this area. The other area is in the north of the site, located between the railway line and Denmark Road and is a former coal depot.

4.2 MARINE SEDIMENT

The CMS-Geotech vibrocore logs presented in Annex D indicate that the shallow sediments within Lake Lothing comprise silt between 0.4m and 1.6m thickness overlying sand. Clay, silt and gravel layers were also recorded within the sand.



5 HYDROLOGICAL & HYDROGEOLOGICAL CONDITIONS

5.1 LOCAL HYDROLOGY

SURFACE WATER FEATURES

- 5.1.1. Lake Lothing splits the site in two and is recorded as a Primary River. The Water Framework Directive Assessment for Lake Lothing presented as Appendix 17A of the Environmental Statement states the following:- 'This estuarine water body is evaluated as having a current overall status of 'Moderate' due to ecological results, based on the 2016 dataset. It has a status of 'poor' for the angiosperm element of the biological results (the cause of this status is unknown) and a status of 'moderate' for dissolved inorganic nitrogen. It has a status of 'Good' for chemical results. It should be noted that this water body catchment is large and encompasses river sub-catchments with differing characteristics, including estuarine and freshwater broads.'
- 5.1.2. No other surface water features are present.

SURFACE WATER ABSTRACTIONS & DISCHARGES

5.1.3. No surface water or potable water abstractions are present within 2km of the site.

5.2 HYDROGEOLOGY

GEOLOGY AND AQUIFER STATUS

- 5.2.1. The superficial deposits underlying the site comprising sand and clay alluvium, and sand and clay of the Happisburgh Formation are classified as a Secondary (A) Aquifer with permeable layers. These are defined by the Environment Agency as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.
- 5.2.2. The underlying sand (with occasional gravel and clay layers) of the Crag Group bedrock is classified as a Principal Aquifer. These are defined by the Environment Agency as layers of rock or drift deposits that have high intergranular and/or fracture permeability meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

GROUNDWATER ABSTRACTIONS

5.2.3. The nearest active groundwater abstraction point is approximately 1,300m to the north west.

GROUNDWATER ENCOUNTERED DURING INVESTIGATION

5.2.4. Ground water was recorded at a number of locations during the ground investigation. The details are summarised in the table below.

Table 7 - Summary of Ground Water Strikes during the Ground Investigation

Exploratory Hole Location	Ground Water Level at Strike (mOD)	Strata Type	Observations
BHC03	1.51	Possible Made Ground	-
BHC04	0.048	Sand	-
BHC04	-7.152	Sand	Rose to -2.152 after 60 minutes
BHC06	1.416	Possible Made Ground	Sheen on ground water.
BHC06A	1.282	Made Ground	No change after 20 minutes
BHC06B	1.465	Made Ground	No change after 20 minutes
BHC07	1.62	Sand	-
BHC13	1.88	Made Ground	-
BHC17	0.284	Clay	Rose to 1.114m after 20 minutes

LAKE LOTHING THIRD CROSSING

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Suffolk County Council



Exploratory Hole Location	Ground Water Level at Strike (mOD)	Strata Type	Observations
BHC101	0.995	Made Ground	Sheen on groundwater.
WSC05	1.213	Sand	-
WSC17	-0.267	Clay	Rose to 0.533m after 10 minutes
WSC19a	0.594	Sand	-
WSC19A(1)	0.298	Sand	-
WSC21	0.725	Sand	-
WSC22	-0.964	Sand	-
WSC23	0.791	Clay	Rose to -0.912m after 15 minutes.
WSC28	-0.902	Possible made ground and sand	-
WSC103	0.375	Sand	-
TPC101	0.912	Made Ground	-
TPC102	1.477	Sand	-
TPC103	1.109	Made Ground	-
TPC02A	1.028	Sand	-
TPC03	1.602	Sand	-
TPC05	1.318 and 0.618	Clay	-
TPC06	0.512	Clay	-
TPC07	1.39	Made Ground	-
TPC08	1.065	Made Ground	-
TPC09	1.12	Clay	-
TPC21	1.31 and 0.31	Clay	-

MONITORED GROUNDWATER LEVELS

5.2.5. Monitoring of groundwater levels in relation to Ordnance Datum was undertaken on two occasions following the completion of the intrusive ground investigation works. The details are provided in Annex C.2 and are summarised in Tables 8 and 9 below.

Table 8 - Summary of Ground Water Level Monitoring in the north of the study area

Stratum	Minimum (mOD)	Maximum (mOD)	Observations
Made Ground	1.232 (BHC02)	1.302 (BHC02)	-
Natural Ground	0.633 (BHC09	1.4 (BHC07)	-



Table 9 - Summary of Ground Water Level Monitoring in the south of the study area

Stratum	Minimum (mOD)	Maximum (mOD)	Observations
Made Ground	0.495 (BHC101)	1.644 (BHC24 PP)	-
Natural Ground	-1.09 (BHC102)	1.754 (BHC24 GG)	-

HYDRAULIC GRADIENT

5.2.6. Whilst not conclusive, the monitoring data appears to indicate the hydraulic gradient is towards Lake Lothing from both the southern study area and the northern study area as would be expected. However, it should be noted that the groundwater monitoring data may be subject to tidal fluctuations which could affect the recorded levels.



6 QUANTITATIVE RISK ASSESSMENT

6.1 INTRODUCTION

- 6.1.1. In the United Kingdom, the presence of contamination within soil or groundwater at a site is generally only of concern if an actual or potentially unacceptable risk to a sensitive receptor exists.
- 6.1.2. The risk assessment process begins with screening chemical concentrations in soil or groundwater against conservative screening values, a process called Generic Quantitative Risk Assessment (GQRA). GQRA's are performed to assess the potential risks to human health and controlled waters and to identify the presence of contaminants of concern (CoC), which may require further more detailed assessment.
- 6.1.3. Annex C.3 presents the chemical test data and Annex F presents the screening spreadsheets.

6.2 HUMAN HEALTH RISK ASSESSMENT

- 6.2.1. Following the tiered approach which is described in Model Procedures for the Management of Land Contamination (CLR11) published by DEFRA and the Environment Agency, this Section provides a Generic Quantitative Risk Assessment (GQRA) of those contaminant linkages that were determined to be plausible in the refined CSM.
- 6.2.2. Defra and the EA have published a limited number of Soil Guideline Values (SGVs) for a series of generic land use scenarios which follow the Contaminated Land Exposure Assessment (CLEA) methodology. Where SGVs are not available, WSP has derived a set of Generic Assessment Criteria (GAC) for the CLEA generic land use scenarios using the CLEA Workbook v1.071 Excel modelling tool. The CLEA workbook does not currently have the capacity to derive criteria to assess risks from the inhalation of vapours derived from contaminants dissolved in groundwater. Therefore, a set of groundwater GACs has also been derived using the Johnson & Ettinger (J&E) approach.
- 6.2.3. The chemical test results have been assessed against screening values for both commercial / industrial and public open space land use scenarios. Further details in the methodologies adopted by WSP Ltd are provided in Annex E. These land use scenarios are also defined in the Environment Agency document 'Updated Technical Background to the CLEA Model' Report SC050021/SR3, January 2009.
- 6.2.4. These two scenarios are most appropriate for the proposed highway and landscaping end uses, although both are considered to be reasonably conservative as it is unlikely anyone will be on-site for the duration that either scenario assumes.
- 6.2.5. The soil chemical data has been compared against end use GAC's for a conservative 1% soil organic matter (SOM) content. The average SOM concentration is 1.48% and therefore the nearest appropriate concentration is 1%. Samples that exceed the screen are identified as contaminants of concern (CoC) and are carried forward for further discussion.
- 6.2.6. For an initial assessment, the data has been split into made ground and natural ground averaging areas and then split again into northern site area and southern site area.
- 6.2.7. For some CoC, direct contact will be the dominant pathway for exposure. Due to the unknown nature of soil excavation and reuse at this stage of the design, it is possible that materials from any depth could be excavated and placed at or near the surface in the final design. In order to support with development options, human exposure to all unsaturated soils, irrespective of depth, was assumed possible for the purpose of this assessment. This will maximise the information available to the design team on the suitability of all unsaturated material and can support with their materials management options.
- 6.2.8. Potential risks to human health from soil gases are assessed in Section 6.4.

ASSESSMENT OF RESULTS – PUBLIC OPEN SPACE LAND USE SCENARIO

6.2.9. Hydrocarbon odours and / or sheens were identified at a number of locations during the ground investigation as detailed in Section 4.2.10, Table 5 above. All except two of these locations were targeted for chemical testing and none of the results exceed the hydrocarbon GAC's.

Natural Ground (Southern Site Area)

6.2.10. The following contaminants of concern (CoC) have been identified from the screening of natural ground in the southern site area:-



- Alkaline pH at one location BHC20 10.4 compared to a screening value of 9.5,
- Acid pH at one location BHC26 4.8 compared to a screening value of 5.5.

Natural Ground (Northern Site Area)

6.2.11. No CoC were identified in natural ground within the northern site area.

Made Ground (Southern Site Area)

- 6.2.12. The following contaminants of concern (CoC) have been identified from the screening of made ground in the southern site area:-
 - Asbestos was recorded by the chemical testing laboratory in one sample (and potential asbestos is recorded on the Engineers logs in TPC23):-
 - BH102 at 0.3m depth as fibres and clumps of chrysotile.
 - Benzo-a-pyrene at two locations WSC23 (26mg/kg) and BHC31 (12mg/kg) exceeded the GAC of 11mg/kg.
 - Alkaline pH at five locations TPC21 (9.6), BHC102 (11.2), BHC101 (10.3) and WSC16 (10.5) exceeded the GAC of 9.5,
 - Lead at one location BHC31 1500mg/kg compared to a screening value of 808mg/kg.

Made Ground (Northern Site Area)

- 6.2.13. The following contaminants of concern (COC) have been identified from the screening of made ground in the southern site area:-
 - Asbestos was recorded by the chemical testing laboratory in one sample:-
 - TPC02 at 0.3m depth as cement bound chrysotile,
 - Benzo-a-pyrene at one location IPC01 (12mg/kg compared to a GAC of 11mg/kg,
 - Alkaline pH at six locations TPC101 (9.9), TPC04 (9.8), BHC02 (11), TPC02 (11.8), BHC08 (10.10) and BHC10 (10) values exceeded the GAC of 9.5.

ASSESSMENT OF RESULTS - COMMERCIAL / INDUSTRIAL LAND USE SCENARIO

6.2.14. Hydrocarbon odours and / or sheens were identified at a number of locations during the ground investigation as detailed in Section 4.1.17, Table 6 above. All except two of these locations were targeted for chemical testing and none of the results exceed the hydrocarbon GAC's.

Natural Ground (Southern Site Area)

- 6.2.15. The following contaminants of concern (CoC) have been identified from the screening of natural ground in the southern site area:-
 - Alkaline pH at one location BHC20 10.4 compared to a screening value of 9.5,
 - Acid pH at one location BHC26 4.8 compared to a screening value of 5.5.

Natural Ground (Northern Site Area)

6.2.16. No CoC were identified in natural ground within the northern site area.

Made Ground (Southern Site Area)

- 6.2.17. The following contaminants of concern (CoC) have been identified from the screening of made ground in the southern site area:-
 - Asbestos was recorded by the chemical testing laboratory in one sample (and potential asbestos is recorded on the Engineers logs in TPC23):-
 - BH102 at 0.3m depth as fibres and clumps of chrysotile.
 - Alkaline pH at five locations TPC21 (9.6), BHC102 (11.2), BHC101 (10.3) and WSC16 (10.5) exceeded the GAC of 9.5.
 - Lead at one location BHC31 1,500mg/kg compared to a screening value of 1,390mg/kg.

Made Ground (Northern Site Area)

6.2.18. The following contaminants of concern (COC) have been identified from the screening of made ground in the southern site area:-



- Asbestos was recorded by the chemical testing laboratory in one sample:-
 - TPC02 at 0.3m depth as cement bound chrysotile,
- Alkaline pH at six locations TPC101 (9.9), TPC04 (9.8), BHC02 (11), TPC02 (11.8), BHC08 (10.10) and BHC10 (10)values exceeded the GAC of 9.5.

6.3 CONTROLLED WATERS RISK ASSESSMENT

- 6.3.1. The generic controlled waters risk assessment was conducted in accordance with the principles of the Environment Agency publication 'Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination' 2006 (EA 2006) and the 'prevent and limit' approach of the Water Framework Directive (2000/60.EC). Generic controlled waters risk assessments compare directly measured concentrations with standard assessment criteria. In this case the following assessments were undertaken:
 - Level 1 evaluates the concentrations of chemicals within the pore water in the unsaturated zone of source area soil, in this case soil leachate analysis/using theoretical calculations.
 - Level 2 evaluates the concentrations of chemicals within the saturated zone immediately underlying a source area i.e. taking dilution and attenuation into account, in this case groundwater analysis.
- 6.3.2. Appropriate Water Quality Standards (WQS) are selected based on both a hierarchy of relevance to England and Wales and the receptor. In this case, the controlled water receptors identified in the CSM are:-
 - Lake Lothing surface watercourse;
 - The underlying Secondary A Aquifer within the superficial deposits;
 - The underlying Principal Aquifer within the bedrock.
- 6.3.3. The following hierarchies of WQS were therefore considered to be appropriate:

Aquifers

- UK Drinking Water Quality Standards (DWS) from The Water Supply (Water Quality) Regulations 2000 (amended 2004)
- World Health Organisation Guidelines for Drinking Water Quality, Fourth Edition, Volume 1, (2011)
- World Health Organisation Petroleum Products in Drinking Water (2008)

Surface Waters

- Environmental Quality Standards (EQS) from The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015
- 6.3.4. Screening spreadsheets are presented in Annex F.

RISKS TO AQUIFER

Soil Leachability Testing

- 6.3.5. Screening of soil leachate test results from the ground investigation identified the following minor WQS exceedances:-
 - Alkaline pH two locations BHC02 (pH11) and BH102 (pH10.4) compared to a WQS of 10,
 - Arsenic one location BHC05 (25µg/l) compared to a WQS of 10µg/l,
 - Chromium one location BHC08 (52μg/l) compared to a WQS of 50μg/l,
 - Nickel one location BHC08 (65μg/l) compared to a WQS of 20μg/l,
 - Lead three locations, BHC08 (19μg/l), IPC01 (25μg/l) and BH102 (14μg/l) compared to a WQS of 10μg/l,
 - Aliphatic hydrocarbons C12-C16 BHC19 (310μg/l) compared to a WQS of 300μg/l,
 - Aromatic hydrocarbons C12-C16 BHC13 (110μg/l) compared to a WQS of 90μg/l.
- 6.3.6. It should be noted that the limits of detection for benzo(a)pyrene and total PAH are in excess of the screening values.

Groundwater Sampling 4/5th January 2018

- 6.3.7. Screening of two water samples (BHC02 and BHC102) taken by Geosphere on 4th and 5th January 2018 did not identify any WQS exceedances.
- 6.3.8. It should be noted that the limits of detection for total PAH and benzo(a)pyrene are in excess of the screening values.



Groundwater Sampling 1st Monitoring Visit

- 6.3.9. Screening of 8 groundwater samples identified the following minor exceedances of the WQS:-
 - Alkaline pH five locations (BHC09, BHC24(dual well), BHC01 and BHC14) recorded values between pH11.7 and pH13.2 compared to a WQS of pH10,
 - Sulphate one location BHC01 (350µg/l) compared to a WQS of 250µg/l,
 - Arsenic one location BHC27 (17μg/l) compared to a WQS of 10μg/l,
 - Chromium one location BHC01 (160µg/l) compared to a WQS of 50µg/l,
 - Nickel two locations BHC24 (77µg/l) and BHC01 (43µg/l) compared to a WQS of 20µg/l.
- 6.3.10. It should be noted that the limits of detection for total PAH and benzo(a)pyrene are in excess of the screening values.

Groundwater Sampling 2nd Monitoring Visit

Screening of 9 groundwater sampling identified the following exceedances of the WQS:-

- Alkaline pH three locations (BHC24(dual well) and BHC01 recorded values between pH11.4 and pH12.6 compared to a WQS of pH10.
- Nickel two locations BHC24 (41µg/l) and BHC01 (30µg/l) compared to a WQS of 20µg/l.

It should be noted that the limits of detection for total PAH and benzo(a)pyrene are in excess of the screening values.

RISKS TO LAKE LOTHING SURFACE WATER

Soil Leachability Testing

- 6.3.11. Screening of soil leachate test results from the ground investigation identified the following WQS exceedances:-
 - Cadmium one location. 0.21µg/l compared to a WQS of 0.2µg/l,
 - Copper twelve locations. 4.2 μg/l to 32 μg/l compared to a WQS of 3.76 μg/l,
 - Mercury two locations. 0.52 µg/l to 0.53µg/l compared to a WQS of 0.07µg/l,
 - Nickel One location. 65μg/l compared to a WQS of 8.6μg/l,
 - Lead 16 locations. 1.3µg/l to 25µg/l compared to a WQS of 1.3µg/l.
 - Zinc four locations. 7.8μg/l to 190μg/l compared to a WQS of 6.8μg/l,
 - Anthracene two locations. 0.15µg/l and 2.8µg/l compared to a WQS of 0.1µg/l,
 - Fluoranthene two locations. 2.2µg/l and 7.6µg/l compared to a WQS of 0.0063µg/l,
- 6.3.12. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene and benzo(ghi)perylene are in excess of the screening values.

Surface Water Sampling

- 6.3.13. The surface water sampling undertaken by CMS-Geotech at four locations within Lake Lothing on 19th April 2018 (shown on Drawing 1069948-WSP-EGN-LL-C19-SK-LE-000X presented in Annex D) identified the following contaminants in excess of the relevant WQS:-
 - Zinc exceedances in all four samples with concentrations varying from 8.88μg/l to 26.8μg/l compared to a WQS of 6.8μg/l.
- 6.3.14. Lake Lothing is an operating port and it is probable that these results can be attributed to the presence of sacrificial zinc anodes on the hulls of ships using the port.
- 6.3.15. It should be noted that the limits of detection for both cadmium and chromium are in excess of the screening values.

Groundwater Sampling 4/5th January 2018

- 6.3.16. Screening of two water samples (BHC02 and BHC102) taken by Geosphere on 4th and 5th January 2018 identified minor exceedances of the WQS for;-
 - Copper one location BHC102 (8.6µg/l) compared to a WQS of 3.76µg/l.
 - Nickel one location BHC102 (9.9µg/l) compared to a WQS of 8.6µg/l.
 - Zinc two locations BHC102 (24μg/l) and BHC02 (12μg/l) compared to a WQS of 6.8μg/l. .



6.3.17. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene, 2,4-dichlorophenol, 1,2,4-Trichlorobenzene, hexachlorobenzene and total phenols are in excess of the screening values.

Groundwater Sampling 1st Monitoring Visit

- 6.3.18. Screening of 8 groundwater samples identified exceedances of the WQS for:-
 - Copper four locations, 4.8µg/l to 61µg/l compared to a WQS of 3.76µg/l,
 - Nickel five locations, 11µg/l to 77µg/l compared to a WQS of 8.6µg/l,
 - Lead two locations, 1.8μg/l to 5.2μg/l compared to a WQS of 1.3μg/l,
 - Zinc four locations, 7μg/l to 17μg/l compared to a WQS of 6.8μg/l,
 - Hexavalent chromium one location BHC01 (160µg/l) compared to a WQS of 0.6µg/l,
- 6.3.19. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene and total phenols are in excess of the screening values.

Groundwater Sampling 2nd Monitoring Visit

Screening of 9 groundwater samples identified exceedances of the WQS for:-

- Copper two locations, BHC24 (19μg/l) and BHC01 (36μg/l) compared to a WQS of 3.76μg/l,
- Mercury one location, BHC24 (0.68μg/l compared to a WQS of 0.07μg/l,
- Nickel four locations, 8.7μg/l to 41μg/l compared to a WQS of 8.6μg/l,
- Lead one locations, (BHC01) 3.8μg/l compared to a WQS of 1.3μg/l,
- Zinc one location, (BHC02) 11μg/l compared to a WQS of 6.8μg/l,
- Hexavalent chromium one location BHC01 (40μg/l) compared to a WQS of 0.6μg/l,
- 6.3.20. It should be noted that the limits of detection for cyanide, mercury, hexavalent chromium, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, benzo(ghi)perylene and total phenols are in excess of the screening values.

DISCUSSION

- 6.3.21. There is some olfactory/ visual evidence of the presence of hydrocarbons in the vicinity of the exploratory holes CPTC13, BHC13, BHC101, BHC102, BHC103 and WSC103 near the southern bank of Lake Lothing (and in a number of other isolated locations). In addition, there are some associated VOC readings (identified using a PID meter during ground investigation) and minor theoretical hydrocarbon exceedances in soil leachate screening values.
- 6.3.22. Sampling of groundwater from monitoring well installations (adopting best practice of purging) within adjacent boreholes (BHC102, BHC14 and BHC27) do not show any exceedances of groundwater screening values for hydrocarbons. It is therefore concluded that although there is some evidence of hydrocarbon presence in a number of locations on site, particularly near the southern bank of Lake Lothing, the analysis of soil, soil leachate and groundwater samples identify that the concentrations are not significant. It is possible that minor spillages have occurred in the past or that any more significant spillages have dispersed with time due to the generally permeable nature of the sub-strata on site. It is recommended that further groundwater monitoring is undertaken from borehole installations to confirm that no significant exceedances of groundwater screening values are present.

6.4 GROUND GAS ASSESSMENT RESULTS

- 6.4.1. To date, two of six rounds of ground gas monitoring have been undertaken by Geosphere Ltd on the following dates:-
 - 9th to 14th May 2018
 - 23rd to 24th May 2018
- 6.4.2. A control building will be constructed as part of the bridge and therefore this gas assessment will inform the design of that building.



- 6.4.3. Atmospheric pressure during the first monitoring visit varied between 1006mb and 1016mb which was a rising trend and during the second visit varied between 1002mb and 1025mb which is a falling trend. The reading for BHC01 of 1002mb is believed to be a typo as all except one location has atmospheric pressure recorded between 1021 and 1025. The results of the gas monitoring are presented in Annex C.2.
- 6.4.4. Table 9 presents Gas Screening Values (GSV) which have been calculated in accordance with C665 for each gas monitoring well.

Table 10 - Summary of Ground Gas Monitoring results

Exploratory Hole	Max Flow Rate (Ihr-1)	Max Methane (% v/v)	Max Carbon Dioxide (% v/v)	Methane GSV	Carbion Dioxide GSV
BHC01	0.9	<0.1	0.5	0.0009	0.0045
BHC02	<0.1	<0.1	3.6	0.0001	0.0036
BHC07	7.4 (recorded at start)	0.1	0.2	0.0074	0.0148
	Maximum steady flow of 0.1			0.0001	0.0002
BHC08	0.9 (recorded at start)	<0.1	<0.1	0.0009	0.0009
	Maximum steady flow of <0.1			0.0001	0.0001
BHC09	-0.3	0.1	<0.1	0.0003	0.0003
BHC14	-0.3	<0.1	<0.1	0.0003	0.0003
BHC24(P)	50.4 (recorded at the start)	0.1	<0.1	0.0504	0.0504
	Maximum steady flow of 0.3			0.0003	0.0003
BHC24(GG)	-0.3 (recorded at the start)	<0.1	0.6	0.0003	0.0018
	Maximum steady flow of <0.1			0.0001	0.0006
BHC27	-1.6 (recorded at the start)	<0.1	<0.1	0.0016	0.0016
	Maximum steady flow of -0.9			0.0009	0.0009
BHC102	<0.1	<0.1	0.2	0.0001	0.0002

6.4.5. Based on the maximum steady flows, the GSV ranged between 0.0001 and 0.0045. All monitoring wells are therefore classified as Characteristic Situation 1 indicating very low risk from ground gases.

It should be noted that where the maximum flow was recorded at the start of the monitoring (italics in the table above), the GSV ranged from 0.0003 to 0.0504, which does not change the Characteristic Situation.

6.5 MARINE SEDIMENT SAMPLING

6.5.1. The chemical test results from the sediment grab samples and the vibrocore sediment samples have been assessed against the CEFAS (Centre for Environment, Fisheries and Aquaculture Science) criteria for offshore disposal. In addition, the vibrocore samples were also subjected to waste acceptance criteria (WAC) testing to assess potential onshore disposal routes.

CEFAS ASSESSMENT

- 6.5.2. The tables in Annex F presents a comparison of the sample results against the current CEFAS Action Levels, (detailed on the table) and was undertaken to establish the overall concentrations of contamination present.
- 6.5.3. The action levels stated are not 'pass/fail' criteria but, in general, contaminant levels below action level 1 are considered unlikely to influence a decision by the MMO on dredge disposal, pursuant to the Deemed Marine Licence (DML). Dredged material with contaminant levels above action level 2 is generally considered unsuitable for sea disposal. Dredged material with contaminant levels between action levels 1 and 2 may require further testing pursuant to the operation of the DML.



- 6.5.4. Of the 12 grab samples, 11 showed levels of trace metal contaminants for at least one determinant above the CEFAS Action Level 1 values, the most common contaminant being nickel. No samples had levels above the CEFAS Action Level 2 for any determinant.
- 6.5.5. Of the 32 vibrocore samples, 10 showed levels of trace metal contaminants for nickel, cadmium and arsenic above the CEFAS Action Level 1 values, the most common contaminant being nickel. No samples had levels above the CEFAS Action Level 2 for any determinant.
- 6.5.6. It is therefore considered that the sediments are likely to be suitable for offshore disposal subject to approval by the MMO pursuant to the DML. The sediments are also considered unlikely to have an unacceptable impact from a contamination perspective if they are mobilised during and / or after construction.

WASTE ACCEPTANCE CRITERIA ASSESSMENT

- 6.5.7. Waste Acceptance Criteria (WAC) testing of the vibrocore samples indicates that most samples pass the inert waste criteria but a few fail the inert, non-hazardous and hazardous criteria.
- 6.5.8. If onshore disposal of excavated sediment is considered at the construction stage, further assessment will be required once the sediments have been excavated and additional pre-treatment is likely to be required to reduce the moisture content prior to acceptance for disposal at a suitably licenced landfill.

6.6 PILING RISK ASSESSMENT

- 6.6.1. A Piling Works Risk Assessment, reference 1069948-WSP-EGT-LL-RP-LE-0002 has been undertaken by WSP in accordance with the following Environmental Agency guidance and is presented as Appendix 12C to the Environmental Statement:-
 - Piling in layered ground: risks to groundwater and archaeology. Environment Agency (October 2006),
 Science Report SC020074/SR;
 - Piling into contaminated sites. Environment Agency National Groundwater and Contaminated Land Centres (February 2002); and
 - Piling and penetrative ground improvement methods on land affected by contamination: guidance on pollution prevention. Environment Agency (May 2001).



7 WASTE ASSESSMENT

- 7.1.1. A waste classification hazardous properties assessment has been carried out in accordance with the WM3 Technical Guidance, to determine if the site soils contain any hazardous properties and would therefore require disposal as hazardous waste.
- 7.1.2. The soil chemical test results have been assessed and identified hazardous properties in 7 samples;-
 - TPC02 at 0.3m,
 - BHC04 at 0.9m,
 - WSC23 at 0.5m,
 - BHC27 at 0.6m.
 - BHC101 at 2.1m,
 - BHC101 at 3.0m,
 - BHC31 at 0.4m.
- 7.1.3. All of the above are in made ground except BHC101 which is in natural ground and exhibits hazardous properties due to elevated petroleum hydrocarbons.
- 7.1.4. This material cannot be reused in the scheme and will require offsite disposal as hazardous waste under the European Waste Catalogue (EWC) as '17 05 03' Soil and stones containing dangerous substances.
- 7.1.5. No other material was classified as containing hazardous properties. Therefore, the remaining material would be classified under the EWC as '17 05 04 Soil and stones other than those mentioned in 17 05 03'.
- 7.1.6. Waste acceptance criteria (WAC) analysis has been carried out on a number of samples in order to assess the acceptability to landfill should offsite disposal be required. Two samples recording hazardous properties were also subjected to WAC testing and the results indicate these materials are suitable for hazardous waste disposal. The other WAC test results indicate that most samples meet the criteria for inert waste disposal but 4 samples fail the inert criteria and will require disposal as non-hazardous waste;-
 - BHC05 at 0.6m fails the inert criteria for chloride, sulphate and total dissolved solids,
 - WSC14 at 1.7m fails the inert criteria for PAH and antimony,
 - BHC32 at 0.6m fails the inert criteria for total organic carbon,
 - BHC08 at 2.6m fails the inert criteria for chromium and selenium.
- 7.1.7. The construction Contractor will need to make their own assessment of the waste classifications.



8 REFINED CONCEPTUAL SITE MODEL

8.1 INTRODUCTION

- 8.1.1. This Section provides a refinement of the preliminary CSM from the Environmental Desk Study Report (presented as Appendix 12A to the Environmental Statement). From the information identified during the ground investigation and the risk assessments detailed in Section 6 above, plausible source-pathway-receptor contaminant linkages have been refined in line with industry good practice (principally CLR11).
- 8.1.2. The refined CSM provides an updated understanding of the site based on the findings of the site investigation and analytical results and draws on the ground, hydrogeological and contamination models which are presented in Sections 4, 5 and 6. It has been used to inform the quantitative risk assessments undertaken in Section 6 in the context of a future land use comprising a new highway layout, bridge and associated landscaping and hard standing.

8.2 PLAUSIBLE CONTAMINANT LINKAGES

8.2.1. Table 10 provides a revised evaluation of the potential contaminant linkages that were considered to be plausible for the future use of the Site. It uses the current site investigation findings to refine the Phase 1 assessment.

Table 11 - Summary of Plausible Contaminant Linkages

Potential Contaminants	Potential Pathways	Potential Receptors	Comments
Free asbestos fibres in made ground soil	Inhalation of asbestos fibres.	Future site users Future maintenance workers	Extensive hard standing will restrict exposure following construction but exposure during construction and during maintenance works cannot be discounted. The presence of asbestos elsewhere within the made ground cannot be discounted therefore if made ground materials are placed in landscaping areas, a capping layer will also need to be considered to minimise the risk to site users and adjacent site users from inhalation of fibres.
Contaminants in soil	Dermal contact, ingestions and inhalation of contaminated made ground, soil particles and fugitive dust.	Future site users Future maintenance workers	Extensive hard standing will restrict exposure at most locations except where landscaping is proposed. Detected potential contaminants limited to benzo-a-pyrene, pH and lead.
Leachable contaminants and contaminants in groundwater	Vertical leaching from impacted soil and lateral migration of impacted groundwater derived from on-site sources.	Superficial geology Secondary (A) aquifer and bedrock Principal aquifer. Lake Lothing surface water	Shallow groundwater samples appear to have been impacted slightly by metals but this does not appear to have been replicated in the deeper groundwater samples although some minor impact has been identified. There is a theoretical risk to surface waters from leachable contaminants in soil including minor hydrocarbon exceedances. Extensive hard standing will limit rainfall percolation and leachate potential and the identified exceedances of the WQS criteria are generally not significantly elevated. Whilst a contaminant linkage is considered likely to exist, an unacceptable risk to controlled waters is considered unlikely



9 CONCLUSIONS AND RECOMMENDATIONS

9.1 GROUND CONDITIONS

- 9.1.1. The ground investigation confirmed the anticipated geology of made ground overlying alluvial deposits (sand and clay), sand with clay banding of the Happisburgh Formation and sand (with clay layers) of the Crag Group.
- 9.1.2. Made ground was recorded at all exploratory hole locations and varied in thickness from 0.75m to at least 3.7m, although possible made ground was recorded to in excess of 6.0m depth at one location. The made ground was generally sand and gravel and heterogeneous in nature.
- 9.1.3. The thickness of made ground varied across the site. In the southern site area, with no particular areas recording thicker made ground than others.
- 9.1.4. Solid concrete at the surface up to at least 0.6m thick was recorded at a few locations, although a 2m thick layer of crumbling degraded concrete was also encountered at one location. This is not across a large area and is not considered to be a significant constraint to construction.
- 9.1.5. Two small diameter redundant pipes were recorded, one infilled with clay which recorded a hydrocarbon odour.
- 9.1.6. Other than the man-made detritus recorded within the made ground, visual and olfactory evidence of contamination was recorded at a number of locations as hydrocarbon odour, sulphurous odour or hydrocarbon sheen.
- Fragments of potential asbestos containing materials were recorded at one location close to the Council
 offices.
- 9.1.8. The ground investigation confirmed the presence of shallow groundwater which is likely to be in continuity with the Lake Lothing surface water body.

9.2 ENVIRONMENTAL / CONTAMINATION ASSESSMENT

- 9.2.1. The following contamination issues have been identified;-
 - In addition to potential asbestos recorded on the Draft Engineers logs at one location, it was also recorded in two made ground soil samples. The potential for more asbestos containing materials to be present within made ground materials cannot be discounted and the construction Contractor should take necessary precautions to protect their staff, site users and adjacent site users as set out in the interim CoCP.
 - Natural ground within the southern site area recorded exceedances of the human health GAC values for both public open space and commercial / industrial end use screening values for alkaline pH at one location and acid pH at two locations.
 - Natural ground within the northern site area did not record any exceedances of the human health GAC values for either a public open space or commercial / industrial end use.
 - Made ground within the southern site area recorded exceedances of the human health GAC values for both public open space for benzo-a-pyrene (two locations) and for both a public open space and commercial / industrial end use for alkaline pH (five locations) and lead (one location).
 - Made ground within the northern site area recorded exceedances of the human health GAC values for a public open space end use for benzo-a-pyrene (one location) and for both a public open space and commercial / industrial end use for alkaline pH (six locations) and lead (one location).
 - The human health exceedances recorded are not considered likely to constrain a major development scheme of this type and can be managed through placement of an inert subsoil and topsoil cap within any landscaping areas. The identified exceedances are of a low magnitude and it is considered that they can be managed by a competent Contractor using good construction techniques and standard hygiene practices during the construction works.
 - Surface water samples from Lake Lothing have identified minor exceedances of the EQS screening value for zinc.
 - Groundwater samples have identified generally low exceedances of both the EQS and DWS screening values for a number of determinants.



- Risks to controlled waters are therefore considered to be relatively low although there is some evidence of impact to groundwater. Whilst a contaminant linkage is considered likely to exist, an unacceptable risk to controlled waters is considered unlikely.
- From the monitoring data available, ground gas has not been recorded at concentrations that require specific gas protection measures over and above standard construction techniques.
- Marine sediment sampling undertaken within Lake Lothing did not identify any sediments with contaminant concentrations above the CEFAS Level 2 action level. It is therefore considered that marine sediments within Lake Lothing are unlikely to pose an unacceptable risk to the marine environment if disturbed and transported to other areas of the Lake during construction. It is also considered that excavated sediments are suitable for offshore disposal in accordance with a suitable licence.

9.3 OUTLINE REMEDIAL MEASURES

- 9.3.1. Potential risks to future site users from asbestos within made ground has been identified and the possibility of made ground at the site containing further asbestos cannot be ruled out. Depending upon the final design and working methods, further sampling and assessment at these locations may need to be undertaken by the construction Contractor and if necessary, consideration should be given to excavating and removing this material from site.
- 9.3.2. Other potential human health risks were identified for a commercial / industrial end use, but these are mitigated to acceptable levels where construction of the road will break the pathway. However, in areas where landscaping is proposed, if made ground is reused, it is considered that placement of an inert subsoil and topsoil capping underlain by a geotextile (to delineate the made ground capping interface and to minimise mixing of the soils) will be sufficient to minimise the risks to site users and adjacent site users. Discussion with the Regulators at detailed design stage will be required to agree the exact scope of any capping.
- 9.3.3. There is some olfactory/ visual evidence of the presence of hydrocarbons near the southern bank of Lake Lothing (and in a number of other isolated locations). However, sampling of groundwater from monitoring well installations within adjacent boreholes does not show any exceedances of groundwater screening values for hydrocarbons. It is therefore concluded that although there is some evidence of hydrocarbon presence in a number of locations on site, particularly near the southern bank of Lake Lothing, the analysis of soil, soil leachate and groundwater samples suggest that the concentrations are not significant. It is therefore recommended that further groundwater monitoring is undertaken from borehole installations to confirm that no significant exceedances of groundwater screening values are present.

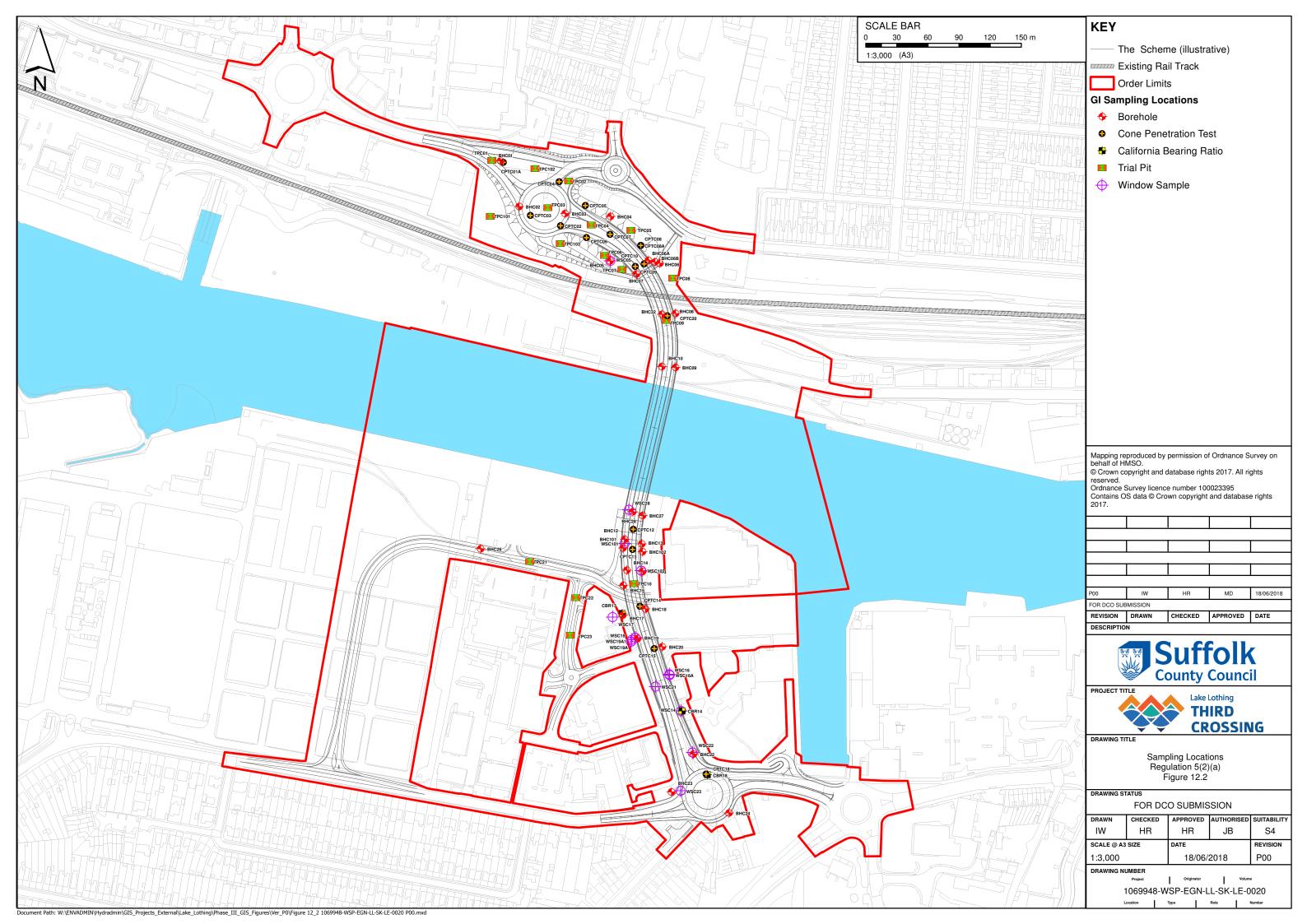
9.4 CONSTRUCTION CONSIDERATIONS

- 9.4.1. Protection of construction workers, site users and adjacent site users from airborne dust generated from made ground during construction will be required and measures are set out in the interim CoCP and will form part of the full CoCP.
- 9.4.2. The construction Contractor will need to keep a watching brief for unforeseen contamination including hydrocarbons and asbestos. Hydrocarbon odours and sheen were identified during the ground investigation, but chemical testing did not record any elevated concentrations.

Annex A

DRAWINGS





Annex B

SCOPE OF WORKS





LAND BASED FIELD WORKS

GENERAL WORKS

The ground investigation was undertaken between 24th July 2017 and 25th April 2018 by Geosphere Ltd who acted as Principal Contractor and were contracted to The Applicant. Chemtest Ltd were sub-contracted by Geosphere to undertake the chemical testing.

The ground investigation was undertaken in general accordance with techniques outlined in BS5930:2015 and BS1377:2016, as appropriate, at the positions shown on Drawing 1069948-WSP-ENG-LL-SK-LE-0020 – Sampling Locations Regulations 5(2)(a) Figure 12.2. The exploratory hole logs are presented in Annex C.1.

The investigation was monitored part time by an Engineer from WSP Ltd.

GAS AND GROUNDWATER MONITORING WELL INSTALLATION

Gas and groundwater monitoring wells were installed in selected boreholes summarised below and were constructed from 50mm perforated plastic pipe with a pea gravel surround and fitted with air tight gas valves. As a minimum requirement, each monitoring well comprised plain pipe from ground level to 1m with a bentonite pellet surround. Exact details of each installation are shown on the Engineers logs in Annex C.1.

Table 12 - Summary of Monitoring Wells

Exploratory Hole Location	Response Zone	Installed Strata					
BHC01	1m - 3m	Potential Made Ground** / Sand					
BHC02	1m – 10.5m	Possible made ground** / Silt / Sand					
BHC07	6m – 12m	Sand / Clay / Sand					
BHC08	7m – 12m	Sand					
BHC09	8m – 12m	Sand					
BHC14	1m – 2.5m	Made Ground					
BHC24	5m – 11.5m	Sand					
	1m – 2.5m	Made ground / Sand					
BHC27	4m – 12m	Gravel and Sand					
BHC102	5m – 11m	Sand					

^{**} Strata description changed from natural to potential / possible made ground by the Contractor after the monitoring well instruction was given.

HEADSPACE SCREENING

Disturbed soil samples were taken by Geosphere Ltd at regular intervals during the advancement of investigation locations for headspace screening. Samples were stored in headspace bags and screened for volatile organic compounds following a period for equilibration using a Photo Ionisation Detector. The results of the PID testing are presented on the exploratory hole records (Annex C.1).

GROUNDWATER AND GAS MONITORING

All boreholes were monitored by Geosphere Ltd for ground gas concentrations on two occasions to-date. Concentrations of methane (CH4), carbon dioxide (CO2), oxygen (O2) and trace gases (including carbon monoxide, hydrogen sulphide) and volatile organic compounds were recorded together with gas flow rates. Atmospheric pressures during the monitoring were also noted to enable a quantitative gas risk assessment to be carried out if necessary in accordance with current best practice.

The results of the gas and groundwater monitoring are presented in Annex C.2.



GROUNDWATER SAMPLING

Geosphere Ltd have undertaken groundwater sampling on two occasion's to-date (9th to 14th May and 23rd and 24th May) at fortnightly intervals after completion of the site works. Prior to each round of groundwater sampling, three well volumes were purged.

Groundwater samples were retained by Geosphere Ltd in containers provided to Geosphere Ltd by Chemtest Ltd and transported to the testing laboratory in accordance with Chemtest Ltd sample handling protocols.

In addition to the above two groundwater sampling visits undertaken after completion of the site works, two locations (BHC02 and BHC102) were also monitored on one occasion at the start of January 2018 during the site works.



MARINE SAMPLING WORKS

GENERAL WORKS

The marine sampling works were undertaken between 9th April 2018 and 23rd April 2018 by CMS-Geotech Ltd who were contracted to WSP Ltd. The chemical testing was scheduled by WSP Ltd and undertaken by ALS Ltd were sub-contracted by WSP Ltd.

Samples were stored in appropriate bottles and transported in cooler boxes to the testing laboratory under a chain of custody protocol within 24hours of being taken.

The factual records comprising sampling locations and test results are presented in Annex D.

SEDIMENT GRAB SAMPLING

Sediment surface grab samples were taken from 48 locations within the lake bed predominantly for the purposes of informing the potential for offshore disposal and sediment transport post construction.

VIBROCORE SAMPLING

Vibrocore sampling from 12 locations at nominal metre intervals to a nominal 4m depth was undertaken within the bed of Lake Lothing predominantly for the purposes of informing the potential for offshore disposal and sediment transport post construction.

SURFACE WATER SAMPLING

Surface water samples were recovered from the 4 locations within Lake Lothing.

Suffolk County Council



TESTING

CHEMICAL TESTING – SOILS & LEACHATE

Selected soil samples were scheduled for chemical analysis by WSP Ltd which was undertaken Chemtest Ltd under contract to Geosphere Ltd. The results of the contamination testing are presented in Annex C. The following testing was scheduled:

Table 13 - Summary of Chemical Testing for Soils

Strata		Soil Sample Laboratory Analysis (no.)											
		Metals	General	TPHCWG	VOC	SVOC	РАН	PCB EC7	PCB WHO 12	WAC	Asbestos	SOM	% Samples in Upper 1m
Made Groun	d	57	57	57	57	57	57	29	27	20	56	7	70
Natural Grou (Clay)	ınd	9	9	9	9	9	9	2	5	1	4	5	11.1
Natural Grou	ınd	1	1	1	1	1	1	1	0	1	0	1	0
Natural Grou	ınd	24	23-24	31	31	27	31	7	4	1	0	21	3.2
Natural Grou (Gravel)	ınd	0	0	2	2	0	2	0	0	0	0	0	0
Key					•		•	•	•			•	
Metals			oron, cadr and zinc	mium, ch	nromiu	m (tota	al and I	nexava	alent), I	ead, m	nercury	, copp	er, nickel,
General	pH, cyar		soluble su	ılphate,	total su	ulphate	e, amm	ionia a	s N, pl	nenol,	free cy	anide	and total
TPHCWG			TPH (alip		d arom	natic sp	olit and	l bande	ed) inc	luding	Benze	ne, To	luene, Ethyl
VOC	Vola	atile Or	ganic Cor	npounds	5								
SVOC	Sem	ni Vola	tile Organ	ic Comp	ounds								
PAH	Spe	ciated	Poly Aror	natic Hy	drocar	bons							
PCB EC7	PCE	PCBs EC7 Congeners											
PCB WHO12	PCE	PCBs WHO12 Congeners											
WAC	Tota	al Wast	te Accepta	ance Cri	teria S	uite							
Asbestos	Scre	en on	ly										
SOM	Soil	Organ	ic Matter										



Table 14 - Summary of Chemical Testing for Leachate

Strata		Soil Lea	chate La	boratory	Analysis	(no.)					
		Metals	General	TPHCWG	SVOC	РАН	% Samples in Upper 1m				
Made Groun	d	26	26	26	4	26	65.4				
Natural Grou Clay)	ınd	0	0	0	0	0	0				
Natural Grou	ınd	0	0	0	0	0	0				
Natural Grou (Sand)	ınd	1	1-2	3	0	3	0				
Natural Grou (Gravel)	ınd	0	0	0	0	0	0				
Key						,					
Metals		Arsenic, boron, cadmium, chromium (total and hexavalent), lead, mercury, copper, nickel, selenium and zinc									
General	pH, water soluble sulphate, ammonia as N, phenol, free cyanide and total cyanide										
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene										
SVOC	Semi V	olatile Org	ganic Com	npounds							
PAH	Speciated Polyaromatic Hydrocarbons										

CHEMICAL TESTING - WATER

Water Samples were extracted from the monitoring wells on site on two occasions by Geosphere Ltd and submitted for chemical analysis at Chemtest Ltd. The results of the contamination testing are presented in Annex C. The following testing was carried out:

Table 15 – Summary of Chemical Testing for Water (Groundwater and Surface Water)

Water Body	Laborate	ory Analys	is (no.)							
	Metals General Suite		TPHCWG	VOC	SVOC	РАН				
Groundwater	19	19	19	19	19	19				
Key										
	Arsenic, cadmium, chromium (hexavalent and total), lead, mercury, copper, nickel, selenium and zinc),									



General Suite	pH, Sulphate water soluble, Ammonia as N, Cyanide (total and free) and phenol
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene
VOC	Volatile Organic Compounds
SVOC	Semi Volatile Organic Compounds
PAH	Speciated Polyaromatic Hydrocarbons (PAH)

CHEMICAL TESTING - LAKE BED SEDIMENT GRAB SAMPLES

Lake bed sediment surface grab samples were taken by CMS-Geotech Ltd from 12 locations within the Lake and were submitted for chemical analysis at ALS Laboratories in Hawarden. The results of the contamination testing are presented in Annex D.2. The following testing was scheduled by WSP Ltd:

Strata	Labora	atory Ana	lysis (no.)							
	Metals	TPHCWG	Pesticides	РАН	PSD	PCB	Organotins				
Lake Lothing Sediments	12	12	12	12	12	12	12				
Key											
Metals	Arsenic, bo		nium, chro	omium, co	pper, lead,	mercury, n	ickel,				
TPHCWG	Speciated Benzene,	` '			•	nded) inclu	ding				
Pesticides	Organo-ch	loride and	organo-p	hosphate	pesticides	and triazine	herbicides				
PAH	Speciated Polyaromatic Hydrocarbons										
PSD	Particle size distribution										
PCB	Polychlorinated biphenyls EC7 and WHO12 Congeners.										
Organotins	Organotin compounds										

CHEMICAL TESTING - LAKE BED SEDIMENT VIBROCORE SAMPLES

Lake bed sediment samples at nominal 1m intervals to 4m depth were taken from 12 Vibrocore locations within the Lake Lothing bed sediments by CMS-Geotech Ltd and were submitted for chemical analysis at ALS Laboratories in Hawarden. The results of the contamination testing are presented in Annex D.2. The following testing was scheduled by WSP Ltd:

LAKE LOTHING THIRD CROSSING
Project No.: 62240712 | Our Ref No.: 1069948-WSP-EGT-LL-RP-LE-0002

WSP June 2018



Strata	Lab	orator	y Ana	lysis (no.)								
	Metals	General Suite	ASbestos	Pesticides	PBDE	РАН	PSD	PCB	Organotins	TPHCWG	SVOC	VOC	WAC
Lake Lothing Sediment Vibrocor Samples	е 34	34	34	34	34	34	34	34	34	34	34	34	34
Key											,		
Metals		Arsenic, boron, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium and zinc											
General Suite	Soil organic matter, pH, sulphate - water soluble and total, cyanide (total and free) and phenol, solid content.												
Asbestos	Asbesto	s scre	en										
Pesticides	Organo	-chlori	de and	dorgan	o-pho	sphate	pestic	ides a	nd tria	zine he	erbicid	es	
PBDE	Polybro	minate	ed Dipl	nenyl E	Ethers								
PAH	Speciat	ed Pol	yarom	atic Hy	/droca	rbons							
PSD	Particle	size d	istribu	tion									
PCB	Polychlo	Polychlorinated biphenyls EC7 and WHO12 Congeners.											
Organotins	Organotin compounds												
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene												
SVOC	Semi volatile organic carbon												
VOC	Volatile Organic Carbon												
WAC	Total Waste Acceptance Criteria suite												

CHEMICAL TESTING - LAKE LOTHING SURFACE WATER SAMPLES

Four water samples were taken from Lake Lothing by CMS-Geotech and submitted for chemical analysis at ALS Laboratories in Hawarden. The results of the contamination testing are presented in Annex D.2. The following testing was carried out:

Table 16 – Summary of Chemical Testing for Surface Water

Water Body	Laboratory Analysis (no.)											
	Metals	General Suite	TPHCWG	VOC	SVOC	РАН						
River (Lake Lothing)	4	4	4	4	4	4						
Key												



Metals	Arsenic, cadmium, chromium (hexavalent and total), lead, mercury, copper, nickel, selenium and zinc),
General Suite	pH, Sulphate water soluble, Ammonia as N, Cyanide (total and free) and phenol
TPHCWG	Speciated TPH (aliphatic and aromatic split and banded) including Benzene, Toluene, Ethyl Benzene and Xylene
VOC	Volatile Organic Compounds
SVOC	Semi Volatile Organic Compounds
PAH	Speciated Polyaromatic Hydrocarbons (PAH)

Annex C

LAND BASED GROUND



INVESTIGATION FACTUAL INFORMATION

Annex C.1

ENGINEERS LOGS



CLIENT	Ր։ Suf	folk	County	Council	PROJECT: Lake L	othin	g Cabla D				GROUND LEVEL m								HOLE No. BHC01
LOGGED FIELDWO				CHECKED BY: SG DATE:	EXCAVATION METHOD	J:	Cable Pe Uncased		n (shell and auger)		Coo	rdinat	es: ,						SHEET 1 OF 3
			GS BH BET				Uncased	1 (0 15.	1 111		DAT	ES 19-	-Apr-1	L8 - 2	0-Apr-	18			PROJECT NO. 2543,GI Lake Lothing
Date/Time			epth*				Strata	1	Graphical Representation		ng/In-Sit	tu Testin	g				Testing	3	Additional Tests and Notes
and Depth	of Casin		of ⊠ Vater	Descriptio	n of Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2 ≥	No.	Blows	SPT N	<425 %	WC P	L LL 6 %	Mg/r	Cu m³ kN/m²	
-	t		38	TOPSOIL (Dark brown slight	y gravelly silty fine to	-		0.00	0 10 20 30 40	0 -									
				coarse sand with rootlets. (subrounded fine to coarse f	int)			0.20		0.20	В1								
				MADE GROUND (Dark orang mottled gravelly fine to coal subangular to subrounded f	e brown and brown se sand. Gravel of		3			0.30 ES	J1								VOC = 0ppm
				\flint)		/‱		0.50		0.50	B2								
				POTENTIAL MADE GROUND fine to coarse sand with occ	sional brown mottling.	\otimes	}		ļ	0.70 ES	J2								VOC = 0ppm
-	+			Gravel of subangular to sub flint)	ounded fine to coarse	\otimes		-		1.00	В3								-
			1				3			1.10 ES									VOC = 0ppm
						\otimes													
			[#:	Orange brown gravelly med Gravel of subangular to rou	um and coarse SAND.	· ·		1.50	7	1.50 S	В5	22	18						
				Gravei of Subangular to rou	ided line and medium liint				ļ <i>ļ.</i>	1.70 ES	J4	3 4 5 6							VOC = 0ppm
	L		計			· · ·				2 -									
l			<u> </u>	2.00 Becoming yellow brow	with depth	· : :				2.00	В6								
			<u> </u> .∄.							2.50 ES	В7	22	10						VOC = 0ppm
			13:							c	J5	2 2 2 3 3 2							
			[<u>]</u>].			· · ·													
_	Ť			Yellow brown slightly gravel of subangular to subrounde	y silty fine SAND. Gravel	×		3.00		3.00	В8								
				or subungular to subround	a time time	×·.													
						×:				3.50		2.2	12						VOC. On the
						. i · i ·	}		\\ <i> </i> \	3.50 ES C	В9 J6	3 3 3 4 3 3	13						VOC = 0ppm
						×			<u> </u>]		33							
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						×	1		1	}									
						×			····]]									
						·^.·:				4.50 C 4.60 ES	B10 J7	2 2 1 2	8						VOC = 0ppm
						×				1.00	3,	3 2							Voc - oppin
-	-					×:.		_		5 -									-
						×·	1												
						×	1												
	 ▼ C+	tandir	g water lo	vel PIEZOMETER De Upp	er seal SAMPLE D		disturbed	sample	S Standard penetration test B	lows SPT blow	us for or	ach 75mr	m incre	ment	<u></u> _				
VVAIEK	Ā N	Vater	strikes	H. Resp	onse zone AND B	Bulk c	disturbed s sturbed sar	ample	C Cone penetration test	(35) Und PTN N = SPT	isturbe	d sample	blow c	ount		X			SHEET SHEET HOLE No. BHCQ1
*WATER				V∕∕ Low	KEY P	Pistor	n sample rbed jar sai		ic i ci i leability test 3	N*120 = including	Total bl	lows/per			a		Geosp	here En	vironmental
				DEDTIL All 1	E:	S Enviro	onmental s		<	including 425 Sample S			icron si	eve	O				º <u> </u>
				DEPTH All depths, level a	nd thicknesses in metres W	/ Wate	r Sample												

	Council	PROJECT: Lake Lo	Lothing Cable Percussion (shell and auger)						UND	LEVEL	m		HOLE No. BHC01			
LOGGED BY: LF		CHECKED BY: SG	EXCAVATION METHOD:						Coor	dinate	es: ,					SHEET 2 OF 3
FIELDWORK BY: TEMPLATE REF: (GEL AGS BH BETA	DATE:		ι	Jncased	to 15.	I m		DATE	ES 19-	Apr-1	8 - 20)-Apr-1	8		PROJECT NO. 2543,GI Lake Lothing
ate/Time Depth								oling/In-Situ Testing Laboratory Testing						Additional Tests and Notes		
and of Casing	n Depth* 3	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths d ≥	No.	Blows	SPT N	<425 %	WC PL %	LL %	r Cu Mg/m³ kN/m²	
		Yellow brown silty/clayey fine s	AND			5.50	5.5.5.	.50 C ES	B11 J8	11 22 32	9					VOC = 0ppm
1						-		.50 S ES	B13 J9	33 33 33	12					VOC = 0ppm
		Yellow brown very clayey fine a	ind medium SAND			7.50 -		.50 S ES	B15 J10	12 34 45	16					VOC = 0ppm
_							8	.50 S ES	B17 J11 B18	2 3 4 6 6 6	22					VOC = 0ppm
_								.50 S ES	B20 J12	7 10 11 12 12 10	45					VOC = 0ppm _
		Dark grey slightly clayey fine SA sand pockets	ND with orange brown			10.50		0.50 S 0.60 ES	B22 J13	5 6 7 6 5 5	23					VOC = 0ppm
*WATER ¥ Sta ∇ W	anding water lev ater strikes	rel PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed sa isturbed sam turbed sam sample bed jar sam onmental sa	ample (aple I		ws SPT blow (35) Und N N = SPT N N*120 = including	isturbed I value (I Total blo seating	sample blows af ows/pen	blow co ter seat etratior	ount ing) 1	dec	G	eosphere En	vironmental SHEET SHEET 2 OF 3 BHC01

CLIENT	: Suffo	lk Cour	ty C	Council	PROJECT: Lake Lo	thin	g Sable De	reussia	n (shell and auger)		GRO	UND	LEVEL	. m					HOLE No. BHC01		
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD:		Jncased				Coor	dinate	es: ,						SHEET 3 OF 3		
FIELDWO TEMPLAT		EL AGS BH	BETA			(Jncased	1 to 15.1	L M		DAT	ES 19-	Apr-1	8 - 2	0-Apr	-18			PROJECT NO. 2543,GI	Lake	Lothir
ate/Time	Depth	Depth*					Strata		Graphical Representation			u Testing			Lab	oratory	Testing		Additional Tests and Notes		
and Depth	of Casing	of Water	Piez.	Description of		Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	No.	Blows	SPT N	<425 %	WC %	PL LI % %	r Mg/m	Cu kN/m²			
_	_			Dark grey slightly clayey fine SAI sand pockets (continued)	ND with orange brown			_	72	1.00	B23										
_	-			Grey medium and coarse SAND grey mottling	with occasional dark			11.50	11	1.50 S	B25	10 12 12 15 16 7	72*						_		
				Grey medium and coarse SAND natural organic odour	with weak to moderate			12.50	5	2.50 S	B27	18 7 19 20	75*								
_	_			<u></u>				_		13-		11							_		
_	_							- (13	3.50 S	B29	6 6 4 4 3 3	14						-		
				Grey CLAY with weak to modera odour				14.20	14	4.30	D30 B32 UT31 J14	(35)							VOC = 0ppm		
=	_			Dark grey silty medium SAND wi organic odour	th moderate natural	×		14.80		15-									Borehole completed at 15.1m backfilled with betonite grout	n bgl. Bo t to 3.0m	reho 1 bgl
-	<u> </u>							-		16-									_		
										1											
WATER	¥ Stai	nding wate ter strikes	er leve	el PIEZOMETER Upper se Respons Lower se	e zone AND B eal TEST U KEY P	Bulk d Undis Piston Distur	disturbed sa listurbed sam turbed sam sample bed jar sam onmental so	ample (nple i nple	•	ws SPT blow (35) Und N N = SPT ! N*120 = including Sample 9	isturbed N value (Total blo g seating	sample blows af ows/pen	blow co ter sea etration	ount ting) n	TO	(I)	Geosph	nere En	vironmental ·	HOLE No.	SHEET
				DEPTH All depths, level and t					172.	pic /	F = 20.118										



GEL AGS TP BETA 2543,GI - LAKE LOTHING.GPJ GINT STD AGS 3_1.GDT 11/8/17

TRIAL PIT LOG

Project			Client		TRIAL PIT No
Lake Lothing			Suffolk (County Council	BHCO3/HD/
Job No	Date 10-08-17	Groun	d Level (m)	Grid Reference ()	BHC02(HP)
2543,GI	10-08-17		2.57		
Fieldwork By			Logged By		Sheet
JG			JG		1 of 1

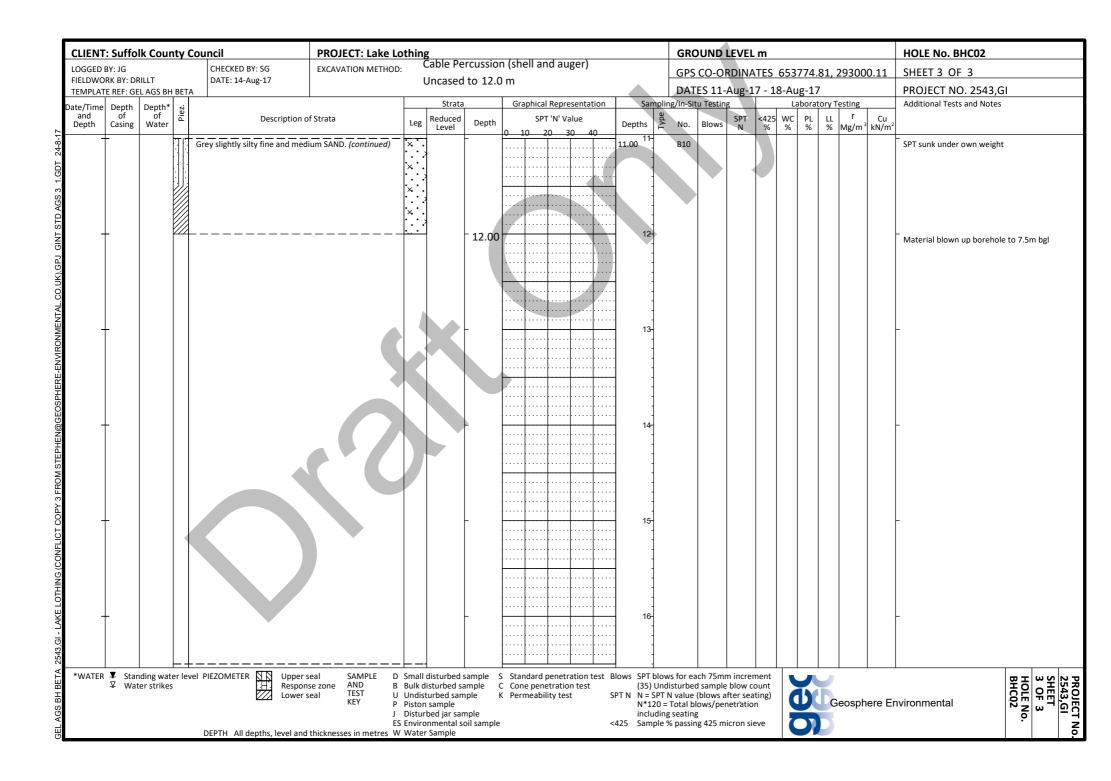
	10				1 01 1
Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	CONCRETE	Parkarkar Parkarkar Parkar			
0.20-0.40	MADE GROUND (orange brown very gravelly coarse Sand. Gravel of angular to subrounded fine and medium brick and flint)		0.25	J1ES	VOC=1ppm (peak)
0.40-0.50	MADE GROUND (grey red very gravelly Sand. Gravel of fine and medium subrounded to angular red brick and concrete)		0.40	J2ES	VOC=1ppm (peak)
0.50-0.70	MADE GROUND (black brown slightly gravelly organic Sand. Gravel of fine subrounded to subangular flint)		0.60	J3ES	VOC=1ppm (peak)
0.70-1.30	Brown grey slightly gravelly medium and coarse SAND. Gravel of fine subangular to subrounded fine flints.				
7	_	a	0.90	J4ES	VOC=0ppm (peak)
-	-	0 0			Moderate to fast inflow of water at 1 m
			1.30	J5ES	VOC=0ppm (peak)

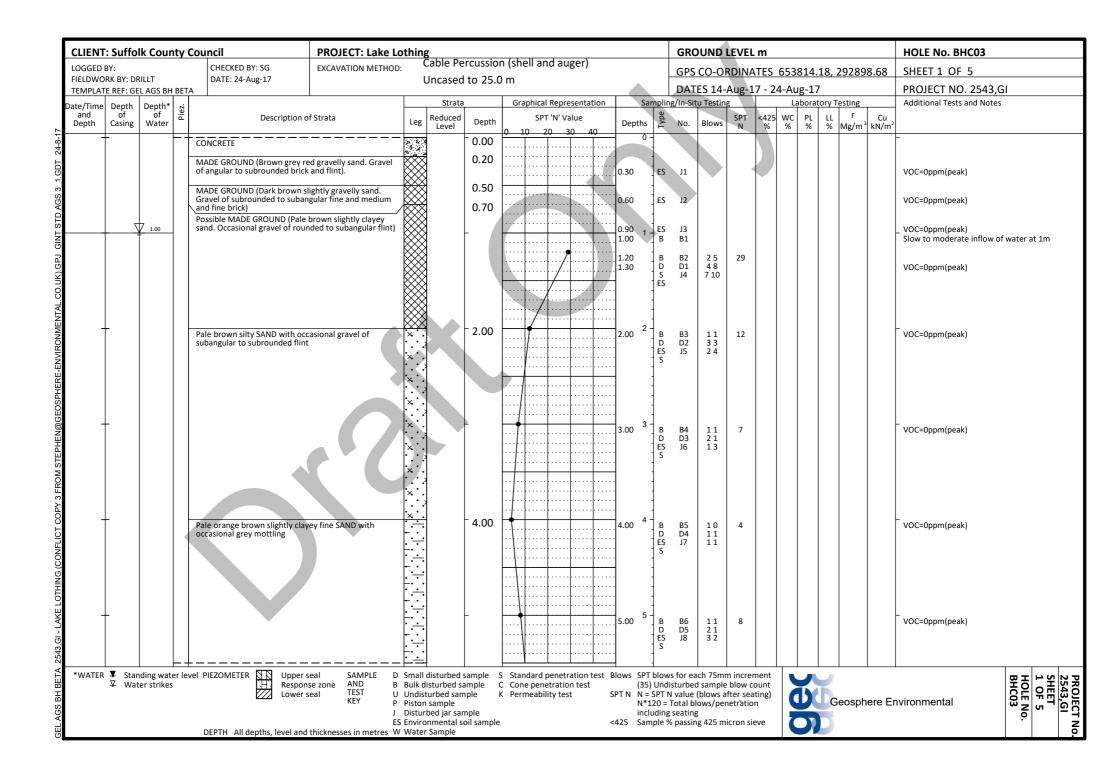
0.35 — Shoring/Support: Stability: Checked By SG

All dimensions in metres Scale 1:12.5 Plant Used HAND DUG Method Inspection pit

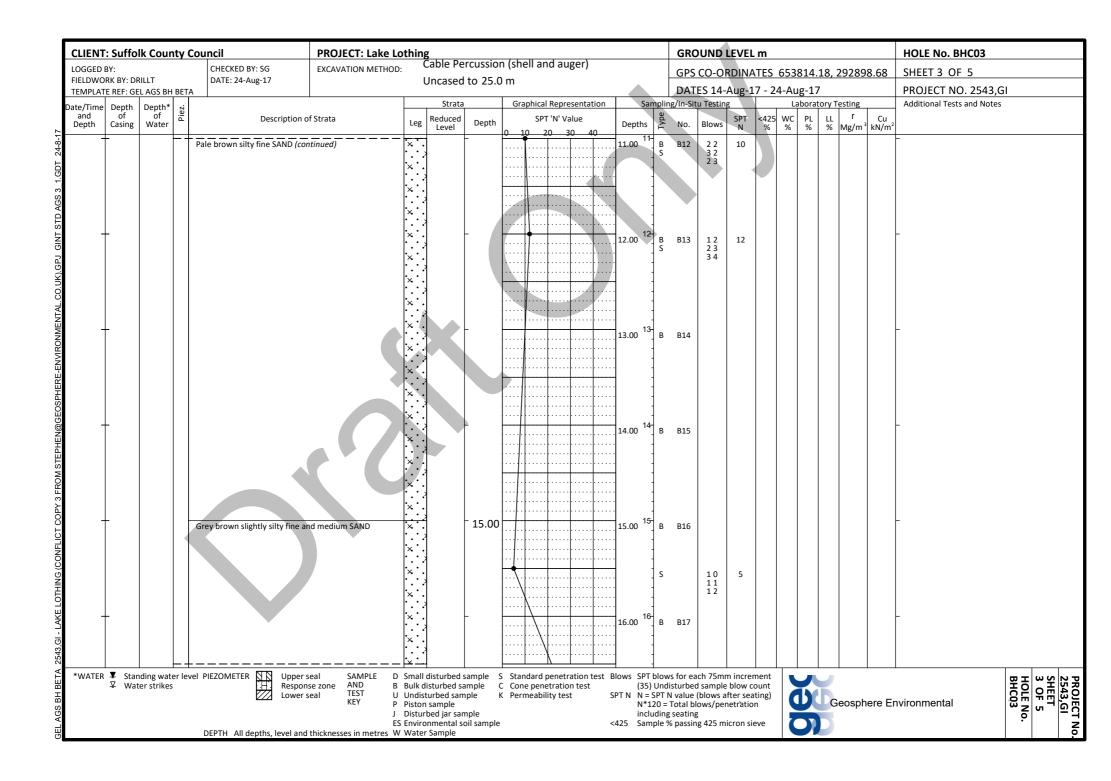
		k Co	unty	Council	PROJECT: Lake Lo		i g Cable Pe	rcuccio	n (ch	م محد الم	iger)			GRC	DUND	LEVEL	m						HOLE No. BHC02		
OGGED B	Y: JG RK BY: DR	шт		CHECKED BY: SG DATE: 14-Aug-17	EXCAVATION METHOD		Uncased		•	en anu a	ugei)			GPS	CO-O	RDINA	TES	653	774.	81, 2	29300	00.11	SHEET 1 OF 3		
	REF: GE		вн вет	_											ES 11-		7 - 1						PROJECT NO. 2543,		
e/Time and	Depth of	Depti of	Piez.				Strata	<u> </u>	Gra		esentation			ng/In-Sit	u Testin						esting r	_	Additional Tests and Note	es.	
	Casing	Wate	er 🖰	Description	of Strata	Leg	Reduced Level	Depth	0 1	SPT 'N' \ 10 20	/alue 30 40	Depth	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m	3 kN/m ²			
1	•		110	CONCRETE		9 4	3	0.00		1		,	0 -										-		
				MADE GROUND (orange brow	n very gravelly fine to		3	0.20				0.25	ES	. 11									VOC=1nnm (noak)		
				coarse sand. Gravel of angular medium brick and flint)	to subrounded fine and	\bowtie	₹	0.40				0.25	ES	J1 J2									VOC=1ppm (peak) VOC=1ppm (peak)		
				MADE GROUND (Grey and dar gravelly fine to coarse sand. (k orange brown very		3	0.50				0.60	ES										VOC=1ppm (peak)		
				medium subrounded to angula (concrete)	ar red brick and		4	0.70				. 0.60	153	13/									VOC=1ppiii (peak)		
1				MADE GROUND (Black and bro	own slightly gravelly	/ :•:	•{		1,,			0.90	1 ES	J4									VOC=0ppm (peak)		
				sand with moderate natural o fine subrounded to subangula	flint)					<i>J.</i>		1.00	В	B1	3 3 4 2	13									
				POSSIBLE MADE GROUND (Bromedium and coarse sand. Gra	own grey slightly gravelly yel of fine subangular to	· · ·	<u>.</u>	1.30		/		1.20	D	D1 J5	3 4								\(\(\text{OC} = \text{One and } \)		
				\subrounded fine flint)	/	/\ . · .]	1.50	7	/		1.30	1 5	12									VOC=0ppm (peak)		
			1#:	Possible MADE GROUND (Brow fine sand. Occasional gravel of rounded flint)	f subrounded to		·					-	-												
				Pale brown slightly sandy SILT	with occasional nockets	x		1.80					-												
+	_			of clay.	with occusional pockets	× *		-				1	2 -	D 2	2.4								1/06 Ones (see 1)		
			1:11:			* .×			1			2.00	B	B2 D2	21	6							VOC=0ppm (peak)		
						× ×						-	ES	J6	2 2										
						×·^						-	}												
			: :			××			(1	1												
			13.			× · ×			-				1												
+	-					××		-	+	 		3.00	3 - B	В3	21	7							VOC=0ppm (peak)		
						* ×			/			.]	D ES	D3 J7	1 1 3 2								,, ,,		
			1:1:			^ ·×				\															
						× .×				<u> </u>		1	1												
			. .			×.×							-												
						×·×				.]	1												
+	-					×·		<u> </u>		1\		4.00	4 ES	J8									>90% recovery from P1 sa	mple withi	n so
						× . × .				····\·		4.00- 5.00	P	P1									VOC=0ppm (peak)		
			13.			×.	1						-												
						* _*	1						1												
						* ·×				l \			1												
			<u> </u>			× .×				···· <i>.</i> /			_												
T	-		: :			* ×	1					5.00	5 - B	B4 D4	3 3 6 6	24							VOC=0ppm (peak)		
						××							D ES	D4 J9	5 7										
			追.			×	<u>:</u>			·····	· · · · · · · · · · · · · · · · · · ·	_	1												
WATER	¥ Stan	ding w	ater le	vel PIEZOMETER Upper							ration test									5		'	1	ᄪᄑ	<u></u>
	¥ Wat	er strik	es	vel PIEZOMETER Upper Respoi	seal TEST U	Undis	disturbed sa sturbed san			ne penetrati meability to		SPTN N	= SPT N	N value	d sample (blows a	fter sea	ting)		1	K				HOLE No. BHC02	台뉴
					KEY P	Pisto	n sample rbed jar sar			,		N	*120 =		lows/per				7	G	eospl	nere E	nvironmental	2 N	ω [_]
							onmental s		е			اا 425 S:				icron sie	21/0	7						6	

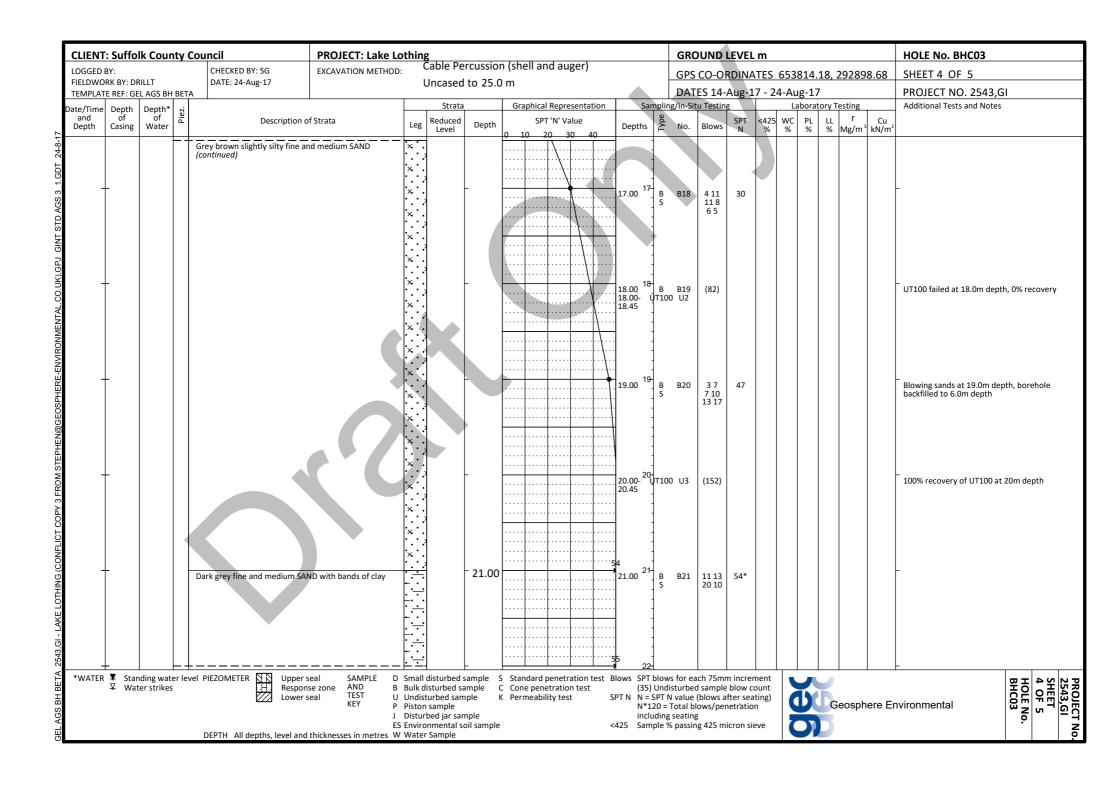
LIENT:	Suffol	k Coun	ty C	ouncil	PROJECT: Lake Lo	thin	ig Cabla Da	vouce!s	a /ab = II =	nd c	· o = l			GRO	UND L	EVEL	m					HOLE No. BHC02		
OGGED B	Y: JG RK BY: DR	шт		CHECKED BY: SG DATE: 14-Aug-17	EXCAVATION METHOD:		Cable Pe Uncased			na aug	er)			GPS C	CO-OF	RDINA	TES	6537	74.82	1, 293	000.11	SHEET 2 OF 3		
		L AGS BH	BETA	_			Uncased	to 12.0) M					DATE	S 11-	Aug-1	7 - 1	8-Au	g-17			PROJECT NO. 2543,G	I	
te/Time	Depth	Depth*	żz.				Strata		Graphica	l Repres	entation	Sa		/In-Situ	Testing	3				y Testir		Additional Tests and Notes		
and Depth	of Casing	of Water	Piez.	Description o		Leg	Reduced Level	Depth		T 'N' Val		Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL Mg,	r Cu /m³ kN/m	2		
	-			Pale brown slightly sandy SILT v of clay. (continued)	vith occasional pockets	* * * * * * * * * * * * * * * * * * * *		_				6.00	B ES P	B5 J10 P2		•						No recovery within P2, bulk (peak)	taken, V	/OC=0
	-					*		-				7.00	B D ES	D5	11 13 46	14						VOC=0ppm (peak)		
				8.00 - 8.40 Grey clay band, reco	vered in lumps	· × × × × × × × ×						8.00	B ES	B7 J12	1 2 1 2 3 1	7						VOC=0ppm (peak)		
					*		_				9.00 ⁹	B ES UT100	B8 J13 U1								UT100 failed, bulk taken, VC	0C=0ppm	ı (pea	
-	-		. □.1	9.80 - 10.10 Slightly grey brown selenite gravel Grey slightly silty fine and medi		× × × × × × × × × × × × × × × × × × ×	•	⁻ 10.00				10.00 10] B	J14	3 2 4 4 5 1	14						VOC=0ppm (peak)		
_ WATER	- ▼ Stan ▼ Wate	ding wate er strikes	er leve	Upper s Respons Lower s	ee zone AND B eal TEST U KEY P	Bulk of Undis Pisto Distu	I disturbed sa disturbed sa sturbed sam n sample rbed jar san onmental so	mple (ple i	C Cone pen C Permeab	etration	test S	(35) PTN N = N*1	blows Undis SPT N .20 = To uding s	turbed s value (b otal blo seating	sample blows af ws/pen	blow co fter sea letration	ount ting) n		XI	Geos	sphere E	- Environmental	HOLE No. BHC02	SHEET 2 OF 3

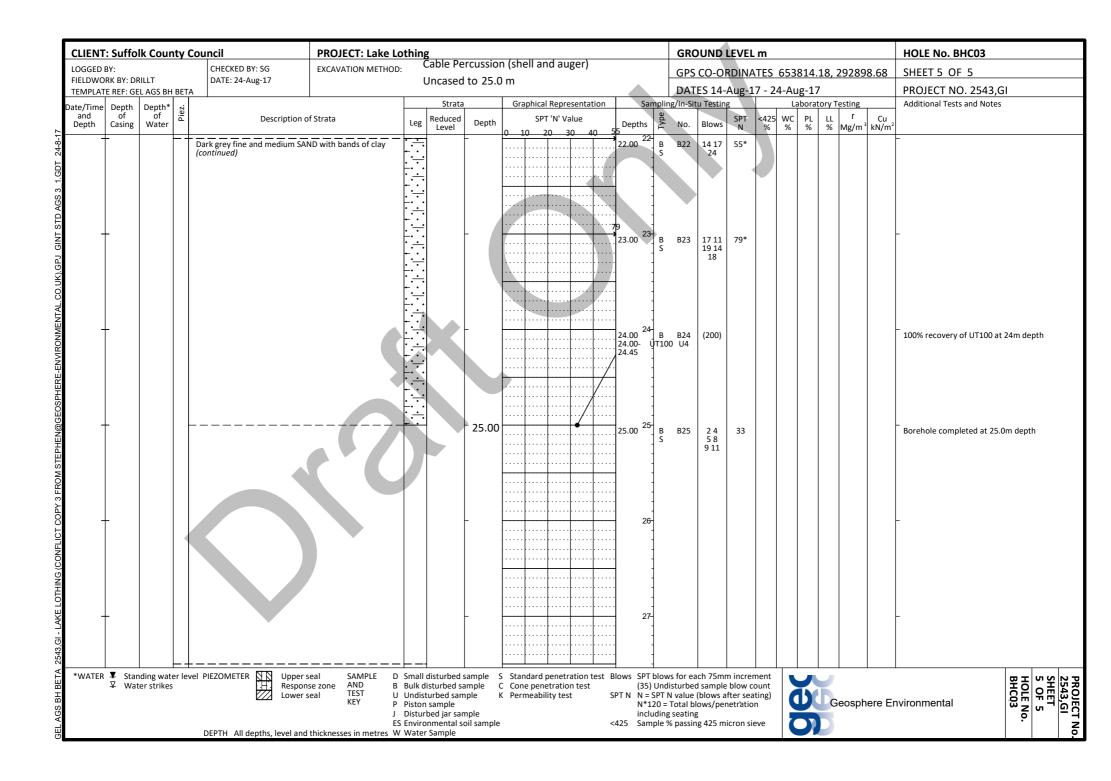




LIENT	: Suffo	lk County		PROJECT: Lake Lo	othin	ig Cabla Da	wa	n /sk=11 -	nd -	~~~!			GRO	UND	LEVEL	m						HOLE No. BHC03
OGGED E	BY: RK BY: DI	DILLT	CHECKED BY: SG DATE: 24-Aug-17	EXCAVATION METHOD		Cable Pe			ına au	ger)			GPS	CO-01	RDINA	TES	653	814.	18, 2	292898	3.68	SHEET 2 OF 5
		L AGS BH BET				Uncased	10 25.0	ווו ע						ES 14-		7 - 2	4-Au	ıg-17	,			PROJECT NO. 2543,GI
	Depth	Depth*				Strata	İ	Graphic	al Repre	sentation	Sa		g/In-Situ	u Testin						esting		Additional Tests and Notes
and Depth	of Casing	of Water ≅	Description	of Strata	Leg	Reduced Level	Depth		PT 'N' Va 20 3	lue 0 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²	
			Pale orange brown slightly cl occasional grey mottling (cor	ayey fine SAND with tinued)	-:-	<u>-</u>									4							
	-		Pale brown silty SAND with o	ccasional pockets of clay	×	- - - - - - -	- 6.00				6.00	B ES UT100	B7 J9) U0	(40)								VOC=0ppm(peak)
					×																	UT100 failed at 6.0m depth, 0% recovery
	-			4	×						7.00	B D ES S	B8 D6 J10	21 23 56	16							VOC=0ppm(peak)
	_				×																	_
					×						8.00	B D ES S	B9 D7 J11	23 54 55	19							VOC=0ppm(peak)
	=		0.00 0.40 Pand of avoyality		×		-				9.00		B10	2.2	22							VOC=0ppm(peak)
			9.00 - 9.40 Band of grey clay Pale brown silty fine SAND		×		9.40				9.00	B ES S	J12	2 2 3 5 7 7	22							voc-oppiii(peak)
	_				×	·]	-		/		10.00	D	B11	(72)								VOC=0ppm(peak)
					×							B ES UT100	J13	(12)								Blowing sands at 10.0m depth, borehole backfilled to 4.8m depth 80% recovery of UT100 at 10m depth
					×:		-					- - - 1-										_
VATER	▼ Star ▼ War	nding water le er strikes	evel PIEZOMETER Uppe Respo	onse zone AND B r seal TEST U KEY P	Bulk Undis Pisto Distu	disturbed sa sturbed sam in sample irbed jar sar	ample nple nple	C Cone per K Permeak	netratio	t 5	(35) SPTN N = N* inc) Undis SPT N 120 = T luding	sturbed value (Fotal blo seating	l sample blows a ows/per	blow co fter sea netratio	ount ting) n		J.	G	eosphe	ere Er	HOLE No.
			DEPTH All depths, level ar			onmental ser Sample	oil sample	!		<	:425 Sar	nple %	passing	g 425 m	icron sie	eve		7				'







CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	thing	3		- / 1	-11 1 \			GR	DUND	LEVEL	. m						HOLE No. BHC04		
LOGGED I		DII 1 =		CHECKED BY: SG	EXCAVATION METHOD:					ell and auger) 1.0 to 4.0m			GRI	D REFE	RENC	Έ: Τ	M 53	859	9298	5		SHEET 1 OF 8		
FIELDWO TEMPLAT			вн вет	DATE:		2	50mm (cased fr	om 4	.0 to 4.0m .0 to 16.0m				ES 04-								PROJECT NO. 2543,G		
ate/Time		Dept		·· 1			Strata			aphical Representatio	n	Sampli		tu Testin			La	borate	ory Tes	ting		Additional Tests and Notes		
and Depth	of Casing	of Wat) je	Description of	Strata	Leg	Reduced Level	Depth	0 1	SPT 'N' Value	De	epths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL % N	r ⁄lg/m³ k	Cu N/m²			
	_			CONCRETE (Pale grey, no rebar)		P 5 4		0.00				0 -										_		
				MADE GROUND (Dark orange b and gravel. Gravel of angular to coarse concrete, brick and flint	subrounded fine to			0.20			0.30	D ES	B1 J1									VOC = <0.1ppm (peak)		
				MADE GROUND (Black and dark sand and gravel with weak to m organic odour. Gravel of angula to coarse flint, brick, concrete a	oderate natural ar to subrounded fine			0.50 0.60			0.60	D ES	B2 J2									VOC = <0.1ppm (peak) Rest groundwater level at 0.	6m bgl	
_	_			MADE GROUND (Black silty fine strong sulphurous and hydrocal	grained soot with			1.00	•		0.90	0 1 - ES	J3	12	5						-	_ VOC = 4.0ppm (peak)		
				MADE GROUND (Dark yellow br sand with black staining and str odour)	ong hydrocarbon			1.30			1.10	o] \	B3 J4	11 12								VOC = 5.0ppm (peak)		
				Dark yellow brown very clayey with pockets of dark yellow bro	ine and medium SAND wn gravelly clay	- - - - -			 															
_	_					 		-	ļ		2.00	2 - ES	В4	00	0							_ VOC = <0.1ppm (peak)		
04-09	2.00 7	2.40				- 						S	J5	00								., .		
						÷.::::::::::::::::::::::::::::::::::::																Inflow of water at 2.4m		
=	_			Black organic rich CLAY with ver shells	y occasional black			3.00			3.00	3 = ES S	B5 J6	00000	0						_	VOC = <0.1ppm (peak) Sample B5 unrepresentative saturated clayey sands	due to r	·eco
																						Sample D2 representative o	black or	rgan
				Black organic rich clayey fine ar black clay pockets	d medium SAND with			3.70				1										_		
									\		4.00	D T ES	В6 J7	00000	0							VOC = <0.1ppm (peak)		
						 						-												
-		<u> </u>		Orange brown and brown mott medium SAND with clay bands Orange brown and brown mott				5.00 5.20			5.00	5 - ES S	B7 J8	2 2 2 4 4 2	12							VOC = <0.1ppm (peak)		
WATER	▼ Star ▼ Wa	 nding v ter stri	⊢ − vater le kes	vel PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P	Bulk di Undist Piston	isturbed sa urbed san sample	ample nple	C Con	ndard penetration test e penetration test meability test		(35) Und N = SPT N*120 =	listurbe N value Total b	d sample (blows a lows/pe	blow of fter sea	ount ating)		X	Ge	osphe	re En	nvironmental	HOLE No. BHC04	SHEET 1 OF 8
				DEPTH All depths, level and	ES	Enviro	bed jar sar nmental s		2		<425	includin Sample			icron si	eve	7	7					. .	

CLIENT:	: Suffo	lk Cou	ınty (Council	PROJECT: Lake Lo	othin	g				GRO	DUND	LEVEL	m					HOLE No. BHC04		
LOGGED B				CHECKED BY: SG	EXCAVATION METHOD:				on (shell and auger) rom 0.0 to 4.0m		GRI	D REFE	RENC	E: TI	M 538	359 9	2985		SHEET 2 OF 8		
FIELDWOF TEMPLATE			ВН ВЕТА	DATE:					rom 4.0 to 4.0m			ES 04-							PROJECT NO. 2543,0	GI	
Date/Time		Depth	*				Strata		Graphical Representation		ling/In-Si	tu Testin	g				y Testir		Additional Tests and Notes	i	
and Depth	of Casing	of Wate	* Piez.	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths	No.	Blows	SPT N	<425 %	WC %	PL 1	LL r % Mg/	Cu m³ kN/m²			
-	-		-	Orange brown and brown mott (continued) Yellow brown and orange brow medium SAND with dark orang pockets of dark grey sandy clay	n mottled silty fine and	× · · · · · · · · · · · · · · · · · · ·		- 6.00		6.00 6 E	S B8 100 J9 U1	(41)							VOC = <0.1ppm (peak)		
_	-					×		_		7.00	S B9 S J10	23 610 1315	44						VOC = <0.1ppm (peak)		
_	-					×		4		8.00 8 E	S B10 S J11	5 8 2 3 5 6	16						VOC = <0.1ppm (peak)		
_	-	7				× × ×		-		9.00	S B11 S J12	2 2 2 3 6 9	20						VOC = <0.1ppm (peak)		
05-09 + 60 mins	9.00	7 9.60 5.00				×				10.00 ¹⁰ E	S B12 S J13	12 37 96	25						Inflow of water at 9.6m VOC = <0.1ppm (peak)		
*WATER	- ▼ Star ▼ Wat	nding wa	ater lev	rel PIEZOMETER Upper s Respon	se zone AND B	Bulk	disturbed disturbed siturbed san	ample (S Standard penetration test BI C Cone penetration test K Permeability test SP		ndisturbe	d sample	blow co	ount					-	внс	2543,G SHEET 2 OF 1
				DEPTH All depths, level and	KEY P J ES	Pistor Distur Enviro	n sample rbed jar sai onmental s	mple	·	N*120	= Total b	lows/per g	netratio	n	7	N	Geos	phere E	nvironmental	HOLE No. BHC04	2543,GI SHEET 2 OF 8

CLIENI	: Sutto	Ik Co	unty	Council	PROJECT: Lake Lo	othin	g Galala B		/ala all a sa al		GRO	UND	LEVEL	m				HOLE No. BHC04		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD				n (shell and auger)		GRID	REFE	RENC	E: TM	53859	9298	35	SHEET 3 OF 8		
	RK BY: DI E REF: GE		RH RFT	DATE:					om 0.0 to 4.0m om 4.0 to 16.0m			ES 04-						PROJECT NO. 2543,GI		
ate/Time	Depth	Depth					Strata		Graphical Representation	Samplii	ng/In-Situ				Labora	tory Te	esting	Additional Tests and Notes	<u>'</u>	
and Depth	of Casing	of Wate	l ë	Description of	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths d	No.	Blows	SPT N	<425 %	/C PL	LL %	r _{Cu} Mg/m³ kN/m²			
- -	-			Yellow brown and orange brownedium SAND with dark orang pockets of dark grey sandy classification of the same pockets of dark grey sandy classification or the same pockets of dark grey slightly clayey fine a dark grey slightly clayey fine a	y (continued)		Level	- 14.00		11.00 ¹¹ S 12.00 ¹² 13.00 ¹³ 14.00 ¹⁴ S		12 24 5111	0	9% X	No. 10 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	%	Mg/m kn/m	Blowing sands encountered 14.0m depth. Casing driven	from 11	l.6m to o 14.0m
-	-			Dark grey medium and coarse white shells	SAND with black and			⁻ 16.00		16.00 ¹⁶ S	B18	3 2 4 7 10 13	34					Continued blowing sands fro depth	m 16m	to 32ı
*WATER	▼ Star ▼ Wat	nding w er strik	ater le	vel PIEZOMETER Upper Respor	seal AND B seal TEST U KEY P	Bulk o Undis Pistor Distur	disturbed sa disturbed sam turbed sam n sample bed jar sam onmental so	imple (iple i iple		SPT blow (35) Und	listurbed N value (Total blo g seating	sample blows a ows/per	blow co fter sea netration	ount ting) n	dec	Ge	eosphere Er	nvironmental	HOLE No. BHC04	SHEET 3 OF 8

CLIENT	Suffol	k Cou	nty C	Council	PROJECT: Lake Lo	thin	g		/		GRC	UND I	EVEL	m					H	IOLE No. BHC04		
LOGGED E				CHECKED BY: SG	EXCAVATION METHOD:				n (shell and auger)		GRIE	O REFE	RENC	E: TN	M 53	859 9	298!	5	S	HEET 4 OF 8		
FIELDWOF TEMPLATI			H BETA	DATE:					om 0.0 to 4.0m om 4.0 to 16.0m			ES 04-9								ROJECT NO. 254	3 GI	
	Depth			1	I	1	Strata		Graphical Representation	Samplir		u Testing		<u> </u>	La	borato	ry Tes	ting		dditional Tests and No		
and Depth	of Casing	Depth* of Water	Piez.	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths 2		Blows	SPT N	<425 %			LL		Cu			
		water		Dark grey medium and coarse white shells (continued)	SAND with black and		Level	-		17.00 ¹⁷ - 18.00 ¹⁸ - 19.00 ¹⁹ -	B19 B20 B21	BIOWS	N	96	%	%	% M	lg/m³ kN				
	-									21.00 21	B23											
*WATER	▼ Stan ♀ Wat	ding wa er strike	ter lev	el PIEZOMETER Upper s Respon	se zone AND B seal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed sa sturbed sam n sample rbed jar sar	ample C nple K mple		(35) Und PTN N = SPTI N*120 = including	isturbed N value Total bl g seating	d sample (blows at lows/pen	blow co fter sea letration	ount ting) n				osphere	e Envir	ronmental	BHC04	SHEET 4 OF 8
				DEPTH All depths, level and	ES	Envir	onmental s		<	425 Sample 9			cron sie	eve	7	N					۱ ,	

CLIENT: Suffolk Cour	ty Council	PROJECT: Lake Lo EXCAVATION METHOD:	thing	<u> </u>				GROUND	LEVEL	. m					HOLE No. BHC04		
LOGGED BY: LF	CHECKED BY: SG	EXCAVATION METHOD:	2	Cable Pe	rcussio	n (shell and auger)		GRID REF	ERENC	E: T	M 538!	59 92	985		SHEET 5 OF 8		
FIELDWORK BY: DRILLT TEMPLATE REF: GEL AGS BH	DATE:			COLLINI	Juscu II	om 0.0 to 4.0m om 4.0 to 16.0m		DATES 04							PROJECT NO. 2543,G	ı	
Date/Time Depth Depth*		1		Strata			pling	/In-Situ Testi			Labo	ratory	Testing		Additional Tests and Notes	•	
and of of Depth Casing Water	Description o	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	Туре	No. Blows	CDT	<425 %	WC F		r	Cu kN/m²			
Depth Casing Water	Dark grey medium and coarse white shells (continued) Dark grey silty medium and co gravel, shell fragments and occ clay bands	SAND with black and		Level	- 26.00	24.00 24		B24 B25 B26	5 N	%	% 5		Mg/m	3 kN/m²			
*WATER ¥ Standing water strikes	er level PIEZOMETER Upper:	seal AND B seal TEST U KEY P	Bulk di Undist Piston Disturk	disturbed s isturbed sa urbed sam sample bed jar san nmental so	ample (aple I aple	K Permeability test SPT N N = SI N*12 include	Jndis PT N 0 = T ding:	turbed samp value (blows otal blows/pe seating	le blow o after sea enetratio	ount ating) on			Geosp	here Er	nvironmental	HOLE No. BHC04	2543,GI SHEET 5 OF 8

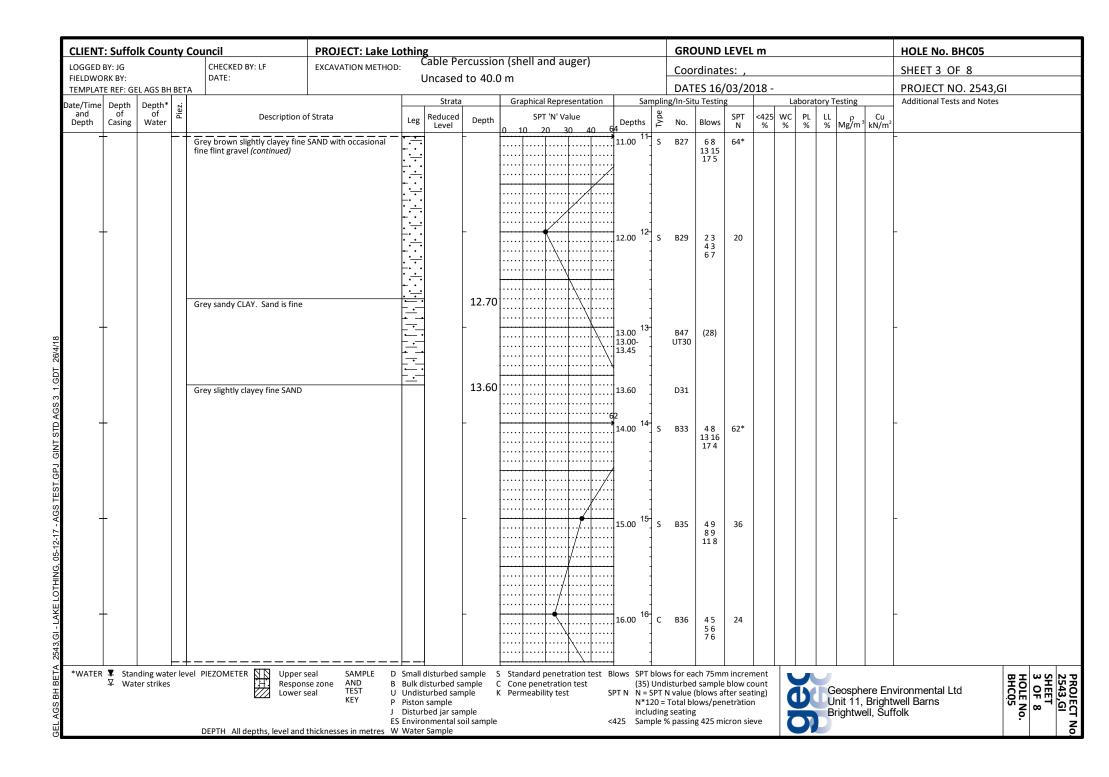
CLIENT	: Suff	folk	County	Council			PROJ	ECT: Lake	Lothin	g		, .					GRO	UND I	LEVEL	. m					HOLE No. BHC	04	
LOGGED E			_		D BY: SG	I .		ATION METH	OD:	Cable Pe			ell and a	_			<u>GR</u> ID	REFE	RENC	E: TN	M 538	8 <u>5</u> 9 9	2985	5	SHEET 6 OF 8		
FIELDWO			.T .GS BH BET	DATE:									0.0 to 4.0 1.0 to 16.					ES 04-9							PROJECT NO. 2	543.GI	
Date/Time				· ·						Strata				resentation	Sar			u Testing		Ĺ	Lab	orato	ry Test	ing	Additional Tests and		
and Depth	of Casing		epth* zig of zig Vater		Des	scription of S	Strata		Leg	Reduced Level	Depth		SPT 'N' '	/alue 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %		r _{Cı} g/m³ kN/	u m²		
			-	Dark grey sil	Ity mediu	m and coars	se SAND	with fine flir hells and sand	nt o				Ţ	ĬĬ													
				clay bands (continued	d)	Sional Si	nens and sand	'y · · · :	4						1											
									. 6.				.			1											
															28.00 ²⁸		B29										
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5									· [·]	4				 		1											
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	▼ St	tandir	ng water le	+ — — — — evel PIEZOMET	ER NN	Upper sea		SAMPLE	D Small	disturbed	sample	S Sta	ndard pene	ration test 1	1 33 Slows SPT	1 blows f	for eac	ch 75mn	n increr	nent					F	m T ~	S N 7
*WATER	⊉ W	/ater	strikes		ER	Response Lower sea	e zone	AND TEST	B Bulk	listurbed s turbed sar	ample	C Co	ne penetrat meability to	on test		Undist	urbed	sample	blow co	ount		A				HOLE No. BHCQ4	154.
					V ZZ	FOME! 26	.uı	KEY	P Pistor	n sample	•	iv Lei	meaninty to	.st .	N*1	20 = To	tal blo	ows/pen			U		Geo	sphere	Environmental	9 E F 8	3, <u>6</u>
									ES Envir	bed jar sa onmental s		e			inclu 425 Sam	uding se ple % p			icron sie	eve	7	n	5			0	
				DEPTH A	II depths,	level and th	hickness	ses in metres	W Wate	r Sample																	9

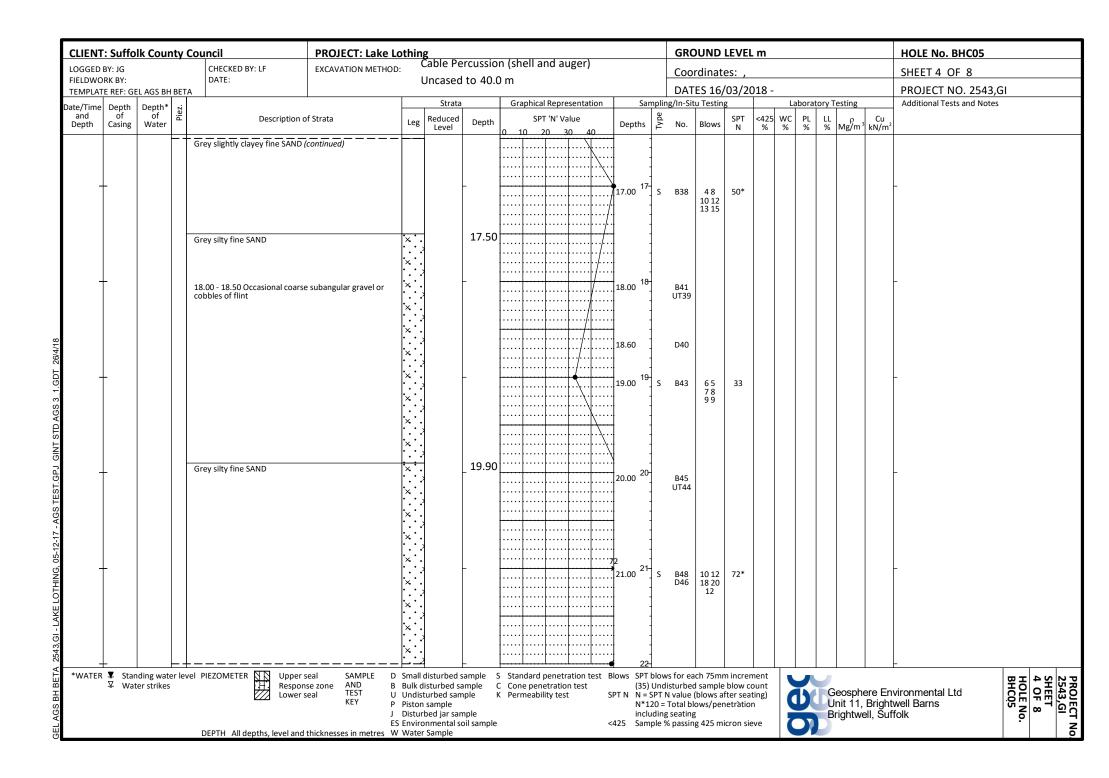
CLIENT	: Suffo	lk Co	unty	Council		PROJECT: Lake		ing		n /ahall an daya			GRO	UND	LEVEL	. m				F	OLE No. BHC04		
LOGGED E		D		CHECKED BY	/: SG	EXCAVATION METH	HOD:			n (shell and auger) om 0.0 to 4.0m			GRID	REFE	RENC	E: TM	53859	929	85	S	HEET 7 OF 8		
TELDWO			BH RF	DATE:						om 0.0 to 4.0m om 4.0 to 16.0m					Sep-1					Р	ROJECT NO. 254	3.GI	
te/Time	Depth							Strata		Graphical Representa	ion	Samplin	ng/In-Situ				Labora	tory Te	esting		dditional Tests and N		
and Depth	of Casing	o	fl∺		Description o	f Strata	Le	Reduced Level	Depth	SPT 'N' Value	Depti	Type	No.	Blows	SPT N	<425 %	VC PL % %	LL	r Mg/m³ l	Cu kN/m²			
-	-		-	Dark grov silty m		arca SAND with fine fl		Level	-	0 10 20 30 4	n I i	33- _S		3 4	9	70	70 70	70	IVIB/III I	-			
				gravel, shell frag	gments and occ	arse SAND with fine fl asional shells and sar	ndy .	$[\cdot]$				3		3 4	9								
				clay bands (cont	inuea)			:		····		-		11									
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:\\/ATED	▼ C+-	ndina	water !	+ evel PIEZOMETER		eal SAMPLE	<u>-</u>	<u>•</u> .	ample (S Standard penetration	ost Blows S	T blow	s for ac-	ch 75~-	m incres	nont		\sqcup					Ι
WAIEK	¥ Sta	iter str	ikes	VET PIEZUIVIETEK	Respon	se zone AND	B Bul	k disturbed sa	mple (C Cone penetration test	(:	5) Undi	isturbed	sample	blow co	ount	X					물	SHEET 7 OF 8
					Lower s	eal KEY	P Pis	disturbed sam ton sample	•	K Permeability test		*120 =	Total blo	ows/per	netratio	n	(1)	G	eosphe	ere Envii	ronmental	04 E	" "
								turbed jar sar vironmental so		!	ii <425 S		g seating % passing		icron sie	eve	O					6	
				DEPTH All de	pths, level and	thicknesses in metre			p. 14														1

CLIENT	: Suffo	olk (County	/ Co	uncil	PROJECT: Lake L	othin	g		on (shell and auger)		GRO	DUND I	LEVEL	m						HOLE No. BHC04		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD	D:	Cable Pe	rcussio	on (shell and auger)		GRI	D REFE	RENC	E: TI	M 53	859 9	9298	35		SHEET 8 OF 8		
FIELDWO TEMPLAT				-ТΔ	DATE:			, , , , , , , , , , , ,	cuscu II	rom 0.0 to 4.0m rom 4.0 to 16.0m			ES 04-9								PROJECT NO. 2543,G		
Date/Time					1	1		Strata		Graphical Representation	Samplii		tu Testing			La	borato	ory Tes	sting		Additional Tests and Notes		
and Depth	of Casing		of ater	ב ב	Description	n of Strata	Leg	Reduced Level	Depth		Depths dd L	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r ∕Ig/m³k	Cu N/m²			
2043,61 - LANE LOTRING, GFO GINT S ID AGS 3 1.GDT 9-10-17				Dgccl	Park grey silty medium and cavel, shell fragments and cay bands (continued)	coarse SAND with fine flint coasional shells and sandy		Level	41.50	0 10 20 30 40	39-	B35		N	76	76	70	96 1	vig/m k	ny m	Borehole aborted at 41.5m continued blowing sands	depth du	e to
	¥ Sta ∇ Wa	anding ater s	g water trikes			onse zone AND B r seal TEST U KEY P J E	Bulk of Undis Pistor Distures S Environ	disturbed san sturbed san n sample rbed jar san onmental s	ample (nple mple	·	(35) Und N N = SPT	disturbe N value Total b g seatin	d sample (blows at lows/pen	blow co fter sea netration	ount ting) n		かり		ospher	e En	vironmental	HOLE No.	2543,GI SHEET 8 OF 8

CLIENT	: Suffo	lk Coun	ty C	ouncil	PROJECT: Lake Lo	othing	g		, ,	,			GRO	UND I	LEVEL	. m		HOLE No. BHC05						
LOGGED				CHECKED BY: LF	EXCAVATION METHOD:				•	nd auger)			Coor	dinate	es: ,						SHEET 1 OF 8			
FIELDWO TEMPLAT		EL AGS BH	BETA	DATE:		ι	Jncased	to 40.0	m				DATE	ES 16/	03/20)18 -					PROJECT NO. 2543,0	GI		
Date/Time	Depth		Piez.				Strata		Graphical	Representation	Sar	npling/		u Testing				atory T	esting		Additional Tests and Notes			
and Depth	of Casing	of Water	Pié	Description of	Strata	Leg	Reduced Level	Depth		'N' Value	Depths	Туре	No.	Blows	SPT N	<425 %	WC PL	LL %	ρ Mg/m	Cu kN/m²				
-	-	1	-+	CONCRETE		6 N.A		0.00	0 10 2	0 30 40	0 -	1						-	- O'	,	-			
						4						1												
				MADE GROUND (Dark grey brow to coarse sand. Gravel of angul and medium concrete and flint)	vn gravelly clayey fine			0.30			0.40	1	4								NOC 1 (
				and medium concrete and flint)	ar to subrounded fine	\bowtie					0.40 0.50		1 + J1 W1								VOC = 1ppm (peak)			
						\bowtie					0.60	ES	B2 J2								VOC = 2ppm (peak)			
						\bowtie					0.90 1	ES	В3								VOC = 1ppm (peak)			
1						\bowtie					'		J3											
				Grey brown silty fine SAND		×		1.20			1.20	ES C	B5 J4	10 01	2						VOC = 1ppm (peak)	ak)		
						×·í							,-	01										
						`;																		
						·^.·;			-			1												
+	-		-	Dark grey and black sandy CLAY	with moderate natural	<u>×</u> :		2.00	 		1.90 2 - 2.00		D6 B7								VOC = 1ppm (peak)			
				organic odour								}	J5											
											2.30	1	В9											
						<u> </u>					2.50	ES	J6								VOC = 1ppm (peak)			
						<u> </u>																		
						<u> </u>						1												
											3.00 3.00-		B12 J7	(15)							VOC = 1ppm (peak)			
						<u> </u>					3.45	۱ ا	JT10											
						<u> </u>					3.60	1	D11											
						-:						1												
+	-					<u> </u>		-	 		4.00 4 -	ES	B13	11	8						VOC = 2ppm (peak)			
						<u> </u>						C	J8	22							, , ,			
																								
			F	Dark grey sandy CLAY. Sand is f	ine	-		4.50	\\		1.50	1	D4.4											
											4.60	1	D14											
						<u></u>					_	1												
1									1 I 1	,,,,,,	5.00	ES	J9	(24)							VOC = 1ppm (peak)			
											1	1	ŬŤ											
			_ _						1 <i>\</i>															
*WATER	▼ Star ▼ War	nding wate ter strikes	r leve	PIEZOMETER Upper so Respons Lower so	e zone AND B real TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	isturbed sa turbed sam sample bed jar san onmental so	ample (aple inple	Standard p Cone pene Permeabili	ty test S	(35) PTN N= N*1	Undist SPT N v 20 = To uding s	curbed value (lo otal blo eating	sample blows af ows/pen	blow co ter sea etration	ount ting) n	dec	U	nit 11.	ere Env Brightv ell, Suff	vironmental Ltd well Barns folk	HOLE No. BHCQ5	SHEET 1 OF 8	

			ouncil	PROJECT: Lake Lo	thin	g G-1-1-					GRO	UND	LEVEL	. m					HOLE No. BHC05		
BY: JG			CHECKED BY: LF	EXCAVATION METHOD:	: '	Lable Pe	ercussio	on (shell and auger)			Coor	dinate	es: ,						SHEET 2 OF 8		
RK BY: E REF: GE	L AGS BH	I BETA	DATE:			Uncased	10 40.0	U III			DATE	ES 16/	03/20)18 -					PROJECT NO. 2543,GI		
Depth	Depth*	żz.	•			Strata		Graphical Representation	Sa	mpling						borato	ry Tes	sting	Additional Tests and Notes		
of Casing	of Water	Ğ	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL % N	ρ Cu /lg/m³ kN/m	2		
-			Grey brown slightly clayey fine				⁻ 6.00		6.00	ES	B17 J10	23 46 67	23						VOC = 0ppm		
-							-		7.00	ESS	B19 J11	2 4 6 6 7 8	27						VOC = 1ppm (peak)		
-							-	•	8.00	ES S	B21 J12	45 57 78	27						VOC = 1ppm (peak)		
-							_		9.00	ESSS	B23 J13	3 2 3 2 8 8	21						VOC = 0ppm		
-							_		10.00 10	ES S	B25 J14	2 4 9 12 13 12	46						VOC = 1ppm (peak)		
- ▼ Stan ▼ Wat	iding wate er strikes	er leve	el PIEZOMETER Upper si Respons Lower si	e zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed san turbed san n sample	ample (C Cone penetration test	Blows SPT (35) SPT N N = N*1	blows Undis SPT N 20 = T	turbed value (I otal blo	sample blows af ows/pen	blow co	ount ting)			Uni	it 11. Briah	nvironmental Ltd	SHEET 2 OF 8	
	Depth of Casing	Depth of Casing Depth* of Water	Depth of Of Casing Water of Of Casing of Casin	Of Casing Water Dark grey sandy CLAY. Sand is f	Depth of Casing Water Description of Strata Description of Strata Description of Strata	Depth of Casing Water Description of Strata Leg Dark grey sandy CLAY. Sand is fine (continued) Casing	Depth of Casing Water Description of Strata Leg Reduced	Depth of Casing Depth Dark grey sandy CLAY. Sand is fine (continued) Depth Dark grey sandy CLAY. Sand is fine (continued) Depth Depth	Depth of Casing water level PIEZOMETER Repsonse zone Lower saal Vater strikes Standing water level PIEZOMETER Repsonse zone Lower saal Vater strikes Upper seal SAMPLE Vater Vater strikes Upper seal Component of Vater Vater vater value Vater sample Samp	Depth Gaing Water Mater Piezometer Pi	Depth of Casing Water Mark Piezometer Piezometer	Depth of Casing Water level PIEZOMETER ■ Upper seal Water strikes Standing water level PIEZOMETER ■ Upper seal Response zone ABD with occasional Fig. 19 Description of Stratal Clower seal E. S.	Depth Casing Water level PIEZOMETER SET Upper seal Name of Continues of Stratus (September 1982) Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Cover seal experience of Set September 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water level PIEZOMETER SET Upper seal Register 1982 Standing water	Depth Goding Water Evel PIEZOMETER Septence Septence	Depth Park Park	Depth Open Open	Depth Option Op	Depth of claims Depth of program Description of Strata Description of	Depth Of Of Of Of Of Of Of O	Depth Spring Sp	





CLIENT	T: Suffo	lk Count	ty Co	ouncil	PROJECT: Lake Lo	othin	g			7.1.11			GROL	UND L	EVEL	. m					HOLE No. BHC05		
LOGGED				CHECKED BY: LF	EXCAVATION METHOD	: (able Pe	rcussio	ion	(shell and auger)			Coord	dinate	es: ,						SHEET 5 OF 8		
FIELDWO TEMPLAT		EL AGS BH E	BETA	DATE:		l	Jncased	to 40.0).U n	m				S 16/0)18 -					PROJECT NO. 254	13,GI	
Date/Time							Strata			Graphical Representation	Sam			Testing		Ξ.		orațo	ry Tes	ting	Additional Tests and N		
and Depth	Depth of Casing	Depth* of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	h n	10 20 30 40 L		•	No.	Blows	SPT N	<425 %	wc %	PL %	LL % N	ρ Cu 1g/m³ kN/ı	m²		
-	t			Grey silty fine SAND (continued)		×		_	Ť	72	2.00 22	S	B50 D49 :	47	49								
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_	Ī					$[\cdot]$				2	5.00 25	S	B56 :	13 12	75*								
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						×.·;				66													
						×.			::		5.80	S I	D57	79	66*								
-	+							-	-		6.00 ²⁶		B58	15 17 18							+		
						×, · ;			::				550	- 1									
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I _	1									62	27												
						×					7.00 27	S	B60 D59 :	5 7 10 12	62*								
						×		27.20			1	,	- 55	18 10									
				Grey silty fine SAND with occasi ragments.	onal fine shell — — — — — — — —	× :		27.30			-												
*WATER	R ▼ Star ∇ Wat	nding water ter strikes	r level	PIEZOMETER Upper si Respons Lower so	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	isturbed sa turbed sam sample bed jar san	ample (aple i	C (·	(35) I N N = S N*12 inclu	Undist PT N v 20 = To ding se	urbed s alue (b tal blov eating	sample llows aft ws/pen	blow co ter seat etration	ount ting) n	TO		Geo Uni Brig	osphere E t 11, Brig ghtwell, S	Environmental Ltd htwell Barns uffolk	HOLE No. BHC05	2543,GI SHEET 5 OF 8
				DEPTH All depths, level and t			nmental so Sample	oii sample	ie	<42	5 Samp	oie % p	assing	425 mid	ron sie	eve	C	"					

CLIENT	T: 9	Suffo	lk Co	unty	Council	PROJECT: Lake L	.othir	ıg		on (shell and auger)		GI	ROUNI) LEVE	L m					HOLE No. BHC05		
LOGGED					CHECKED BY: LF	EXCAVATION METHOD	D:	Cable Po	ercussio	on (shell and auger)		Co	ordina	ates: ,						SHEET 6 OF 8		
FIELDWC TEMPLAT			L AGS	ВН ВЕТ	DATE:			Uncased	to 40.0	0 m		DA	ATES 1	6/03/2	018 -	-				PROJECT NO. 2543,	GI	
Date/Time		Depth of	Dept			•		Strata	1	Graphical Representation	San	npling/In-					aborat	ory Te	esting	Additional Tests and Note		
and Depth	c	of Casing	of Wate		Description	on of Strata	Leg	Reduced Level	Depth		Depths	Type No	. Blow	SPT N	<425 %	wc %	PL %	LL %	ρ Cu Mg/m³ kN/i	m^2		
Depth		asing	Wate		Grey silty fine SAND with or fragments. (continued)			Level	- -		Depths 28-28.00 28-28.50	 No B6 B6 S D6 S B6 D6 	1	5 75* 5 75* 7 75*	%	%	%	%	Mg/m³ kN/i	n ²		
*WATER	R \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Z Stan Z Wat	iding w er strik	vater le	Res Low	oonse zone AND B er seal TEST U KEY P	Bulk Undi: Pisto Distu S Envir	disturbed s sturbed sar n sample rbed jar sa onmental s	ample (nple I mple		(35) SPT N N = S N*12	Undisturk SPT N valu 20 = Total ding seat	oed samp ie (blows blows/p ing	ole blow of after sea enetration	count ating) on		J D	Ur	eosphere E nit 11, Brig ightwell, S	Environmental Ltd htwell Barns uffolk	6 OF 8 HOLE No. BHC05	SHEET

CLIENT	: Suffo	olk C	ounty	/ Co	uncil	PROJECT: Lake Lo	othin	g			(ab all and a)		GR	OUND	LEVEL	. m					HOLE No. BHC05
LOGGED					CHECKED BY: LF	EXCAVATION METHOD:	:	Cable Pe	ercussio	on ((shell and auger)		Cod	ordinat	es: ,						SHEET 7 OF 8
FIELDWO TEMPLAT		EL AG	S BH BE	ΤA	DATE:			Uncased	to 40.0	.u m	m		DA	TES 16,	03/20)18 -					PROJECT NO. 2543,GI
ate/Time	Depth	Dep			<u> </u>			Strata		(Graphical Representation	$\overline{}$	pling/In-S					aborat	ory Te	esting	Additional Tests and Notes
and Depth	of Casing	(of ater		Description of		Leg	Reduced Level	Depth	٥	SPT 'N' Value Dep	ths	Ā No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Cu Mg/m³ kN/m²	
				f	Frey silty fine SAND with occasing ments. (continued) Grey silty slightly clayey fine SAI		X X X X X X X X X X		35.40		75 33.50 33.50 34.50	34-35-36-37-37-37-37-37-37-37-37-37-37-37-37-37-	S B73 D72 S B75 D74 S B77 D76 S B81 D80	6 9 19 23 8 8 17 18 24 8							
*WATER	▼ Star ▼ Wa	nding iter st	water l	+- evel	PIEZOMETER Upper se Respons Lower se	e zone AND B eal TEST U KEY P	Bulk of Undis Pistor	disturbed salisturbed salisturbed sann sample	ample (nple k	C C	Permeability test SPT N	(35) U N = SF N*120	lows for e Indisturbe PT N value D = Total I ling seating	ed sample (blows a blows/per	blow co	ount ting)		D.	D.	eosphere En nit 11, Bright ightwell, Sut	vironmental Ltd well Barns folk
					DEPTH All depths, level and t	ES	Envir	onmental s		e			le % passi		icron sie	eve				J 3, 3di	•

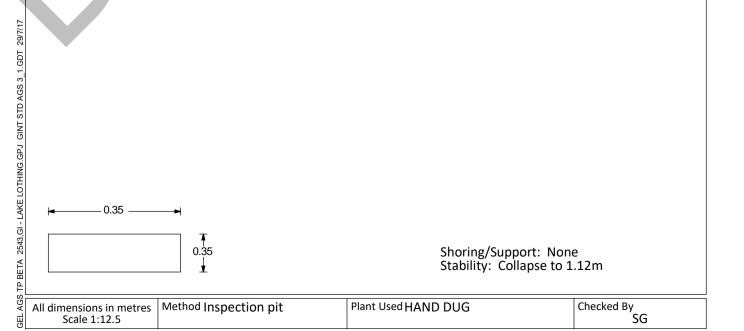
CLIENT	T: S	Suffol	k Cou	nty (Council	PROJECT: Lake Lo	othin	g		,				GRO	UND	LEVEL	. m						HOLE No. BHC05		
LOGGED					CHECKED BY: LF	EXCAVATION METHOD	:	Cable Pe	ercussio	on (s	(shell and auger)			Coor	rdinate	es: ,							SHEET 8 OF 8		
FIELDWC TEMPLAT			L AGS B	H BETA	DATE:			Uncased	1 10 40.0					DAT	ES 16/	03/20)18 ₋						PROJECT NO. 2543,G	il	
Date/Time	De	epth of	Depth*	Piez.				Strata		G	Graphical Representation	S	$\overline{}$	/In-Sit	u Testing				aborat				Additional Tests and Notes		
and Depth	Ca	of asing	of Water	- Bi	Description o	f Strata	Leg	Reduced Level	Depth		SPT 'N' Value	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
-					Grey silty slightly clayey fine SA	ND. (continued)	× · · · · · · · · · · · · · · · · · · ·		- 40.00			33.50	000 s	D82	25 35 15	75*									
	R ¥	Stan Wate	ding wa er strike	ter lev	PIEZOMETER Upper s Respon: Lower s	se zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple i nple	C Co K Pe	Standard penetration test Cone penetration test Permeability test	Blows SP (3! SPT N N*	T blows b) Undis SPT N 120 = T	turbed value (otal blo seating	l sample blows af ows/pen	blow co ter seat etration	ount ting) n		ングン	Ur	nit 11.	ere En Bright	vironmental Ltd well Barns folk	HOLE No. BHC05	2543,GI SHEET 8 OF 8



TRIAL PIT LOG

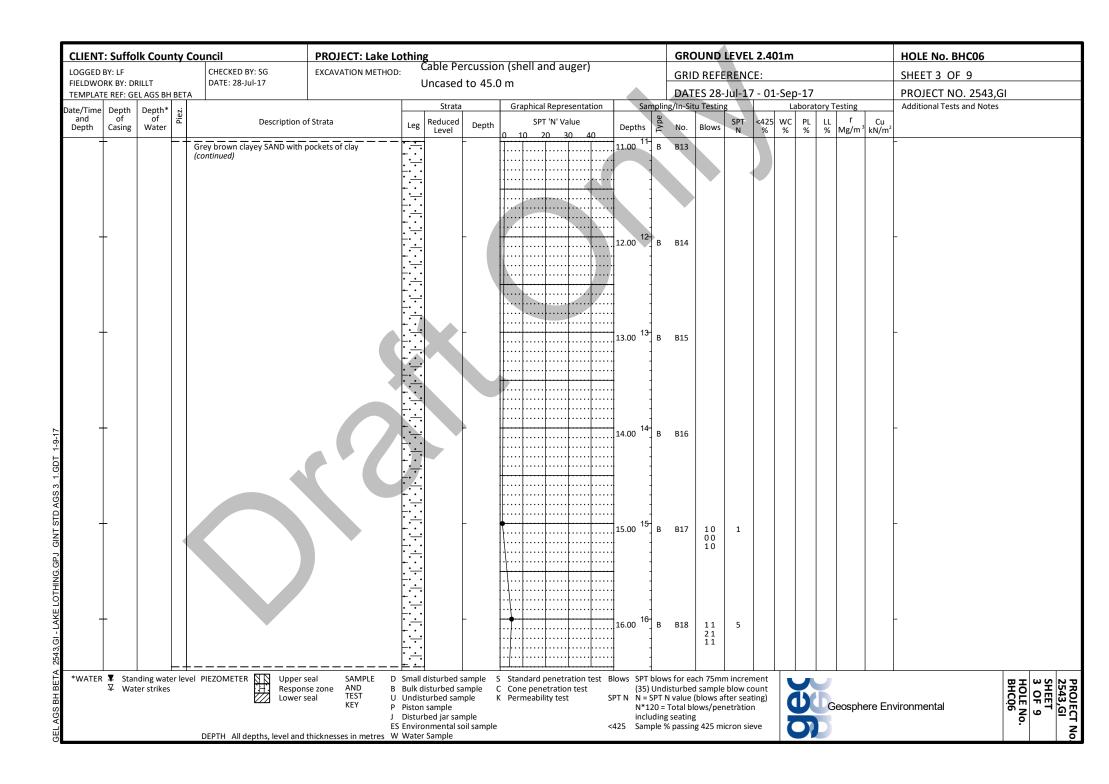
Project			Client		TRIAL PIT No
Lake Lothing	g		Suffol	k County Council	BLICOC
Job No	Date 28-07-17	Groun	d Level (m)	Grid Reference ()	BHC06
2543,GI	28-07-17		2.40		
Fieldwork By			Logged By		Sheet
SG			LF		1 of 1

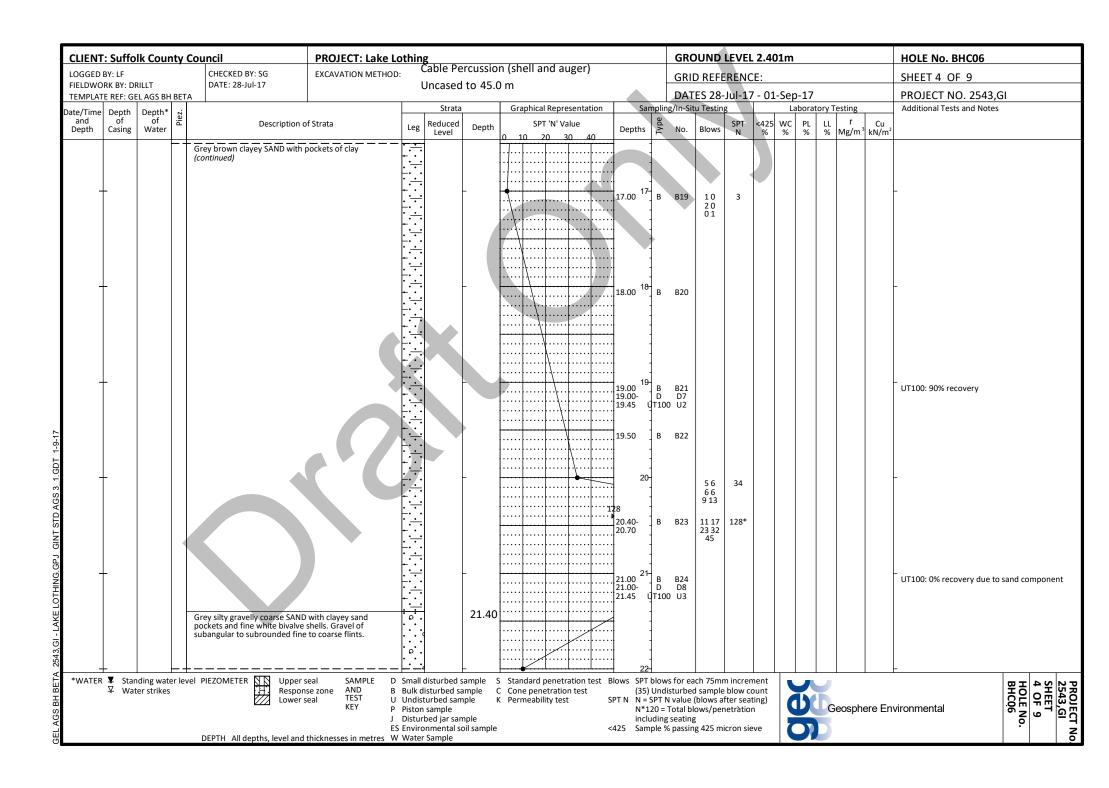
Danabh	DECCRIPTION	Legend	D. All	N.	D /T t -
Depth	DESCRIPTION CONCRETE Polymer (See to another region of New York (See to another region)	XXXXX	Depth	No	Remarks/Tests
0.00-0.17	CONCRETE: Pale grey fine to medium grained. No rebar identified.				
- 0.17-0.30	 MADE GROUND (sub-base): Dark orange brown slightly gravelly fine to coarse sand with frequent cobbles of slightly dark grey/black stained concrete. Gravel is angukar to sub-rounded fine to coarse quartz and flint. 		0.20	J1ES	VOC = 0 ppm (peak)
0.30-1.25	Possible MADE GROUND: Black stained (loose) silty slightly gravelly fine to medium sand with heavy hydrocarbon odour. Gravel is angular to - sub-rounded fine to coarse flint.				V00 0 ()
			0.40	JZES	VOC = 6 ppm (peak)
			0.50	J3ES	VOC = 122 ppm (peak)
	0.60 becoming dark grey medium to coarse sand with occasional black stained mottling and slight hydrocarbon odour.				
			0.70	J4ES	VOC = 9 ppm (peak)
					Moderate inflow of water at 1 m - Hydrocarbon sheen at surface of water level
					End of Inspection Pit at 1.25m bgl



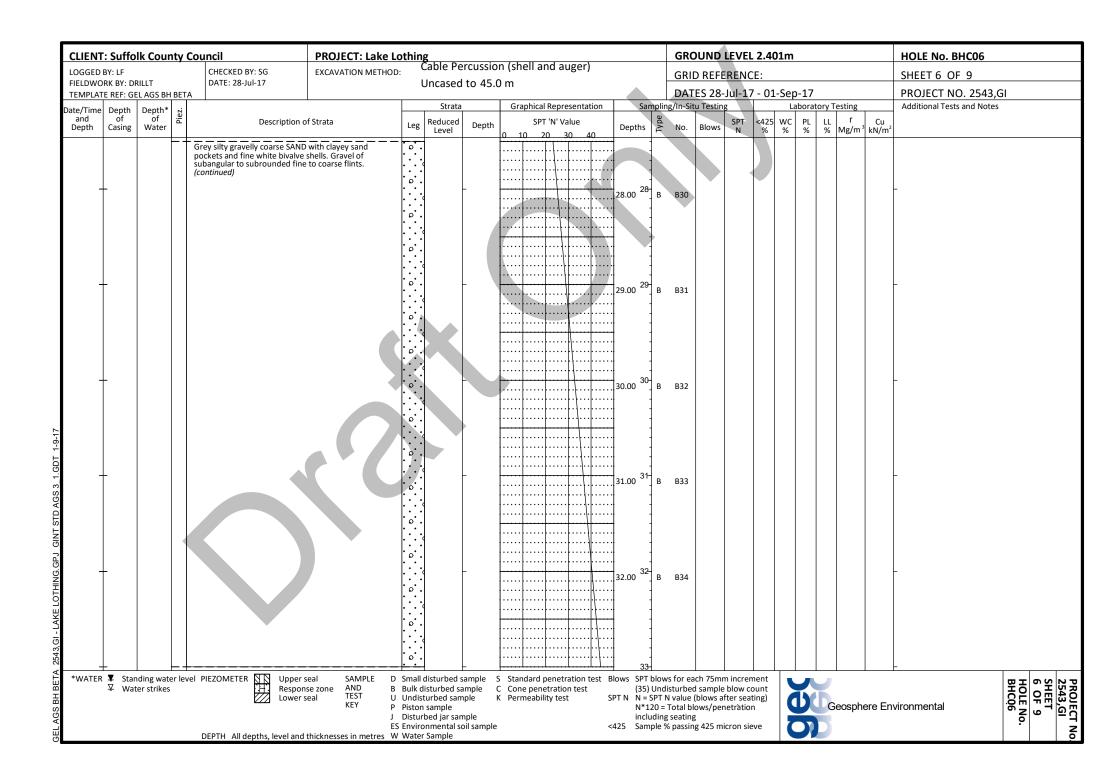
CLIENT	: Suffc	olk C	ounty	, Co	ouncil	PROJECT: Lake Lo	othin	ıg		, .						GRO	DUND	LEVEL	2.4	01m					HOLE No. BHC06		
LOGGED		. D. I. T			CHECKED BY: SG	EXCAVATION METHOD		Cable Pe		-	ell ar	nd au	ger)			GRII	D REF	RENC	CE:						SHEET 1 OF 9		
FIELDWO TEMPLAT				ΤA	DATE: 28-Jul-17			Uncased	1 (0 45.0	n m						DAT	ES 28-	Jul-17	7 - 0:	l-Sep	o-17				PROJECT NO. 2543,G	I	
ate/Time			pth*					Strata		Gra	phical	Repres	entation	Sa		g/In-Sit	tu Testin	g		La		ory T	esting		Additional Tests and Notes		
and Depth	of Casing		of ater		Description of	Strata	Leg	Reduced Level	Depth	0 1		'N' Valu		Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
-					CONCRETE: Pale grey fine to me	edium grained. No	\boxtimes		0.00					0											_		
				1	MADE GROUND (sub-base): Dar gravelly fine to coarse sand with	k orange brown slightly			0.17					0.20	ES	J1			J						VOC = 0 ppm (peak)		
				\s a	lightly dark grey/black stained angukar to sub-rounded fine to	concrete. Gravel is coarse quartz and flint.	\otimes	8						0.40 0.50	ES B	J2 B1									VOC = 6 ppm (peak) VOC = 122 ppm (peak)		
				s	Possible MADE GROUND: Black ilightly gravelly fine to medium	sand with heavy		8						0.70	ES ES	J3 J4									VOC = 9 ppm (peak)		
28-07		1.		f	nydrocarbon odour. Gravel is ar ine to coarse flint. 0.60 becoming dark grey mediu		\bowtie	1					<u> </u>	1	-										_		
0 mins		1.	02	C	occasional black stained mottlin hydrocarbon odour		\bigotimes							1.10	EW	W1									Moderate inflow of water at - Hydrocarbon sheen at surf	1m ace of wa	iter l
				P	Possible MADE GROUND (Dark b Gravel of angular to subrounde	prown clayey Sand and d fine to coarse flint.			1.25	<u> </u>					1		11	4							End of Inspection Pit at 1.25	m bgl	
				S	Sand is fine and medium.		\bowtie							1.50	В	В2	11										
							\bowtie	8							-												
_	_						\bowtie			ļ				2.00 2	ES	J5	0.0	0							\(\(\) \(\		
							\bowtie			\				12.00]ES	15	00	0							VOC = 0 ppm (peak)		
										:\:::				1	1												
										1.				 	1												
				В	Black sandy CLAY with natural o	rganic odour.	- <u>·</u>		2.70	/.				2.70	D	B3 D1									VOC = 0 ppm (peak)		
-	L						E		-					3	ES	J6	11	8							PIston sample failed, bulk ta soils	ken of rec	cove
						_ 5 //	X							:	1		12										
							.							:	-												
					3.50 band of fine to coarse suba lint gravel	angular to subrounded		-]												
					3.80 becoming very sandy with	depth		:						3.80	ES	D2									VOC = 0 ppm (peak)		
-	_							<u> </u>	-		<u> </u>] ,	ES UT100	J7) -									UT100 no recovery, SPT take	en - sunk ı	und
						_		-							B ES	B4 J8									weight of hammer VOC = 0 ppm (peak) - 4m		
						1		1			.\				EW	W2											
						7	<u> </u>								1												
								:							1												
-	_				Pale grey and grey mottled grav		· ·		5.00		- 			5.00	B	B5	74	16							VOC = 0 ppm (peak)		
				s	grey sandy clay pockets. Gravel subrounded medium and coars	oi subanguiar to e flints.		:∮			 				ES	19	4 3 7 2										
				1-			٠,٠٠				<u> </u>		····		1												
VATER	▼ Sta	nding ter st	water l	evel	PIEZOMETER Upper se Respons Lower se	e zone AND B		disturbed s				enetratetrate	test	(35)) Undi	isturbed	d sample	blow c	ount							모 문 당	- Y
					Lower se	eal TEST U KEY P	Undis Pistor	sturbed sam n sample	nple I	K Perr	neabili	ty test	9	PTN N= N*1	SPT N L20 = 1	l value Total bl	(blows a lows/pei	fter sea	ting)		D	G	eosph	ere En	vironmental	HOLE No. BHCQ6	1 OF 9
								rbed jar san onmental s					<	incl 425 San		seating passin		icron sie	eve	7			•			ة ا	,
					DEPTH All depths, level and t										*	•	-										

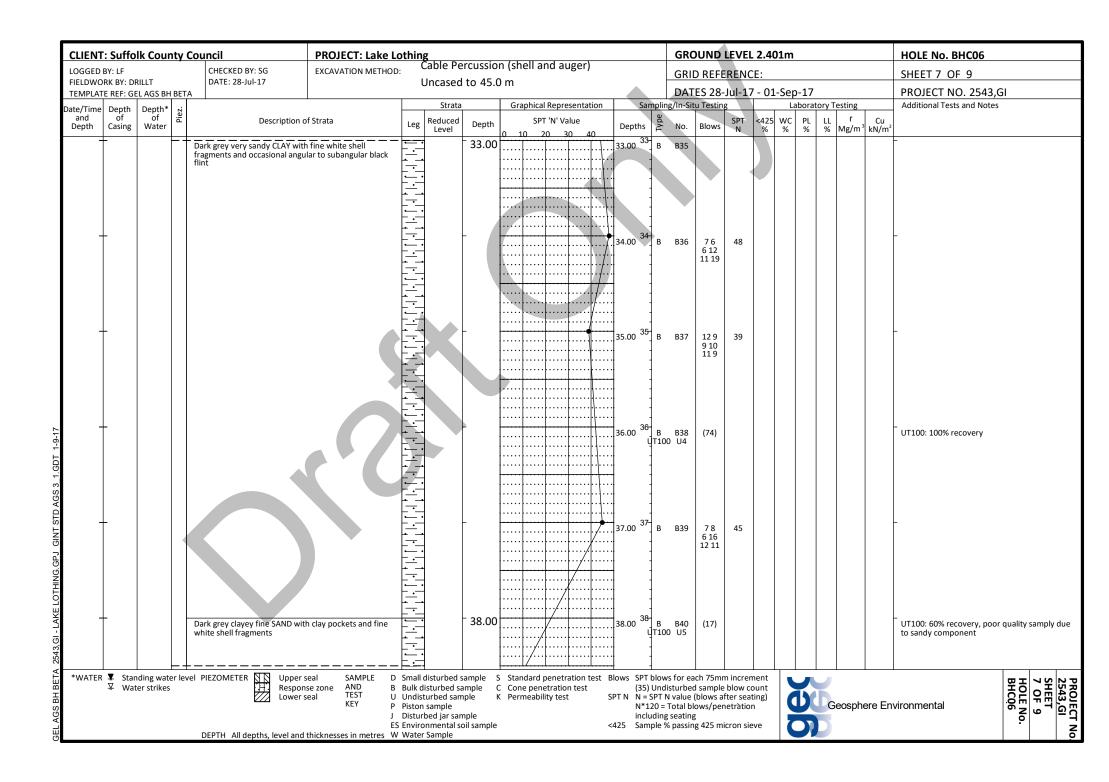
LIENT	Suffo	k Cou	ınty (Council	PROJECT: Lake Lo	othin	i g Cable Pe	reussia	n (ch	11 224 2	ugor)			GRO	UND L	EVEL	2.40	1m				HOLE No. BHC06		
OGGED E	BY: LF RK BY: DF	U.T		CHECKED BY: SG DATE: 28-Jul-17	EXCAVATION METHOD	<i>)</i> .	Uncased			en and a	iuger)			GRID	REFE	RENC	E:					SHEET 2 OF 9		
	E REF: GE		H BETA				Uncased	1 10 45.0	ווו כ					DATE	S 28-J	ul-17	- 01	-Sep-1	7			PROJECT NO. 2543,GI		
e/Time	Depth	Depth	* Piez.				Strata	l I	Gra		resentation	Sa		/In-Situ	Testing					Testing	_	Additional Tests and Notes		
and Depth	of Casing	of Wate	r lää	Description	of Strata	Leg	Reduced Level	Depth		SPT 'N' \) 20	/alue 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC P	L LL 5 %	r Mg/m	3 Cu kN/m²			
				Pale grey and grey mottled gragrey sandy clay pockets. Grave subrounded medium and coal	l of subangular to	0	,		/		30 40	5.50	B D	B6 D3										
+	-			6.00 occasional bands of oran	e brown sand	0		_				6			00	3						_		
				Orange brown and grey sandy	CLAY		· · · · · · · · · · · · · · · · · · ·	6.50							21									
	_						•					7												
												7.00 7.00- 7.50	B D ES S	B7 D4 J10 P1								Piston sample: 50% recovery, moderate sample quality but	, soils too only ~50	o fii)%
				Orange brown and grey brown	silty fine SAND	×	K	7.50				7.50	B D	B8 D5								Water added, samples recove	ered as s	lur
	-					×						8.00	ES UT100	J11 U1								UT100: 20% recovery; poor q to sandy component	quality sa	ımp
					. 7	×						8.50- 9.00	В	В9										
	-			Grey brown clayey SAND with	pockets of clay	× -		9.00				9.00	В	B10								Samples very disturbed and r	nixed toફ	get
						-:						9.60-]]] B	B11										
+	-					·						9.80 10.00	BES	B12								-		
					,	- · · · · · · · · · · · · · · · · · · ·							ES	J12										
				₩		- · · · · · · · · · · · · · · · · · · ·							-											
_	▼ Standing water level PIEZOMETER Response zone Lower seal Lower seal KEY					Bulk o Undis Pistor	disturbed : disturbed san sturbed san n sample rbed jar sar	ample C nple k	C Cone	dard penet e penetrationeability te		(35) PTN N = N*1	blows Undis SPT N L20 = T	turbed value (b	sample l plows aft ws/pene	olow co er seat	unt ing)	9		Geosph	nere En	rvironmental	HOLE No.	2 OF 9
				DEPTH All depths, level and	ES	S Enviro	onmental s				<	425 San				ron sie	ve						9	

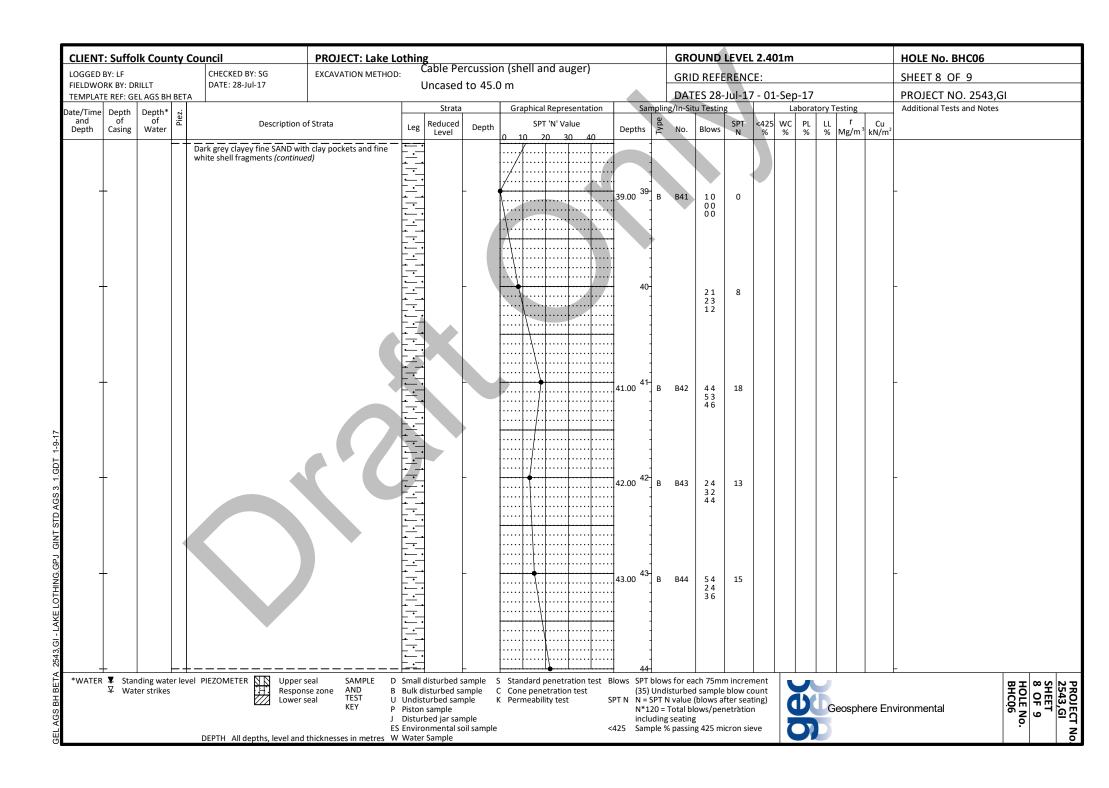


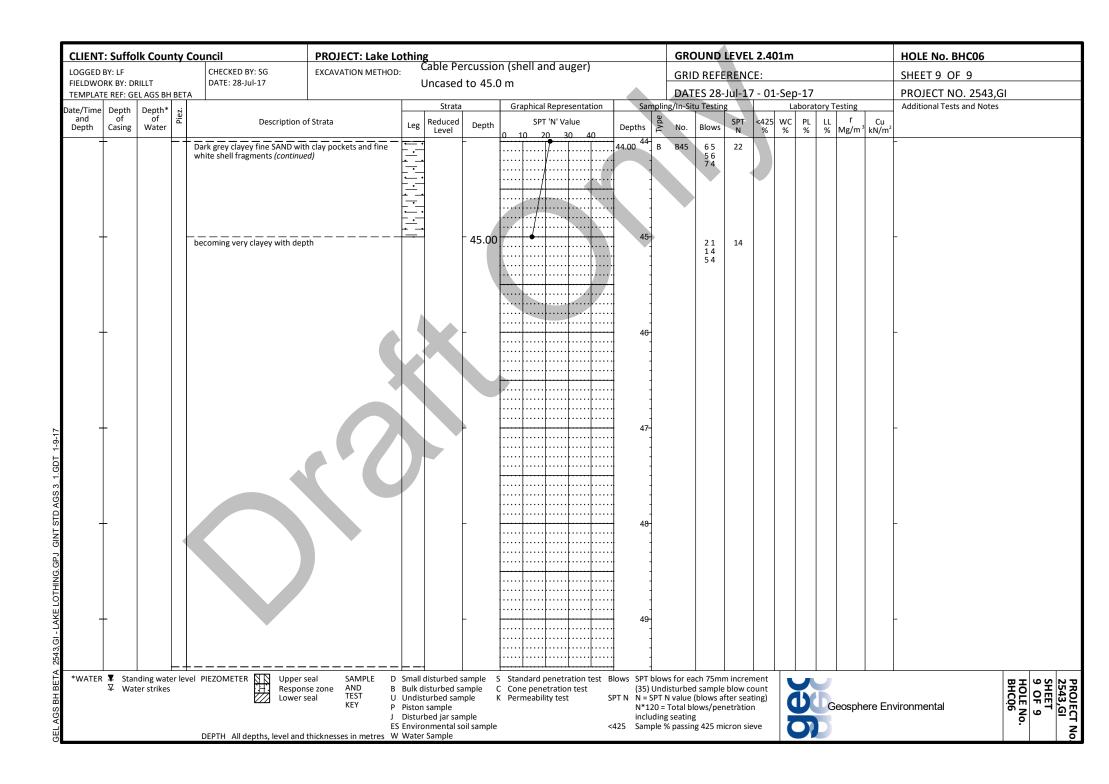


CLIENT	: Suff	folk	Count	ty Co		PROJECT: Lake Lo	thin,	g Sable Be	rcussia	n /-	ad augor)	Ľ	GROUND L	EVEL	2.4	01 n	1				HOLE No. BHC06
LOGGED		וומח	-		CHECKED BY: SG DATE: 28-Jul-17	EXCAVATION METHOD:					nd auger)	L	GRID REFE	RENC	Έ:						SHEET 5 OF 9
FIELDWO TEMPLAT				BETA			(Jncased	ι τυ 45.U	o m			DATES 28-J	lul-17	7 - 01	1-Se	p-17				PROJECT NO. 2543,GI
ate/Time		n D	pth*	Piez.		_		Strata		(/In-Situ Testing				Labora				Additional Tests and Notes
and Depth	of Casing	g V	of /ater	E	Description of	Strata	Leg	Reduced Level	Depth		'N' Value Depths		No. Blows	SPT N	<425 %	W (%)	PL %	LL %	r Mg/m	Cu kN/m ²	
-				!	Grey silty gravelly coarse SAND pockets and fine white bivalve subangular to subrounded fine (continued)	hells. Gravel of		Level			22.00 ²² B 22.00 ²³ T1(B 24.00 ²⁴ B 25.00 ²⁵ B 27.00 ²⁶ B 27.00 ²⁶ B 27.00 ²⁶ B 27.00 ²⁶ B 27.00 ²⁷ B 27.00 ²⁷ B	E E	B25 2 2 2 3 2 3 2 3 2 3 2 3 3 3 3 3 3 3 3	10	%	%	%	%	Mg/m	³ kN/m²	UT100: 0% recovery due to sand compone Blowing sands encountered from 25m to 3 depth
*WATER	Sta	andin ater	g water trikes	- ·	PIEZOMETER Upper s Respons Lower si	e zone AND BE eal TEST UI KEY PI	Bulk d Undist Piston Distur	listurbed sa turbed sam sample bed jar san	ample C nple K	C Co K Pe	ity test SPT N N = SPT	N v To g se	turbed sample value (blows aft otal blows/pendeating	blow co ter sea etràtion	ount ting) n		96		eosph	l nere En	Vironmental SHEET SHEET SHEET SHEET





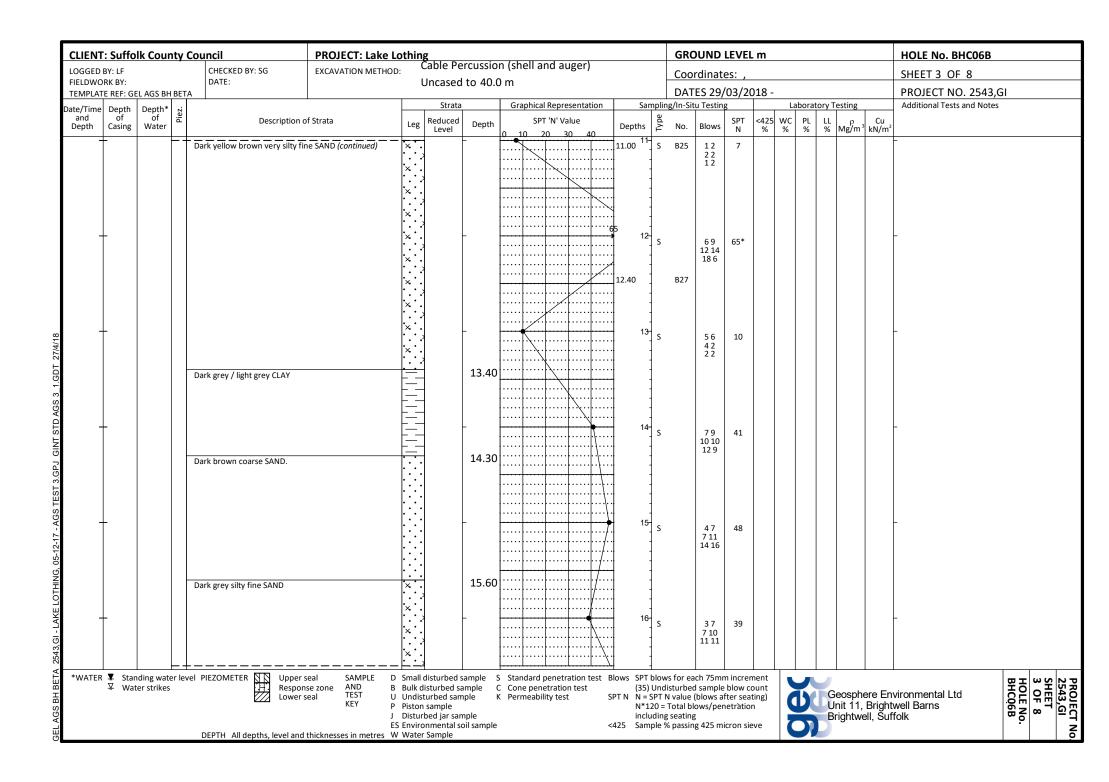




CLIENT:	: Suffo	lk Coun	ty C	ouncil	PROJECT: Lake Lo	othin	g			GR	OUND I	EVEL	m						HOLE No. BHC06A		
LOGGED B				CHECKED BY: SG DATE:	EXCAVATION METHOD				n (shell and auger)	Со	ordinate	es: ,							SHEET 1 OF 1		
FIELDWOF TEMPLATE		L AGS BH E	BETA			'	Uncased	1 (0 2.9	III	DA	TES 28-I	Mar-1	8 - 2	28-Ma	r-18	3			PROJECT NO. 2543,GI		
and	Depth of Casing	Depth* of Water	Piez.	Description of	f Strata	Leg	Strata Reduced Level	Depth	SPT 'N' Value Depths	g/In-S No.	Situ Testing Blows	SPT N	<425 %	wc	orato PL %	LL	r Mg/m³	Cu kN/m²	Additional Tests and Notes		
+	-	-	-+	CONCRETE		A (4.)	Level	0.00	0 10 20 30 40	—		IN	/0	/0	70	70	v16/111	KIN/III	-		
+ 20 mins	<u> </u>	1.10		MADE GROUND (Dark brown gr sand. Gravel of angular to subr flint, brick and occasional potter MADE GROUND (Dark brown sli coarse sand. Gravel of angular coarse flint)	ghtly gravelly fine to to subrounded fine to			1.10	0.30 1 1 1 1 20 S	B1	10 10 01	2							– Slow inflow of water at 1.1m No recovery from SPT		
	-			MADE GROUND (Dark grey silty MADE GROUND (Black sandy cla				2.60	2.60	В4	10 10 10	2							No recovery from SPT Obstruction at 2.1m depth - cas Casing left in-situ until examinat company	ing at a	ingle. utilities
	-								4-										-		
*WATER	▼ Stan ▼ Wat	iding water er strikes	· leve	Upper so Respons Lower so	te zone AND B TEST U KEY P J ES	Bulk d Undis Piston Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple I nple	K Permeability test SPT N N = SPT N N*120 = including	sturb value fotal seati	ed sample e (blows af blows/pen ng	blow co ter sea etràtion	ount ing) n	ששע	\ \ \ \ \	Ge	osphe	ere Env	vironmental .66	HOLE No.	2543,GI SHEET

CLIENT	: Suffo	lk Count	y Cou	ıncil		PROJ	IECT: Lake L	othin	g		<u> </u>						GRO	DUND	LEVEL	m .					HOLE No. BHC06B		
LOGGED E				CHECKED BY: SG		EXCAV	ATION METHO	D:	Cable Pe			iell a	nd au	ger)			Coo	rdinat	es: ,						SHEET 1 OF 8		
FIELDWOI TEMPLATI		EL AGS BH B	ETA	DATE:					Uncased	(0 40.0	u n						DAT	ES 29/	03/20)18 -					PROJECT NO. 2543,0	il	
Date/Time	Depth	Depth*	, Z.	•			Strata		Gr	aphica	l Repres	entation	Sa		g/In-Sit	tu Testin	g		Labo	ratory	Testing		Additional Tests and Notes				
and Depth	of Casing	of Water	Piez.	Des	scription o	f Strata		Leg	Reduced Level	Depth			T 'N' Val		Depths	Type	No.	Blows	SPT N	<425 %	WC P	L LI	ρ Mg/m	Cu kN/m²			
-	_	-	+ 50	NCRETE + SUB-BAS	SE (Orange	brown s		93	4	0.00	0	10	20 30 T	40	0	+							1 0,	,	-		
			gra	ivel. Gravel of ang	ular to sub	rounded	d flint)									1											
			MA	ADE GROUND (Dark coarse sand with m	k grey bro	wn and b	olack silty fine			0.30			: :::::		0.30	1	B1										
			100	coarse sand with it	noderate n	iaturai or	rganic odour)	\otimes	3						0.45	ES	J1								VOC = 0ppm		
	_								Ž				·			1											
+ 20 mins		0.90 0.90							3							+									Slow inflow of water at 0.9r	n	
1			Gre	ey gravelly CLAY wi	ith occasio	nal orang	ge brown	<u> </u>		1.10					1.10	7	В2								Bentonite seal installed bety depth		n and 1.0
			san	ndy clay pockets. G e to coarse chalk	Gravel of si	ubangula	ar to rounded				•]	s		10 00	0						acpu.		
								<u> </u>	1	1.50			· · · · · · ·		1.30 1.35	ES	B4 J2	00							VOC = 1ppm (peak)		
			Gre	ey brown fine SAN	D with poo	kets of g	grey clay			1.50			:		1.60	ES	J3								VOC = 1ppm (peak)		
																-											
+	-		Dar	rk grey sandy CLAY	/ with mod	erate to	strong natural	<u> </u>	•	2.00	•				2.00 2	s	В6	10	0						_		
			org	ganic odour			J	<u>:</u>]		00									
															:	1											
								<u> </u>							1	1											
													:		2.60	ES	J4								VOC = 1ppm (peak)		
								<u> </u>	-						3	_											
]	S		10 00	0								
								<u></u> -	-							1		0.0									
													· · · · · · · · · · · · · · · · · · ·		3.40	1	В8										
								<u>-</u> -	-				:		3.60	ES	J5								VOC = 1ppm (peak)		
									_				·			1											
+	_								-	-	•				4] S		10	1						_		
											 					1		00	_								
									-						:	1											
							1 10			4.60	1.				1.50	1	540) , , , , , , , , , , , , , , , , , , ,		
				rk yellow brown ar e SAND	nd orange	brown m	nottled silty	×	,	4.00					4.60 4.70	ES	B10 J6								VOC = 1ppm (peak)		
								×			··-}··	· · · · ·				+											
I								×.:	1						5	s		10 01	5								
								×	1			/]		13									
								<u>- Ľ</u>	2			1.7	1		5.40	1	B12										
WATER	▼ Star ▼ Wa	nding water er strikes	level P	PIEZOMETER	Upper s Respons Lower s	se zone	AND B TEST U KEY P	Bulk of Undis Pistor Distur	disturbed salisturbed sam turbed sam sample bed jar san onmental sa	ample (aple I	C Cor K Per	ne pen	penetra etration lity test	test	(35 PTN N = N) Undi SPT N 120 = luding	sturbed I value Total bl seating	d sample (blows at lows/per	blow co fter sea netration	ount ting) n	dec	W	Jnit 11	nere En , Bright /ell, Suf	vironmental Ltd well Barns folk	HOLE No. BHC06B	2543,GI SHEET 1 OF 8
			D	DEPTH All depths,	level and t	hickness				on sample					Jai	pic /	Pussili	۱۱۱۱ دعه م.	.5. 511 310								

CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	othir	ng			/ ala al a a a		GR	OUND	LEVEL	m						HOLE No. BHC06B
LOGGED				CHECKED BY: SG	EXCAVATION METHOD					n (shell and auger)		Coc	ordinate	es: ,							SHEET 2 OF 8
FIELDWO TEMPLAT		K BY: DATE: REF: GEL AGS BH BETA					Uncased	to 40.0	.u m	m			TES 29/)18 -						PROJECT NO. 2543,GI
ate/Time		Dept					Strata		(Graphical Representation	Samj		itu Testin				borato	ory Te	esting		Additional Tests and Notes
and Depth	of Casing	of Wat	l ë	Description o		Leg	Reduced Level	Depth	1 O	SPT 'N' Value D	epths	ed No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m³ k	Cu N/m²	
				Dark yellow brown and orange fine SAND (continued)	brown mottled silty	×				5.6	0]	S J7									VOC = 0ppm
	-			6.00 Becoming pale grey mottl	d with depth	×		_		6.2	0	S B14	13 55 78	25							•
-	_					× :		_		6.6	7 -	S J8	3 6 7 7 10 11	35						-	VOC = 2ppm (peak) -
						×: ×: ×:				7.6	0]	B16									VOC = 3ppm (peak)
-	-					×		_		8.4		S B18	48 11 15 14 10	62*							
-	-			Dark grey and orange brown n	ottled slightly sandy	× × ×	•	9.00		8.6		S J10	35	36							VOC = 2ppm (peak)
				CLAY						9.4]	B20	79 911								
+	-			Dark yellow brown very silty fi	e SAND	×.		9.90		9.6	0 10	B21 S B23	11	7						-	VOC = 2ppm (peak) -
	<u>-</u>					×		_			10]	S B23 ES J12	12 22								VOC = 0ppm
*WATER	▼ Star ▼ War	nding v ter stri	vater le	vel PIEZOMETER Upper:	se zone AND B eal TEST U KEY P	Bulk Undi: Pisto Distu	disturbed saturbed saturbed san n sample rbed jar sar onmental s	ample (nple k nple	C C		(35) U (35) U I N = SF N*120 includ	ndisturbe T N value) = Total b ing seatin	ed sample (blows at blows/pen	blow co ter seat etration	ount ting) n		CX D	Ur	eospherenit 11, B	riahtw	vironmental Ltd vell Barns olk



CLIEN	T: S	uffol	k Cour	nty Co	ouncil	PROJECT: Lake Lo	othin	g					,			GRO	DUND	LEVE	L m						HOLE No. BHC06B		
LOGGE					CHECKED BY: SG	EXCAVATION METHOD):	Cable Pe	rcussic	on (sh	iell a	nd au	ger)			Coor	rdinat	es: ,							SHEET 4 OF 8		
FIELDW TEMPLA			AGS BH	BETA	DATE:			Uncased	to 40.	0 m						DATI	ES 29,	/03/2	018 -						PROJECT NO. 2543,0	GI	
Date/Tim			Depth*					Strata		Gra	aphica	l Repre	sentation	Sa	mpling		u Testin				aborat	ory Te	esting		Additional Tests and Notes		
and Depth	Ca	of asing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth			T 'N' Va		Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	ρ Mg/m	Cu kN/m²	2		
				-+-	Dark grey silty fine SAND (contin	ued)	×.			0 1	IO	20 30	40		1												
								 				.			-												
							·*. · :						5	8	1												
	†						×		_		<u> </u>		 i	17	s		3 5	58*							<u> </u>		
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	+						×		_		ļ	1		18	s		7 12	69*							-		
							×]		16 19 15										
							<u> </u>	 				: :::::			1												
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							×								1												
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	+						×. · :		-		 -			19	S		79	66*							-		
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								1				1			1												
					Dark grey slightly sandy CLAY		Ë	•	20.60)					1												
							<u> </u>	-				.			-												
	1						- <u>·</u> -	•	_					21	1										-		
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							<u></u>]				ļ	/		1												
								_							1												
					Dark grey silty fine SAND		×		21.70)		.[]	/.]												
	1			otot .			<u></u>	1	_		<u> </u>	<u> </u>	/	22	1												
*WATE	R ¥ ∇	Stand Wate	ding wate er strikes	er level	PIEZOMETER Upper se Respons Lower se	e zone AND B eal TEST U KEY P	Bulk o Undis Pistor Distu	disturbed sa sturbed sam n sample rbed jar san	ample aple aple	C Con K Peri	e pen	penetra etratior lity test	S	lows SPT (35) PT N N = N*1 incl	blows Undis SPT N 120 = T uding s	turbed value (otal blo seating	d sample (blows a ows/pei	e blow of fter sea netratio	ount iting) in		D.	Ur	nit 11.	ere En Bright ell, Suf	ovironmental Ltd twell Barns ffolk	HOLE No BHC06B	2543,GI SHEET 4 OF 8
					DEPTH All depths, level and t	ES	Envir	onmental so		9			<	425 San	nple %	passing	g 425 m	icron si	eve				5	,		•	

CLIENT	: Suffo	lk Cou	ınty C	Council	PROJECT: Lake Lo	othir	ng		on (shell and auger)		GRO	DUND	LEVEL	m					HOLE No. BHC06B		
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD	:	Cable Pe	ercussio	on (shell and auger)		Coo	rdinate	es: ,						SHEET 5 OF 8		
FIELDWO TEMPLAT		EL AGS B	H BETA				Uncased	1 (0 40.0	U III		DAT	ES 29/	03/20)18 -					PROJECT NO. 2543,GI		
Date/Time	Depth of	Depth of	* Piez.				Strata		Graphical Representation			u Testing	3			borato			Additional Tests and Notes		
and Depth	Of Casing	Water	r ä	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths ≥	No.	Blows	SPT N	<425 %	WC %	PL %	LL % N	ρ Cu 1g/m³ kN/m²			
-	-			Dark grey silty fine SAND (contir	ued)	× · · · · · · · · · · · · · · · · · · ·		-		22- s		46 67 911 49 89	33						_		
_	_		_	Dark grey silty sandy CLAY		× · · · × · × × × × × × ×		23.60		24 s		67 89 12 18	47						_		
-	_					* X X X X X X X X X		_		25- S		5 7 8 10 10 10	38						_		
_	_			Dark grey fine silty SAND with sl	nell fragments	× × × × × × × × × × × × × × × × × × ×	*	26.40		26-									_		
-	_					× · · · · · · · · · · · · · · · · · · ·	?	_	66	27- S		7 11 19 24 7	68*						-		
*WATER	¥ Star ∇ Wa	nding wa ter strike	ater leve	PIEZOMETER Upper so Respons Lower so	e zone AND B real TEST U KEY P J ES	Bulk Undi Pisto Distu Envir	disturbed sa sturbed san n sample Irbed jar sar onmental s	ample (nple k nple		(35) Un T N N = SPT N*120 =	disturbed N value Total bl g seating	d sample (blows at ows/pen	blow co fter seat etration	ount ting) n		N N	Uni	osphere En t 11, Bright ghtwell, Suf	vironmental Ltd well Barns folk	SHEET 5 OF 8 HOLE No.	4JTJ,U:

CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake I	Lothir	ng		71.11		GRC	DUND	LEVEL	. m					HOLE No. BHC06B
LOGGED E				CHECKED BY: SG	EXCAVATION METHO	D:	Cable Pe	ercussio	on (shell and auger)		Coo	rdinate	es: ,						SHEET 6 OF 8
FIELDWO TEMPLAT		EL AGS	ВН ВЕТ	DATE:			Uncased	to 40.(u m			ES 29/)18 -					PROJECT NO. 2543,GI
ate/Time	Depth	Depti		1			Strata		Graphical Representation		ing/In-Sit					borat	ory Te	esting	Additional Tests and Notes
and Depth	of Casing	of Wate	∺	Description	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value Do	epths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Cu Mg/m³ kN/m²	
				Dark grey fine silty SAND wit (continued)	n shell fragments	×.													
-	-					×		_	72	28 S		8 14 27 23	72*						-
						×: •×:	· ·												
						×			75										
	_					.*. *.	·	-		29 s		11 14 29 21	75*						
						×													
+	-					×		_	75	30 s		14 11 22 28	75*						_
						×	· · ·					22 28							
						×			75										
-	_					×		_		31- S		19 6 27 23	75*						_
						×	•												
+	_					×		-	75	32 s		25 32	75*						_
						×						25 32 18							
						×													
WATER	_ ▼ Star ▼ Wat	nding w	rater lev	vel PIEZOMETER Uppe H. Respi	onse zone AND B	Bulk	disturbed s	ample (S Standard penetration test Blow C Cone penetration test	(35) Ur	disturbed	d sample	blow co	ount					. 모든 등 또
				Lowe	rseal TEST L KEY p J	J Undi Pisto Distu	sturbed san n sample Irbed jar san onmental s	nple i mple	K Permeability test SPT N	N = SP1 N*120 includi	N value = Total bl ng seating % passin	(blows at ows/pen	ter sea etràtio	ting) 1		D)	Dr	eosphere En nit 11, Bright ightwell, Sut	vironmental Ltd well Barns folk

CLIENT	Γ: Suff	folk	County	Council			PROJ	ECT: Lal	ke Lothi	ng Cable Pe				,			GRO	UND	LEVEL	. m					HOLE No. BHC06	В	
LOGGED				CHECKE DATE:	D BY: SG		EXCAV	ATION MET	THOD:	Cable Pe	ercussio	on (shell	and a	uger)			Coor	dinate	es: ,						SHEET 7 OF 8		
FIELDWO TEMPLAT			AGS BH BE							Uncased	10 40.0	o m					DATI	ES 29/	03/20)18 -					PROJECT NO. 254	13,GI	
Date/Time	Depth	h D	epth* 3							Strata	 B	Graph	ical Repr	esentation	Sa		g/In-Situ	u Testing					y Testir		Additional Tests and N	otes	
and Depth	of Casing	g \	of e		Des	cription of	f Strata		Le	g Reduced Level	Depth		SPT 'N' V		Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL I	L Mg	o Cu /m³ kN/m²			
Depth -	Casing	g	Water	Dark grey fir (continued)				nents	Lee X	Level	Depth	0 10		30 40	Depths/5 3	S S S S S S S S S S S S S S S S S S S		18 7 43 7	75* 75*	%	%	%	W. Mg.	У́м ³ kN/m ²	-		
<u>-</u>									× × × × × × × × × × × × × × × × × × ×		_				74 3	3		20 5 25 25 11 13 18 24 8	75* 74*						_		
WATER	₹ St	tandii	ng water k	evel PIEZOMET		———— Upper se	<u>— — —</u> eal	SAMPLE	X X X X X X X X X X X X X X X X X X X					ration test I	775 3.	3	s for ea	20 5 50 ch 75mn	75 n incren	nent					_	m-	2 (2)
	¥ w	Vater	strikes	evel PIEZOMET			eal	AND TEST KEY	U Und P Pist J Dist ES Env	disturbed salisturbed sar on sample urbed jar salironmental s	mple I mple	C Cone p K Permea	enetration	st S	PTN N= N*	SPT N 120 = 1 luding	I value (Total blo seating	ows/pen	fter seat etratior	ting) 1			Unit '	phere Er 11, Brigh twell, Su	ovironmental Ltd twell Barns ffolk	HOLE No. BHCQ6B	SHEET 7 OF 8

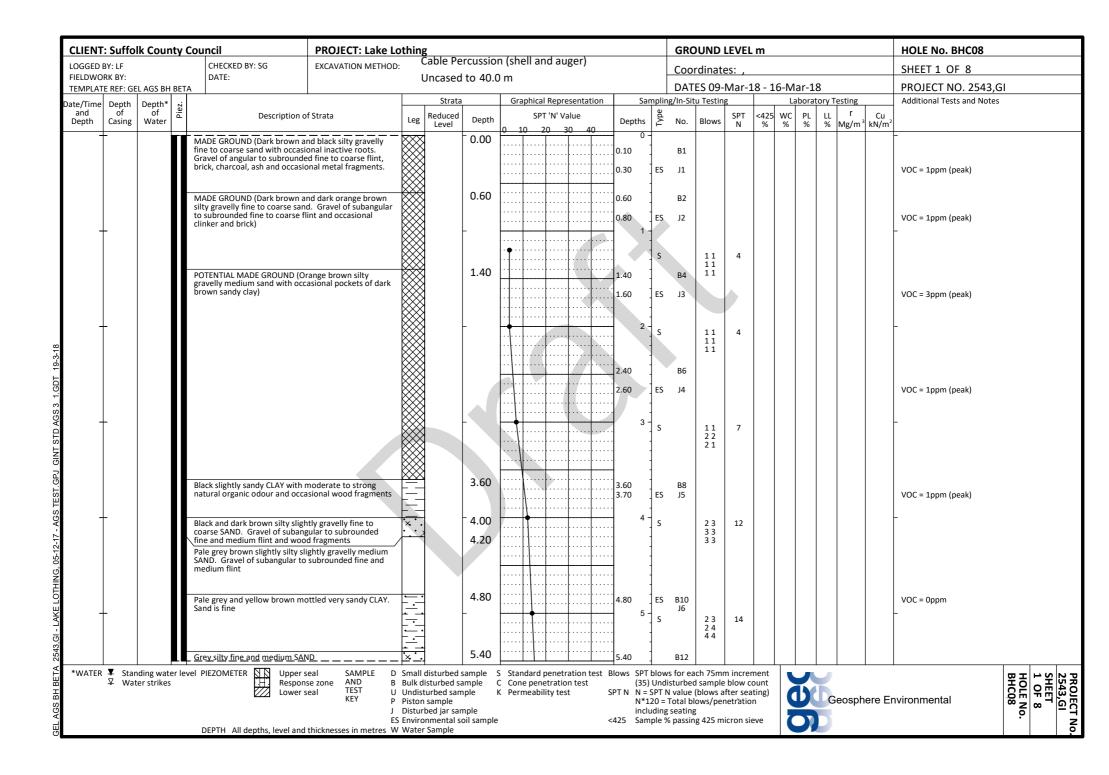
CLIENT	T: S	Suffo	k Cou	ınty (Council	PROJECT: Lake Lo	othin	ıg					GRO	UND	LEVEL	. m						HOLE No. BHC06B		
LOGGED					CHECKED BY: SG DATE:	EXCAVATION METHOD):	Cable Pe	ercussio	n (shell and auger	')		Coor	rdinat	es: ,							SHEET 8 OF 8		
FIELDWO TEMPLAT			L AGS B	н ветл				Uncased	1 (0 40.0	J M			DAT	ES 29/	03/20)18 -						PROJECT NO. 2543,G	1	
Date/Time	e D	epth of	Depth ¹	* * .z.				Strata	1	Graphical Representa	ation		ng/In-Sit	u Testin	g		La	borate	ory Te	esting		Additional Tests and Notes		
and Depth	Ca	of asing	of Water	Piez.	Description of	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value	De	pths 원	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m³ k	Cu N/m²			
-		asilig	vacei		Dark grey fine silty SAND with s	hell fragments	×	Level	- 40.00		75	39- S 40- S 41-		25 41 9	75* 75*	96	%	%	% 1	Mg/m k	N/m°			
*WATER	∔ R ¥ Z	Stan Wat	ding wa er strike	iter lev	rel PIEZOMETER Upper : Respon Lower :	se zone AND B seal TEST U KEY P J	Bulk of Undis Pistor Distu	disturbed s sturbed san n sample rbed jar san onmental s	ample (nple I mple	S Standard penetration C Cone penetration test K Permeability test	SPT N	(35) Und N = SPT N*120 =	disturbed N value (Total blo g seating	d sample (blows at ows/per	blow co fter sea netration	ount ting) n		がい	Un	eosphere nit 11, B ightwell,	right	- vironmental Ltd well Barns iolk	HOLE No. BHC06B	SHEET 8 OF 8

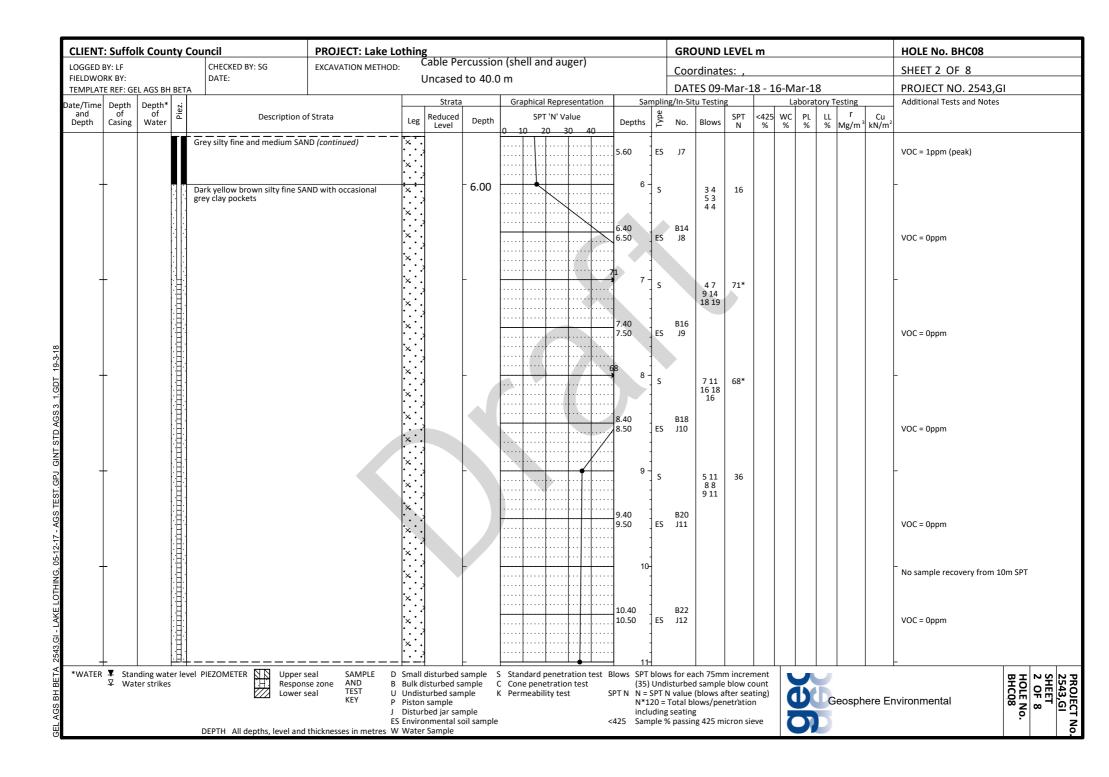
CLIENT	: Suffo	olk C	County	Council	PROJECT: Lake Lo	othin	g Calala S		e (ale all a rail a	\		GRO	DUND	LEVEL	m					HOLE No. BHC07	
LOGGED		DD11 1 -	_	CHECKED BY:	EXCAVATION METHOD				n (shell and aug	er)		Coo	rdinate	es: ,						SHEET 1 OF 4	
FIELDWC TEMPLAT			SS BH BET	DATE:		(Uncased	το 40.0) M)18 -	27/03/:	2018			PROJECT NO. 2543,GI Lake	Lothi
ate/Time	Depth	De	pth* zi				Strata		Graphical Represe	ntation		ng/In-Sit	u Testing	_		Labora				Additional Tests and Notes	
and Depth	of Casing		of ater	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30	40	Depths 2	No.	Blows	SPT N	<425 %	WC PL % %	LL %	ρ Mg/m	Cu kN/m²		
-	_			Concrete with 5mm rebar at the		P 4		0.00			0 -									-	
		1 0	75	MADE GROUND (Dark brown as coarse SAND with pockets of vis	sually desiccated clay	\bowtie		0.30		0	30 40 ES	B1 J1								VOC = 1 ppm (peak)	
-	_	¥ 0.	75	and moderate natural organic of to subangular fine to coarse bri and flint)	dour. Gravel of angular	0.		- 0.60		0	60 ES	B2 J2								VOC = 0 ppm (peak) – Inflow of water at 0.75m	
				Orange brown slightly gravelly in Gravel of subangular to subrou	fine to medium SAND.				ł Terrek errek errek er		20	B4	11	2						VOC = 0 mm (mods)	
				flint.	nded line to coarse					1	40 ES	J3	01							VOC = 0 ppm (peak)	
-	-			Dark brown slightly gravelly me	dium SAND with weak	٠٠.	1	2.00	- 		2 =		11	4						-	
				natural organic odour. Gravel o subrounded fine to medium flir	f angular to					2	40	В6	11 11								
										2	50 ES	J4								VOC = 0 ppm (peak)	
-	<u> </u>							-	/	3	00 3	B8	33	20						\(\OC = 0 mm (mode)	
						· • ·			/-	3	20 ES	J5	35 57							VOC = 0 ppm (peak)	
_				Dark grey / black CLAY with mo odour	derate natural organic	=		3.70	7	3	70 ES	В9 J6								_ VOC = 0 ppm (peak)	
				0000.					::::: <i> </i> ::::: ::::	4	00 1	UT10	(11)								
				Dark grey very clayey medium a	and coarse SAND with	-		4.60			60	B12									
-	_			weak to moderate natural orga	nic odour.	<u> </u>		5.00		4	70 5 ES	J7		2						VOC = 0 ppm (peak)	
				Black slightly sandy SILT/CLAY worganic odour and occasional w	with strong natural white shell fragments.				/		1		11 01 11	3							
						<u>×</u>		F 00	···\.		1										
-	_			Slightly grey brown silty fine SA	ND.	×		5.80		5	80 6 ES	B14 J8	(14)							_ VOC = 0 ppm (peak)	
						× .					1	UT15	(- ',								
						×				6	60 ES	B17								VOC = 0 ppm (peak)	
-	-						}	_		Ь	7 7 -	19	11	14						_	
						×	.			7	40	B19	3 2 4 5								
						× .			\ \	7	70 ES									VOC = 0 ppm (peak)	
-	<u> </u>					× .		_			8 -		2 2 4 7	23						-	
				Dark grey with occasional brow	n pockets slightly sandy	<u>×</u>	1	8.40		8	40	B21	66								
_	L			silty CLAY.		×	-		N.	8	70 ES	J11								VOC = 0 ppm (peak)	
_						<u> </u>	-				"]		4 6 9 9	36							
						Ž.X.		0.70			1		8 10								
_	_			Grey brown slightly silty fine SA	ND.	×		9.70	 		70 80 10 ES	B23 J12								_ VOC = 0 ppm (peak)	
				L		×				:::: :::/:::	1		3 3 7 12	49							
WATER	¥ Sta ∇ Wa			vel PIEZOMETER Upper s Respons Lower s	se zone AND B eal TEST U KEY P	Bulk d Undis Piston Distur	disturbed sa disturbed sam in sample rbed jar san onmental so	ample (aple inple	Standard penetratic Cone penetration to Permeability test	est SPT	(35) Und N N = SPT	disturbed N value Total bl g seating	d sample (blows af ows/pen	blow co ter seat etratior	ount ing) 1	dec	U	nit 11,		vironmental Ltd well Barns folk	SHEET 1 OF 4
				DEPTH All depths, level and						-72			J5	5.0	-						

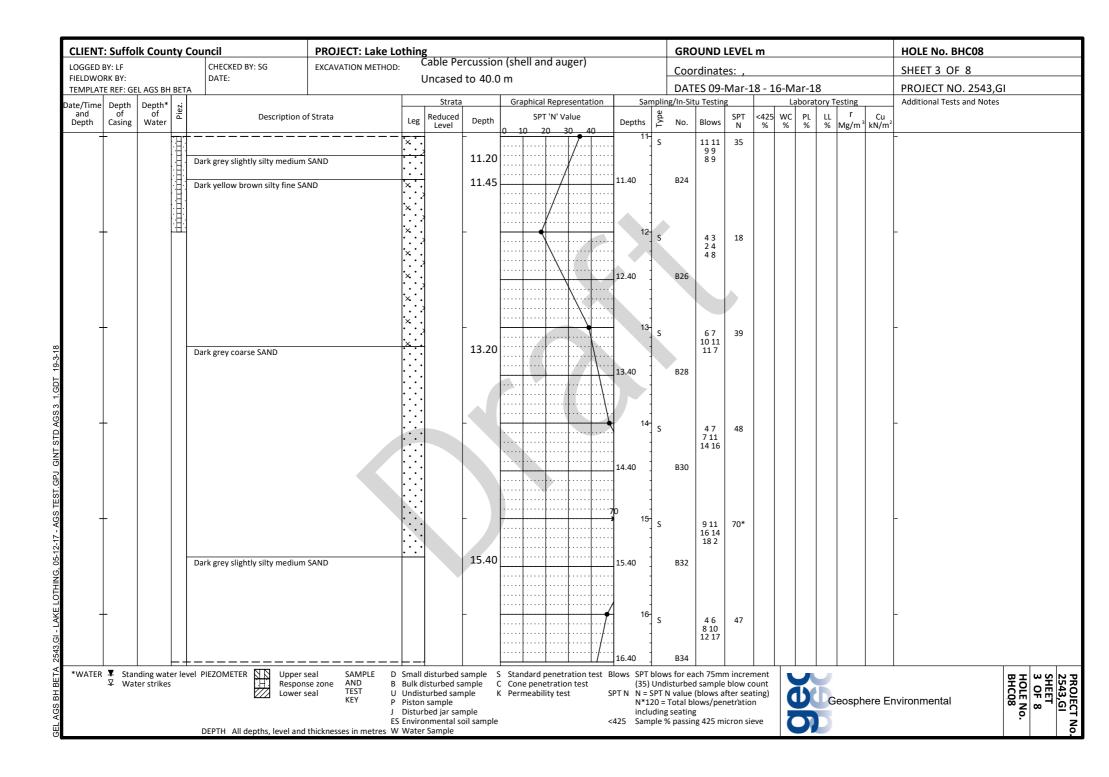
CLIENT	: Suffo	lk Cou	nty C	Council	PROJECT: Lake Lo	othin	g		7.1				GRO	UND	LEVEL	. m					HOLE No. BHC07		
LOGGED				CHECKED BY:	EXCAVATION METHOD	:	Cable Pe	rcussio	on (shell an	d auger)			Coor	dinate	es: ,						SHEET 2 OF 4		
FIELDWO TEMPLAT			I BETA	DATE:			Uncased	to 40.	.U M				DATE	S 20/	03/20)18 - :	 27/03	3/20:	18		PROJECT NO. 254	3,GI Lake	Lothing
Date/Time	Depth	Depth*					Strata		Graphical R	Representation	Sar	npling/		ı Testing					y Testin	g	Additional Tests and No		
and Depth	of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	SPT '	N' Value 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL L %	L Μg/	Cu m³ kN/m²	2		
			ΓŤ	Grey brown slightly silty fine SA	ND. (continued)	×:-	1			···//	10.40	1	B25	14 16									
-	-					·. · :	.1	-			11-			23	30						-		
						· · ·								58	30								
						·*·:	: 				11.40	'	B27	38									
-	-					×:.	.]	-			12			22	40						-		
						·	1							5 7 12 16	40								
							[12.60		B29	12 10									
-	-					×		-			13	1		46	60*						-		
						×·.								9 13 18 10	60								
						·	1				13.40		B31	10 10									
-	-		-	Slightly brown grey becoming g	ov cilty SAND with	· · ·	<u>'</u>	14.00		·····	1 1/1			23	32						-		
				Slightly brown grey becoming g occasional subangular to subrou	inded flint gravel.	· · · ·	[]				•• •			5 7 9 11	32								
						×:·					14.40	'	B33										
-	-		-	Light grey silty fine SAND.		× .	4	15.00)	·····	15	1		67	47						-		
				Light brey sitty fille shirts.			}			: : : : : : : : : : : : : : : :	:	1.	225	8 9 12 18	7/								
7 / t						×··					15.40] '	B35	12 10									
<u> </u>	-					× · .	[]	-			16-	1		7 11	68*						-		
3						·.··	1				1.5.40	1.		14 21 15	55								
2						$ \hat{\cdot} \cdot \cdot \cdot$	3		1		16.40] '	B37										
- A	-					×	·	-		·····	17			69	39						-		
<u>5</u>						×·	.]				:			10 9 9 11	33								
LARE LOT FING, US-12-17. GFJ GINT STD AGS S 1. GDT Z//4/10						<u> </u> :::	4				17.40	•	B39	9 11									
, 3	-					×. :	;	-			18	}		8 12	70*						-		
5.						×:.	.]		::::: ::::: :		:	1		18 22 10	70"								
-7						·	1					1 1	B41	10									
	-					.	<u> </u>	-			55 19-			78	65*						-		
						×	;							15 15 13 7	03								
2				Dark grey slightly sandy CLAY.			•	19.60)		19.60		B43	13 /									
<u>-</u>	-					<u> </u>	-	F			20 00 20	1		(21)							-		
•								20.40	,		20.00	"	7144	(41)									
5				Dark grey silty fine SAND with o fragments.	ccasional shell	×	;	20.40	'		20.60		B46										
	_		$\perp \downarrow$			<u> ×</u> :		ļ.			/14 21-						Ш,				-		
*WATER		iding wat er strikes		el PIEZOMETER Upper si Respons Lower si	e zone AND B eal TEST U KEY P J ES	Bulk o Undis Pistor Distur Enviro	disturbed sa sturbed san n sample rbed jar sar onmental s	ample nple nple	C Cone penet K Permeability	y test S	(35) PTN N=: N*1	Undisto SPT N v 20 = To Juding se	urbed : ralue (b ral blo eating	sample plows af ws/pen	blow co ter seat etratior	ount ting) n		V	Unit 1	ohere Er 1, Brigh well, Su	nvironmental Ltd twell Barns ffolk	HOLE No. BHCQ7	2543,GI Lake SHEET 2 OF 4
; 				DEPTH All depths, level and t	hicknesses in metres W	Wate	r Sample																<u> </u>

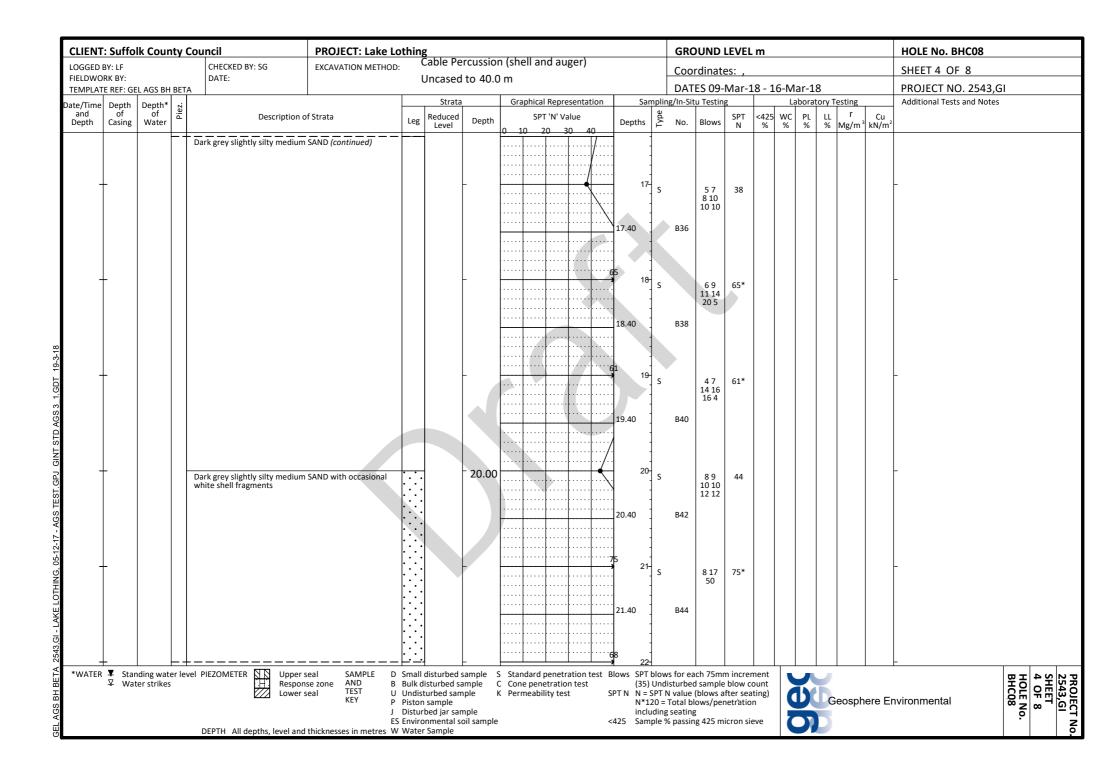
CLOSEP PRICE NUMBER CANADA SET CLOSE PRICE CLOSE P	CLIENT	: Suffo	olk Cou	nty (Council	PROJECT: Lake L	othin	g					GRO	OUND	LEVEL	. m					HOLE No. BHC0	7	
State Continue C			.			EXCAVATION METHOD):	Cable Pe	rcussi	on (shell and au	iger)		Cooi	<u>rdina</u> t	es: ,						SHEET 3 OF 4		
Part				H BETA				uncased	to 40	.u m						018 - 2	27/03	/2018	 8		PROJECT NO. 25	43,GI Lake	Lothing
Section Process Proc		Depth	Depth*					Strata		Graphical Repre	sentation												
1.40 1.40		of Casing	of Water	Pié	Description of	f Strata	Leg	Reduced Level	Depth	0 10 20 3	0 40 74		No.	Blows	SPT N	<425 %	WC P	L LL 6 %	ρ Mg/m	Cu kN/m²			
1.40 B48 15 15 15 15 15 15 15 1	_			ГΤ	Dark grey silty fine SAND with o	ccasional shell	×]				21-			74*						Ī		
	1				riagneris. (commuca)		×	1				1.40	B48	15									
22.4.0 650 13.3 71.4 13.4 13.4 13.4 13.4 13.4 13.4 13.4 1	1							 			::::::75	22											
23.80 23.00 850 811 71* 16.18 71* 16.18 71* 16.18 71* 16.18 71* 16.18 71* 16.18 71* 16.18 71* 75* 16.18 71* 75* 16.18 71* 75* 16.18 71* 75* 16.18 71* 75							·^.·:			1::::::::::::::::::::::::::::::::::::::		22		12 13 21 29	75*								
23.80	1						×:·					2.40	B50										
23.80 24 1411 75* 1421 75* 75* 1421 75* 75	I _						×]			::::::71	23											
Carey slightly clayery/silty fine SAND. 23.80 32.40 85.2 18 18.11 75* 18.21 18.21 175* 18.21 18.21 175* 18.21 18	1							 		1::::::::::::::::::::::::::::::::::::::	:::::::::::::::::::::::::::::::::::::::	23			71*								
Care Sighthy clayery/silly fine SAND.	1						·^.·:					3.40	B52	16									
24.40 B54 10 25 68* 117.23 17.23 18.24 18.25 10 25.70 25.40 B56 10 25.70 25.40 B56 10 25.40 B56] _	<u> </u>			Grey slightly clayey/silty fine SA	ND.	×.		23.8	o ::::: :::::	·····	24											
24.40 854 61 173 68* 173 68* 173 68* 173 173 68* 173 68* 173 68* 173 68* 173 68* 173 68* 173 68* 173 68* 173 68* 173 68* 173 173 68* 173 68* 173 68* 173 68* 173 68* 173 173 68* 173 68* 173 68* 173 68* 173 68* 173 68* 173							×]		18 22	75* 								
25.70	1							}			 2	4.40	B54	10									
25.70	-	-					×	-	-	1		25		6.43	C0*						-		
Dark grey silty SAND with shell fragments. 25.70 25.40 26.40 26.40 27.40 28.40 28.40 28.40 28.40 28.40 28.40 29.40 29.40 29.40 29.40 20.40	1						× : .				::::::]		17 23	68*								
26 58 12 18 63* 12 18 63* 12 18 12 18 12 18 12 18 12 18 18					B. I		<u> · · · · · · · · · · · · · · · · · · ·</u>	1	25 7			5.40	B56	10									
27.40 860 27.40 860 27.40 860 28.40 862 28.40 862 29.40 864 29.40 864 29.40 864 29.40 864 29.40 866 30.40 866 30.40 866 30.40 866 30.40 866	_	_			Dark grey silty SAND with shell f	ragments.	×. :		- 23.7			26		50	62*						-		
27.40 860 27.40 860 27.40 860 28.40 862 28.40 862 29.40 864 29.40 864 29.40 864 29.40 864 29.40 866 30.40 866 30.40 866 30.40 866 30.40 866							×:.					‡		12 18	03								
							\	1			2	5.40	B58	20									
75 - 178 28 22 75*	-	<u> </u>					ļ. · . ·	†	-		٠٠٠٠٠ <u>/</u> ٢	27-		15 10	75*						-		
75 31 178 2822 75*	3						×. :				::::::			22 28	'								
75 31 178 2822 75*							×:.					7.40	В60										
75 31 178 2822 75*	-	<u> </u>					·. · :	1	-			28		187	75*						-		
	5						: . : .	†		::::: ::::: :::::	::::::		DC3	19 19	'								
	5						×. · :	<u> </u>			2	s.40 <u> </u>	B62	**									
	_	_					×:.		-			29		187	75*						F		
	3						\	1		::::: ::::: :::::		340	DC4										
	Ď.						:·:·	†		1::::::		9.40	во4										
75 31 178 2822 75*	-	+					×. :	,	-			30		25 32	75*						-		
75 31 178 2822 75*	į						×:.					1 1	B66										
31 178 75* 28 22 75*							\	1				J.+U	500										
WATER Standing water level PIEZOMETER Water strikes Upper seal Response zone Lower seal Lower seal NET KEY Piston sample J Disturbed jar sample J Disturbed ja	- 5	+						1	<u> </u>		·····	31		178	75						+		
*WATER Standing water level PIEZOMETER Response zone Lower seal Lower seal Lower seal Disturbed sample Lower seal Disturbed jar sample Standing water level PIEZOMETER Response zone Lower seal Disturbed sample Disturbed sample Standard penetration test SPT blows for each 75mm increment (35) Undisturbed sample blow count N = SPT N value (blows after seating) N*120 = Total blows/penetration including seating Brightwell. Suffolk	3			$\perp \downarrow$			- <u> ×</u> : :	2				1		28 22									
ES Environmental soil sample ODEPTH All depths, level and thicknesses in metres W Water Sample DEPTH All depths, level and thicknesses in metres W Water Sample	*WATER	▼ Star ▼ Wat	nding wat ter strikes	er lev		se zone AND B eal TEST U KEY P J	Bulk o Undis Pistor Distur S Enviro	disturbed sa sturbed sam n sample rbed jar san onmental se	ample nple nple	C Cone penetratio K Permeability test	n test : SPT	(35) Und N N = SPT N N*120 = including	isturbed N value (Total blog seating	d sample (blows a ows/per	blow co fter sea netratio	ount ting) n	dec	<u>U</u>	Jnit 11	. Briaht	twell Barns	HOLE No. BHCQ7	2543,GI Lake SHEET 3 OF 4

CLIENT	: Suffo	lk Coui	nty Co	ouncil	PROJECT: Lake Lo	othin	ng .		on (shell and auger			GRO	DUND	LEVEL	. m					HOLE No. BHC07		
LOGGED				CHECKED BY:	EXCAVATION METHOD	:	Cable Pe	rcussio	on (shell and auger)		Coo	rdinat	es: ,						SHEET 4 OF 4		
	ORK BY: DE TE REF: GE		IBETA	DATE:			Uncased	to 40.0	0 m			DAT	ES 20,	/03/20)18 - :	27/03	3/201	8		PROJECT NO. 2543	GI Lake	Lothing
Date/Time and		Depth*					Strata		Graphical Represent	ition		ng/In-Si	tu Testin					Testing	5	Additional Tests and Note		
and Depth	of Casing	of Water	Piez.	Description o	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30	De	pths 2	No.	Blows	SPT N	<425 %	WC %	PL LI % %	L ρ S Mg/r	n ³ KN/m	2		
			FŦ	Dark grey silty SAND with shell t	ragments. (continued)	×			0 10 20 30		10	B68										
-	_					×	.]	-		::::: :	32		24.4	75*						-		
							.}			:::::::			21 4 21 29	/5								
						×	· .*			32.4	10	B70										
-	-					×		-		: :::::	33		15 10	75*						-		
						·. ·	:1			::::::	. 1	D72	26 24	, ,								
										33.4	+U]	B72										
-	+					×. :	:	_		· · · · · · · 4P	34		25 31	75*						-		
						×					10	B74	19									
						×	:1				•	574										
-	+						·	-		: :::::	35		58	63*						-		
						·. · :	.}				10	B76	12 21 17									
						×				:::::::::::::::::::::::::::::::::::::::	1											
-	Ť					×		-		 	36 -		7 11 18 27	86*								
							.]			36.4	10	B78	23									
							.}				3											
	Ī					×	:				37-		8 15 22 28	73*								
l						×	.]			37.4	10	B80										
l .						·× ·	:1			:::::75	38 -											
										: ::::::	30		25 33 17	75*								
						×. :				 38.4	10	B82										
						×				· · · · · · · · · · · · · · · · · · ·	39											
						·. ·	:1						23 2 29 21	75*								
										39.4	10	B84										
	_		l ⊢			·*·	•	40.00)	:::::75	40		10.7	75*						-		
								40.00			-		18 7 22 28	/5								
-										: ::::: 	‡											
-	+							-		: :::::	41									-		
											=											
											1											
*	<u> </u>	1.	<u> </u>	L DISTONANTED NINI		<u> </u>		<u> </u>	 		42			<u> </u>						-		
*WATER		iding wat er strikes		I PIEZOMETER Upper s Respons	e zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distu Envir	disturbed sa sturbed san n sample rbed jar sar onmental s	ample aple aple	S Standard penetration C Cone penetration tes K Permeability test	SPT N	(35) Und N = SPT N*120 =	disturbe N value Total b g seating	d sample (blows a lows/per g	blow co fter seat netration	ount ting) n	ME		Unit 1	here Er 1, Brigh well, Su	nvironmental Ltd twell Barns ffolk	HOLE No. BHCQ7	2543,GI Lake SHEET
				DEPTH All depths, level and	hicknesses in metres W	Wate	r Sample											4				<u> </u> 6 c



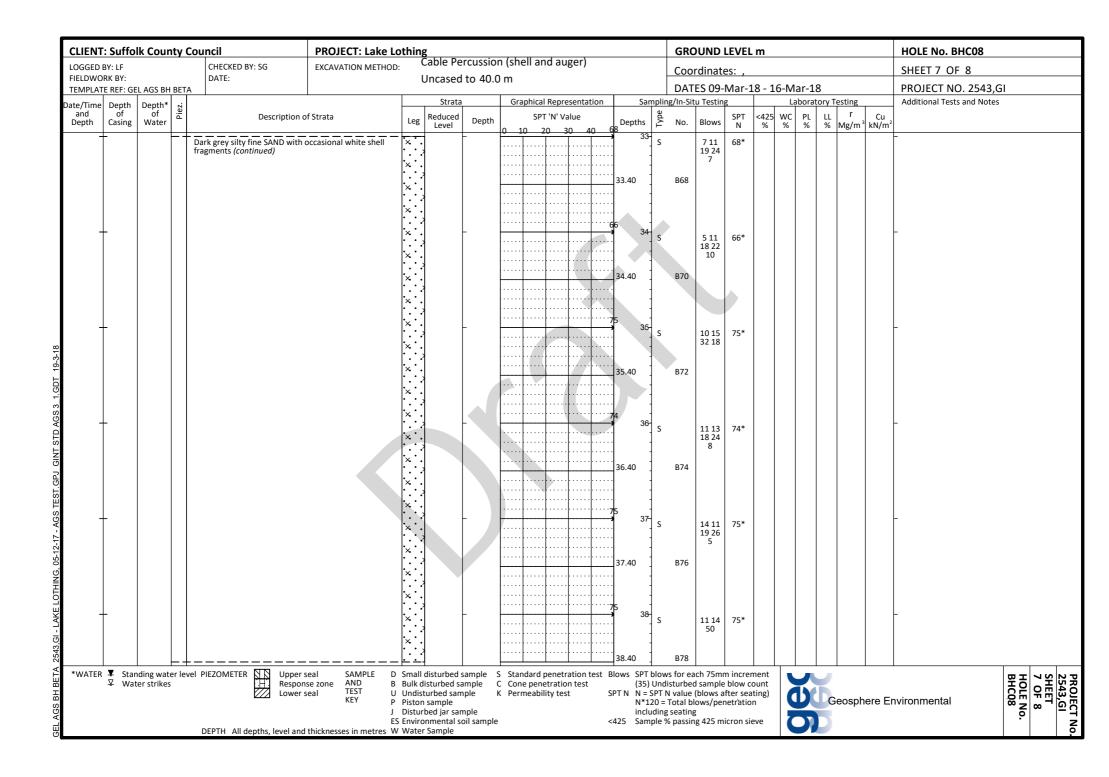


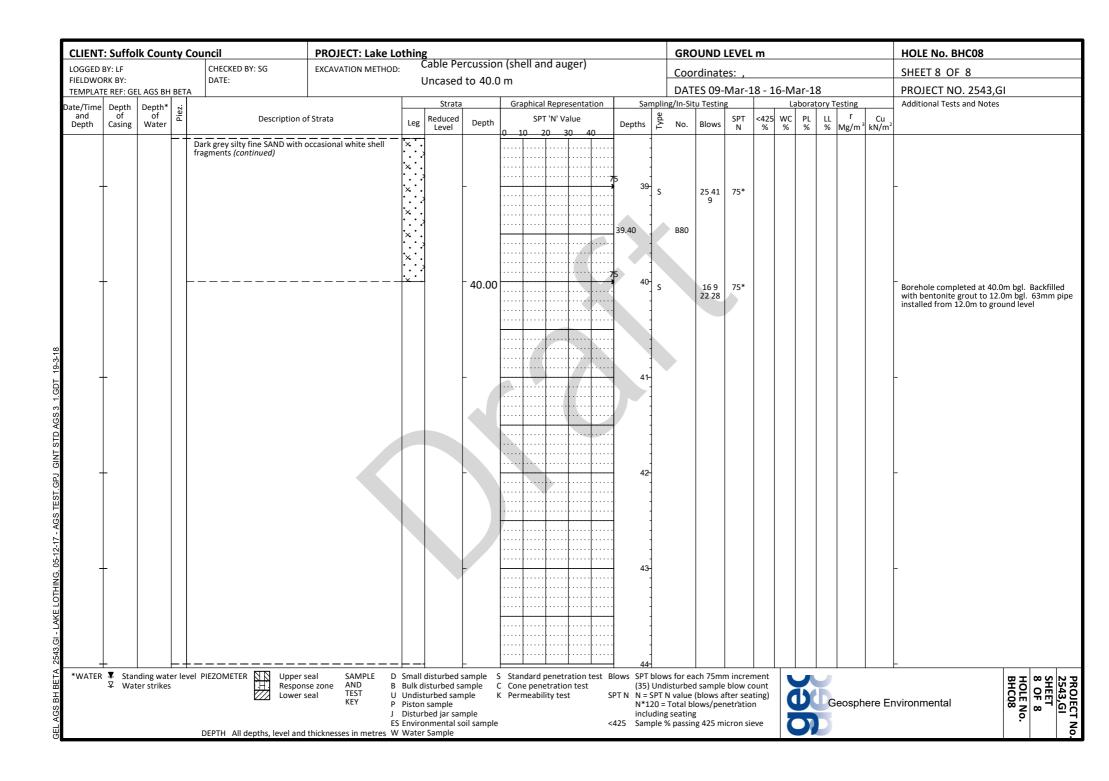




CLIENT	Γ: Suff	folk	County	Council	PROJECT: Lake Lo	othin	g				GRO	DUND	LEVEL	. m						HOLE No. BHC08			
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:	: (Cable Pe		n (shell and auger)	_	Coo	rdinate	es: ,							SHEET 5 OF 8			
FIELDWO TEMPLAT			AGS BH BET	DATE:		l	Uncased	ιτο 40.C	v m			ES 09-		L8 - 1	6-M	ar-18	3			PROJECT NO. 2543,GI			_
Date/Time	Depti	h C	Depth* ⋈				Strata		Graphical Representation			tu Testing	g		La	borat	ory Te			Additional Tests and Notes			
and Depth	of Casin	ig \	of e	Description o	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value Dep	pths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²				
-	†		-	Dark grey slightly silty medium white shell fragments (continue	SAND with occasional		1	-	20 20 30 40 40	22- S		6 12	68*							_			
				white shell fragments (continue	ed)					1		17 23 10											
								22.50		}													
				Dark grey CLAY			1	22.50	22.5	50]	B46												
							1			-													
-	+					=	1	-	22.0	00 23	UT47	(31)								_			
									23.0		0147	(31)											
1						<u> -</u>	1																
				Dark grey slightly sandy CLAY		_	1	23.50		-													
									23.6	50	B48												
									62	24-										_			
	T									24 S		5 7 10 14 21 5	62*							_			
γ <u>.</u>												215											
<u></u>									24.4	10	B50												
 1.61																							
20																							
- AG	t							- 1	25.0	00 25	UT51	(29)								_			
S -										1													
2									25.4	10	B52												
J				Dark grey coarse SAND with fre fragments	equent white shell			25.50		- 1	-												
2									1	1													
<u></u>	1								75	26- S		1111	75*							-			
<u>.</u>										1,		11 14 31 19	/ɔ*										
71.5										1													
ජ ව									26.4	10	B54												
						· : · :				+													
									69														
¥	T									27- S		10 9 50	69*							=			
<u>.</u>										1													
2543,61				<u> </u>		<u> </u>			27.4	40	B56												
*WATER	₹ St ∇ W	tandi Vater	ng water le strikes	vvel PIEZOMETER Upper s Respon Lower s	se zone AND B seal TEST U KEY P	Bulk d Undis Pistor Distur	listurbed sa turbed sam n sample bed jar sar	ample (nple i nple		(35) Und N = SPT I N*120 = including	isturbed N value Total bl seating	d sample (blows a lows/per	blow c fter sea netratio	ount iting) n		D.	Ge	eosph	ere Er	nvironmental	HOLE No. BHC08	SHEET 5 OF 8	
, ב				DEPTH All depths, level and			onmental s r Sample	oil sample	<425	Sample 9	% passir	ng 425 mi	icron si	eve							.		

CLIENT	: Suffo	olk Cou	nty (Council	PROJECT: Lake Lo	othing	3		n (shell and auger)		GRO	DUND	LEVEL	. m						HOLE No. BHC08			_
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:	: (Cable Pe	rcussio	n (shell and auger)		Coo	rdinate	es: ,						_	SHEET 6 OF 8			
FIELDWO TEMPLAT		EL AGS B	н ветл	DATE:		ι	Jncased	το 40.0) m		DAT	ES 09-	Mar-1	 L8 - 1	 L6-M	ar-1	8			PROJECT NO. 2543,G			_
Date/Time	Depth	Depth	.	•	•		Strata		Graphical Representation		ng/In-Sit	tu Testin			Li	aborat		esting		Additional Tests and Notes			
and Depth	of Casing	of	1 ∺ 1	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m ³	Cu kN/m²				
			Ħ	Dark grey coarse SAND with fre	equent white shell					-													
1				fragments (continued)		 !				1													
						<u> </u> : . : .			7.	5 . 28 .										_			
						· : · :			·····	²⁰] s		25 35 15	75*										
						· · ·																	
				Dark grey silty fine SAND with of fragments	occasional white shell	×		28.40		28.40	B58												
						×·																	
1						× .			7	5													
1 -	†					<u> </u> :.:}		_		²⁹ s		14 11	75*							=			
						×				1		18 22											
1						×				29.40	B60												
_						×																	
-3-18						× · ·																	
- 45 - 45	-					·.·;		-		5 30 s		19 6	75*							-			
1.GDT						×						22 28	,,,										
88 88						×				20.40	B.C.2												
D AG						×				30.40	B62												
ls L						·				}													
<u>z</u>						× .			7	5										_			
J						×				31- S		16 9 16 24	75*										
N N						×·			1	1		10											
										31.40	B64												
7 - 7						×			[····	1													
7-7-7						×				, -													
ජ ජ	+					×				32 s		5 8	63*							-			
ON NEW YORK						×				1		12 18 20											
						<u> </u> :.:;				32.40	B66												
Y						× ;				52.70	500												
5						×				1													
2543,GI	L					<u>ن</u> خا		_		8 -										_			
_	▼ Sta ▼ Wa	nding wa	ater lev	vel PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk d Undist Piston	disturbed s isturbed sat turbed sam sample bed jar sar	ample (S Standard penetration test BIC Cone penetration test C Permeability test SF	(35) Un PTN N = SPT	disturbe N value Total b	d sample (blows a lows/per	blow c	ount iting)		D)	G	eosph	ere Er	nvironmental	HOLE NO	SHEET 6 OF 8	PKOJECI
1				DEPTH All denths level and	ES	Enviro	nmental s		<4	125 Sample			icron si	eve	7						١٠		2
				DEPTH All depths, level and	unicknesses in metres W	vvater	sample																ì





LIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g Salata S		المعامل المعامل م		GRO	UND	LEVEL	m				HOLE No. BHC09
OGGED I			CHECKED BY: SG	EXCAVATION METHOD	, .			n (shell and auger)		Coor	rdinate	es: ,					SHEET 1 OF 5
	RK BY: J8 F RFF: GF	kM EL AGS BH BET	DATE:		ι	Jncased	to 50.0	m u		DAT	ES 03/	04/20)18 -				PROJECT NO. 2543,GI Lake Lot
e/Time	Depth		<u>'</u>	I.		Strata	ı	Graphical Representation	Sampli	ng/In-Siti				Labora	tory T	esting	Additional Tests and Notes
and epth	of Casing	Of Water	Description of	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths ^원 스	No.	Blows	SPT N	<425 %	WC PL %	LL %	ρ Cu Mg/m³ kN/n	n^2
†	-		Surfacing materials (Asphalt)				0.00		0 -								
			MADE GROUND (Multicoloure Gravel is fine to coarse grey co	ncrete, red brick, yellow	\bowtie]	0.13		0.30	B1 J1							VOC = 0ppm
			brick and occasional pieces of MADE GROUND (Dark brown /	cast iron)]	0.60		0.60	B2 J2							VOC = 0ppm
+	-		Gravel is fine and medium ang rounded subrounded flints)		×		1.10	<i>p</i>	0.90 1 -	J3 B3							VOC = 1ppm
			Pale brown silty fine SAND.	/		ł		/	1 1	В3	33 33	12					
			Doub bysour sounds CLAV with f	somment modified and	× .		1.80		1.60	B5 J4	33						VOC = 1ppm
+	-		Dark brown sandy CLAY with for coarse rounded flint gravel.	<u> </u>	<u>:-</u>		Γ		2 -		10	4					ļ
			Black slightly brown mottled o	ganic CLAY.	\vdash	-	2.20	\ /	2.20	B7 J5	11 11						VOC = 1ppm
					71/			<u> </u>	2.70	33							100 100
+	-					-	<u> </u>		3 -		0.0	0					-
									3 40	В9	00						
										23							
+	-				77/		<u> </u>		4 -		0.0	0					-
									4.20-	J6 B11	00						VOC = 1ppm
					<u></u>	-			4.40	DII							
+	-						-		5 -		3 4	29					-
			Pale brown / orange brown me	edium SAND.	 		5.30	/	540	B13	77 87						
								/	5.50	J7							VOC = 0ppm
+	-				· . · .		F	1	1 _ 1		24	16					-
			Dark orange sandy CLAY		<u>:::</u> :		6.40	1 1 -]	B15	3 3 6 4						
			Dark Grange Sandy CLAT		<u>:</u>		00		6.50	18							VOC = 0ppm
-	-						-		7 -		3 4	19					-
					<u>_</u> :				7.40	B17	4 4 5 6						
			Light orange brown silty fine S.	AND	 	-	7.60		7.50	J9							VOC = 0ppm
+	-				$[\cdot : \cdot$		}		8 =		13	22					-
					· · · ·			· · · · · · · · · · · \ · · · · · · ·	: 1	B19	3 4 6 9						
									78.40 8.50	J10							VOC = 0ppm
+	-				· · · ·		-	*	9 =		35	27					+
] 10	B21	77 67						
			Grey fine silty SAND		×	-	9.60	\\\	9.40		- /						
+	-						-	 -	9.80 10	J11	24	36					VOC = 0ppm
			L		× .	ł		·····] -		79						
VATER		nding water le ter strikes	vel PIEZOMETER Upper Respor	se zone AND B seal TEST U KEY P	Bulk d Undist Piston Distur	listurbed s turbed san sample bed jar san	ample (nple I nple		(35) Und SPT N N = SPT N*120 = includin	disturbed N value (Total blo g seating	l sample blows at ows/pen	blow co fter seat netration	ount ting) n	jec	U	eosphere E nit 11, Brigh rightwell, Su	invironmental Ltd htwell Barns uffolk
			DEPTH All depths, level and			onmental s Sample	oil sample	•	425 Sample	% passin	g 425 mi	cron sie	eve	O			•

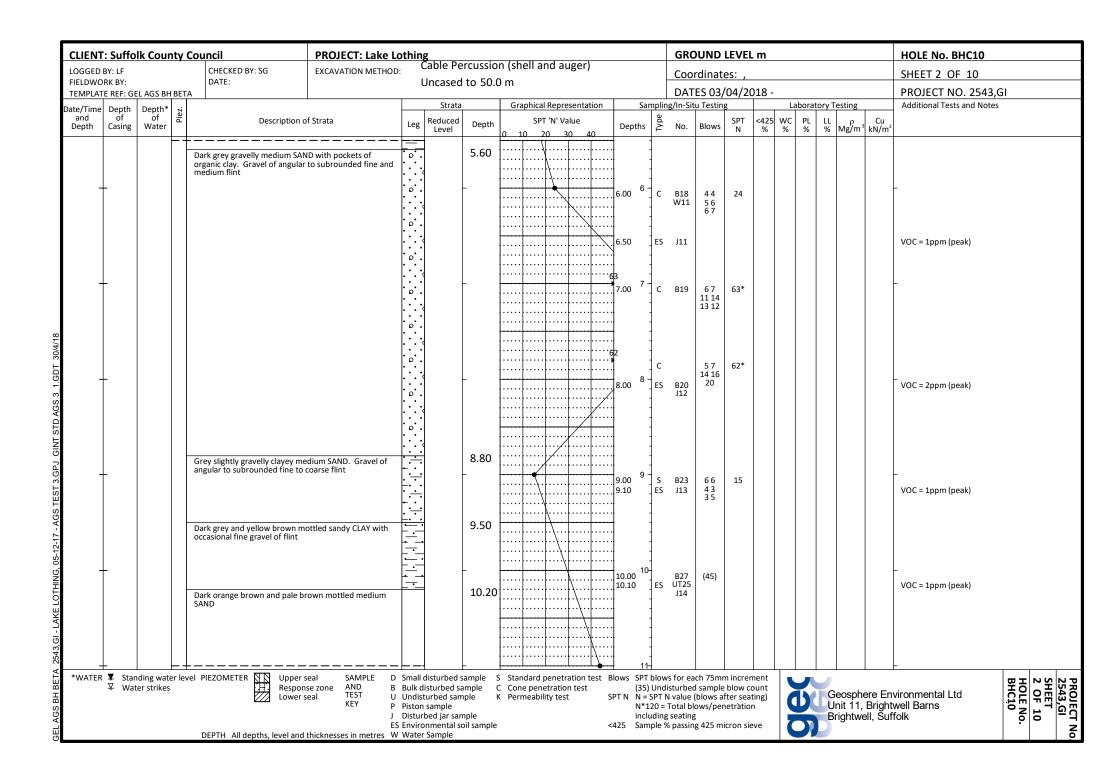
LIENT	: Suffo	lk County		PROJECT: Lake	Lothir	ig Cablo Do	rcuccio	n (shell and auger)		GRC	DUND	LEVEL	m					HOLE No. BHC09		
OGGED E	BY: JG RK BY: J8	.NA	CHECKED BY: SG DATE:	EXCAVATION METHO	υ.	Uncased				Coo	rdinat	es: ,						SHEET 2 OF 5		
		EL AGS BH BET				Ulicaseu	10 30.0	J 111		DAT	ES 03/	04/20)18 -					PROJECT NO. 2543,	GI Lake I	_oth
e/Time	Depth of	Depth*				Strata		Graphical Representation		ling/In-Sit	u Testin	3		La	borato	ry Test	ing	Additional Tests and Note	s	
and Depth	of Casing	of Water		tion of Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL % M	ρ Cu g/m³ kN/m²	2		
	_		Grey fine silty SAND (cont	inued)	×				::I	B23	9 11									
			Brown coarse SAND		×	<u>· </u>	11.20			B25	3 3 4 4 7 10	25								
+	-						-		12		48 910	49						-		
_	-						- 42.42		12.40	B27	12 18	21						-		
			Grey silty CLAY		× - × - × - × -		13.10		13.40	B29	35 35 67	21								
1	-		Dark grey coarse SAND.		×		14.00			B31	3 4 7 8 9 7	31						-		
+	-					•	-			522	78 1012 1211	45						-		
+	-						-		16	B33	7 11 17 13	68*						-		
+	_						-			B35	11 9	70*						-		
									17.40	B37	13 19 18	,5								
+	-		Dark grey sandy CLAY			· -	18.40		181	B39	46 66 610	28						<u> </u>		
	-					-	-		19.00	UT40								-		
	_		Dark seem of the Class			•			19.60	B42	0.0	26						-		
			Dark grey silty CLAY		* <u>*</u>		20.00		4 1	B44	8 9 8 7 10 13	38								
 NATER	- Star	nding water le	vel PIEZOMETER Up					S Standard penetration test		ws for ea								-	무필	ာ င်
	 vvat	iei strikes		wer seal TEST (KEY p	U Undis P Pistor J Distu	disturbed sa sturbed san n sample rbed jar sar	nple k nple	C Cone penetration test K Permeability test	SPT N N = SPT N*120 includio	N value = Total bl ng seating	(blows a ows/per	ter seat etration	ing) 1		X	Unit		nvironmental Ltd Itwell Barns ffolk	HOLE No. BHC09	南
			DEPTH All depths, leve	I and thicknesses in metres		onmental s r Sample	oil sample		<425 Sample	% passin	ig 425 m	cron sie	ve							

LIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g Salata S		- / ala - II	-d		GRO	UND	LEVEL	m					HOLE No. BHC09		
OGGED I			CHECKED BY: SG	EXCAVATION METHOD:				•	nd auger)		Coor	dinate	es: ,						SHEET 3 OF 5		
	RK BY: J8 E REF: GI	ιM EL AGS BH BET	DATE:		l	Jncased	το 50.0	m			DATI	ES 03/	04/20	 18 -					PROJECT NO. 2543	,GI Lake	Loth
e/Time			,	l		Strata		Graphica	Representation	Samplir	ng/In-Situ			Ĺ.	Labora	atory T	esting		Additional Tests and Not		
and Depth	of Casing	Of Water	Description o	of Strata	Leg	Reduced Level	Depth	0 10 2	「'N' Value '0 30 40	Depths ≥	No.	Blows	SPT N	<425 %	WC PL	LL %	Mg/m³	Cu kN/m²			
1	_	-	Dark grey silty CLAY (continued)	×	1				21.00 21	UT45							Ī	-		
					×				} · · · · · · · · · · · · · · ·												
			Dark grey silty fine sandy CLAY		<u>*_`</u>		21.60			21.60	B47										
†	-				<u>*</u>		-			22-		46	36					İ	-		
					××				h 1 1	22.40	B49	99 711									
					×]	5-13										
+	-				× .		<u> </u>			23 00 23	UT50							-	-		
					× × ·				[[1]											
					×.					23.40	B51										
4	_				<u>×</u> -×		_			9 <u> </u>									_		
			Dark grey silty fine SAND with s	shelly gravel.	×		24.20			1 1		5 14 17 19	69*								
			0 3,7 3,7	, , ,	1	·			<u> </u>	24.40	B53	14									
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	_				×					23		6 17 22 28	73*								
						1				25.40	B55	22 20									
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+	-				×		-			26		18 7	75*					İ	-		
										26.40	B57	419									
					×. · ;	,				20.40	557										
+	-				× · .		-			27-		16 9	75*					}	-		
						1						27 23									
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4	_				× .		_			5 28		40.45	75*						_		
						1				1 1		10 15 25 25	75*								
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+	-				, , ,	1	-			30-		25 29	75*					ł	-		
					·.·;	1				30.40	B65	21									
					×]		::::::		30.40	503										
+	-				× · .	1	-			31		15 10	75*					}	-		
						1						23 27									
VATER	▼ Star ∇ Wat	nding water le er strikes	vel PIEZOMETER Upper s Respon Lower s	se zone AND B seal TEST U KEY P	Bulk d Undist Piston Distur	listurbed sa turbed sam sample bed jar san	ample C nple K nple			(35) Und PT N N = SPT I N*120 = including	isturbed N value (I Total blo g seating	sample blows af ows/pen	blow co ter seat etration	ount ing) 1	ec	Ur	eosphenit 11,	Bright	vironmental Ltd well Barns folk	HOLE No. BHCQ9	SHEET 3 OF 5
			DEPTH All depths, level and	ES	Enviro	onmental so			<	425 Sample			cron sie	ve	O		5•	,		•	

LIENT	: Suffo	Ik County	Council	PROJECT: Lake Lo	othin	g		, , , , , , , , , , , , , , , , , , ,		GRO	UND	LEVEL	. m					HOLE No. BHC09		
OGGED I			CHECKED BY: SG	EXCAVATION METHOD	1:			n (shell and auger)		Coor	dinate	es: ,						SHEET 4 OF 5		
	RK BY: J8 F RFF: GF	ιM EL AGS BH BET	DATE:			Uncased	to 50.0	J m			ES 03/)18 -					PROJECT NO. 2543	.GI Lake	Loth
e/Time	Depth			1		Strata		Graphical Representation	Samplir		u Testing				atory T	esting		Additional Tests and Not		
and epth	of Casing	Depth* Zing Signature	Description o	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	No.	Blows		<425 %	WC PL	LL %	Mg/m ³	Cu kN/m²			
			Dark grey silty fine SAND with:	shelly gravel.	×.			0 10 20 30 40	31.40	B67										
	_		(continued)			1			74 <u> </u>									_		
					×. :	,					11 13 22 28	74*								
					× .			 	32.40	B69										
									5											
7	-				× ;	,	_		33-		14 11	75*						-		
					×				33.40	B71	21 29									
						1				5/1										
+	-				×. · :	,	_		3./⊢		15 10	75*					-	-		
					× · .				1 1		18 22	, ,								
						1		7	34.45	B73	10									
_	_				×. ·	,	_		5 <u>:</u> 35									_		
					×						14 11 22 28	75*								
)			35.40	B75										
					×. · ·	,			75]											
7	-				\.`.		_	I I I	36-		25 31	75*					f	-		
)			36.40	B77	19									
					×				30.40	5//										
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						\		I I I I I	1 1		27									
					×				37.40	B79										
	_				×·		_		5 <u>:</u> 38									_		
						}					11 14 50	75*								
					×				38.40	B81										
					×·				1 1											
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					×	,		1	39.40	B83										
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+	-				· · ·	 	-		19 Ad		9 10	69*					}	-		
					×	,			‡ ‡		10 10	05								
					·× · :			7	40.40	B85	14 16									
	_				·		_	1	75 : 41-								L	=		
					×	,			"		11 14 19 23	75*								
					×·.]			41.40	B87	8									
								6	 											
VATER		ding water le	vel PIEZOMETER Upper:			disturbed s disturbed sa		S Standard penetration test BC Cone penetration test	42-					U			 	-	무동	<u>y</u> 4
	- vval	פו אוווענא	Respor Lower	seal TEST U	Undis	turbed sam			PTN N = SPT	V value (blows af	fter seat	ting)	(1)	G	eosphe	ere Env	vironmental Ltd well Barns	HOLE No. BHCQ9	の重
				j	Distur	n sample bed jar san			N*120 = including	seating						rightwel	اا, Suff	olk	⁹ N	5
			DEPTH All depths, level and	ES	Enviro	onmental so		<	425 Sample			cron sie	eve	O		5	,		•	

LIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g G- l- l		(ala all a sa d		GROL	UND I	LEVEL	m					HOLE No. BHC09		
OGGED I			CHECKED BY: SG	EXCAVATION METHOD	:			n (shell and auger)		Coord	dinate	es: ,						SHEET 5 OF 5		
	RK BY: J8	kM EL AGS BH BET	DATE:			Uncased	to 50.0) m		DATE)18 -					PROJECT NO. 2543,	GI Lake	Loth
e/Time			T .	I .		Strata		Graphical Representation	Samplii	ng/In-Situ				Labor	atory T	esting		Additional Tests and Notes		
and	of Casing	l of l∺	Description o	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths 2	No.	Blows	SPT N	<425 %	WC PI	LL %	Mg/m ³	Cu kN/m²			
-	-		Dark grey silty fine SAND with	shelly gravel.	×		-		42-		6 11	67*						-		
			(continued)		×]			42.40		11 14 25									
					·^.·:	,			1 1											
+	-				×:		-	I I I	43	:	10 15	75*						-		
					·:	1			43.40	B91	50									
						\			1 1	B91										
+	-				×		_		44	.	14 11	75*						-		
					×.				1 1	3	36 14	, 5								
					· · ·	\			44.40	B93										
4	_				×··	,	_		45	1.	25.50							_		
					×·.				1	- 1,	25 50									
						1		I I	45.40	B95										
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	_						L													
7	_								52											
		<u> </u>	 		<u> </u>	-														
VATER		nding water le ter strikes	vel PIEZOMETER Upper:	se zone AND B seal TEST U KEY P	Bulk o Undis Pistor Distur	listurbed sa turbed sam I sample bed jar san	ample (aple i		(35) Und PT N N = SPT N*120 = includin	listurbed s N value (b Total blov g seating	sample llows af ws/pen	blow co ter seat etration	ount ing) 1	lec	U	eosphenit 11,	Bright	vironmental Ltd well Barns folk	HOLE No. BHCQ9	SHEET 5 OF 5
			DEPTH All depths, level and			onmental so	oil sample	<	425 Sample S	% passing	425 mi	cron sie	ve	O		-			•	

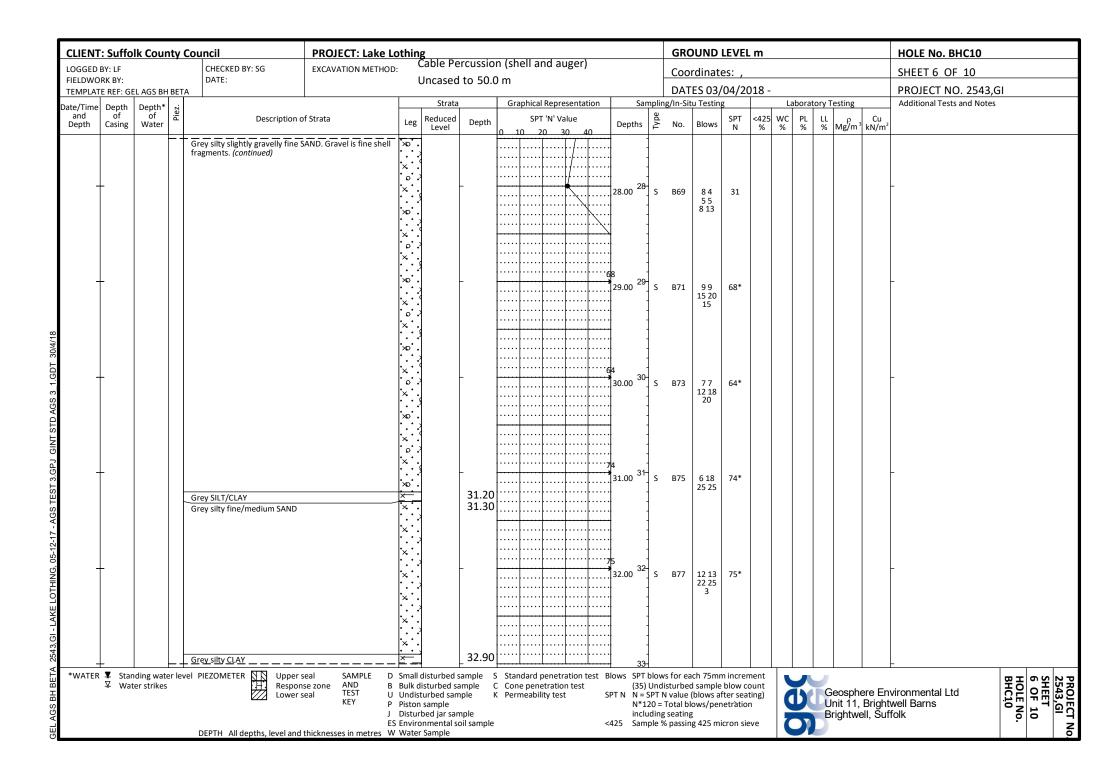
CLIENT	: Suffc	olk Co	unty	Council	PROJECT: Lake Lo	othing	3					GRO	DUND	LEVE	. m					HOLE No. BHC10		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD					shell and auger)		Coo	rdinat	es: ,						SHEET 1 OF 10		
FIELDWO TEMPLAT		EL AGS	BH BET	DATE:		·	ncased	l to 50.0	u m			DAT	ΓES 03/	/04/20	018 -					PROJECT NO. 2543,0	il	
Date/Time							Strata	l I	Gr	Graphical Representation			tu Testin	g		Labor	atory T	Testing		Additional Tests and Notes		
and Depth	of Casing	of Wat	er ä	Description o	Strata	Leg	Reduced Level	Depth		SPT 'N' Value	Depths 2	No.	Blows	SPT N	<425 %	WC PL	LL %	ρ Mg/m	Cu kN/m ²			
-	-		+	ASPHALT OVER CONCRETE		P 8 9		0.00	0	10 20 30 40	0 -							"	<u> </u>	-		
				MADE GROUND (Dark brown be very gravelly fine to coarse sand	ecoming red brown			0.13).20] ES	5 J1								VOC = 0ppm		
				subrounded fine to coarser brid flint)	k, concrete, metal and	\bowtie					,.20	, ,,								VOC - oppin		
				,		\bowtie		0.60		c).50 ES	5 J2								VOC = 0ppm		
				MADE GROUND (Dark brown ar medium and coarse sand. Grav	el of angular to	\bowtie		0.00			1											
				subrounded fine to coarse brick MADE GROUND (Grey brown sl		\Rightarrow		0.90			0.80 ES	S 13								VOC = 0ppm		
_				coarse sand. Gravel of angular medium brick and flint)		\bowtie		1.10		1	L.00 1 ES	5 B1 J4								VOC = 0ppm		
				MADE GROUND (Grey brown si	ty fine to coarse sand			1.20		1	ı.20 s		11	4								
				with pockets of grey brown clay subangular fine to coarse brick,						1	L.40 ES	S J5	11 11							VOC = 1ppm (peak)		
				MADE GROUND (Multicoloured Gravel of angular to subrounde	gravelly sandy clay. d fine to coarse brick			1.60	-		}											
				\and flint) Soft dark grey and black mottle	d sandy CLAY with black	<u>.</u>					L.80 ES	S B5								VOC = 3ppm (peak)		
-	_			clay pockets and weak to mode odour	rate natural organic	<u> </u>		2.00	-		2.00 2 5	J6	11	4						-		
				Black and dark grey mottled sar moderate natural organic odou		<u>:</u>			: :::]		11	"								
				sacrate natara organic odou					: :::		2.20 ES	5 J7								VOC = 2ppm (peak)		
				Dark grey silty CLAY with strong	natural organic odour	×		2.50	-	1	2.50	В8										
					-	* ×					-											
						×					1											
_	_					<u>×</u>		-	 	3	3 ES		(5)							VOC = 2ppm (peak)		
						<u>*</u> _x					1	J8 UT9										
						××					}											
i				Soft grey CLAY with occasional f	ibrous material			3.50			-											
											1											
i _						-		-			4 -											
İ									<u>}</u>		1.00 T ES		00	0						VOC = 2ppm (peak)		
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										\\	1											
											1											
-	-					_		-			5.00 5 ES	B16	(15)							VOC = 2ppm (peak)		
											-	J10 UT15										
											1											
*WATER	¥ Sta ∇ Wa	l Inding water stril	vater lev kes	vel PIEZOMETER Upper s H. Respons Lower si	e zone AND B eal TEST U KEY P	Bulk di Undist Piston	disturbed sisturbed san curbed san sample bed jar sar	ample (C Cor	candard penetration test Bloone penetration test Bloone penetration test SPT	(35) Un T N N = SPT N*120	disturbe N value	d sample (blows a lows/per	blow c	ount ting)	<u>6</u>	U	Init 11.	ere En Bright	vironmental Ltd well Barns	HOLE No. BHC10	2543,GI SHEET 1 OF 10
				DEDTIL All I III I I I I I I I I I I I I I I I	ES	Enviro	nmental s	oil sample		<42	25 Sample			icron sie	eve	O		nigritw	eli, out	IUIN		0
				DEPTH All depths, level and t	hicknesses in metres W	Water	Sample															



LOGGED FIELDWC TEMPLAT Date/Time and Depth	ORK BY: FE REF: G			CHECKED BY: SG	l		rahia Da									m					HOLE No. BHC10		
TEMPLAT Date/Time and	Depth				EXCAVATION METHOD	:				(shell and auger)			Coor	dinate	es: ,						SHEET 3 OF 10		
and	of	Dei	GS BH BET	DATE:			Uncased	to 50.0	.0 m	n		[DATE	ES 03/0	04/20)18 -					PROJECT NO. 2543,	GI	
	of Casing	1 20	of Sign				Strata			Graphical Representation	San		n-Situ	Testing				ratory	Testing	3	Additional Tests and Notes		
-	-	W	of i≝ /ater	Description o	f Strata	Leg	Reduced Level	Depth	1	SPT 'N' Value 10 20 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC F	L LI 6 %	- ρ Mg/i	m³ kN/m²			
				Dark orange brown and pale br	own mottled medium		1	_			11.00	S E	329	46	44						-		
				SAND (continued)							-			9 11 11 13									
											-												
				Brown coarse silty SAND.		×		11.50	0		-]											
						×.	1																
	1						1	_			12 -										_		
						∤ ^. · :	,				-	S		3 2 3 3 6 13	25								
						×	,				-			6 13									
				Grey/brown slightly clayey med	lium SAND.		-	12.50	0		12.50	F	331										
				,, - · - · · · · · · · · · · · · · ·]											
				Grey sandy CLAY				12.90	0		-												
-	†			Grey Sandy CLAY		<u></u>		_ 12.50	Ŭ		13.00 13		335	()							-		
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-	ļ			Cross places and appre	CAND with associanal		1	14.00	o		- -14 00 14	S E	337	1.2	28						_		
				Grey clayey medium and coarse fine subangular gravel.	SAND WITH OCCASIONAL	-:-		200	Ŭ ::		14.00	3 5	037	13 55 810	20								
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-	Ť					F:		-			15.00 ¹⁵⁻	S E	339	5 4 3 5	18						_		
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-	+			Grey slightly clayey fine SAND.		-	4	16.00	٥[16.00 16-	S E	341	23	33						-		
				Grey Singificity clayery fille SAIND.		-:-			1					2 6 12 13	<i>J</i> J								
						<u> </u>								12 13									
	V Sto	ndina	water les	vel PIEZOMETER De Uppers			disturbed of	amnlo s		Standard penetration test Blo	owe CDT	hloves f	or eac	h 75mm	incren	nent						1_ 1	
*WATER	₹ Stal ⊈ Wa	ater st	g water iev trikes		se zone AND B eal TEST U KEY P J	Bulk o Undis Pistor Distur Enviro	listurbed sa turbed sam sample bed jar san onmental so	ample (aple k	C C	Cone penetration test Permeability test SP	(35) TN N = 9 N*1	Undistu SPT N va 20 = Tot Iding se	urbed alue (b tal blo ating	sample plows af ws/pen	blow co ter sea etration	ount ting) 1	OPC		Geosp Unit 1 Bright	ohere En 1, Bright well, Suf	vironmental Ltd well Barns folk	HOLE No. BHC10	2543,GI SHEET 3 OF 10

CLIENT	T: Suf	folk	Coun	ty Co	ouncil	PROJECT: Lake Lo	othin	g		, .					GRC	DUND	LEVE	L m						HOLE No. BHC10		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD	: (Cable Pe	rcussic	on (sł	nell ai	nd auger)			Coo	rdinat	es: ,							SHEET 4 OF 10		
FIELDWO TEMPLA			GS BH	BETA	DATE:		'	Uncased	το 50.	.u m					DAT	ES 03,	/04/2	018 -						PROJECT NO. 2543,0	GI	
Date/Time	Depti	h D	epth* of	ez.				Strata		Gr	aphical	Representation	Sai	т—	g/In-Sit	tu Testin	ıg		L	aborat	ory T	esting		Additional Tests and Notes		
and Depth	of Casin	g V	of Vater	Piez.	Description of	Strata	Leg	Reduced Level	Depth			Γ'N' Value	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m	Cu kN/m²			
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					DEPTH All depths, level and t			onmental se r Sample	oii sample	2			425 Sam	ipie %	passin	ıg 425 m	iicron si	ieve								

CLIEN	T: S	uffol	k Cou	nty (Council	PROJECT: Lake Lo	othir	ng		on (shell and auger)		GR	OUND	LEVEL	. m						HOLE No. BHC10			
LOGGED FIELDWO					CHECKED BY: SG DATE:	EXCAVATION METHOD:	:	Cable Pe	ercussio	on (shell and auger)		Со	ordinat	es: ,							SHEET 5 OF 10			
TEMPLA			L AGS BH	H BETA				Uncased	1 10 50.0	.0 m		DA	TES 03	/04/20)18 -						PROJECT NO. 2543,G			
Date/Time	e De	epth	Depth*	ez.				Strata	1	Graphical Representation			Situ Testir	ng			aborat	$\overline{}$			Additional Tests and Notes			
and Depth	Ca	of asing	of Water	i.	Description o	Strata	Leg	Reduced Level	Depth		Depths	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m³ I	Cu kN/m²				
and Depth		of I	of		Grey silty slightly gravelly fine S fragments.	ND. (continued)	Leg	Level		0 10 20 30 40	22-00 22-	B56 UT5: S B58 S B63	5 8 9 8 9 14 8 7 5 8 8 9 8 9 14	SPT N 40 40 74*	<425 %	WC %	PL %	LL %	Mg/m³ I	Cu kN/m²	-			
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CLIENT	: Suff	folk	County	y Co	ouncil	PROJECT: Lake Lo	othin	ıg		,	7.1.11			GRO	UND	LEVEL	. m						HOLE No. BHC10		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD	:	Cable Pe	ercussio	on (:	(shell and auger)			Coor	dinate	es: ,							SHEET 7 OF 10		
FIELDWO TEMPLAT			AGS BH BE	ETA	DATE:			Uncased	1 to 50.0	U m	m			DATE	ES 03/	04/20)18 -						PROJECT NO. 2543,G	ı	
Date/Time	Depth							Strata		(Graphical Representation	San	npling		u Testing				abora	tory T	esting		Additional Tests and Notes		
and Depth	of Casing	g \	epth* of Vater		Description of	Strata	Leg	Reduced Level	Depth		10 20 20 40	Depths	Ι'	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m	Cu kN/m²			
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CLIENT	T: :	Suffo	lk Co	unty	Council	PROJECT: Lake L	.othir	ng		on (shell and auger)		GF	ROUNE	LEVE	L m						HOLE No. BHC10		
LOGGED					CHECKED BY: SG	EXCAVATION METHOD						Со	ordina	tes: ,							SHEET 8 OF 10		
FIELDWO TEMPLA			L AGS	BH BET	DATE:			Uncased	10 50.0	U III			TES 03		018						PROJECT NO. 2543,GI		
Date/Time	e [Depth of	Dept	h* zi		•		Strata	9	Graphical Representation		pling/In-	Situ Testi	ng			Laborat	ory T	esting		Additional Tests and Notes		
and Depth	c	of Casing	of Wat	er ä	Descriptio	n of Strata	Leg	Reduced Level	Depth		epths	√ No	. Blow	SPT N	<425 %	wc %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
and Depth		of Casing	of	1 :	Grey gravelly sity fine and n fine shell fragments. (contin	edium SAND. Gravel is	Leg No x o x	Level	Depth	75 	.00 40-	·	2 21 4 47 3 4 25 50 5 50	75*	<425 %	5 WC %	PL %	LL %	Mg/m ³	Cu kN/m²			
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CLIEN	T: Su	uffol	c Count	ty C	ouncil	PROJECT: Lake Lo	othin	ig						GRO	UND	LEVEL	m						HOLE No. BHC10			
LOGGED					CHECKED BY: SG DATE:	EXCAVATION METHOD:	:	Cable Pe	ercussio	on ((shell and auger)			Coor	dinate	es: ,							SHEET 9 OF 10			
FIELDWO TEMPLA			AGS BH E	ВЕТА	DATE:			Uncased	10 50.0	.u m	III			DATI	ES 03/	04/20)18 -						PROJECT NO. 2543,G	I		
Date/Time	e De _l	pth	Depth*	ž.				Strata			Graphical Representation	San		/In-Situ	u Testing	3		L	aborat	ory T	esting		Additional Tests and Notes			
and Depth	Cas	of sing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	1 0	SPT 'N' Value	Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	ρ Mg/m	Cu kN/m²				
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*WATER	R ₹	Stanc Wate	ing water r strikes		I PIEZOMETER Upper se Respons Lower se	e zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed disturbed s tturbed san 1 sample rbed jar san	ample (nple k nple	S S C C K P	Standard penetration test Blox Cone penetration test Permeability test SPT	(35) N N = 9 N*12 inclu	S Undis PT N 20 = T ding s	for ead turbed value (otal blus seating	ch 75mn sample blows af ows/pen	blow co ter seat etration	ount ting) n			Ur	nit 11.	ere En Bright	- vironmental Ltd well Barns folk	HOLE No. BHC10	SHEET 9 OF 10	36/36

CLIEN	T: Suffo	lk Cou	nty	Council	PROJECT: Lake Lo	thin	g							GRC	DUND	LEVEL	. m						HOLE No. BHC10	
LOGGE				CHECKED BY: SG	EXCAVATION METHOD:	(Cable Pe	rcussio	n (she	ell and a	uger)			Coo	rdinat	es: ,							SHEET 10 OF 10	
FIELDW TEMPLA	ORK BY: .TE REF: G	EL AGS BI	H BET.	DATE:		,	Uncased	to 50.0) m						ES 03/		018 -						PROJECT NO. 2543,0	31
Date/Time	e Depth	Depth*					Strata		Grap	ohical Repr	esentatio	on		ng/In-Sit	u Testin			La	borat		esting		Additional Tests and Notes	
and Depth	of Casing	of Water	Piez.	Description	of Strata	Leg	Reduced Level	Depth	0 10	SPT 'N' V	alue 80 40		Depths 본	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m	Cu kN/m²		
			Ħ	Grey slightly gravelly medium	SAND. Gravel is fine shell	۰۵.			ĬĬ															
				fragments. (continued)		· · ·							-											
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*WATE	T R ▼ Stai ▼ Wa	nding wat ter strikes	er lev	vel PIEZOMETER Upper Respoi Lower	nse zone AND B I seal TEST U I KEY P I J I	Bulk o Undis Pistor Distur	disturbed si disturbed si turbed san n sample bed jar sar onmental s	ample (aple inple	C Cone K Perm	dard peneti e penetration eability tes	n test	SP	55- ows SPT blow (35) Und TN N = SPT I N*120 = including 25 Sample 9	listurbed N value Total bl g seating	d sample (blows at lows/per	blow co fter sea netratio	ount ting) n		S S S	_ D.	nit 11.	ere En Bright ell, Suf	rvironmental Ltd twell Barns ffolk	2543,GI SHEET 10 OF 10 HOLE No. BHC10
				DEPTH All depths, level and				on sample				<4	ے sample کے	∕∘ hassiu	15 423 INI	ICI U(1 SI6	ve							

CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC14 Cable Percussion (shell and auger) CHECKED BY: SG EXCAVATION METHOD: LOGGED BY: LF Coordinates: SHEET 2 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 02-Jan-18 - 12-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Strata ate/Time Depth Depth* LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 wc PL % Leg Depth Depth Casing Water Depths No. Blows Level Ν % % Orange brown slightly gravelly fine SAND. Gravel of subangular to rounded fine to coarse flint and quartz (continued) 5.80 B10 ٥. 46 38 6.10 J8 88 ES VOC = 0ppm 10 12 6.60 Orange brown very gravelly coarse SAND. Gravel of 6.60 B12 angular to subangular fine to coarse flint 6.80 ES VOC = 0ppm ٥. 37 38 ... 9 12 98 7.70 Pale orange brown slightly gravelly fine to coarse 7.70 B14 SAND. Gravel of angular to subangular fine to coarse 7.90 ES J10 VOC = 0ppm 12 29 3 7 109 8.40 Becoming pale brown with depth 8.60 ES B16 VOC = 0ppm J11 43 3 2 13 19 9.40 B18 9.60 ES J12 VOC = 0ppm 9.90 Becoming dark brown with depth 9.90 B19 46 35 68 10 11 10.60 B21 PROJECT No. 2543,GI SHEET 2 OF 8 HOLE No. BHC14 *WATER ▼ Standing water level PIEZOMETER SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment Upper seal AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC14 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG EXCAVATION METHOD: Coordinates: SHEET 4 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 02-Jan-18 - 12-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 wc PL % Leg Depth Depth Casing Water Depths No. Blows % Level Ν % Pale orange brown slightly gravelly fine to coarse SAND. Gravel of angular to subangular fine to coarse flint (continued) 16.70 B33 38 48 7 11 14 16 17.60 Dark grey silty fine SAND 17.60 B35 S 25 1 1 3 5 9 8 18.60 B38 12 17 79* 25 25 19.60 B40 20-69* 7 12 18 22 10 B42 20.60 21-57* 77 11 14 14 18 21.60 B44 PROJECT NO.
2543,GI
SHEET
4 OF 8
HOLE NO.
BHC14 *WATER ▼ Standing water level PIEZOMETER SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment Upper seal AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC14 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG EXCAVATION METHOD: Coordinates: SHEET 6 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 02-Jan-18 - 12-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey slightly silty SAND (continued) 27.60 B56 28 16 19 24 26 85* 28.50 B58 29 11 18 79* 50 29.60 B60 10 16 76* 24 26 30.60 B62 31-12 50 31.60 B64 13 34 97* 50 32.60 B66 PROJECT No. 2543,GI
SHEET
6 OF 8
HOLE No. BHC14 *WATER ▼ Standing water level PIEZOMETER D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment Upper seal SAMPLE AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	: Suff	folk	Cour	ity C	ouncil			PROJ	IECT: L	ake I	othin	g						GR	OUND	LEVEL	. m						HOLE No. BHC14		
LOGGED					CHECKED B	Y: SG	I		ATION N		D:	Cable I			n (shell and auger)			Cod	ordinat	es: .							SHEET 8 OF 8		
FIELDWO TEMPLAT			GS BH	BETA	DATE:							Uncase	ed to	40.0) m				TES 02-		8 - 12	2-Jan	-18				PROJECT NO. 2543,G	il	
ate/Time and			epth* of	Piez.				· ·				Stra			Graphical Representation	on	Sam	pling/In-S		g		La	borat		esting r		Additional Tests and Notes		
Depth	Casin	g \	Vater	۵		Descrip	ption of S	Strata			Leg	Reduce Level	D	epth	SPT 'N' Value 0 10 20 30 40		Depths	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	Mg/m	Cu kN/m ²			
					Dark grey slight Gravel of white	tly silty gr	avelly fingments (ne and i	medium ued)	SAND.			- 40	0.00			39-60 39-60 40-64-64-64-64-64-64-64-64-64-64-64-64-64-	B78 S B80	19 50								Borehole completed at 40.0 with bentonite grout to 3.0	Om depth m bgl.	. Backfille
*WATER	¥ St ∇ W	tandii /ater	ng wat strikes	er leve	el piezometer	<u>∵</u> R	Jpper sea Response Lower sea	zone	SAMP AND TEST KEY	E L F	Bulk of Undis Undis Pisto Distu	disturbed disturbed sturbed s n sample rbed jar s	l sampl ample sample	le (Standard penetration te Cone penetration test Permeability test	SP ⁻	(35) T N N = S N*12 inclu	olows for e Undisturbe PT N value 0 = Total l ding seatir ble % passi	ed sample e (blows a blows/per ng	blow c fter sea netratio	ount iting) n) V	G	eosph	ere E	nvironmental	HOLE No. BHC14	SHEET 8 OF 8

PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG EXCAVATION METHOD: Coordinates: SHEET 1 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Leg Depth Blows Depth Casing Water Depths No. Mg/m³ kN/m³ Level Ν % % 20 30 MADE GROUND (Brown slightly gravelly clayey fine to 0.00 coarse sand with rootlets. Gravel of angular to 0.10 В1 subrounded fine to coarse flint) 0.25 ES J1 VOC = 0ppm 0.30 Becoming gravelly with depth 0.40 0.30 B2 MADE GROUND (Dark brown and dark orange brown sand and gravel. Gravel of angular to subangular fine 0.50 В3 to coarse flint. Sand is fine to coarse) ES 0.60 J2 VOC = 0ppm 0.70 MADE GROUND (Dark brown becoming black silty fine 0.80 and medium sand) 0.90 ES J3 VOC = 0ppm 1.00 Becoming gravelly with depth. Gravel of clinker, 1.10 flint and ash VOC = 0ppm 1.15 ES J4 Orange brown gravelly fine and medium SAND. Gravel 79 41 of angular to subangular fine to coarse flint 119 11 10 1.70 R6 1.80 ES Mag0 = DOV 2.00 Brown becoming yellow brown fine and medium SAND 50* 36 with occasional angular fine to coarse flint gravel 10 12 14 14 2.60 Brown SAND and GRAVEL. Gravel of angular to 2.60 В8 subrounded fine to coarse flint. Sand is medium. . b. 2.70 ES VOC = 0ppm .16 3 3.00 Dark yellow brown medium SAND 35 43 79 11 16 3.60 Becoming slightly clayey with depth 3.60 B10 3.70 ES J7 VOC = 0ppm 37 44 98 11 16 4.60 B12 4.70 ES J8 VOC = 0ppm 60* 37 11 13 16 10 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 2 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % 20__30 Dark yellow brown medium SAND (continued) 5.60 B14 5.70 ES J9 VOC = 0ppm 6 23 14 33 44 6.60 Dark yellow brown slightly gravelly medium and coarse 6.60 B16 SAND. Gravel of subangular to subrounded fine to ES 6.70 J10 VOC = 0ppm coarse flint S 25 30 58 98 7.60 B18 ES 7.70 J11 VOC = 0ppm 8 25 38 79 11 11 B20 8.60 ES 8.70 J12 VOC = 0ppm 24 19 46 9.60 B22 l ES 9.70 J13 VOC = 0ppm 9.80 Yellow brown medium and coarse gravelly SAND 9.80 B23 37 24 79 129 10.60 B25 10.70 J14 VOC = 0ppm *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 3 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ % Yellow brown medium and coarse gravelly SAND 13 29 (continued) 36 911 B27 11.60 12 60* 12 16 22 12.60 B29 77* 47 10 21 296 13.50 Orange brown silty fine SAND 13.60 B31 66* 6 10 21 29 14.60 B33 64* 59 18 22 10 15.60 B35 62* 48 129 10 19 *WATER ▼ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 3 OF 8 HOLE No. BHC15 AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 4 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N Mg/m³ kN/m³ Level 20 30 Orange brown silty fine SAND (continued) 16.60 B37 17-67* 6 11 20 22 17.60 B39 S 9 22 81* 21 19 18.20 10 Dark grey slightly clayey fine SAND 18.60 Dark grey silty fine SAND 18.60 B41 10 14 74* 13 20 19.60 B43 20-11 19 80* 24 26 B45 20.60 21-18 23 91* 30 20 21.60 B47 *WATER 🔻 Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET
4 OF 8
HOLE No.
BHC15 AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 5 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Гуре Description of Strata Reduced SPT 'N' Value <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows % Mg/m³ kN/m³ Ν % Dark grey silty fine SAND (continued) 44 58* 9 13 28 22.40 Dark grey CLAY 22.60 B49 23-23.60 D51 24 24.40 Dark grey coarse SAND with occasional shell fragments 24.60 B53 25-49 6 10 10 10 15 14 25.60 B55 66* 79 13 16 21 26.60 B57 27-16 29 95* 50 *WATER ▼ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 6 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ Level % 20 30 Dark grey coarse SAND with occasional shell fragments (continued) 27.60 B59 27.60 Sand becoming fine in grain size with depth 28 22 28 28.60 B61 29-15 50 29.60 B63 30-25 50 30.60 B65 196 75* 26 24 31.60 B67 25 38 75* 12 32.60 B69 *WATER 🔻 Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 6 OF 8 HOLE No. BHC15 AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 7 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows % Mg/m³ kN/m³ Level Ν % 20 30 Dark grey coarse SAND with occasional shell fragments 196 75* (continued) 35 15 33.60 B71 187 75* 27 23 34.60 B73 25 50 35.60 B75 36-75* 169 45 5 36.60 B77 25 50 37.60 B79 38 75* 223 50 *WATER 🔻 Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC15** LOGGED BY: LF CHECKED BY: SG Coordinates: SHEET 8 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 16-Jan-18 -PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' and of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ Level % 20 30 Dark grey coarse SAND with occasional shell fragments (continued) 38.60 B81 39-15 10 75* 32 18 39.60 B83 40-40.00 Borehole completed at 40.0m depth. Backfilled with bentonite grout. S 11 14 75* 21 19 10 41-42 43-*WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample N = SPT N value (blows after seating) Lower seal K Permeability test KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** Cable Percussion (shell and auger) LOGGED BY: JG CHECKED BY: LF EXCAVATION METHOD: Coordinates: SHEET 1 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Leg Depth Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % 20 30 0.00 TOPSOIL (Dark brown silty slightly gravelly fine sand with rootlets. Gravel of subangular to subrounded fine and medium flint) 0.20 ES В1 VOC = 12ppm (peak). Slight natural organic J1 0.40 MADE GROUND (Dark brown and black gravelly fine to B2 0.40 ES VOC = 23ppm (peak) coarse sand. Gravel of subangular fine and medium 0.50 J2 \asphalt and brick) ES 0.60 В3 VOC = 2ppm (peak) MADE GROUND (Brown slightly gravelly fine and J3 0.75 medium sand with occasional gravel of fine flint and (brick fragments) Light brown and yellow brown fine and medium SAND 1.00 B4 VOC = 6ppm (peak) with occasional fine and medium flint gravel 1.20 В6 11 9 22 23 1.60 ES J5 VOC = 8ppm (peak) 1.70 Brown and light grey mottled sandy CLAY with occasional fine flint and chalk gravel 1.80 D7 2.00 UT8 (42)2.50 VOC = 163ppm (peak). Strong natural organic 2.60 2.80 D10 3.00 B12 23 20 34 67 Δ + 20 mins 3.50 ES J7 Moderate inflow of water at 3.5m 3.60 W13 VOC = 0ppm D14 4.00 Yellow brown medium SAND with occasional fine flint 4.00 B16 12 16 23 gravel ES J8 4.50 VOC = 0ppm 23 17 24 5.00 B19 56 5.30 ES J9 VOC = 0ppm *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** Cable Percussion (shell and auger) LOGGED BY: JG CHECKED BY: LF **EXCAVATION METHOD:** Coordinates: SHEET 2 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % 20__30 Yellow brown medium SAND with occasional fine flint gravel (continued) 6.00 B20 9 11 23 6.30 ES. J10 VOC = 0ppm 7.00 S B22 44 26 56 78 7.30 ES J11 VOC = 0ppm 8.00 Yellow brown gravelly medium and coarse SAND. 8.00 B24 35 24 Gravel of subangular to subrounded fine and medium 66 VOC = 0ppm 8.30 ES J12 9.00 S B25 12 7 0 12 ES J13 9.30 VOC = 0ppm ٥. 10.00 Grey brown very gravelly medium and coarse SAND. 10.00 13 B27 34 Gravel of subangular to subrounded fine and medium 43 flint and occasional coarse subrounded flint 33 10.30 ES J14 VOC = 0ppm ... D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 3 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' and of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Level Ν % % Grey brown very gravelly medium and coarse SAND. 11.00 B28 3 4 16 Gravel of subangular to subrounded fine and medium flint and occasional coarse subrounded flint 43 45 (continued) 12.00 B29 44 20 ٥٠ 44 66 13.00 C B30 23 19 3 4 5 7 14.00 Grey brown slightly silty fine SAND with occasional C B31 28 14.00 33 rounded fine flint 47 89 15.00 C B32 38 68 79 9 13 16.00 B34 29 33 5 7 7 10 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 4 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % % Mg/m³ kN/m³ Level 20 30 Grey brown slightly silty fine SAND with occasional rounded fine flint (continued) 17.00 B36 50* S 37 7 10 16 17 18.00 S B38 24 29 67 6 10 18.50 Grey fissured CLAY 19.00 UT39 (150) 19.20 Grey silty fine SAND 20.00 20-S B40 68 50* 8 10 14 18 21.00 S B42 10 14 74* 14 17 19 21.60 Grey fissured CLAY SAMPLE *WATER ▼ Standing water level PIEZOMETER Upper seal D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 5 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows % Mg/m³ kN/m³ Ν % 20 30 Grey fissured CLAY (continued) 22.00 U46 (40)22.60 D47 1_{23.00} ²³1 B49 7 10 67* 12 14 168 24.00 24 UT50 (50)24.60 D51 125.00 ²⁵ 25.00 64* Grey silty fine SAND with occasional shell fragments B53 10 12 15 13 26.00 26 S B55 109 44 77 5 6 127.00 27 S B57 70* 7 13 14 15 174 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 6 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth* of and Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % % Mg/m³ kN/m³ Level 20 30 Grey silty fine SAND with occasional shell fragments (continued) 1_{28.00} ²⁸1 S B59 5 18 73* 40 10 129.00 ²⁹1 S B61 12 13 75* 15 15 20 30.00 B63 5 12 67* 30 20 31.00 ³¹ S B65 5 20 75* 25 25 32.00 S B67 7 12 69* 23 27 32.80 Grey silty gravelly fine SAND. Gravel of shell fragments and calcareous gravel *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) Lower seal K Permeability test Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

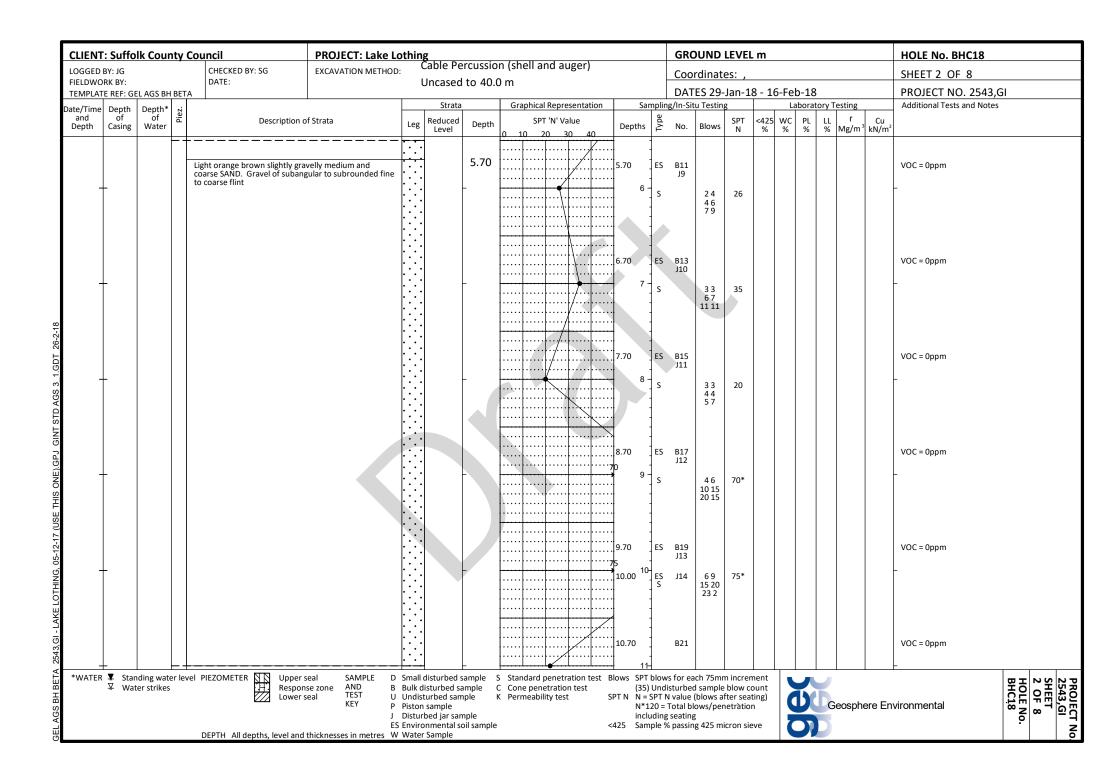
PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 7 OF 8 FIELDWORK BY: Uncased to 40.0 m DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' and of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows Mg/m³ kN/m³ Ν % % Grey silty gravelly fine SAND. Gravel of shell fragments 33.00 S B69 4 10 64* and calcareous gravel (continued) 15 21 14 0 10 15 32 18 34.00 D71 75* ٥٠ 1_{35.00} 35 B73 12 13 75* 18 27 75* 36.00 Becoming slightly gravelly with depth B75 36.00 25 42 37.00 ³⁷⁻ S B77 7 17 74* 25 25 38.00 S B79 75* 15 10 28 22 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC17** LOGGED BY: JG CHECKED BY: LF Coordinates: SHEET 8 OF 8 FIELDWORK BY: Uncased to 40.0 m TEMPLATE REF: GEL AGS BH BETA DATES 23-Jan-18 - 31-Jan-18 PROJECT NO. 2543.GI Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Depth of Date/Time Depth' and of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % Depth Leg Depth Casing Water Depths No. Blows N % Mg/m³ kN/m³ Level % 20 30 Grey silty gravelly fine SAND. Gravel of shell fragments and calcareous gravel (continued) 0 1_{39.00} ³⁹1 S B81 25 35 75* 15 o* 40.00 Borehole completed at 40.0m depth. Backfilled with bentonite grout. 25 32 75* 18 42 43-*WATER ▼ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count U Undisturbed sample N = SPT N value (blows after seating) Lower seal K Permeability test KEY Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	: Suffc	olk Cou	ınty (Council	PROJECT: Lake Lo	othin	g				GROU	UND L	EVEL	m					HOLE No. BHC18
LOGGED FIELDWO				CHECKED BY: SG DATE:	EXCAVATION METHOD	:	Cable Pe Uncased		n (shell and auger)		Coord	dinate	s: ,						SHEET 1 OF 8
TEMPLAT		EL AGS E	H BETA			,	uncased	1 (0 40.0	u m		DATE	S 29-J	an-1	3 - 1	6-Feb-	18			PROJECT NO. 2543,GI
Date/Time and Depth	Depth of Casing	of	Bi I	Description o	f Strata	Leg	Strata Reduced Level		Graphical Representation Si SPT 'N' Value Depths O 10 20 30 40	T e	ng/In-Situ No. E	Testing Blows	SPT N	<425 %	WC F	PL L		r Cu g/m³ kN/m²	Additional Tests and Notes
_				TOPSOIL (Brown silty slightly clar rootlets and occasional gravel of subrounded flints)	f subangular to			0.00	0.10	ES	J1								VOC = 0ppm
				MADE GROUND (Dark brown si Gravel is fine and medium suba flints)	ty gravelly SAND. ngular to subrounded			0.30	0.30	ES	J2 J3								VOC = 1ppm VOC = 1ppm
_			_	Orange brown / brown slightly SAND. Gravel is fine and mediu subrounded flints	gravelly medium fine n subangular to			1.00	0.90 1	ES S		1 2 3 5 5 5	18						VOC = 0ppm
_	_		-	Brown very gravelly coarse SAN subangular to subrounded fine		0		1.70	1.70	ES	B3 J5	37	50*						VOC = 0ppm -
_									2.70	ES	B5 J6	9 16 17 8 4 9 11 16 23	63*						VOC = 0ppm
-			_	Grey brown slighlty slity slightly SAND. Gravel of subangular to	gravelly fine to coarse subrounded fine flint			3.50	3.70	ES		23 57 75	24						VOC = 0ppm _
-								_	60 5	ES		37 911 1416	60*						VOC = 0ppm -
WATER	¥ Star ▼ Wa	inding wa	es es	el PIEZOMETER Upper s H. Respon- Lower s	eal AND B TEST U KEY P	Bulk d Undis Piston Distur	listurbed san turbed san I sample Bed jar sar	ample nple mple	K Permeability test SPT N N = N inc) Und SPT I 120 = luding	isturbed s N value (b Total blov g seating	sample l lows aft ws/pene	olow co er seat etration	ount ing) n	MA		Geos	sphere En	SHEET SHEET 1 OF 8 HOLE No. BHC1.8
				DEPTH All depths, level and			onmental s r Sample	oii sample	<425 Sal	пріе 9	₀ passing ⋅	425 MIC	ron sie	ve	C				

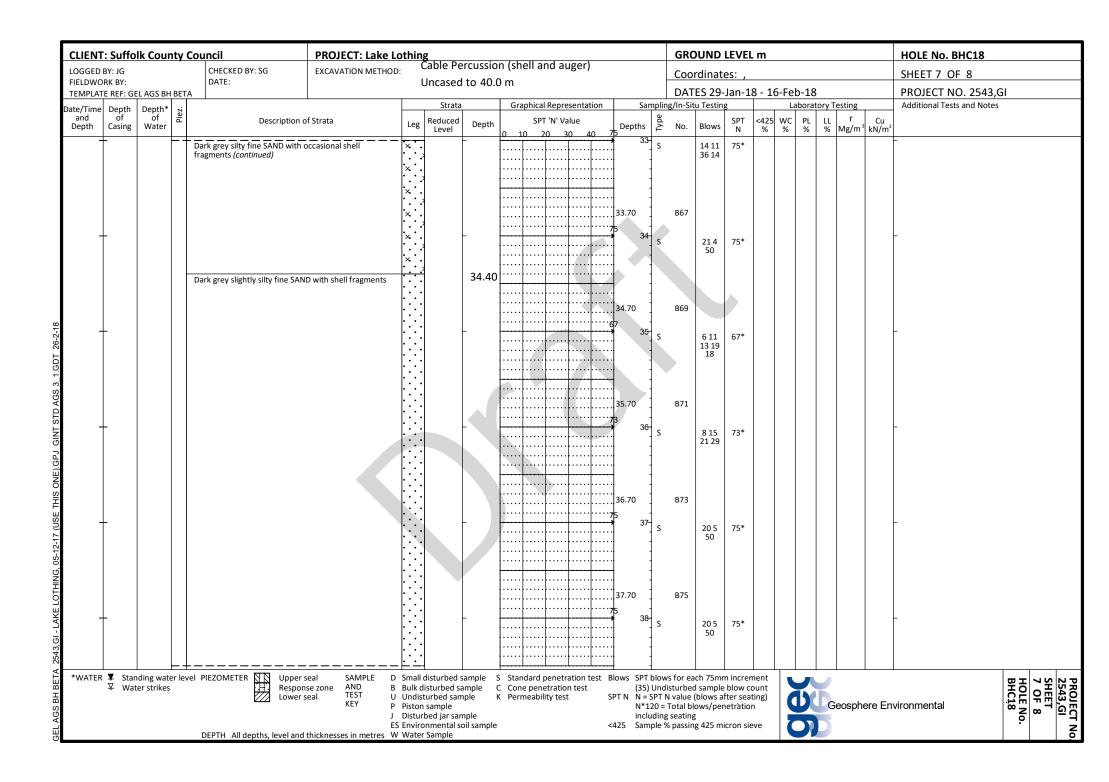


CLIENT	T: Suffo	lk Coun	ty C	Council	PROJECT: Lake Lo	othin	g		71 11 1		GRO	DUND	LEVEL	m						HOLE No. BHC18		
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD:	: (Cable Pe		n (shell and auger)		Coo	rdinate	es: ,							SHEET 3 OF 8		
TEMPLAT		EL AGS BH	BETA				Uncased	1 10 40.0	ווז כ		DAT	ES 29-	Jan-1	3 - 1	6-Feb	-18				PROJECT NO. 2543,G	1	
Date/Time		Depth*	Piez.				Strata			$\overline{}$		tu Testing				borato	\neg			Additional Tests and Notes		
and Depth	of Casing	Water	<u>a</u>	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depth	ıs Ş	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
26-2-18	Cashing	water		Brown gravelly medium and coasubangular to subrounded fine Brown SAND and GRAVEL. Grassubrounded fine and medium fine and coarse.	rel of subangular to		Level	12.50	12.00	11- s	B23	35 55 66	N 22 35	<u>%</u>	%	%	% N	Mg/m ³	kN/m²	-		
THIS ONE).GPJ GINT STD AGS 3 1.GDT				Orange brown SAND and GRAV subangular medium and coarse 14.60 Becoming slightly cobbly	flint. Sand is medium.			13.80	14.00	14-		43 57 10 12	34							_		
2543,GI - LAKE LOTHING, 05-12-17 (USE 1	_							-		15- s		48 913 1313 37 1015 225	48 62*							_		
GEL AGS BH BETA	R ▼ Star ▼ Wa	nding wate ter strikes	r leve	PIEZOMETER Upper so Respons Lower so	e zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	listurbed sa turbed san sample bed jar sar onmental s	ample (nple i mple	V Permeability testV SPT N N N N N N N N N N N N N N N N N N N	35) Und I = SPT I*120 = ncludin	disturbed N value Total bl g seating	d sample (blows af lows/pen	blow co fter sea netration	ount ing) 1		クスカ	Ge	eosphe	ere Env	vironmental	HOLE No. BHC18	2543,GI SHEET 3 OF 8

CLIENT	: Suff	folk	Coun	ity C	Council	PROJECT: Lake Lo	othir	ng					GRO	DUND	LEVEL	. m						HOLE No. BHC18	
LOGGED					CHECKED BY: SG DATE:	EXCAVATION METHOD	:	Cable Pe	ercussio	on ((snell and auger)		Coo	rdinat	es: ,							SHEET 4 OF 8	
FIELDWO TEMPLAT			AGS BH	BETA				Uncased	. 10 40.0	.0 m	m 		DAT	ES 29-	Jan-1	8 - 10	6-Fe	b-18				PROJECT NO. 2543,GI	
Date/Time	Depth	h D	epth*	Piez.				Strata		-	Graphical Representation			tu Testin				aborat				Additional Tests and Notes	
and Depth	of Casing	g V	of Water	i.	Description of	Strata	Leg	Reduced Level	Depth	١	SPT 'N' Value De	pths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m ³	Cu kN/m²		
_	_				Orange brown SAND and GRAV subangular medium and coarse (continued)	EL. Gravel of flint. Sand is medium.			_		69	17- s		10 9 12 13 10 15	69*							-	
-	_				Dark grey fissured CLAY			• • - - - - -	17.80 -	0	17.8	18-	B33 UT34	(57)								-	
-	_				Dark grey silty fine SAND with o	ccasional clay pockets	× · · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	18.80	0		19 s	B36	8 11 18 22 10	69*							-	
_	_				Dark grey silty fine SAND			-	19.70	· · ·	19.7 73	20 s	B38	9 14 31 19	73*							-	
_	_										20.7 75	21 s	B40	10 15 50	75*							-	
*WATER	¥ St ∇ W	tandir /ater	ng wate strikes	er leve	el PIEZOMETER Upper so	e zone AND B real TEST U KEY P	Bulk of Undis	disturbed disturbed saturbed san n sample irbed jar sai	ample (nple k	s s c c	21.7 68 Standard penetration test Cone penetration test Permeability test SPT N	22- SPT blo (35) Un N = SPT N*120:	disturbe N value	d sample (blows a lows/per	blow co	ount ting)		J D	G	eosph	ere En	- vironmental	SHEET 4 OF 8
					DEPTH All depths, level and t	ES	Envir	onmental s		e	<425	Sample			icron sie	eve	(D			į (

CLIENT	: Suff	olk (County	Council	PROJECT: Lake L	othir	ng			(shell and auger)		GF	OUNE	LEVE	. m					HOLE	No. BHC18		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD):	Cable Pe	ercussio	on (:	(shell and auger)		Со	ordina	tes: ,						SHEET	5 OF 8		
FIELDWO TEMPLAT		GEL AC	GS BH BET	DATE:			Uncased	1 (0 40.0	.U m	m		DA	TES 29	-Jan-1	8 - 1	6-Fel	o-18			PROJE	CT NO. 2543,G	il	
Date/Time	Depth	n De	of Siez				Strata	1	(Graphical Representation	San	npling/In-	Situ Testi	ng			borato	ry Te	sting	Addition	al Tests and Notes		
and Depth	of Casing	g w	of ide	Description of	f Strata	Leg	Reduced Level	Depth	1	SPT 'N' Value 0 10 20 30 40 68	Depths	Type No	Blows	SPT N	<425 %	WC %	PL %	LL %	r (Mg/m³ kN	u ′m²			
-	-		-	Dark grey silty fine SAND (contin		E		-		0 10 20 30 40 68	22-	S	6 12	68*						+			
						E	-				-		22 28										
											-												
						\vdash					_												
											_												
						<u> </u>				2	2.80	B44	١										
_	Ī									2	3.00 23-	UT4	5 (40)										
						<u> </u>	-																
						<u> </u>			_		3.60	D46											
				Dark grey CLAY			-	23.70	0	2	3.70	B47											
_	-							-			4.00 24	UT4	0 (22)							-			
						=	-			2	+.00	014	8 (32)										
						\vdash	-				-												
										2	4.60	D49)										
						<u> </u>	-																
-	+							-	\ 	2	5.00 ²⁵	UT5	0 (51)							-			
						1			\		-												
				Dark grey silty fine SAND with o fragments	ccasional shell	×	$\overline{\cdot}$	25.30	0		-												
				25.50 Sand becoming fine and r	medium with depth	×:	:1				-												
						١٠	.}		l:::	2	5.70	B51											
						×	·		ļ	 5	-												
_	Ī					×	•		<i></i>		26- -	S	16 9 19 21	75*									
						·×.	1		1		-		10										
						: • :					-												
						·*·	;				-												
						:×:	•]				6.70	B53	3										
_	_					·×.	.]	L		75	27 -		22.2	75*						-			
							.}				-	S	22 3 24 26										
						×	:				-												
	<u> </u>					<u></u>			<u> </u>		-												
*WATER	¥ Sta	anding ater st	g water lev trikes	vel PIEZOMETER Upper s H. Respons Lower s	se zone AND B		disturbed disturbed s			Standard penetration test Blo Cone penetration test		olows for Undisturb										모공	SHEET 5 OF 8
				Lowers	eal TEST U	Undi	sturbed sar				N N = 9	PT N valu 20 = Total	e (blows	after sea	ting)			Ge	osphere	Environmen	ntal	C18	일반
					J	Distu	rbed jar saı		•	.41	inclu	ding seati	ng				77		.55011010			~ <u>~ N</u>	∞ . ⊆
				DEPTH All depths, level and t			onmental s r Sample	oii sample	e 	<42	> sam	ole % pass	1118 425 ľ	INCLOU SIG	eve								

CLIENT	: Suffo	lk Co	unty (Council	PROJECT: Lake Lo	othir	ng					GRC	UND I	LEVEL	m					HOLE No. BHC18
LOGGED				CHECKED BY: SG	EXCAVATION METHOD):	Cable Pe	ercussio	on (s	(shell and auger)		Cooi	rdinate	es: ,						SHEET 6 OF 8
FIELDWO TEMPLAT		EL AGS I	ВН ВЕТ	DATE:			Uncased	1 to 40.0	.0 m	m		DAT	ES 29	Jan-18	3 - 16	6-Fel	o-18			PROJECT NO. 2543,GI
Date/Time	Depth	Depth	* "	•			Strata		G	Graphical Representation		ng/In-Sit	u Testing			La	borato	ory Te	sting	Additional Tests and Notes
and Depth	of Casing	of Wate	.* Piez.	Description of	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value Dept	hs A	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Cu Mg/m³ kN/m²	
	-			Dark grey silty fine SAND with a fragments (continued)	occasional shell	× × × × × × × × × × × × × × × × × × ×		-		27.70 73 28.70 28.70	28 S	B55 B57	8 15 16 21 13	73*						
_	-					×				30.70	31- s	B61	22 3 25 25	75*						_
-	_					× × × × × ×				31.70 72 32.70	32- s	B63	20 5 32 15	72*						-
*WATER	▼ Star ∇ Wat	nding w ter strik	ater lev	VEL PIEZOMETER Upper: Resport Lower:	se zone AND B seal TEST U KEY P J	Bulk o Undis Pisto Distu Envir	disturbed sa sturbed san n sample rbed jar sar onmental s	ample (nple i mple	C Co K Pe	Permeability test SPT N I	SPT blov (35) Und N = SPT N*120 = ncluding	listurbed N value (Total blog seating	d sample (blows af ows/pen	blow co ter seat etratior	ount ing) 1	7	人父の		eosphere En	SHEET SHEET 6 OF 8 BHC18 8

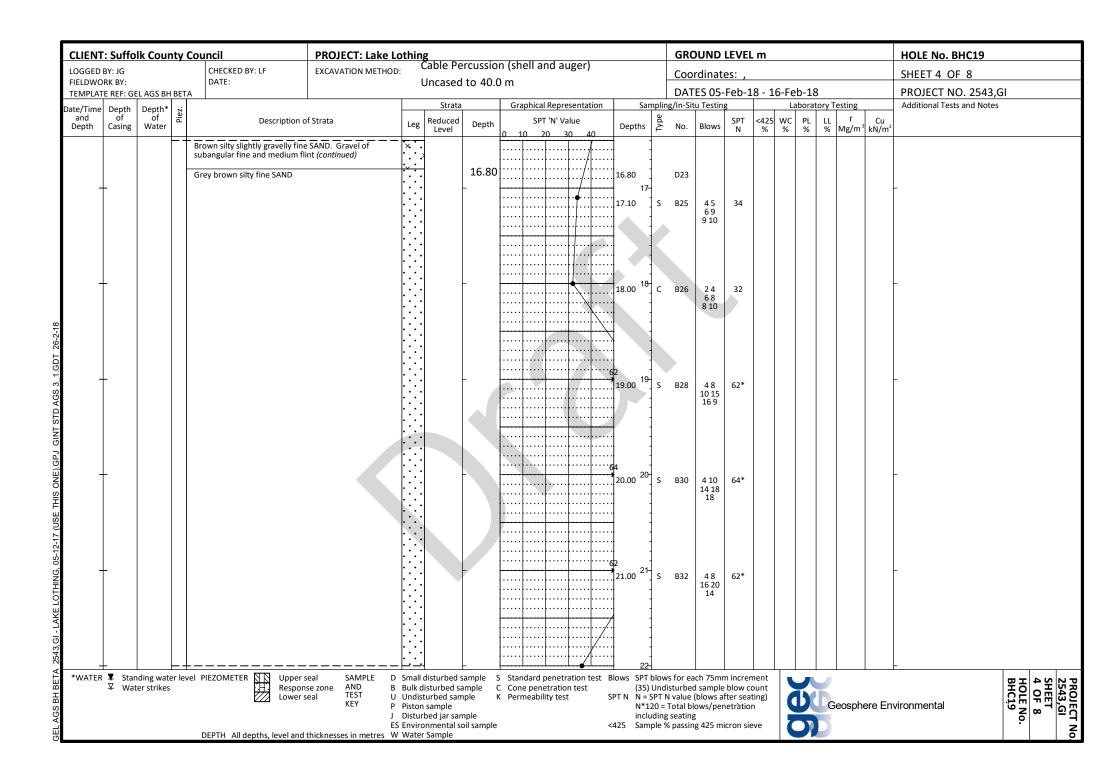


CLIENT	: Su	ffoll	Cou	nty (Council	PROJECT: Lake Lo	othir	ng		on (shell and auger)		GR	OUND	LEVEL	. m						HOLE No. BHC18
LOGGED					CHECKED BY: SG DATE:	EXCAVATION METHOD):	Cable Pe	ercussio	on (shell and auger)		Cod	ordinate	es: ,							SHEET 8 OF 8
FIELDWO TEMPLAT			AGS BI	H BET				Uncased	1 (0 40.0	u m		DA	TES 29-	Jan-1	8 - 1	6-Fe	eb-18	3			PROJECT NO. 2543,GI
Date/Time	Dep	oth	Depth*	Piez.				Strata		Graphical Representation			itu Testing						esting I		Additional Tests and Notes
and Depth	of Casi	ing	of Water	Ι	Description	of Strata	Leg	Reduced Level	Depth		epths 원	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m	Cu kN/m²	
2043,GI - LAKE LO I HING, U3-12-17 (USE I HIS ONE),GFU GINI S ID AGS 3, 1.GD I, 20-2-18			water		Dark grey slightly silty fine SAI (continued)	ID with shell fragments		Level	- 40.00	0 10 20 30 40 38 38 74 39 39 39 74		B77	7 13 20 30	70*	96	%		%	Mg/m	kN/m²	Borehole completed at 40m bgl. Borehole backfilled with bentonite grout.
	<u>↓</u>	Stand Wate	ing wat	ter lev	PIEZOMETER Upper Respo Lower	nse zone AND B seal TEST U KEY P J	Bulk Undi: Pisto Distu Envir	disturbed s isturbed san in sample urbed jar sai ronmental s	ample (nple I mple	·	(35) Und N = SPT	disturbe N value Total b g seatir	ed sample e (blows af blows/pen ng	blow co fter sea letration	ount ting) n		D	G	eosph	ere En	SHEET 8 OF 8 HOLE No. BHC18

CLIENT	: Suffo	lk Cour	nty C	Council	PROJECT: Lake Lo	othin	g				GRO	DUND	LEVEL	m					HOLE No. BHC19	
LOGGED				CHECKED BY: LF DATE:	EXCAVATION METHOD:		Cable Pe Jncased		n (shell and auger)		Coo	rdinate	es: ,						SHEET 1 OF 8	
FIELDWO TEMPLAT		EL AGS BH	BETA				Jiicased	1 (0 40.0	J III		DAT	ES 05-	Feb-1	8 - 1	6-Feb-	18			PROJECT NO. 2543,GI	
Date/Time and Depth	Depth of Casing	Depth* of Water	Piez.	Description of	Strata	Leg	Strata Reduced Level	Depth	Graphical Representation SPT 'N' Value	Samplir ed Depths		tu Testing Blows	SPT N	<425 %	WC F			r Cu g/m³ kN/m²	Additional Tests and Notes	
_			-+	TOPSOIL (Brown gravelly slightly with rootlets. Gravel of subang and chalk)				0.00		.20 .30 ES	B1 J1			, , , , , , , , , , , , , , , , , , ,				,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	VOC = 7ppm (peak)	
				MADE GROUND (Dark brown gr sand. Gravel of angular to subr	ounded flint and chalk)			0.40	0	.50 ES	В2								VOC = 4ppm (peak)	
-	_			Light brown slightly gravelly me Gravel of subangular to subroun	dium and coarse SAND. nded fine flint			0.80		.90 1 ES	B3								- VOC = 10ppm (peak)	
				1.20 Becoming gravelly with dep	oth															
-	_			Grey brown gravelly silty mediu occasional clay pockets. Gravel rounded fine and medium flint	m SAND with of subangular to	×		1.70		.70 C ES	B4 J4	11 33 33	12						VOC = 35ppm (peak) 5ppm (steac	ly). No odou
			-	Light brown gravelly medium ar of subangular to subrounded m	d coarse SAND. Gravel edium and coarse flint			2.20		.20 S ES	B6 J5	4 4 4 4 5 5	18						VOC = 3ppm (peak)	
_	_								3	.00 3 ES C	B7 J6	3 4 2 2	9						VOC = 33ppm (peak). No odour.	
										 - - - - -		32								
-	_					0			4	.00 4 ES C	B8 J7	2 2 3 4 7 7	21						VOC = 0ppm	
-	_			Orange brown gravelly silty med angular to subrounded fine to c				- 5.00	1	.00 5 ES C	B9 J8	23 45	22						VOC = 0ppm	
						0.						67								
*WATER	¥ Star ∇ Wat	nding wate ter strikes	er leve	el PIEZOMETER Upper si Respons Lower si	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed s listurbed san turbed san sample bed jar sar onmental si	ample (nple I nple		(35) Und N N = SPT	isturbe N value Total b g seatin	d sample (blows af lows/pen g	blow co ter seat etràtion	ount ing) n	Jec		Geos	sphere En	vironmental PC1	SHEET 1 OF 8
				DEPTH All depths, level and t				on sumple	\42	.s sumple	o passii	.p 453 IIII	o. o.i 310	••	C					

CLIEN	T: Suffe	olk C	ounty	/ Co	ouncil	PROJECT: Lake Lo	othin	g		on (shell and auger)		GR	OUND	LEVE	. m					HOLE No. BHC19
LOGGE					CHECKED BY: LF	EXCAVATION METHOD	: (Cable Pe	rcussic	on (shell and auger)		Cod	ordinat	es: ,						SHEET 2 OF 8
FIELDW TEMPLA	ORK BY: .TE REF: G	GEL AG	S BH BE	TA	DATE:			Uncased	(0 40.	.u m		DA	TES 05-	Feb-1	8 - 16-1	Feb-	18			PROJECT NO. 2543,GI
Date/Tim and Depth	e Depth of Casing	l d	ıf l∺	-	Description of	Strata	Leg	Strata Reduced Level	Depth			ling/In-S	itu Testin Blows	SPT N	<425 W		ratory L L 6 %	y Testir		Additional Tests and Notes
Бери		,	-	+-	Drange brown gravelly silty med	lium SAND Gravel of		Level	·	0 10 20 30 40	-		2.0113	N	% %	6 9	6 9	% IVIg	/III KN/m	
	+			a	orgular to subrounded fine to contain the subrounded fine to contain the subrounded fine and medicasional fine subangular flint	oarse flint <i>(continued)</i>	× .		- 6.00		.00 6 E	S B10	23 45 55	19						VOC = 0ppm
							×						55							
	+						× · · · · · · · · · · · · · · · · · · ·) } }	_		00 ⁷ E	S B11 C J10	12 33 78	21						VOC = 0ppm
	_			Bbw	Brown gravelly medium SAND w orown sandy clay. Gravel of fin- vith occasional coarse flint	ith thin bands of grey e and medium flint	×		8.00	8	8 - E	S B12 C J11	2 3 3 4 5 5	17						VOC = 0ppm
	_				Brown gravelly medium SAND. ine and medium flint	Gravel of subangular			9.00		00 9 E	S B13	23 34 57	19						VOC = 0ppm
							0			1	0.00 ¹⁰ E	S B14 C J13	3 4 5 5 5 6	21						VOC = 0ppm
*WATE	R ▼ Sta ∇ Wa	anding ater str	water le	evel	PIEZOMETER Upper se Respons Lower se	e zone AND B ral TEST U KEY P	Small Bulk d Undist Piston Distur	listurbed sa turbed san I sample bed jar sar	ample aple aple	•	(35) Ur N N = SP N*120 includi	ndisturbe TN value = Total I ng seatir	ed sample (blows a blows/per	blow c fter sea netratio	ount ting) n		D	Geos	sphere E	SHEET 2 OF 8 HOLE No. BHC19
					DEPTH All depths, level and t			onmental s r Sample	oil sample	e <42	5 Sample	e % passi	ng 425 m	icron si	eve	O				

CLIENT:	Suffo	lk County	· Council	PROJECT: Lake Lo	othin	g				GROUN	ID LEVE	L m					HOLE No. BHC19		
LOGGED B			CHECKED BY: LF DATE:	EXCAVATION METHOD	:			n (shell and auger)		Coordin	nates: ,						SHEET 3 OF 8		
FIELDWOF TEMPLATE		L AGS BH BE				Uncased	1 10 40.0			DATES (05-Feb-	18 - 1	L6-Feb	-18			PROJECT NO. 2543,G	il	
	Depth	Depth*				Strata				g/In-Situ Te					y Test		Additional Tests and Notes		
	Casing	Water	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	Typ	No. Blo	ws SPT	<425 %	WC %	PL I % '		r _{Cu} g/m³ kN/m²			
and	of	of E	Brown SAND and GRAVEL. Grarounded fine to coarse flint. Sa Grey brown sandy gravelly CLA subrounded to rounded mediu Orange brown sandy slightly cosubangular to rounded fine to of flint. Brown silty slightly gravelly fine subangular fine and medium fli	y. Gravel of m flint. Sand is medium bbly GRAVEL. Gravel of oarse flint. Cobbles of	Leg	Reduced Level	Depth 11.00 13.30 14.50	12.00 12 12.00 13 12.00 13 14.00 14	advir c	B15 2.5 6 6 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7 40 13 30 8 8 4 48 10 16 5 47 11	<42!	s wc %	PPL I		r Cug/m³ kN/m²			
TA 2543,GI-LAKEL	▼ Stan ▼ Wat	ding water le	evel PIEZOMETER Uppers Respon Lower's	se zone AND B eal TEST U	Bulk d	disturbed siturbed saturbed san	ample (S Standard penetration test Blows SPT b	Jndi:	8 1 13 s for each 75 sturbed sam	10 15 5mm incre	count					_	HOL BHC	2543,GI SHEET 3 OF 8
SEL AGS E			DEPTH All depths, level and	KEY P J ES	Piston Distur Enviro	n sample bed jar sar onmental s	mple	N*12 include	0 = 1 ding	Total blows/ seating	/penetration	on	0		Geo	sphere En	vironmental	HOLE No. BHC19	. ET 3,G



CLIENT	: Suffo	lk Cou	ınty (Council	PROJECT: Lake Lo	othin	g				GRC	UND I	LEVEL	m					HOLE No. BHC19	
LOGGED				CHECKED BY: LF	EXCAVATION METHOD:	:	Cable Pe	ercussio	on (shell and auger)		Cooi	rdinate	es: ,						SHEET 5 OF 8	
FIELDWO TEMPLAT		EL AGS E	BH BETA	DATE:			Uncased	1 to 40.0	0 m		DAT	ES 05-	Feb-1	8 - 1	6-Fe	o-18			PROJECT NO. 2543,GI	
Date/Time	Depth	Depth	*	·			Strata	1	Graphical Representation	$\overline{}$	ng/In-Sit	u Testing			La	borato	ry Te	sting	Additional Tests and Notes	
and Depth	of Casing	of Wate	. Piez.	Description o	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depti	ıs A	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r _{Cu} ⁄/g/m³ kN/m	2	
_	-			Grey brown silty fine SAND (con	tinued)			_	22.00	22- S	B34	87 88 911	36							
_	_							_	23.00	23	B37	(68)								
									23.60		UT35									
_	_							_	24.00	24 s	B39	28	32						_	
												78 89								
_	_			24.80 Becoming slightly gravelly fine shell fragments	with depth. Gravel of				25.00	25 S	B41	2 7 11 12 13 14	59*						_	
_	_		_	Grey slightly silty fine SAND wit	occasional fine shells			- 26.00	75 26.00	26 s	B43	25 14 16 20	75*						-	

-	_						-	_	27.00	27- C	B44	19 6 21 29	75*							
*WATER	▼ Star ▼ Wat	nding wa er strike	ater lev es	el PIEZOMETER Upper s Respon: Lower s	e zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed sidisturbed san disturbed san dist	ample (nple i nple	K Permeability test SPT N N N ii	35) Und = SPT *120 = icluding	listurbed N value (Total blog g seating	d sample (blows af ows/pen	blow co ter seat etratior	ount ing) 1		N N	Ge	osphere E	nvironmental BHC19 0.	SHEET 5 OF 8

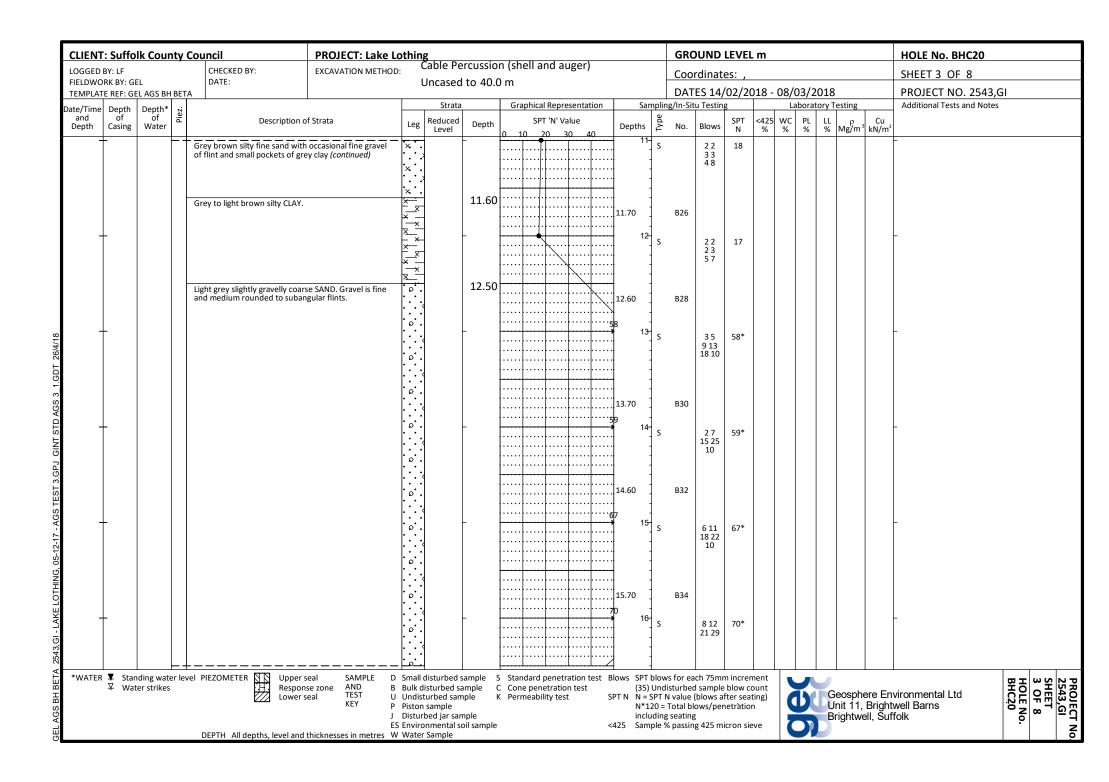
CLIENT	: Suffo	lk Cou	unty (Council	PROJECT: Lake L	othir	ng			GF	ROUND L	.EVEL	m						HOLE No. BHC19		
LOGGED E				CHECKED BY: LF	EXCAVATION METHOD):	Cable Pe	ercussio	on (shell and auger)	Со	ordinate	:s: ,							SHEET 6 OF 8		
FIELDWOI TEMPLATI		EL AGS E	зн ветл	DATE:			Uncased	to 40.0	0 m	DA	ATES 05-F	eb-1	8 - 1	.6-F	eb-1	3			PROJECT NO. 2543,GI		
Date/Time	Depth	Depth	*		•		Strata	9			Situ Testing						esting		Additional Tests and Notes		
and Depth	of Casing	of Wate	, Piez.	Description	of Strata	Leg	Reduced Level	Depth		No	. Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m ³	Cu kN/m²			
Depth	Casing	Wate		Grey slightly silty fine SAND w (continued)		Leg	Reduced Level	Depth	75	B48 B50	6 25 32 18 8 25 50 0 8 12 14 20 16 2 6 17 18 29 3		<425 %	%	% ***	\(\frac{1}{2}\)	Mg/m ³	Cu kN/m²	-		
*WATER	_ ▼ Star ⊽ Wat	nding wa	ater leves	rel PIEZOMETER Upper Respo Lower	nse zone AND B seal TEST U KEY P	Bulk Undi Pisto	I disturbed disturbed s sturbed san n sample	ample (K Permeability test SPT N N = SPT	sturb Valu Fotal	bed sample l ue (blows aft I blows/pene	blow co	ount ing)				eosph	ere En	- vironmental	6 OF 8 HOLE No. BHC19	SHEET

## MOUNT SUPPLY WITH THE PROJECT 1-12 Case MOUNT SUPPLY WITH Cepts Mount of the Part o	CLIENT	: Suffc	olk (Count	ty C	ouncil	PROJECT: Lake Lo	othin	g				GRO	UND	EVEL	m						HOLE No. BHC19		
Table Tabl							EXCAVATION METHOD):	Cable Pe	ercussio	on (shell and auger)		Coor	dinate	es: ,							SHEET 7 OF 8		
Part Part			SEL A	GS BH E	ЗЕТА				Uncased	1 to 40.0	0 m		DATI	ES 05-	Feb-1	8 - 1	.6-F	eb-18	3			PROJECT NO. 2543,GI		
Second Control Contr	Date/Time	Depth	De	pth*	ez.	•			Strata				g/In-Situ	u Testing										
Givey lightly life fine SAND with occasional fine shells	and Depth	of Casing	w	of /ater	ĕ	Description of	f Strata	Leg	Reduced Level	Depth	IN 10 20 30 40 /b I	Type	No.	Blows		<425 %	WC %	PL %	LL %	r Mg/m	Cu kN/m²			
	-					(continued) 36.00 Becoming slightly gravelly			Level		75 33.00 33 34.00 34 35.00 35 36.00 36	s	B56 B58 B60	12 13 30 20 10 15 20 30 9 14 24 26	75* 75* 73*	%	%	\(\frac{1}{2}\)	%	Mg/m	KN/m-	-		
Lower seal TEST U Undisturbed sample K Permeability test SPT N N =	*WATER	¥ Sta	anding	g water trikes	- + r leve	PIEZOMETER Upper so	e zone AND B TEST U	Small Bulk o	disturbed san	ample (S Standard penetration test Blows SPT b C Cone penetration test (35) L K Permeability test SPT N N = S	lows Jndis	for ead sturbed value (31 19 ch 75mm sample blows af	increm blow co	unt ing)				eosnh	ere En	vironmental	HOLE No.	SHEET

CLIENT	: Suff	olk	Coun	ity C	Council	PROJECT: Lake Lo	othin	ng				GRO	OUND	LEVEL	. m						HOLE No. BHC19
LOGGED	BY: JG				CHECKED BY: LF	EXCAVATION METHOD):	Cable Pe	ercussio	on (shell and auger)		Coo	rdinate	es: ,							SHEET 8 OF 8
FIELDWO TEMPLAT		GEL A	GS BH	BETA	DATE:			Uncased	to 40.0	υ m		DAT	ES 05-	Feb-1	.8 - 1	.6-F	eb-18	 3			PROJECT NO. 2543,GI
Date/Time	Depth	n D	epth*	èZ.				Strata	1	Graphical Representation		ing/In-Sit				L	.abora	tory T	esting		Additional Tests and Notes
and Depth	of Casing	g V	of /ater	Piez.	Description o	f Strata	Leg	Reduced Level	Depth		ths a	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m	Cu kN/m²	
-					Grey slightly silty fine SAND wit (continued)	n occasional fine shells		Level	- 40.00	0 10 20 30 40 75 39.00 39.00 374	39-5	B68	16 9 36 14	75*	**************************************	% 		***************************************	ivig/m	KN/M*	Borehole completed at 40m bgl. Backfilled with bentonite grout.
*WATER	¥ Sta ∇ W	andin	g wate	er leve	PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P J ES	Bulk o Undis Pistor Distu	disturbed s sturbed san n sample rbed jar san onmental s	ample (nple i mple		SPT blo (35) Un N = SPT N*120 includir	ws for eadisturbed N value Total blood seating % passin	d sample (blows af ows/pen	blow co ter sea etration	ount ting) n		D		eosph	ere En	SHEET SHEET 8 OF 8 BHC19 vironmental

CLIENT	: Suffo	olk (County	Council	PROJECT: Lake Lo	othir	ng		/	المعالما				GRC	DUND	LEVEL	. m					HOLE No. BHC20		
LOGGED		`F!		CHECKED BY: DATE:	EXCAVATION METHOD					shell and a	auger)			Coo	rdinate	es: ,						SHEET 1 OF 8		
FIELDWO TEMPLAT			GS BH BET				Uncased	1 to 40.0	U M					DAT	ES 14/	02/20)18 -	08/0	3/20	18		PROJECT NO. 2543,0	3l	
ate/Time			of Siez				Strata		G	raphical Rep	resentation	Sa		g/In-Sit	u Testing	5		La	orato	ry Tes	ting	Additional Tests and Notes		
and Depth	of Casing		of 불	Description o	f Strata	Leg	Reduced Level	Depth		SPT 'N' '	Value 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %		LL % N	ρ Cu 1g/m³ kN/m²			
-	-			MADE GROUND (FLEXIBLE SUR	<u> </u>	XX	3	0.00	Ĭ		7	0	1									-		
				MADE GROUND (Dark grey and gravel of subangular to subrou and flexible surfacing)	black slightly sandy nded fine to coarse flint	\bigotimes	3	0.10				0.30	ES	J1								VOC = 4ppm (peak)		
				MADE GROUND (Grey brown s to subrounded fine and mediu	andy gravel of angular n flint and clinker)	\bigotimes	<u> </u>	0.50				0.50	ES	В1								VOC = 0ppm		
				MADE GROUND (Orange brow medium sand. Gravel of subar flint)	n silty gravelly fine and gular to rounded fine	\bigotimes	<u> </u>	0.05						J2										
_	_			MADE GROUND (Multicoloured medium sand with occasional r	ockets of compacted			0.85				1.00	ES	В3								VOC = 1ppm (peak)		
				sand. Gravel of subangular to and occasional clinker)	subrounded fine flints	\otimes	}						s	J3	4 6 6 6	25								
						\otimes						1			67									
				Orange brown slightly silty gra		$\overset{\sim}{\bowtie}$	<u> </u>	1.70				1.70	ES	B5								VOC = 0ppm		
_	_			SAND. Gravel of subangular to	subrounded fine flint		:	-		······································		1.80	-	J4 B6	35	20						_		
							:						1		5 4 6 5	20								
						·					\]											
							:				::\\													
												2.80	ES	B8 J5								VOC = 0ppm		
												3	S		45 69 1210	37								
							:								12 10									
							:]											
												3.80	ES	B10 J6								VOC = 0ppm		
-	_						:	-				4	s	10	5 7 11 14	72*						-		
				Light brown silty fine SAND wit of flint	n occasional fine gravel	×		4.20]		17 18									
						×					- -// -	4												
						×						4.70	ES	B12 J7								VOC = 0ppm		
-	_			5.00 Sand becoming fine to me	dium with depth	×		-		 		5	s		33	24						-		
						×									35 79									
			<u> </u>			<u>×</u> _	<u>. </u>		ļ			1	1					Ш						
*WATER	▼ Sta ▼ Wa	nding ater st	g water lev trikes	vel PIEZOMETER Upper: Respon	se zone AND B	Bulk	l disturbed s disturbed sa sturbed san	ample (C Co	andard pene one penetrat ermeability te) Undi	isturbed	d sample	blow co	ount			Geo	osphere En	vironmental Ltd	HOLE No. BHC20	SHEET 1 OF 8
				N/V rowers	KEY P	Pisto Distu	n sample Irbed jar sar	nple		icubility te		N* inc	120 = ¹ luding	Total bl	ows/pen	etràtio	n			Uni	t 11, Bright ghtwell, Suf	well Barns	E No	~ ~
				DEPTH All depths, level and	ES	Envir	onmental s		9		<	425 Sar				cron sie	eve				,,		•	HEET LOF8

CLIENT	: Suffo	lk Cou	nty (Council	PROJECT: Lake L	othir	ng			- /ala all a sad a			GROUNI	LEVE	L m						HOLE No. BHC20
LOGGED I		-,		CHECKED BY:	EXCAVATION METHOD):			•	n (shell and auger)		L	Coordina	tes: ,							SHEET 2 OF 8
FIELDWO TEMPLAT			<u>н в</u> ет,	DATE:			Uncased	1 (0 40.0	.u m	III			DATES 1	1/02/2	018	- 08	/03/2	018			PROJECT NO. 2543,GI
ate/Time	Depth	Depth*	žē.				Strata	1	(Graphical Representation	San		In-Situ Test	ng			Labora				Additional Tests and Notes
and Depth	of Casing	of Water Descript		Description o	f Strata	Leg	Reduced Level	Depth	1 0	SPT 'N' Value 0 10 20 30 40	epths	Туре	No. Blow	SPT N	<425 %	5 W(PL %	LL %	ρ Mg/m	Cu kN/m²	
-	-			Light brown silty fine SAND wit of flint (continued)	occasional fine gravel	× · · · · · · · · · · · · · · · · · · ·		_		5.	70 - 6 - -		57 911 151!	62*							VOC = 0ppm -
-	-					× × × ×	`.	_		6.			J9 B16 2 4 4 4 9 10	27							VOC = 0ppm
-	-					× × × •	· · · · · · · · · · · · · · · · · · ·	-		7.	70 - 8 -	ES I	B18 J10 2 4 6 6 7 11	30							VOC = 0ppm _
_	_		_	Grey brown silty fine sand with of flint and small pockets of gre	occasional fine gravel y clay	×	· · · · · · · · · · · · · · · · · · ·	8.60			50 <u>-</u> - - 9 -	ES S	B20 J11 2 3 4 6 6 9	25							VOC = 0ppm _
-	-					× · · · · · · · · · · · · · · · · · · ·	: 	_		9.			J12 B22	60*							VOC = 0ppm -
		STATE OF THE PARTY				× · · · · · · · · · · · · · · · · · · ·	* • • • • •			10	.60 _ .11-	ES	11 13 13 13 B24 J13								VOC = 0ppm
WATER	▼ Star ∇ Wat	l Iding wa er strike	ter lev	rel PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk Undi: Pisto Distu	disturbed s disturbed s sturbed san n sample irbed jar san conmental s	ample (nple i mple	C C		(35) N N = S N*12 inclu	Undist PT N v 20 = To ding se	urbed samp alue (blows tal blows/p	le blow o after sea enetratio	count ating) on		O O	U	nit 11.	ere Env Brightvell, Suff	vironmental Ltd well Barns folk



PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC20** LOGGED BY: LF CHECKED BY: Coordinates: SHEET 4 OF 8 FIELDWORK BY: GEL Uncased to 40.0 m DATES 14/02/2018 - 08/03/2018 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % ρ Cu Mg/m³ kN/m² Depth Leg Depth Casing Water Depths No. Blows % Ν % Light grey slightly gravelly coarse SAND. Gravel is fine and medium rounded to subangular flints. (continued) 16.70 B36 45 23 46 67 17.50 Dark grey slightly silty/clayey fine SAND. 17.60 B38 35 25 5 7 67 18.60 Dark grey fine slightly silty SAND, with occasional shell 18.70 B40 196 75* 22 28 19.70 B42 214 75* 20 25 20.70 B44 12 13 75* 26 24 21.70 B46 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count Geosphere Environmental Ltd U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal KEY Unit 11, Brightwell Barns P Piston sample N*120 = Total blows/penetration Brightwell, Suffolk J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	Γ: Suff	folk	County		PROJECT: Lake Lo	othir	ng		,	(Jalandi and A			GRO	UND	LEVEL	m						HOLE No. BHC20		
LOGGED				CHECKED BY: DATE:	EXCAVATION METHOD	:	Caple Pe	ercussio	on (: ~~ ∩	(snell and auger)			Coor	dinate	es: ,							SHEET 5 OF 8		
FIELDWO TEMPLAT			AGS BH BET				Uncased	1 10 40.0	.U m	m				ES 14/)18 -						PROJECT NO. 2543,0	il	
Date/Time	Depti	h C	of Piez.				Strata		(Graphical Representation	Sai		g/In-Situ	u Testing				borat		esting		Additional Tests and Notes		
and Depth	of Casin	ıg V	of ë	Description of	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value 0 10 20 30 40 75	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	ρ Mg/m³	Cu kN/m²			
-	†		-	Dark grey fine slightly silty SAN fragments. (continued)	D, with occasional shell	×	;			, 10 20 30 40 7	22	S		16 9 22 28	75*							-		
						×.						1												
				David was Cl AV		<u> : :</u>		22.50	\ <u> </u>			1												
				Dark grey CLAY				22.50	'		22.60	1	B48											
							_					-												
-	+							-	<u> </u>		23.00 ²³	-	UT49									_		
												}												
				Dark grey coarse slightly shelly	SAND.	 	-	23.40)[}												
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							•]		27 23	, ,									
												1												
*WATER	R ▼ St ∇ W	tandi Vater	ng water lev strikes	vel PIEZOMETER Upper: Respon Lower:	se zone AND B seal TEST U KEY P J	Bulk Undi Pisto Distu Envir	disturbed s sturbed san n sample Irbed jar sai onmental s	ample (nple I mple	C C		(35) TN N = N*1	Undis SPT N 120 = T uding:	sturbed value (otal blo seating	l sample blows af ows/pen	blow co ter seat etration	ount ting) n			Ur	nit 11.	ere Env Brightvell, Suf	vironmental Ltd well Barns folk	HOLE No. BHC20	SHEET 5 OF 8

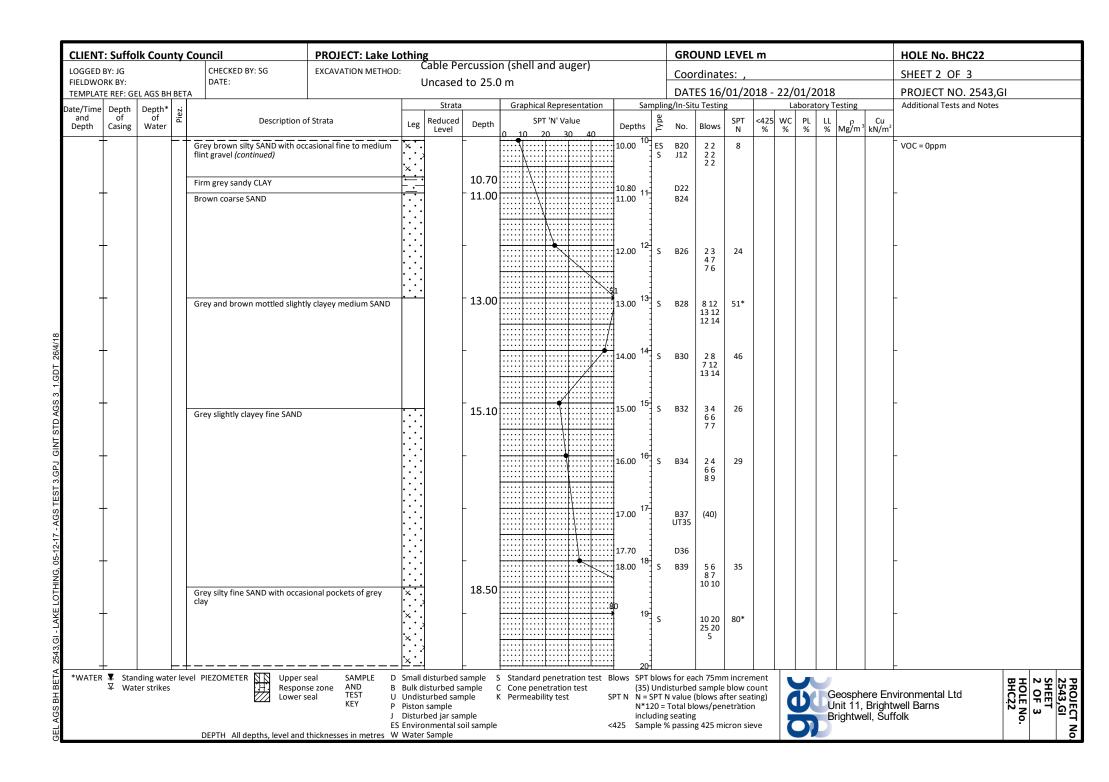
PROJECT: Lake Lothing

Cable Percussion (shell and auger) **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC20** LOGGED BY: LF CHECKED BY: Coordinates: SHEET 6 OF 8 FIELDWORK BY: GEL Uncased to 40.0 m DATES 14/02/2018 - 08/03/2018 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth of Depth' of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % ρ Cu Mg/m³ kN/m² Depth Leg Depth Casing Water Depths No. Blows N % % 20 30 Dark grey coarse slightly shelly SAND. (continued) 27.70 B59 28-223 71* 22 24 28.70 B61 169 75* 50 29.70 B63 30-223 75* 39 11 30.50 Dark grey silty fine SAND with shelly fragments. B65 30.70 25 42 75* 31.70 B67 178 75* 31 19 B69 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE SHEET 6 OF 8 HOLE No. BHC20 AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count Geosphere Environmental Ltd U Undisturbed sample SPT N N = SPT N value (blows after seating) K Permeability test Lower seal Unit 11, Brightwell Barns P Piston sample N*120 = Total blows/penetration Brightwell, Suffolk J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIEN	Γ: Suffe	olk (Count	y C	ouncil	PROJECT: Lake I	Lothir	ng				(GROUN	D LEV	EL m	1					HOLE No. BHC20		
LOGGED					CHECKED BY:	EXCAVATION METHO	D:	Cable Pe	ercussio	on (shell and auger)			Coordin	ates:	,						SHEET 7 OF 8		
FIELDWC TEMPLA			GS BH B	BETA	DATE:			Uncased	to 40.0	.u m			OATES 1		2018	3 - 0	8/03/	2018			PROJECT NO. 2543,	 3I	
ate/Time	Depth	De			-			Strata		Graphical Representation		npling/l	n-Situ Tes						Testing		Additional Tests and Notes		
and Depth	of Casing		of ater	Piez.	Description	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value De	oths	Туре	lo. Blov	/s SPT	Γ <4	25 V	VC PI	. LL %	ρ Mg/m	Cu kN/m²			
	+		T		Dark grey silty fine SAND with (continued)	shelly fragments.	- <u> </u> ×.	•	-	0 10 20 30 40 75	33-	S	18 24 2		_						-		
					(continueu)		×.	.1			1		24 2	١									
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*WATEF	R ▼ Sta ∇ Wa	andin ater s	g water trikes	leve	PIEZOMETER Upper Respoi	nse zone AND E seal TEST U KEY p	Bulk Undi Pisto Distu	-1 I disturbed sa disturbed san n sample Irbed jar sar conmental sa	ample (nple i nple		(35) N = 9 N*12 inclu	Undistu PT N va 20 = Tot ding se	rbed sam lue (blow al blows/	ole blow s after s penetrat	count eating tion	it g)	dec		⊥ Geosph Jnit 11 Brightw	nere En Bright ell, Suf	vironmental Ltd well Barns folk	HOLE No. BHC20	SHEET 7 OF 8

and of	GS BH BET/ epth* 23 of 25 Aater -	CHECKED BY: DATE: Description o Dark grey silty fine SAND with s (continued)		Leg	Strata	1 to 40.0	U M	shell and au Graphical Repre	ger)			Coordina	tes: ,						SHEET 8 OF 8		
remplate REF: GEL AG ate/Time Depth De and of	epth* zi	Description o	f Strata	Leg	Strata	1 to 40.0	U M	1													
ite/Time Depth De	epth* zi	Description o			Reduced		Gi	Granhical Renre				DATES 14	/02/2	018 -	08/0	3/20:	L8		PROJECT NO. 2543,0	il .	
and of ODepth Casing W	of జ	Dark grey silty fine SAND with s			Reduced Level			отартнеат перте.	sentation	Sa	mpling/	In-Situ Testi			La	orator	/ Testing		Additional Tests and Notes		
-		Dark grey silty fine SAND with s (continued)	helly fragments.	·x · .		Depth		SPT 'N' Va		Depths	Туре	No. Blows	SPT N	<425 %	WC %	PL L	L β Mg/n	Cu kN/m²			
				× · · · · · · · · · · · · · · · · · · ·		- 40.00			7	38.70 5 3: 39.70 5 4: 4:	9- s	B81 18 7 32 18 B83 12 13 22 28	75*								
WATER \$\frac{\Pi}{\Pi}\$ Standing \$\frac{\Pi}{\Pi}\$ Water st	g water lev trikes	vel PIEZOMETER Upper s Respon: Lower s	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor Distur	disturbed saturbed saturbed sann sample rbed jar saronmental s	ample (nple k mple	C Co K Pe	standard penetra Cone penetration Permeability test	test S	(35) PTN N = N inc	Γ blows f i) Undist : SPT N v 120 = To luding se	urbed samp ralue (blows rtal blows/po	e blow c after sea netratio	ount iting) in			Geosp Unit 11 Brightv	here En I, Bright vell, Suf	rvironmental Ltd twell Barns ffolk	HOLE No. BHC20	SHEET

CLIENT	: Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	othir	ng			/-llll -			GRC	UND	LEVEL	. m					HOLE No. BHC22	
LOGGED				CHECKED BY: SG DATE:	EXCAVATION METHOD					(shell and auger)			Coo	rdinate	es: ,						SHEET 1 OF 3	
FIELDWO TEMPLAT		EL AGS B	H BETA				Uncased	10 25.0	.u m	n			DAT	ES 16/	01/20)18 -	22/0	1/20:	18		PROJECT NO. 2543,GI	
ate/Time		Depth*	Piez.				Strata		(Graphical Representation	Sa		g/In-Sit	u Testing	Į.		Lak	orator	y Tes	sting	Additional Tests and Notes	
and Depth	of Casing	of Water	ä	Description o	f Strata	Leg	Reduced Level	Depth		SPT 'N' Value	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL I	LL N	ρ Cu /lg/m³ kN/m²		
_	_		Ħŧ	FLEXIBLE SURFACING		X	\$	0.00		10 20 30 40	0	+									-	
				MADE GROUND (Brown gravell and medium brick, flint and flex		\otimes	Š	0.15		0	20	ES	B1 J1								VOC = 53ppm (peak)	
				fragments)	dible surracing	\otimes	\geqslant			0	50	ES	B2 J2								VOC = 98ppm (peak)	
-	-					\bowtie	2	1 10			1	-	32								_	
				Orange brown slightly clayey fit with occasional fine and mediu	ne and medium SAND m flint gravel			1.10	:::	<i>f</i> 1	20	ES S	B4 J3	12	12						VOC = 6ppm (peak)	
				Orange brown clayey fine SANI		· :-	<u>.</u>	1.70]	13	2 3 3 4								
-	-			Orange brown clayey fille SANG	,	-:-		-			00 2	ES	J4	(17)							VOC = 2ppm (peak)	
						<u>:-:</u>	<u>.</u>			2		15	UT5	(1)							νος – Σρριτι (ρεακ)	
							<u>:</u>			2	.60]	D6									
-	-					F:_	<u>:</u>	_	 	2	00 3	+ FS	R8	00	4						VOC = 1ppm (peak)	
							<u>.</u>		:::	3	.00	ES S	B8 J5	11	-						VOC - Ippini (peak)	
						<u> </u>	-					1										
-	F						<u>.</u>	-			00 4	ES	B10	11	11						 VOC = 0ppm	
						-:-	<u>:</u>		:::	4	.00	S	J6	22	11						VOC - оррии	
				Brown silty SAND with occasion	al thin bands of grey		-	4.50	:::	-/		1		34								
_	_			clay	a domáh		1	-		5	5	1	D13	11	_							
				5.00 Becoming grey brown with	i deptri	: :					.00	ES S	B12 J7	11 11 22	6						VOC = 0ppm	
						.:.	1		1			1		22								
_	_					: :	•	_			. 6	1	544		20							
									:::	6	.00	S	B14 J8	23 67	29						VOC = 0ppm	
						: :	•		1:::]		88								
								_	1:::	7	7	1									_	
							•		:::	7	.00	ES C	B15 J9	11 21	7						VOC = 0ppm	
]		22								
							•		1:::	:::::::::::::::::::::::::::::::::::::::	8	1									=	
										8	.00	ES C	B16 J10	11 11	6						VOC = 0ppm	
							•					1		22								
						• : •	<u>:</u>	- 0 00			۵]										
				Grey brown silty SAND with occ flint gravel	casional fine to medium	×	;	9.00	:::	9	.00	ES S	B18 J11	23 47	26						VOC = 0ppm	
				-		×	.]					1		78								
						<u>.</u>					40]										
*WATER	▼ Stai	nding wa	ter leve	el PIEZOMETER De Uppers						Standard penetration test Blo										I	m =	<u>ب</u> د
	¥ Wa	ter strike	S	el PIEZOMETER Upper s H. Respon Lower s	eal TEST U	Undi	disturbed sam			Cone penetration test Permeability test SPT	N N=	SPT N	I value (l sample [blows af	ter seat	ting)		M			vironmental Ltd well Barns folk	SHEET 1 OF 3
					KEY P	Pisto	n sample Irbed jar san			•	N*:	120 = 1		ows/pen			2			it 11, Bright ghtwell, Suf	well Barns	₃ ⊣
				DEPTH All depths, level and	ES	Envir	ronmental so		е	<42				g 425 mi	cron sie	eve			ي او	grittvicii, Oui		



CLIEN	T: Su	ıffolk	Cour	nty C	ouncil	PROJECT: Lake L	.othir	ng					GI	ROUND	LEVE	. m					HOLE No. BHC22		
LOGGED					CHECKED BY: SG	EXCAVATION METHO	D:	Cable Pe	ercussio	on (shell a	and auger)		Co	ordinat	tes: ,						SHEET 3 OF 3		
FIELDW! TEMPLA			AGS BH	I BETA	DATE:			Uncased	1 to 25.	.0 m			DA	ATES 16	/01/20	018 -	22/0	01/20	18		PROJECT NO. 2543,0	GI	
Date/Time	e Dep	pth [Depth*	Piez.				Strata		Graphic	al Representation	Sa	mpling/In-	Situ Testir	ng		La	borato			Additional Tests and Notes		
and Depth	Casi	ing	of Water	ä	Description of	f Strata	Leg	Reduced Level	Depth		PT 'N' Value	Depths	P No	. Blows	SPT N	<425 %	WC %	PL %	LL % Mg	ρ Cu g/m³ kN/m	2		
-LAKE LOTHING, 05-12-17 - AGS TEST 3.GPJ GINTSTD AGS 3_1.GDT 26/4/18	Casi	ing .	water		Grey silty fine SAND with occasi clay (continued)		x	Level	- 25.00	D	20 30 40	26 25 26 26 25 26 26 26 26 26 26 26 26 26 26 26 26 26		Blows	N	%	%	%	% Mg	i/m³ kN/m			
GEL AGS BH BE LA 2543, GI	R ¥ ∇	Standi Water	ng wate strikes	er leve	PIEZOMETER Upper s. Respons Lower s.	se zone AND B eal TEST U KEY P J E	Bulk (Undis Pistor Distu S Envir	disturbed sa sturbed san n sample rbed jar sar onmental s	ample nple mple	S Standard C Cone per K Permeab	I penetration test BI netration test SI illity test SI	(35) PTN N = N*: incl		oed sample le (blows a blows/pe ing	e blow cafter sea netratio	ount ting) n		וע	Unit	sphere Ei 11, Brigh ntwell, Su	nvironmental Ltd twell Barns ffolk	HOLE No. BHC22	2543,GI SHEET 3 OF 3

CLIENT	: Suffo	olk C	County	Council	PROJECT: Lake Lo	othin	ig		and the second second		GRO	DUND	LEVEL	. m						HOLE No. BHC23
LOGGED FIELDWO				CHECKED BY: SG DATE:	EXCAVATION METHOD):	Cable Pe Uncased		on (shell and auger)		Coo	rdinat	es: ,							SHEET 1 OF 3
		GEL AG	SS BH BET				Ulicasec	1 (0 15.0	O III		DAT	ΓES 26-	Feb-1	.8 - 2	7-Fe	b-18				PROJECT NO. 2543,GI
ate/Time	Depth	De	of Zi				Strata	1	Graphical Representation			tu Testin					ory Te	esting		Additional Tests and Notes
and Depth	of Casing		of i≝ ater	Description	of Strata	Leg	Reduced Level	Depth	SPT 'N' Value D	epths 원	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³ ki	Cu N/m²	
-	_			TOPSOIL (Dark brown silty fine	and medium sand with	-		0.00	0 10 20 30 40	0 -									Ŧ	
				occasional flint gravel)						}										
									0.5	BO ES	B1 J1									VOC = 0ppm
				MADE GROUND (Dark brown g	gravelly fine to coarse			0.60]										
				MADE GROUND (Dark brown g sand with occasional pockets of black sand and occasional cob of angular to subrounded fine	of orange brown and bles of concrete. Gravel	\bowtie			0.7	70] ES	B2 J2									VOC = 1ppm (peak)
_	-			of angular to subrounded fine and occasional brick)	to coarse flint, concrete	\otimes	3	-		1-									F	
				Oranga haassa fina and madis	m CAND with a consist of	<u> </u>	4	1.20		, 1	D2									
				Orange brown fine and mediu rounded flint	III SAMD MINI OCCASIONAL	· · ·	.	20	1.2		D3	1.3	9							
									1.5		B4 J3	12 22 23	9							VOC = 2ppm (peak)
						· · ·						23								
_							<u>'</u>	- 2.00		2 - 6									L	
				Orange brown slightly clayey f with occasional pale grey mott				2.00	2.0	00 ² s	В6	12 23 33	11							
				2.20 Bands of clay becoming n	nore frequent with depth		.		2.5	30 ES	J4	33								VOC = 1ppm (peak)
							:													Pr drawn
							·													
										1										
-	_							-	3.0	00 ^{3 -} s	В8	11	17						r	
										1		3 3 4 7								
									3.5	BO ES	J5									VOC = 2ppm (peak)
						: · : ·				}										
							:			-										
-	-			Orange brown silty fine and m	edium SAND with	×		4.00	72	00 4] s	B10	67	72*						ŀ	
				occasional fine flint gravel	Calam 5/145 With	· ` `	}			, 1	510	9 14 21 15	, -							
						×			4.5	80] ES	J6									VOC = 1ppm (peak)
						×				1										
						×·	.]			1										
						×				5 -									L	
						· . · .	.}		5.0	00 ^{5 -} S	B12	1 2 9 10	44							
						×	· <u> </u>		5.3	30 ES	J7	12 13								VOC = 1ppm (peak)
						<u>'×</u> _				1										
'WATER	▼ Sta ∇ Wa				nse zone AND B	Bulk	disturbed s	ample (S Standard penetration test Blow C Cone penetration test	(35) Und	listurbe	d sample	blow co	ount						BE HO
				Lower	seal TEST U KEY P	Pistor	sturbed san n sample		K Permeability test SPT I		Total b	lows/per				D	Ge	eosphere	e Envi	ironmental SHEET SHEET BHCL23 BHCC3
					J	Distu	rbed jar saı onmental s		<425	includin Sample	g seatin	g			7	77	5			Vo. 3
				DEPTH All depths, level and								J								

CLIENT	: Suff	olk	Coun	ty C	Council	PROJECT: Lake Lo	othin	ıg					GRO	DUND	LEVEL	. m						HOLE No. BHC23
LOGGED					CHECKED BY: SG	PROJECT: Lake Lo	:	Cable Pe	ercussio	on (s	(shell and auger)		Coo	rdinate	es: ,							SHEET 2 OF 3
FIELDWO TEMPLAT		GEL A	GS BH I	ВЕТА	DATE:			Uncased	1 (0 15.0	.u m	m		DAT	ES 26-	Feb-1	8 - 2	7-Fe	b-18	3			PROJECT NO. 2543,GI
ate/Time	Depth	D			•			Strata	ļ	(Graphical Representation		ing/In-Si	u Testing				borat		esting		Additional Tests and Notes
and Depth	of Casing	g v	of /ater	Piez.	Description of	Strata	Leg	Reduced Level	Depth	١	SPT 'N' Value 0 10 20 30 40	ths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²	
-					Orange brown silty fine and me occasional fine flint gravel (cont	inued)	×		- 6.00		71 6.00 6.30 7.00	7 - S	B15	8 13 12 15 16 7	71*							VOC = 0ppm
-	_										8.30		B17	10 14 58	18							- VOC = 0ppm
-	_				9.80 - 10.20 Band of grey clay						9.00] E:	B19 5 J11	2 2 5 7 10 13	35							VOC = 0ppm
_											10.5	o '0] s	B22 B22	2 6 8 14 13 12	47							VOC = 1ppm (peak)
*WATER	▼ Sta ▼ Wa	andin ater s	g water strikes	r leve	el PIEZOMETER Upper si Respons Lower si	e zone AND B eal TEST U KEY P	Bulk of Undis Pistor Distu	disturbed s disturbed s sturbed san n sample rbed jar san onmental s	ample (nple i mple	C Co	·	(35) Un N = SPT N*120 includii	disturbe N value	d sample (blows af lows/pen	blow co ter seat etràtion	ount ting) n		D D		eosphe	ere En	Vironmental SHEET SHEET BHC23

CLIENT	Ր։ Suff	olk C	ounty	Council	PROJECT: Lake Lo	othin	g			G	ROUND	LEVEL	. m						HOLE No. BHC23		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD	: (Cable Pe		n (shell and auger)	С	oordinate	es: ,							SHEET 3 OF 3		
FIELDWC TEMPLAT		GEL AG	S BH BET	DATE:			Uncased	to 15.0) m		ATES 26-		8 - 2	7-Fe	b-18	 3			PROJECT NO. 2543,G	1	
Date/Time	Depth	Dei			•		Strata	I		ng/Ir	-Situ Testing			La	borat	ory Te	esting		Additional Tests and Notes		
and Depth	of Casing	g Wa	oth* of ater	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	N	o. Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m³	Cu kN/m²			
- LANE LOTRING, 03-12-17 (USE TRIS ONE), 673 GINT STUARS STUGDT 3-3-18	Casing		ater	Yellow brown silty fine and me 11.00 Becoming grey brown will yellow brown silty medium and occasional dark orange brown rounded flint Grey CLAY Grey brown silty fine and medi	dium SAND (continued) th depth Coarse SAND with sand pockets and		Level	12.60 13.00	12.00 ¹² s	B. B. B. B. B. B. B. B. B. B. B. B. B. B	1 1 3 6 7 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8 9 8	N 30 44 44 44 311	%	%	%	%	Mg/m ³	kN/m²			
*WATER	R ▼ Sta ▼ Wa	anding ater st	water le rikes	vel PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P J ES	Bulk of Undis Pistor Distur Enviro	disturbed sa sturbed sam n sample rbed jar san onmental so	ample (nple i nple	5 Standard penetration test Blows SPT blo Cone penetration test (35) Un Permeability test SPT N N = SPT N*120 including	distui N va Tota g sea	bed sample ue (blows at Il blows/pen ting	blow co ter sea etratio	ount ting) n	-	ング	Ge	eosphe	ere En	vironmental	HOLE No. BHC23	2543,GI SHEET 3 OF 3

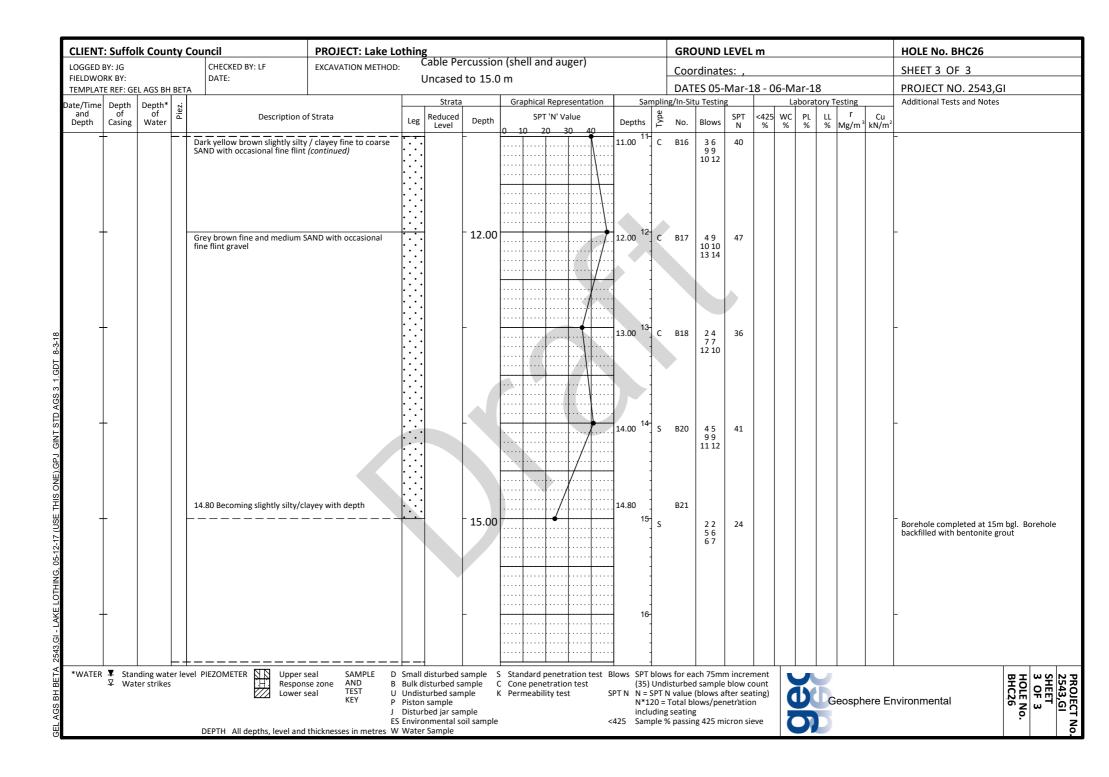
PROJECT: Lake Lothing **CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC24** Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: EXCAVATION METHOD: Coordinates: SHEET 1 OF 3 FIELDWORK BY: GEL Uncased to 15.0 m DATES 14/02/2018 - 23/02/2018 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes Date/Time Depth Depth' of of Description of Strata Reduced SPT 'N' Value Гуре <425 WC PL % LL % ρ Cu Mg/m³ kN/m² Leg Depth Depth Casing Water Depths No. Blows Level Ν % % 20__30 0.00 CONCRETE (Pale grey, no rebar) Standpipe installed at 0m 0.15 MADE GROUND (Intact bricks and cobbles of brick) 0.23 0.25 J1 MADE GROUND (Orange brown and dark orange Standpipe installed at 0.1m brown silty gravelly fine to coarse sand with occasional pockets of black / dark brown silty sand VOC = 1ppm (peak) VOC = 1ppm (peak) ES J2 0.35 Becoming grey brown in colour with depth 0.50-В 1 0.60 MADE GROUND (Black silty slightly gravelly fine and medium sand with moderate natural organic odour. 0.70 Gravel of angular to subrounded fine and medium flint and clinker) 1.00 ES VOC = 1ppm (peak) Mag0 = DOV 1.50 ES 1.90 Grey brown silty slightly gravelly fine and medium SAND with weak natural organic odour to 2.5m. Gravel of subangular to rounded fine flint. 2.10 VOC = 2ppm (peak) 6 ĒS J5 2.50 8 VOC = 2ppm (peak) l ES 16 3 3.50 10 VOC = 1ppm (peak) ES J7 VOC = 5ppm (peak) 4.50 12 ĒS J8 5 *WATER \ Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND TEST Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count Geosphere Environmental Ltd U Undisturbed sample N = SPT N value (blows after seating) K Permeability test Lower seal KEY Unit 11, Brightwell Barns P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating Brightwell, Suffolk ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIEN.	T: Suff	olk C	ount	ty Co	ouncil	PROJECT: Lake Lo	othin	g							GRC	DUND	LEVE	L m						HOLE No. BHC24			
LOGGED		CEL			CHECKED BY:	EXCAVATION METHOD	:	Cable Pe	ercussio	on (sh	ell and	auger)			Coo	rdinat	es: ,							SHEET 2 OF 3			
	ORK BY: (TE REF: (SS BH E	BETA	DATE:			Uncased	to 15.	.0 m					DAT	ES 14/	02/20	018 -	23/0)2/20)18			PROJECT NO. 2543,0	GI		
Date/Time	Depth of	Dep	pth*	Piez.				Strata		Gra	aphical Re	epresentation	Sa	т-	g/In-Sit	tu Testin	g	-		borato	ry Tes	sting		Additional Tests and Notes			
and Depth	of Casing	g Wa	of ater	ă.	Description of	Strata	Leg	Reduced Level	Depth		SPT 'N 0 20	I' Value 30 40	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL % N	ρ ⁄lg/m³	$\frac{Cu}{kN/m^2}$				
	_				ight grey brown silty fine SAND		× × ×	· · · · · · · · · · · · · · · · · · ·	5.50				5.50 6 -	B ES	14 J9									VOC = 3ppm (peak)			
							×	· · · · · · ·	_				6.50	B ES	16 J10									VOC = 1ppm (peak)			
							×		_				7.50	B ES	18 J11									VOC = 2ppm (peak)			
				Light brown fret slightly silty slightly gravel SAND.		htly gravelly medium	× × × × ×		8.10				8.50	B ES	20 J12									VOC = 2ppm (peak) / CO = 4	1ppm (pe	ak)	
							x		_				9.50		22 J13									VOC = 1ppm (peak)			
				water level PIEZOMETER Upper seal SA Response zone AN Lower seal TE			×						10.50	В	J14 24									VOC = 1ppm (peak) / CO = 4	1ppm (pe	ak)	
*WATEI	+ R ▼ Sta ∇ Wa	anding ater st	water rikes	- + - r level	Respons Lower se	e zone AND B ral TEST U KEY P J ES	Bulk o Undis Pistor Distu	disturbed sa sturbed sam n sample rbed jar san onmental so	ample nple nple	C Con K Perr			(35) PTN N = N*1	blows Undis SPT N 20 = T	sturbed value Fotal bl seating	d sample (blows a lows/per	blow c fter sea netratio	ount iting) n		N N	Uni	it 11. I	ere En Bright	E vironmental Ltd well Barns folk	HOLE No. BHC24	SHEET 2 OF 3	PROJECT NO
					DEPTH All depths, level and t									, , , , ,	,	J	3	-									

■ FIELDWORK BY: GEL DATE: Uncased to 15 () m	D. Blows SPT <425 WC PL LL % PMg/m ³	SHEET 3 OF 3 PROJECT NO. 2543,GI Additional Tests and Notes Cu kN/m²
TEMPLATE REF: GEL AGS BH BETA Date/Time and Depth of Casing Water of Casing by Water of	SPT A25 WC PL LL P Mg/m 3	Additional Tests and Notes
Date/Time and Depth of Casing Depth of Casin	SPT A25 WC PL LL P Mg/m 3	Additional Tests and Notes
Depth Casing Water Leg Leg Depth Q 10 20 30 40 Depths ≥ No	6	Cu
Light brown fret slightly silty slightly gravelly medium SAND. (continued) Brown slightly gravelly medium SAND. Gravel is fine subangular flints. 11.30 11.50 B 26 Grey silty CLAY Grey silty fine SAND.	6	
Brown slightly gravelly medium SAND. Gravel is fine subangular flints. 11.30 11.50 B 26 Grey silty CLAY Grey silty Fine SAND. 12.30 12.30 12.50 B 29		-
Subangular flints. 11.50 B 26		-
Grey silty CLAY Grey silty fine SAND. 11.50 B 26 12.10 12.30 12.50 B 29		_
Grey silty CLAY Grey silty fine SAND. 12.10 12.30 12.50 B 29	9	_
Grey silty CLAY Compared to the compared to	9	_
Grey silty CLAY Compared to the compared to	9	
Grey silty fine SAND. 12.30 12.50 B 29	9	
12.50 B 29	9	
Brown grey silty SAND with occasional fine subangular		
Brown grey silty SAND with occasional fine subangular x		
flint gravel. 13.50 B 31		-
13.50 B 31		
Grey silty fine SAND. 14.50	1	
Grey silty fine SAND. 14-		
Grey silty fine SAND. 14.50 15.00 15.00 16.50 17.50 18.50 18.50 19.50		
Grey silty fine SAND. 14.50 B 33		
Grey silty fine SAND. 14.50 B 33		
Grey silty fine SAND. 14.50 14.50 15.00 15		
15.00	3	
15.00		
5		
5		
- - - - - - - - -		-
*WATER \$\Pi\$ Standing water level PIEZOMETER \$\Bar{\Pi}\$ Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for		
*WATER \$\frac{\psi}{\psi}\$ Standing water level PIEZOMETER Response zone Lower seal ESPT N aluments of the content of the cont	r each 75mm increment	lere Environmental Ltd BHCLE No. 3 OF 3 OF 3 OF 3 OF 3 OF 3 OF 3 OF 3 O

CLIENT	lk Count	y Co	ouncil	PROJECT: Lake Lo	othing						JND L	EVEL	m			HOLE No. BHC26				
LOGGED E				CHECKED BY: LF	EXCAVATION METHOD:				n (shell and auger)		Coordinates: ,							SHEET 1 OF 3		
		EL AGS BH B	ETA	DATE:		Uncased to 15.0 m					DATES	S 05-N	√lar-1	8 - 0	06-N	/lar-1	.8			PROJECT NO. 2543,GI
Date/Time and	Depth of	Depth*	Piez.				Strata		 		/In-Situ	Testing						Testing r		Additional Tests and Notes
Depth	Casing	Water	۵.	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths P	ı Abe	No. E	Blows	SPT N	<425 %	WC %	PL %	LL %		Cu kN/m²	
	=		(MADE GROUND (Dark brown gr coarse sand. Gravel is angular t coarse flint, brick, clinker and cl	o subrounded fine to			0.00	0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -	:S	B1 J1									VOC = 0ppm
_	_		- 1 1	MADE GROUND (Dark brown ar to coarse sand with occasional occasional black sand pockets	d orange brown fine subrounded flint and			0.70	0.70 0.80 E	S	B2 J2									VOC = 0ppm _
				Dark yellow brown slightly silty SAND with occasional fine flint	/ clayey fine to coarse			1.30		S S		2 2 4 6 6 6	22							VOC = 0ppm
	_			2.50 Becoming gravelly with de	oth			_	2.00 2 5	SS S	J4	2 4 4 5 6 6	21							VOC = 0ppm
	_								2.80	SS C	J5	2 2 2 3 4 5	14							VOC = 0ppm
-	_							-	4.00 4	SS C	J6	1 1 2 2 4 4	12							VOC = 0ppm
	_							_	5.00	SS C	J/	1 2 4 4 3 4	15							VOC = 0ppm
*WATER	¥ Star ¥ Wa	nding water ter strikes	level	I PIEZOMETER Upper s Respons Lower s	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed si listurbed san turbed san sample bed jar san onmental s	ample (nple nple	K Permeability test SPT N N = SP N*120 includi	ndis T N = T ing s	turbed s value (bl otal blov seating	sample lows af ws/pen	blow co ter sea etratio	ount ting) n		1		Geosp	here Er	SHEET 1 OF 3 HOLE No. BHC26
į				DEPTH All depths, level and				on sample	. \423 Sampi	C /0	hassiii ,	76J IIII	UII 31t	.vc						•

CLIENT	: Suffo	lk County	/ Council	PROJECT: Lake Lo	othing					GROUND LEVEL m									HOLE No. BHC26
LOGGED			CHECKED BY: LF	EXCAVATION METHOD:	HOD: Cable Percussion (shell and auger) Coordinates: .								SHEET 2 OF 3						
	LDWORK BY: APLATE REF: GEL AGS BH BETA						Uncased to 15.0 m						L8 - C)6-M	ar-1	8			PROJECT NO. 2543,GI
Date/Time	Depth	Depth* -	<u> </u>		Strata					ling/In-Situ Testing					aborat		esting		Additional Tests and Notes
and Depth	of Casing	of G	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value	Depths 2	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m³	Cu kN/m²	
-	_	_	Dark yellow brown slightly silty SAND with occasional fine flint	/ clayey fine to coarse (continued)			_	0 10 20 30 40	6.00 6 - ES	8 B11 J8	1 1 3 2 3 3	11					- 5	,	VOC = 0ppm
<u>-</u>	_						_		7.00 7 - ES C	5 B12 J9	2 3 3 3 4 3	13							VOC = 0ppm
_	_		8.00 - 9.50 Becoming dark oran	ge brown					8.00 8 ES C	5 B13 J10	2 3 4 4 6 7	21							VOC = 0ppm
-	_						-		9.00 ⁹ ES C	5 B14 J11	1 4 4 5 4 8	21							VOC = 0ppm
_									10.00 ¹⁰ - ES C	5 B15 J12	2 4 7 10 11 13	41							VOC = 0ppm
*WATER	▼ Star ▼ Wat	nding water l eer strikes	level PIEZOMETER Upper's Respon:	se zone AND B eal TEST U KEY P	Bulk d Undis Pistor Distur	listurbed sa turbed sam I sample bed jar sar	ample (aple I aple	·	(35) Un TN N = SPT N*120 = includin	disturbe N value Total b g seatin	d sample (blows a lows/per g	blow of fter sea netratio	ount iting) n			G	eosph	ere Er	2543,GI SHEET 2 OF 3 HOLE No. BHC26
			DEPTH All depths, level and	j ES	Distur Enviro	bed jar sar onmental s		<6		g seating	g				5		созрп	GIG EI	6 N Θ Θ



CLIENT: Suffolk County Council PROJECT: Lake Lothing GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 2 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 wc PL % Leg Depth Depth Casing Water Depths No. Blows % Level Ν % Grey brown silty fine and medium SAND (continued) 6.00 В7 23 18 33 5 7 6.20 ES J8 VOC = 0ppm 5 5 5 7 7 7 7.00 S В9 26 7.10 ES J9 VOC = 0ppm 8.00 C B10 23 26 8.10 ES J10 45 89 VOC = 0ppm 9.00 22 C B11 5 5 9.10 ES J11 VOC = 0ppm 10.00 3 2 B13 14 10.10 ES J12 3 3 VOC = 0ppm 10.20 Yellow brown slightly silty gravelly SAND. Gravel of angular to subrounded fine to coarse flint ٥. SAMPLE *WATER \(\Pi \) Standing water level PIEZOMETER D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET
2 OF 10
HOLE No.
BHC27 Upper seal AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 4 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N Level % Dark grey silty fine and medium SAND with occasional pale brown mottling (continued) 17.00 45 79 S B26 38 10 12 18.00 S B28 2 4 40 6 8 12 14 19.00 S B30 3 10 63* 18 24 20.00 20 S B32 78 65* 12 13 15 10 20.30 Dark yellow brown medium and coarse SAND 20.40 Dark grey silty medium SAND 21.00 21 S B34 7 10 40 108 10 12 21.60 Dark grey sandy CLAY SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SHEET
4 OF 10
HOLE No.
BHC27 AND ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count TEST U Undisturbed sample K Permeability test SPT N N = SPT N value (blows after seating) Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 6 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² and of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey silty fine and medium SAND (continued) 28.00 ²⁸1 7 19 21 29 S B50 76* 29.00 S B52 10 16 76* 35 15 30.00 S B54 4 15 69* 23 27 31-31.50 S B56 12 17 79* 24 26 B58 68* 32.50 8 13 19 24 4 D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SAMPLE SHEET 6 OF 10 HOLE No. BHC27 AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 7 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu Mg/m³ kN/m² of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey silty fine and medium SAND (continued) 68* 33.50 B60 8 10 S 13 17 20 34.50 S B62 6 17 73* 20 27 3 35.50 S B64 20 27 97* 36 14 36.50 S B66 5 12 67* 24 26 37.50 S B68 17 20 87* 25 25 *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 7 OF 10 HOLE No. BHC27 AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample K Permeability test Lower seal Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

PROJECT: Lake Lothing CLIENT: Suffolk County Council GROUND LEVEL m HOLE No. BHC27 Cable Percussion (shell and auger) LOGGED BY: LF CHECKED BY: SG **EXCAVATION METHOD:** Coordinates: SHEET 9 OF 10 FIELDWORK BY: Uncased to 50.0 m DATES 02-Jan-18 - 15-Jan-18 PROJECT NO. 2543.GI TEMPLATE REF: GEL AGS BH BETA Strata **Graphical Representation** Sampling/In-Situ Testing Laboratory Testing Additional Tests and Notes ate/Time Depth Depth³ LL r Cu % Mg/m³ kN/m² of of Description of Strata Reduced SPT 'N' Value <425 WC % PL % Leg Depth Depth Casing Water Depths No. Blows N % Level Dark grey silty fine and medium SAND (continued) 44.20 White shell fragments present with depth 44.20 B81 44.50 B83 12 15 77* S 26 24 45.50 S B85 18 25 93* 40 10 46.50 S B87 14 25 64* 25 50 47.50 S B89 12 17 79* 27 23 48.50 S B91 10 28 88* 50 49.00 B92 *WATER \(\Pi \) Standing water level PIEZOMETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment SHEET 9 OF 10 HOLE No. BHC27 AND TEST ▼ Water strikes Response zone B Bulk disturbed sample C Cone penetration test (35) Undisturbed sample blow count SPT N N = SPT N value (blows after seating) U Undisturbed sample Lower seal K Permeability test Geosphere Environmental P Piston sample N*120 = Total blows/penetration J Disturbed jar sample including seating ES Environmental soil sample <425 Sample % passing 425 micron sieve DEPTH All depths, level and thicknesses in metres W Water Sample

CLIENT	Γ: Suffe	olk Co	unty	Council		PRO	JECT: Lake	Lothi	ng					GR	OUND	LEVEL	m						HOLE No. BHC27		
LOGGED			-	CHECKED I	BY: SG		ATION METH		Cable			n (shell and auger)		Coc	rdinat	es: .							SHEET 10 OF 10		
FIELDWC	ORK BY: TE REF: G	SEL AGS	RH RFT	DATE:					Uncas	sed t	o 50.0) m			ΓES 02-		3 - 15	5-Jan-	-18				PROJECT NO. 2543,GI		
te/Time						ļ			St	rata		Graphical Representation		npling/In-Si						ory Te	esting		Additional Tests and Notes		
and Depth	of Casing	of Wat	er sie		Description o	of Strata		Le	Reduc	ced el	Depth	SPT 'N' Value	Depths	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
-				Dark grey silty	fine and mediur	n SAND (continued)	× · · · · · · · · · · · · · · · · · · ·			50.00	0 10 20 30 40	50- 51- 52- 53-	S	8 28 45 5	86*							Borehole completed at 50.0n with bentonite grout to 13.0n	າ depth. ກ bgl	Backfill
*WATEF	R ▼ Sta ▼ Wa	anding v	vater le kes	– – – – – vel PIEZOMETER		ise zone	SAMPLE AND TEST KEY	B Bulk	II disturb disturbe	ed sam	iple (Standard penetration test Cone penetration test C Permeability test	(35) PTN N = S	Undisturbe PT N value	d sample	blow c	ount ting)		₩ K	K		_	nvironmental	HOLE No. BHC27	3HEE

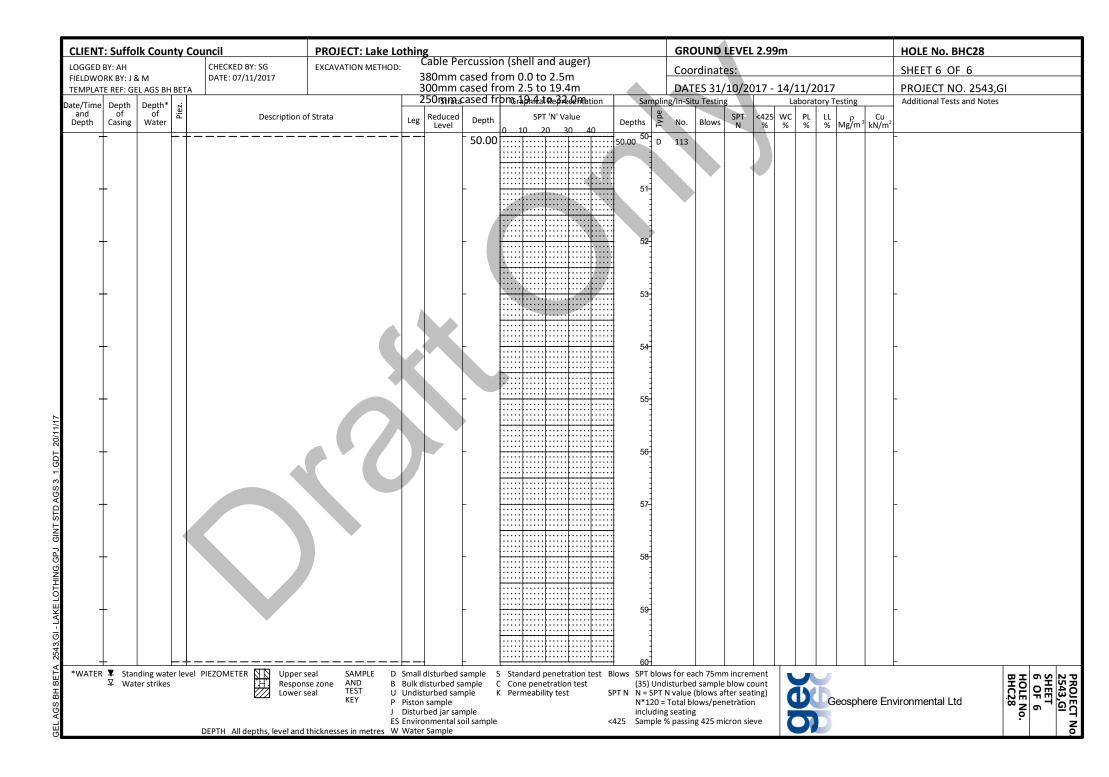
LIENT	: Suf	folk	County	Council	PROJECT: Lake Lo	othin	g G- l- l- G		/-1 !!					GRO	UND	LEVEL	2.99)m				HOLE No. BHC28		
OGGED				CHECKED BY: SG DATE: 07/11/2017	EXCAVATION METHOD:				n (shell om 0.0 t					Coor	dinate	es:						SHEET 1 OF 6		
ELDWO EMPLAT			ı AGS BH BET.			3	300mm	cased fr	om 2.5 t	to 19.4	1m			DATI	ES 31/	10/20	17 -	14/11	L/20:	17		PROJECT NO. 2543,6	il	
e/Time			epth* ¿	·		2	250mma	cased fr	on 19 ₁ 4	at Q e32e	••••••••••••••••••••••••••••••••••••••	Sa		g/In-Situ	u Testing			Lab	orator	y Test	ting	Additional Tests and Notes		
and epth	of Casin		epth* zi of id Vater	Description of	of Strata	Leg	Reduced Level	Depth		PT 'N' Va 20 3	lue 0 40	Depths		No.	Blows	SPT N	<425 %	WC %		LL % M	ρ Cu g/m³ kN/m²			
-	_			Reinforced CONCRETE.			4	0.00				0	1											
				MADE GROUND (Brown gravel of fine to medium subrounded	to angular flint and fine /		a	0.15 0.36					1											
				\to medium subrounded concre CONCRETE	ete.)/		<u></u>	0.52				0.60	P	1		1						VOC=0ppm (peak)		
-	_			MADE GROUND (Brown mediu	m slightly clavey to	/ <u>[</u>]	_ 0.75				1.00 1	- D	1 2								-		
				gravelly sand. Gravel of fine to angular flint with occasional fir	medium subrounded to /	ļ'	9		3::			1.00 1.20-	1 D	3	11	3								
				subrounded to subangular cor	crete.)	<u></u>	1					1.65] B]	4 2	10 11							VOC=0ppm (peak)		
				Brown firm sandy slightly grave angular flint.	elly CLAY. Gravel of fine	<u></u>	\$	L	/ <u>/</u> ::::::	::::::		1.70	D	5										
						<u>•</u>	4		::: <u>\</u> :::::			1.70	D B	6 7	10 11	5								
						<u> </u> -	d	2.50	$\mathbb{R} \setminus \mathbb{R}$:::::::		2.45	1	3	12							VOC=0ppm (peak)		
			[Grey brown medium to coarse SAND with occasional fine to m	slightly clayey organic	<u>; ÷</u>		2.60	<u> </u>			.12.00- 12.50] [8								voc-oppin (peak)		
-	-			rounded flint.	/	6.	1	3.00				2.50 3 2.60	B D	56 9	11	13						VOC=0ppm (peak)		
				Dark grey brown medium to co gravelly SAND. Gravel is fine to	coarse angular flint. /	٠.		3.30				2.70-	J B B	4 10	3 3 4 3									
				Light brown grey medium sligh Gravel is fine to coarse subang	tly gravelly SAND.							2.90	B	11										
-	<u> </u>			Light brown grey SAND and GR		b <u>→</u>		4.00			7	3.00- 4] D	12	1.6	44						-		
				coarse with rare cobble sized s	ubangular flint.	ъ.					:::::] / ::::	4.00-	1,	12 5	16 88	44						VOC=0ppm (peak)		
						b. `.					/	4.45] B	13	13 15									
						b.					<u> </u>	.14.30- 4.50	}											
	ľ		[Light brown medium slightly gr fine to medium subangular flin	avelly SAND. Gravel of	٥.		5.00	l::::		<i>y</i> .	5.10	D	14	3 4 5 6	32						VOC=0ppm (peak)		
				and the second s							 :\:: :::	.15.20 .5.30-] J] B	6 15	8 13							voc-oppin (peak)		
						۰.۰				:[::::		5.70	1											
-	-							-				6	- - - -	10	23	37						-		
						· 6.					<u> : : : : : : : : : : : : : : : : :</u>	6.20	‡ Ī	16 7	77 11 12							VOC=0ppm (peak)		
											<i> </i>	.10.40-	B	17										
_	_							-				7	-									-		
											•	7.20]	8	3 4	34						VOC=0ppm (peak)		
										- [,	[7,00	D B	18	5 6 10 13									
						·				::[::::/:	/	7.80	1	19										
							٩			•		30.20].		33	25						\(\(\text{OC} = \text{Ompage} \) \(\text{OC} = \text{Ompage} \)		
					7							8.20]]	9 20	23 812							VOC=0ppm (peak)		
							1					8.80	В	21										
-	-			Light brown SAND and GRAVEI		b	1	9.00			/	9	- - -	22	3 4 11 15	50*						<u> </u>		
				gravel is fine to medium with o subangular flint.	ccasional coarse	b. b.					· · · · · · / · · · ·		1	22	15 9									
				-		· . b.					:: <i>/</i> ::::::	9.50-] B	23										
_	<u> </u>					<u>p</u> .	-	-	<u> </u>	•	<u> </u>	10	,									-		
VATER			ng water lev strikes	rel PIEZOMETER Upper			disturbed s		Standard C Cone pe		ation test				ch 75mn sample								무동	ÿ
	- V	vatel	JUNES	Respor Lower	seal TEST U	Undis	turbed san		Cone pe			SPTN N=	SPT N	value (blows af	ter seat	ing)	1	M	Con	enhore En	vironmental Ltd	1 OF 6 HOLE No. BHC28	16
					j	Distur	n sample bed jar sar					inc	luding	seating				2		Geo	spriere ⊑n	vironinentai Lta	8 N 6	, –
				DEPTH All depths, level and	ES	Enviro	onmental s					425 Sar				cron sie	ve						'-	

CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	thin	g		<i></i>					GRC	UND	LEVEI	2.99	m				HOLE No.	BHC28		
LOGGED			CHECKED BY: SG	EXCAVATION METHOD:			ercussio	•		• .			Coo	rdinat	es:						SHEET 2 (OF 6		
FIELDWO TEMPLAT		& M EL AGS BH BET	DATE: 07/11/2017		3	300mm	cased fr cased fr	om 2	5 to 19	.4m			DAT	ES 31/	10/20)17 -	14/11/	/2017	7		PROJECT N	NO. 2543	,GI	
Date/Time			Ι '							2 e 2 Mation	Sa			u Testin					Testing		Additional Te		,	
and Depth	of Casing	Depth* Signal Si	Description o	Strata	Leg	Reduced Level	Depth	0 10	SPT 'N' \	30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC PI	LL %	Mg/m	Cu kN/m²				
-	_		Light brown SAND and GRAVEL gravel is fine to medium with or subangular flint. (continued)	Sand is medium and casional coarse							10.50- 11.00	D B	24 25 26	13 34 715 44 45 710	29						-			
-	_		Grey brown medium to coarse soft clay laminations. Grey fine to medium clayey SAI Grey soft to firm sandy slightly fine to meium subangular to su	ND. gravelly CLAY. Gravel is		-	11.80 12.00 12.20				11.80- 12.00 12.00- 12.45 12.10 12.20-	B D D B	27 28 29 30	2 4 6 6 6 6	24						-			
-			Grey fine slightly gravelly SAND Light orange brown coarse slight Gravel of fine to medium subro Grey brown SAND and GRAVEL	tly gravelly SAND. unded to rounded flint. Sand is coarse and	0 0 0 0		13.00 13.20 13.50				12.50 13.00- 13.45 13.50		31 32 33	(52)							-			
	_		gravel is fine to medium round Brown slightly clayey SAND and medium to coarse and gravel is subrounded flint.	GRAVEL. Sand is fine to medium	b. b. b.		14.00				14.00 ₁₄ 14.20 14.50- 15.00	D B	34 35	45 87 87	30						_			
71/11/02	_		Orange brown medium SAND v subrounded flint gravel.	ith occasional fine	b. b. c.		15.50				15.50- 16.00	В	36 37	11 35 1015	33						-			
100.1 AGS 3 1.GD1			Grey brown medium SAND with subrounded flint gravel.	occasional fine	0.	-		:::::	:::::	:::::/::::::	16.00-	1 ^D	38 39 40	5 7 7 10 12 10	39									
		•	Grey brown fine to medium slig	htly clayey SAND.			17.20 17.70				17.00- 17.45 17.00- 17.50	D B	41 42	33 77 88	30									
	_		Grey fine to medium slightly cla	yey SAND.			18.20				17.90 18 18.00	D T100	43) 44	(40)										
2543,GI - LAKE LC							_			. /	19.00-	D B D B	45 46 47 48	15 1010 1012	42						-			
		ding water le er strikes	vel PIEZOMETER Upper s Respon Lower s	e zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	listurbed sa turbed san sample bed jar sar onmental s	ample C nple k	Stand Cone Perm		st	<u>-† 20</u> Blows SPT (35) SPT N N = N*1	Undi SPT N 20 = 1 uding	sturbed I value (Total bl seating	d sample (blows at ows/per	blow of fter sea netratio	ount ting) n	dec		Geosph	ere En	vironmental L	_td	HOLE No. BHC28	SHEET 2 OF 6

CLIENT	: Suffo	lk County	/ Council	PROJECT: Lake L	othin	g		, ,					GROL	JND L	EVEL	2.99	m				HOLE No. BHC28		
LOGGED			CHECKED BY: SG	EXCAVATION METHOD):	Cable Pe 880mm (•		•			Coord	dinate	es:						SHEET 3 OF 6		
FIELDWO TEMPLAT		& M EL AGS BH BE	DATE: 07/11/2017			800mm (800mm (DATE:	S 31/:	10/20)17 -	14/11/	2017			PROJECT NO. 2543	.GI	
Date/Time			· '	L	2	250หาลง	cased fr	om ₆ ,19n	Aat Re32	••••••••••••••••••••••••••••••••••••••	San		In-Situ						esting		Additional Tests and Note		
and Depth	of Casing	Depth* of Water	Description	of Strata	Leg	Reduced Level		0 10	SPT 'N' Va	0 40	Depths		No. E	Blows	SPT N	<425 %	WC PL	LL %	ρ Mg/m³	Cu kN/m²			
	_		Grey fine silty SAND.		×		20.00			/:::	20.00-20-	D B	49 50 1	5 9 12 22							-		
					×··	1				<i> </i> ::::	20.45	В		14									
					>	}				/	20.50				4								
-	-		Brown coarse SAND.		×		21.00				21										_		
			Grey fine silty SAND.		××	-	21.10		- 4		21 40	D	51	46	25								
			Grey clayey SILT.		× ^		21.50	./:::::			21.85	В	52	5 6 7 7	23								
-	_				× ^		-	·····			21.70 22	D	53	′′							_		
					××						. 22.00 - . 22.30- I-	T100											
					×						22.75	. 200	·										
	L				×						23	_	_								-		
					×						23.00	D B D	55 58 57	2 5 6 6	25								
					××						23.50 <u> </u>	D	57	67									
			Grey medium to coarse silty S	SAND with occasional shell	<u> </u>		23.80			····	23.55												
1 1			fragments.								24.00- ²⁴	B D	60 59	33	49								
			Grey firm to stiff CLAY.				24 50				24.10-	,	39	8 10 16 15									
			Grey firm to stiff CLAY. Grey fine silty SAND.		Ť. · .		24.70			1	24.55												
1 -	-						-	 			25.00- ²⁵	D B	61		124*						_		
<u> </u>					.		25.52				25.45 25.00-	В	62 2	21 29 31 19									
0/11			Very dense grey silty fine and	medium SAND.	×		25.50				25.50												
7 −	_				×		-	 			26 00 26	D	63								-		
<u>5</u>					/// >						8	,											
2					×.;	,		 			26.50-		65 1	5 5 10 11	58*								
SA _	_				×		_	:::::	::: :::::		27.00			20 7							-		
2					[]			::: :::::		1 1												
_ <u>N</u>					$ \tilde{\cdot},\cdot\rangle$			 			27.50-	В	67	58	55*								
					× . ,					::::::	28.00		1	12 18 12									
פֿ פֿ	_				×·						287												
Z T				7	: ::>						\$17 \$1			,	57*								
2					*·:;			1:::::1::	:::t:::::	t::::::	:l :	В		3 6 8 12	5/*								
AK -	-				× .		-	 			29.00 29	D	ן פט	16 12							-		
- -			, and the second		× · .	1					j 5												
254 3, GI					\hat{\chi}\cdot\;			::::: ::	::::::::		29.50- 30.00	В	71	5 10 15 23	65*								
	<u> </u>	\bot	<u> </u>		<u>× · .</u>		_		<u> </u>	t	30			12									
*WATER		nding water l ter strikes	Lower	nse zone AND Breseal TEST UKEY P	Bulk d Undist Piston Distur S Enviro	listurbed sa turbed sam sample bed jar san onmental se	ample (aple k	Cone p	enetratio	t :	(35) SPT N N = S N*12	Undist PT N v 20 = To ding se	urbed s value (bl otal blov eating	ample lows aff ws/pen	blow co ter seat etration	ount ing) 1	dec		eosph	ere En	vironmental Ltd	HOLE No. BHC28	2543,GI SHEET 3 OF 6
<i>;</i>			DEPTH All depths, level an																				

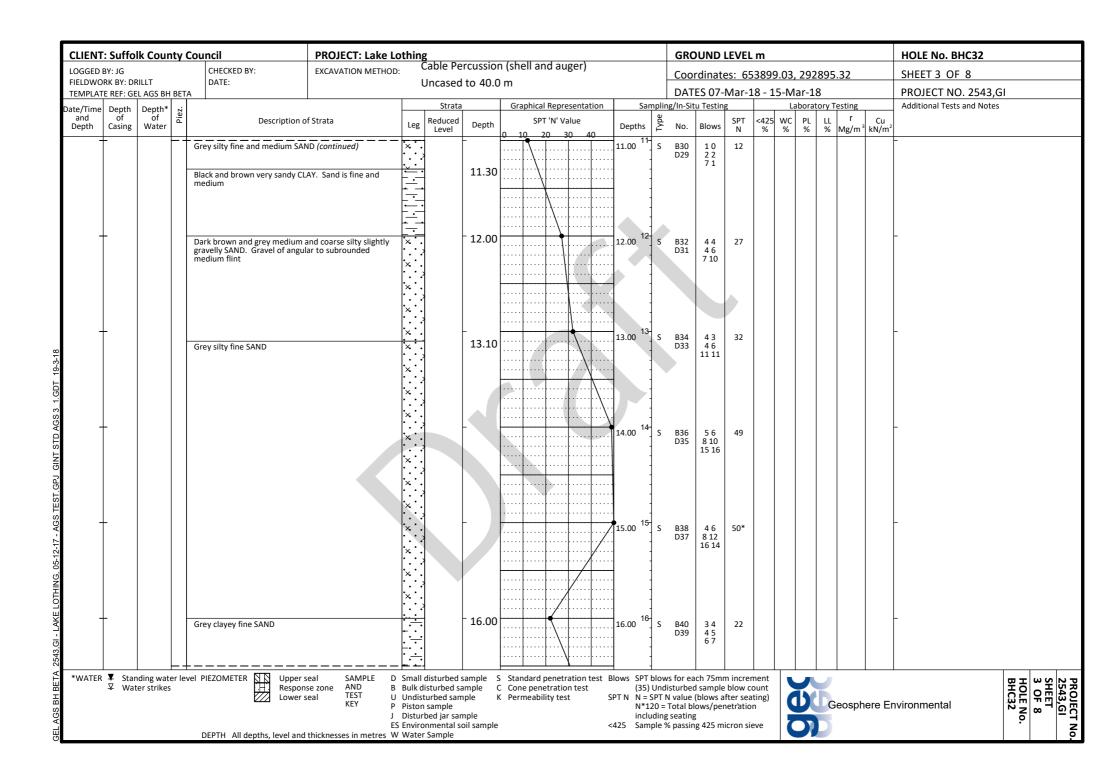
CLIEN	T: Su	ıffolk	c County	Counci	il		PROJECT: Lak	ke Lothin	g							GRO	UND I	EVEL	2.99	m				HOLE No. BHC28		
LOGGED				-	ECKED BY: SO	G	EXCAVATION MET	ГНОD:	Cable Pe		•		•			Coord	dinate	es:						SHEET 4 OF 6		
FIELDWO					TE: 07/11/20	017			380mm (300mm (117	14/11/	2017			PROJECT NO. 254	13 CI	
			AGS BH BE	1 '					250mm-	cased fr	bm:49.	4ate 3	entation	Sail			Testing		11/-	Labora				Additional Tests and No		
Date/Time and Depth	Dep of Casi	f	Depth* of Water		D	escription of	Strata	Leg	D. d d	Depth	0 10	SPT 'N' V	alue	Depths	Туре		Blows		<425 %		T		Cu kN/m²	Additional rests and the	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
-	†					ty fine and me	edium SAND.	<u>×</u> :		-			30 40	30										-		
				(contin	<i>ued)</i> iff grey sand	v SII T				30.30		::: ::::		65	D	72										
						ty fine and me	edium SAND			30.50		::: ::::		30.50-	В	74	5 10 15 15	65* ◀								
	↓							×.:	1	_				31.00			20							-		
									}																	
								×:						31 50- 1	T100	75	(90)									
1								[.;·	1		7	::: ::::		31.95	•	, ,	(55)				1					
1	†							``. `	}					32	1									<u> </u>		
								×:.]			[::::		632.20	D	76					1					
									1					32.50-	В		5 10 20 30	65*								
1 .	1							·^.·:	,	_ `				33.00	1		20 30							_		
								×						<u></u>	1						1					
														.5/	В	80	5 9	57*								
								^ *·:						34.50	ľ		14 12	37								
-	+							×.		-	 			34	1		11 20							-		
									1					67	1											
								×··						34.50-	В		6 11	67*								
								×				::: ::::		35.50 35	1		16 29									
														• • •												
<u> </u>								×.		•	1			75	1_											
5								×						35.50- 36.00	В		9 16 20 30	75*								
-	+							· . · .	X	_					1									_		
5								×						64												
2								×.:	1					36.50-	В	86	4 10	64*								
Ž.								- (°)	}					37.00	1		30 20									
	Ť							× `.]	_				3/-	1						1			<u> </u>		
, -									1			::: ::::		: 7 0	1						1					
200								·^.·:	}		:::: -			37.50- 38.00	В		10 10 15 16	70*			1					
<u>.</u>	+							× .		Ļ				38	1		19				1			 -		
ģ							7		1		::::: ::				1						1					
								·*.·:	,		 	::: ::::	 	38 50-	В	90	8 20	78*			1					
2								× · .			1			• • •	1	-	50	. 5			1					
AKE.	†							<u> </u> :::-	1	-	 	: : : : : : :	 	 39	1						1			<u> </u>		
-								×. :	,		:::: ::	::: ::::		86	1						1					
2343,61								×			1			39.50- 40.00	В	92	9 27 50	86*			1					
	1		L	<u> </u>				Ľ:	1	Ļ				40.00	1		50				1			-		
EL AGS BH BETA			ing water le r strikes				e zone AND al TEST KEY	B Bulk of U Undis P Pistor J Distur ES Enviro	listurbed sa turbed sam sample bed jar san onmental se	ample (aple k	C Cone p	enetration	t	(35) SPT N N = N*1	Undist SPT N v 20 = To uding se	urbed stalue (botal blow eating	sample plows af ws/pen	blow co ter seat etration	ount ing) 1	dec		eosph	ere Env	vironmental Ltd	HOLE No. BHC28	SHEET 4 OF 6
				DEPT	H All depth:	s, level and th	nicknesses in metre	es W Wate	r Sample																	

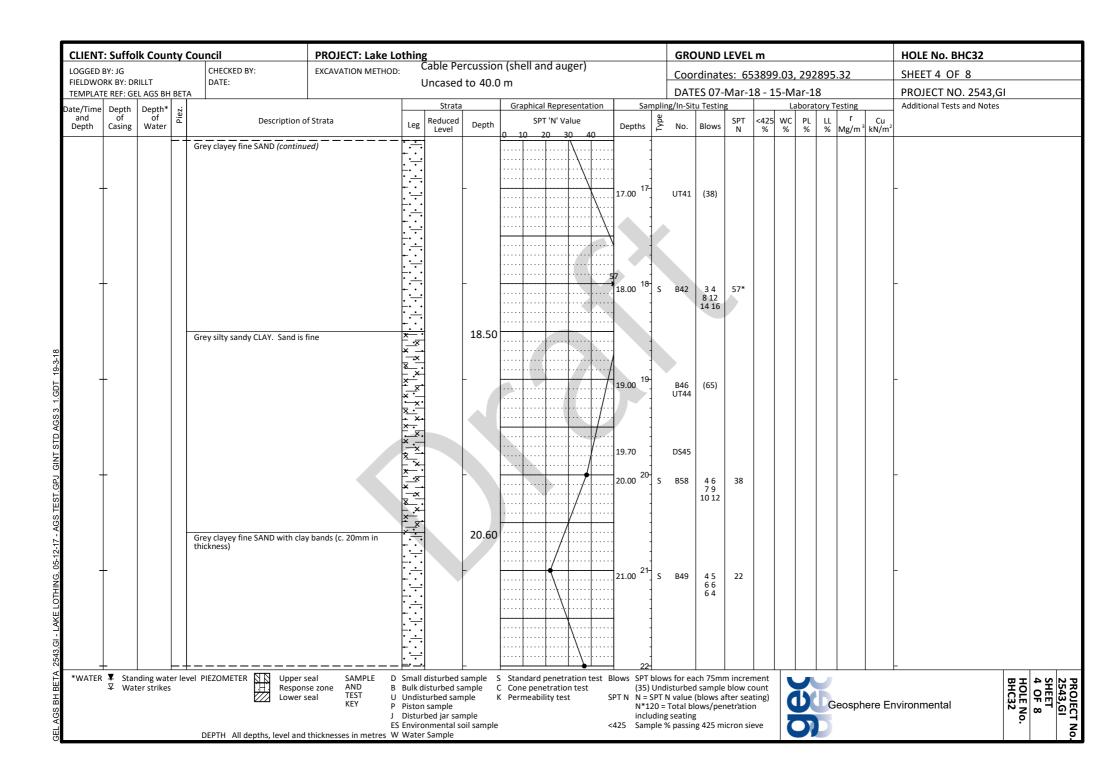
CLIENT	: Suff	olk C	County	Council	PROJECT: Lake Lo	thin	g		,,,	Į.				GRO	UND	EVEL	2.99	m				HOLE No. BHC28		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:		Cable Pe 880mm (•					Coor	dinate	es:						SHEET 5 OF 6		
FIELDWO TEMPLAT			SS BH BET	DATE: 07/11/2017 A		3	300mm (cased fr	om 2.5	to 19.4	m			DATE	ES 31/	10/20)17 -	14/11/	2017			PROJECT NO. 2543	B,GI	
Date/Time	Depth	De	pth* zi			2	250 mm a	cased fr				San	npling/		u Testing	3		Labora	atory T	esting		Additional Tests and Not	es	
and Depth	of Casing	g w	of Hater	Description of	Strata	Leg	Reduced Level	Depth		SPT 'N' Val 20 30		Depths	Туре	No.	Blows	SPT N	<425 %	WC PL %	LL %	Mg/m ³	Cu kN/m²			
-	-		+	Very dense grey silty fine and m	edium SAND	×			Ĭij			40-												
				(continued) Very dense grey silty fine SAND		: . ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;]	40.50				40.50	В	94	12 22	86* <								
				very defise grey sifty fille SAND		٠.٠.		.0.50				41.00	P	94	13 23 50	80								
	Ī					× · .	<u> </u>					41-										_		
						×:.	,					41.50-	В	96	13 28	91*								
_	ļ					×			7			42.00 42	>		50							_		
						× .]					718												
						>						42.50-	В		10 18 35 15	78*								
-	+						}	-				43			33 13							-		
						× .						73												
						× .]	_		7 16 40 10	73*								
-	+					×		-				43.80- 44.00 44	В	100								_		
				Very dense grey slightly gravelly is occasional fine shell fragment	silty fine SAND. Gravel	×		44.30				43.80- 44.00 44- 44.50- 45.00 45	D	103	12.25	57*								
				is occasional file shell flagillette	J.	×						45.00	В	102	12 25 20	5/*								
1	Ť					×			1:::::	:::::::::::::::::::::::::::::::::::::::		:1 1										<u> </u>		
11/17												(2 45.50-	В	104	7 15	72*								
r 20/						·						46.00 46			50									
.GD						×						78												
83						×						46.50-	В	106	8 20	78*								
O A G	1						1	-		::::::::	:::::	47.00 - 47-			50							 -		
TST						· · · ·					1	11												
N D			1		_	:::>						47.50- 48.00	В	108	11 50 50	111*								
- GPJ	+					*. · ;		-				- 40										-		
ENG.					7	× .			1::::::	::::::::		als I												
LOT						× .						48.50 49.00 -	В	110	18 25 50	93*								
LAKE	†					× · .			l 	::::::::	:::::	49										-		
<u>.</u>						× ·			l l			140 50	В	112	11 14	94*								
2543,GI						:::>	}		::::: :::			50.00			18 21	54								
SEL AGS BH BETA **WATER	¥ Sta ▼ Wa			Vel PIEZOMETER Upper so Respons Lower so	e zone AND B TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	listurbed sa turbed sam sample bed jar san onmental se	ample C aple k aple	Cone pe Permeal	netration	test	PTN N=9 N*12	Undist SPT N v 20 = To ding se	urbed value (botal blo eating	sample blows af ows/pen	blow co ter seat etration	ount ting) n	dec		eospho	ere En	vironmental Ltd	HOLE No. BHC28	2543,GI SHEET 5 OF 6



CLIENT	: Suffo	lk Cou	nty C	Council	PROJECT: Lake Lo	thing	g				GRO	OUND	LEVEL	. m						HOLE No. BHC32
LOGGED		DULT		CHECKED BY:	EXCAVATION METHOD:				n (shell and auger)		Coo	rdinate	es: 65	3899	9.03,	292	895	.32		SHEET 1 OF 8
FIELDWO TEMPLAT			H BETA	DATE:		·	Uncased	1 to 40.0	U M		DAT	ES 07-	Mar-1	18 - 1	.5-M	ar-18	8			PROJECT NO. 2543,GI
Date/Time	Depth of	Depth	Piez.				Strata		Graphical Representation		ng/In-Sit	tu Testin						esting		Additional Tests and Notes
and Depth	Casing		-	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m	Cu kN/m²	
-	_			MADE GROUND (Dark brown gr Gravel is subangular to rounded	avelly coarse sand. flints and clinker)			0.00		0 -										-
				MADE GROUND (Yellow brown slightly gravelly medium to coar	se sand. Gravel is			0.50		0.30 ES 0.50 ES	J1 B2									VOC=1ppm (peak) VOC=1ppm (peak)
-	_			angular to rounded fine flint an	slightly gravelly			1.00		1										-
				silty/clayey sand. Gravel is fine flints.) Brown/grey slightly silty fine to very occasional fine rounded to	medium SAND, with	XX		1.30		1.10 ES 1.20 ES 1.30	B3 J3 W1 B5									VOC=1ppm (peak) VOC=1ppm (peak)
					-	×				1.50 ES 1.70 S	J4 B6	10	3							VOC=1ppm (peak)
-	_					×				2.00 ² ES	J5	11								VOC=0ppm (peak)
_	_			Dark grey / black medium fine S small clay pockets and fine rour				2.50		2.50 ES S	B7 J6	10 01 11	3							VOC=1ppm (peak)
				Dark grey / black silty CLAY with	moderate - strong	× ×		3.50		3.50 ES	В9	10	2							VOC=1ppm (peak)
				natural organic odour		×		4.00] S	D8 J7	01								_
				Dark grey / black clayey fine to moderate strong natural organi		1		4.00		4.00	B12 UT10	(25)								
				Grey brown sandy CLAY				4.60		4.50 ES S	B13 D11 J8	43 23 23	10							VOC=1ppm (peak)
-	-									5.34	B15									-
	▼ Sta ▼ Wa	nding wa iter strike	ter lev	PIEZOMETER Upper Si Respons Lower Si	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	listurbed s turbed san sample bed jar sa	ample (nple mple	·	(35) Und T N N = SPT N*120 = including	listurbe N value Total b g seating	d sample (blows a lows/per	blow c fter sea netratio	ount ating) n		Į,		eospł	nere Er	SHEET 1 OF 8 HOLE No.
				DEPTH All depths, level and			onmental s r Sample	on sample	<4	25 Sample 9	⁄₀ passir	ig 425 m	icron SI	eve						

CLIENT	։ Տւ	uffol	k Co	unty	Council	PROJECT: Lake	e Lothin	ig Calala S	•	/ al 11		1		G	ROUND	LEVE	L m						HOLE No. BHC32	
LOGGED E			шт		CHECKED BY: DATE:	EXCAVATION METH	100.	Cable Pe		-	and au	ger)		Co	<u>ordina</u>	tes: 6	53899	9.03,	, 2928	895.	32		SHEET 2 OF 8	
TEMPLAT				вн вет				Uncased	1 (0 40.0	, , , , ,				DA	TES 07	7-Mar-	18 - 1	L5-M	ar-18	3			PROJECT NO. 2543,GI	
ate/Time and	De	epth of	Depth of	h*			_	Strat		Graph		esentation	Sai	mpling/In-	Situ Testi				aborato				Additional Tests and Notes	
Depth		sing	Wate	er 🚡	Descript	ion of Strata	Leg	Reduced Level	Depth	0 10	SPT 'N' Va	alue 80 <u>40</u>	Depths	Туре	. Blow	s SPT	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²		
					Grey brown sandy CLAY (ontinued)		•					5.50	ES J9									VOC=1ppm (peak)	
								4		l				1										
								-		-				_										
1	Ī				Pale grey silty sandy CLAY		<u>×</u> _•× × –	1	6.00				6.00	S B1 D1	7 12	13								
							<u>* -</u>	1]	3 4								, , , , , , , , , , , , , , , , , , ,	
							×	1			\		6.30	ES J10)								VOC=0ppm (peak)	
							- ×	1			\													
							<u>×</u>					[
4	Ļ				Grow brown warmalaway 5	no to modium CANDtal.	<u> </u>		7.00			· · · · · · · · · · · · · · · · · · ·	7.00	1		22							_	
					Grey brown very clayey fi occasional fine subangula	flints.	<u> </u>	<u>:</u>	7.00			/	7.00	S B2 D1	66	33								
							<u> </u>	-			/		7.30	ES J1:	10 11								VOC=0ppm (peak)	
											/			}									., ., .,	
							<u></u>	-																
							-:-				. /													
+	-						<u> </u>	-	-				8.00 8	S B2	2 22	14							_	
							-:-]] D2	1 34									
							ļ.; .	-					8.30	ES J1	!								VOC=0ppm (peak)	
														1										
							—•							_										
							 -:							-										
1	Ī				Grey brown slightly silty s	ightly sandy CLAY			9.00				9.00	B2 UT2	(28)									
							NE			N]									, , , , , , , , , , , , , , , , , , ,	
							7						9.30 9.41	ES J1: D2									VOC=0ppm (peak)	
										·····			-	1										
					Grey silty fine and mediur	1 SAND	×.		9.80				9.80]] D2	5									
4	Ļ				Grey sirry fine and media	ISAND	·.··	}					10	1	´								_	
							×	;	1				10.10	S B2 D2	3 11	9								
							×.	:					10.30	ES J1									VOC=0ppm (peak)	
							 	1					1	-										
								}						1										
							×	·]						1										
*\^/^TED	<u> </u>	C+a=	ding	- H	vel PIEZOMETER D	nor cool SAMPLE	 _	I dicturbad	Famula 1	Ctanda	rd nonct-	ation tost [11	blows for	02ch 75	nm incr	mont	 	\sqcup				<u> </u>	Τ.
· WAIER	Δ̈́	Wate	aing w er strik	kes	<u>∵</u> H∵ Re	per seal SAMPLE sponse zone AND wer seal TEST	B Bulk	disturbed s	ample (C Cone p	penetratio		(35)	Undistur	ed samp	le blow	count						몽	SHEET 2 OF 8
					Ľ∕∕∕ Lo	wer seal TEST KEY	P Pisto	sturbed sar n sample		k Perme	ability tes	τ S	SPTN N = N*1	20 = Tota	blows/p	atter se enetratio	atıng) on		D	Ge	eosph	ere Er	nvironmental	FZ SET
								rbed jar sa onmental s				<	incl 425 Sam	uding seat	ing			7	77				5	5 ~
					DEPTH All depths, leve	and thicknesses in metres								,	55									





CLIENT	Γ: Suffo	lk Count	y Co	ouncil	PROJECT: Lake Lo	thing	<u> </u>				(ROUN	D LEV	/EL r	n						HOLE No. BHC32			
LOGGED				CHECKED BY:	EXCAVATION METHOD:	(able Pe		n (shell and auger)		C	oordin	ates:	653	899	.03,	2928	195.	32		SHEET 5 OF 8			
	ORK BY: DI TE REF: GI	RILLT EL AGS BH B	ETA	DATE:		ι	Jncased	to 40.0) m			ATES (PROJECT NO. 2543,G	I		
Date/Time	Depth			1			Strata		Graphical Representation		ling/lı	n-Situ Tes				Lat	orato		sting		Additional Tests and Notes			_
and Depth	of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	0 10 20 30 40		y y	o. Blo	ws SF	PT <	425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²				
				Grey clayey fine SAND with clay thickness) <i>(continued)</i>	bands (c. 20mm in			-		2.00 22	В	51 4 8 1 9 1 59 (50	.0	7							_			
1.GDT 19-3-18 -	_							_	66	3.70		555 8 12 18	20	;*							-			
ST.GPJ GINT STD AGS3				Grey silty fine SAND with white	shell fragments			25.60		5.00 25-	UT	60 (15 r56	0)								-			
E LOTHING, 05-12-17 - AGS TE:				26.00 White shell fragments bed with depth		× × × × × × × × × × × × × × × × × × ×			2	6.00 26		62 81 12 16	15)*							_			
=TA 2543,GI - LAKE	R ¥ Stai	nding water	leve	I PIEZOMETER DUpper se					S Standard penetration test Blo	ws SPT bl	ows fo		8 18 5mm in	creme							-	вт	5 SI	_
*WATER	¥ Wa	ter strikes		Upper so Respons Lower so DEPTH All depths, level and to	eal TEST U KEY P J ES	Undist Piston Distur Enviro	sturbed sam urbed sam sample bed jar san nmental so Sample	nple I nple	·	TN N=SP	T N va = Tot ing sea	al blows/ ating	vs after penetr	seati ation	ng)		n	Ge	eosph	ere Er	nvironmental	HOLE No. BHC32	SHEET 5 OF 8	

CLIENT	: Suff	folk	Coun	ty C	ouncil		PROJE	ECT: Lake L	othin:	g			shell and au				GRO	UND	LEVEL	m						HOLE No. BHC32		
LOGGED					CHECKED BY:		EXCAVA	TION METHOD	D: (Cable Pe	ercussio	on (s	shell and au	ger)			Coor	dinate	es: 65	3899	9.03.	2928	395.	32		SHEET 6 OF 8		
FIELDWO TEMPLAT				ВЕТА	DATE:				1	Uncased	to 40.0	0 m	Ì					ES 07-l								PROJECT NO. 2543,0	3I	
Date/Time						Į.				Strata	1	G	Graphical Repre	sentation	Sai	npling,		u Testing		Ĺ,		borato		sting		Additional Tests and Notes		
and Depth	of Casin		of Vater	Piez.	D	Description of	Strata		Leg	Reduced Level	Depth		SPT 'N' Va		Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mø/m³	Cu kN/m²			
			+	=‡	Grey silty fine SANI	 D with white	shell frag	ments	·× ·	2010.		0	10 20 3	0 40						/*	-	,,,	- 1		,			
					(continued)			,																				
									×	,					2	1												
-	 								× .		-	-		;	28.00 ²⁸	s	B66	10 12	72*						-	_		
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9.									× · :	1					30.00	S	B70	9 16 28 22	75*									
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2									×·			\				1												
7 -	-										-	-		6	8 31.00 ³¹	s	B72	4 14	68*							-		
5									×						31.00			15 16 19	00									
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AG A									×																			
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۲-۲ کار									×						5	1												
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Ž									×							1												
<u>.</u> 5									× · :	1						1												
2043,01				_					_ : : :		L			·····7	5	1												
*WATER	▼ St	tandiı	ng wate	r leve	el PIEZOMETER	Upper so							tandard penetr									_			ı İ	<u> </u>	ωт	6 S 2
Ĭ	Ā M	Vater	strikes		el PIEZOMETER	Respons Lower se	eal	TEST U	J Undis	listurbed s turbed san			Cone penetration Permeability test		PTN N=	SPT N	value (l	sample blows a	fter sea	ting)		51			_		HOLE No. BHC32	2543,GI SHEET 6 OF 8
100 BH								KEY P	Pistor	sample bed jar sai			.,		N*1	$20 = T_0$	otal blo	ows/pen	etratio	n "	7		Ge	eosph	ere En	nvironmental	22 Z	%; <u>G</u>
Ž					DEDTH All ما ما ما ما ما ما ما ما ما ما ما ما ما	he lovel en d	thicksss:	E	S Enviro	onmental s		e		<	425 Sam				icron sie	eve							'	
					DEPTH All depth	ns, level and	tnicknesse	es in metres V	v Wate	r sample																		

CLIENT	Suffol	k Cou	nty (PROJECT: Lake Lo		g Cabla Da	reussi-	n /sk	ell and auger			_	GRO	UND	LEVEL	m						HOLE No. BHC32		
OGGED E		шт		CHECKED BY: DATE:	EXCAVATION METHOD:		Uncased			eli afiu auger)		L	Coor	dinate	es: 65	3899	9.03,	292	895.	32		SHEET 7 OF 8		
EMPLATI			н вета				oncased	10 40.0	o m					DATE	ES 07-	Mar-1	8 - 1	5-M	ar-18	3			PROJECT NO. 2543,G	il	
te/Time	Depth	Depth		•			Strata		Gra	phical Represent	ation	Sai		/In-Sit	u Testin	3		Lą	borat	ory Te	esting		Additional Tests and Notes		
and Depth	of Casing	of Water	1 % 1	Description o		Leg	Reduced Level	Depth		SPT 'N' Value	40 7	Depths		No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²			
				Grey silty fine SAND with white (continued) Grey silty fine SAND with occas fragments				- 35.00			77	33.00 33 33.00 34 33.00 34 335.00 36 337.00 37	S	B80 B81	10 15 15 16 19 18 7 28 22 25 32 18 8 17 29 45	75* 75* 75*									
*WATER	▼ Stan ∇ Wat	ding wa er strike	ater lev	rel PIEZOMETER Upper s Respon-	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed san sturbed san n sample	ample nple	C Con	ndard penetration e penetration tes meability test	st	(35) TN N = N*1	Undis SPT N 20 = T	turbed value (otal blo	sample blows a ows/per	blow co	ount ting)	2	S C	Ge	eosph	ere Er	nvironmental	7 OF 8 HOLE No. BHC32	CHEFT
				DEPTH All depths, level and	ES	Enviro	rbed jar sar onmental s r Sample	mple oil sample	е		<4	incli 25 Sam		eating passing		icron sie	eve	7						•	-

CLIENT	: Suff	olk (Coun	ty C	ouncil	PROJECT: Lake Lo	othin	g				GRO	UND I	EVEL	m						HOLE No. BHC32
LOGGED	BY: JG			, -	CHECKED BY:	EXCAVATION METHOD):	Čable Pe	rcussio	on (shell and auger)			rdinate			9.03	292	895.	.32		SHEET 8 OF 8
FIELDWO TEMPLAT				BETA	DATE:			Uncased	l to 40.0	0 m			ES 07-						,		PROJECT NO. 2543,GI
Date/Time	Depth	De				1		Strata	1	Graphical Representation		ng/In-Sit	u Testing				borat		esting		Additional Tests and Notes
and Depth	of Casing		of ater	Piez.	Description	of Strata	Leg	Reduced Level	Depth		pths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²	
2049,GI - LAME LOTRING, US-1Z-17 - AGS TEST.GF3 GINT STD AGS 3. T.GDT 19-5-18	-				Grey silty fine SAND with occa	sional white shell	X X X X X X X X X X	Level	- 40.00	0 10 20 30 40 69 39.0	30-	B87	5 14 23 27	69* 75*	%	%	- %	**	ivig/m ³	KN/M*	Borehole completed at 40.0m bgl. Borehole backfilled with betonite grout.
	▼ Sta ▼ Wa	andin ater s	g wate trikes	r leve	DEPTH All depths, level and	nse zone AND B seal TEST U KEY P J	Bulk o Undis Pistor Distur S Enviro	disturbed san sturbed san n sample rbed jar san onmental s	ample (nple i mple		SPT blov	listurbed N value Total bl g seating	d sample (blows at ows/pen	blow co fter sea etratio	ount ting) n		がい		eosph	ere En	SHEET 8 OF 8 HOLE No. BHC32

CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	g				GRO	UND	LEVEL	3.07	′5m				HOLE No. BHC101
LOGGED			CHECKED BY:	EXCAVATION METHOD):			n (shell and auger) om 0.0 to 23.5m		Coor	dinate	es: 65	3870	0.537	, 292	661.3	98	SHEET 1 OF 4
FIELDWO FEMPLAT		DLMES L AGS BH BETA	DATE:					om 23.5 to 38.4m		DATE	ES 12/	12/20)17 -	19/1	2/20:	 17		PROJECT NO. 2543,GI
ate/Time	Depth	Depth* ½	•			Strata		Graphical Representation	Samplin	g/In-Situ	ı Testin	3		Lal	orator	y Testin	g	Additional Tests and Notes
and Depth	of Casing	of Kater	Description o	f Strata	Leg	Reduced Level	Depth	0 10 20 30 40	Depths Depths	No.	Blows	SPT N	<425 %	WC %	PL I	L r % Mg/	m³ kN/m²	
1	-		CONCRETE (Concrete with 2-5r CONCRETE (Brown grey to grey a sandy gravel with some subb- throughout. Sand is fine to coa angular to subrounded concret	concrete recovered as ase/degraded concrete rse. Gravel is very e, red brick and			0.00 0.20	c										VOC = 1ppm
1	-		occasional rounded flints. Hydr 0.30 - 2.00 Layers of concrete tranging from degraded crumbl 0.70 Three disused 6 inch pipes the southern wall, all filled with	hroughout the strata; y state to solid. entering the pit from			_		.90 1 - ES .40 - ES	J2 J3								VOC = 4ppm VOC = 6ppm 1.4m sample is comprised of crushed cond and red brick and is red/grey in colour.
_		7 2.10	MADE GROUND (Slightly brown gravel. Gravel is rounded to slig medium flints. Strong hydrocar Grey becoming slightly grey bro	htly angular fine and bon odour) own silty gravelly fine	X		2.00	2 2 2 2 2	2 = ES .10	J4 W1 J5 1								Slow/moderate inflow of water at 2.1m VOC = 3ppm Water sample taken as water flowed into excavation. Groundwater exhibited a blac
	-		SAND. Gravel of angular to sub moderate hydrocarbon odour 3.50 Gravel becoming less freq	rounded fine flint with	×		_	3	.00 B ES	2 J6 JJ7	23 34 34	14						hydrocarbon "sheen". VOC = 4ppm. Hand dug pit to 2.4m, casing placed in the hole and backfilled with aris VOC = 1ppm VOC = 1ppm
	-		4.00 Becoming slightly grey bro odour no longer present with o		×		_	4	.00 4 B ES C	3 3	21 10 11	3						VOC = 1ppm
-	-				×		_	5	.00 5 B ES C	4 J9	12 34 57	19						VOC = 1ppm
-	-		6.00 - 7.00 Band of angular to s medium gravel	ubrounded fine and	× × ×		_	6	.00 6 B ES C	5 J10	12 23 56	16						VOC = 0ppm
-	-				×		_	· · · · · · · · · · · · · · · ·	.00 7 B ES C	6 J11	47 78 98	32						VOC = 0ppm
-	-				×		_	8	.00 8 D B ES	7 8 J12	23 46 812	30						VOC = 0ppm
	-				×		_	9	.00 9 B ES S	9 J13	12 23 34	12						VOC = 0ppm
	-				×		_	9		10 11 J14	7 14 10 9 8 9	36						VOC = 0ppm
VATER		ding water lev er strikes	vel PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor Distu	disturbed sa disturbed sa sturbed sam n sample rbed jar san	ample (aple i	,	(35) Undi N N = SPT N N*120 = including	sturbed I value (b Total blo seating	sample blows af ows/pen	blow co ter seat etration	ount ing) 1		70	Bright Bright	well Barr well, Suf	ivironmental Ltd ns, Ipswich Road ffolk, IP10 BJ 1603 298076
			DEPTH All depths, level and			onmental so r Sample	oil sample	<42	.5 Sample %	passing	425 mi	cron sie	ve			reiep	none: 0	1603 298076

CLIENT	: Suffo	lk Co	unty (Council	PROJECT: Lake Lo	othin	ng				GRO	DUND	LEVEL	3.07	75m				HOLE No. BHC101
LOGGED				CHECKED BY:	EXCAVATION METHOD:				on (shell and auger)		Coo	rdinate	es: 65	3870	0.537, 2	2926	61.398	3	SHEET 2 OF 4
	RK BY: HO		BH BET	DATE:			200mm (cased fr	from 0.0 to 23.5m from 23.5 to 38.4m		DAT	ES 12/	12/20)17 -	19/12/	2017	7		PROJECT NO. 2543,GI
ate/Time		Deptl		<u>'</u>			Strata	1	Graphical Representation		ling/In-Si	tu Testing					Testing		Additional Tests and Notes
and Depth	of Casing	of Wate	Pi l	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value De	pths 2	No.	Blows	SPT N	<425 %	WC PL	LL %	r Mg/m	Cu kN/m²	
=	_			Grey becoming slightly grey br SAND. Gravel of angular to sub moderate hydrocarbon odour	rounded fine flint with	×		-	72	00 11 D	13	10 12 25 25	72*						VOC = 0ppm. SPT final penetration 70mm
_	-		-	Grey brown slightly gravelly sa angular to subrounded fine flir Orange brown gravelly fine to	it /	× 0	·]	12.20 12.40	/-	1 "	14 5 J16	16 89 1515	47						VOC = 0ppm
_	-			angular to subrounded flint		0	•	_	13.	00 ¹³ D		3 2 5 8 8 11	32						_
-	-			Brown gravelly silty slightly gra SAND. Gravel of angular to sub	velly fine to medium rounded flint	× · · ·	· · · · · · · · · · · · · · · · · · ·		0	1	19 3 20	6 10 10 10 15 15	66*						SPT final penetration 40mm
_	-					×		_	15.	1	21 22	9 9 12 20 18	68*						SPT final penetration 25mm
_	-					× × ×		_	16.	1	23 3 24	8 8 11 15 17 7	66*						SPT final penetration 10mm
_	-		-	Grey slightly clayey silty fine ar	d medium SAND		- - -	7 17.00	17.	00 ^{1/-} D		3 4 5 8 9 11	33						_
-	-						<u>:</u> :		77	00 - D		8 10 14 8 10 11	43						-
-	-						-	-	19.	00 ¹⁹ D		10 17 35 15	77*						SPT final penetration 35mm
-	-			Grey clayey silty fine SAND			-	20.00	D	20 D	31 32	8 12 25 25	70*						SPT final penetration 40mm
'WATER	▼ Star ∇ Wat	nding w ter strik	ater lev	vel PIEZOMETER Upper : Respon	se zone AND B seal TEST U KEY P	Bulk of Undis Pistor Distu	I disturbed sa disturbed san sturbed san n sample rbed jar sar conmental si	ample (nple k mple	,	(35) Un N = SPT N*120	idisturbe FN value = Total b ng seatin	d sample (blows af lows/pen	blow co fter seat netration	ount ing) 1	Jec		Brightw Briahtw	ell Barr ell. Suf	vironmental Ltd ns, Ipswich Road folk, IP10 BJ 1603 298076

CLIENT	: Suff	folk	County	Council	PROJECT: Lake L	othin	ig		- /-l				GRO	UND I	LEVEL	3.07	5m				HOLE No. BHC101		
LOGGED			•==	CHECKED BY:	EXCAVATION METHOD	J:			n (shell and au om 0.0 to 23.5	•		L	Coor	dinate	es: 65	3870).537, 2	9266	1.398		SHEET 3 OF 4		
FIELDWO			иes AGS BH BETA	DATE:					om 23.5 to 38				DATE	S 12/	12/20)17 -	19/12/	2017			PROJECT NO. 2543,G		
ate/Time							Strata		Graphical Repre		Sa			ı Testing			Labora				Additional Tests and Notes		
and Depth	of Casing		epth* 경 of 경 Vater	Description	n of Strata	Leg	Reduced Level	Depth	SPT 'N' Va	0 40 7	Depths 4	1 '	No.	Blows	SPT N	<425 %	WC PL %	LL %	r Mg/m³	Cu kN/m²			
-				Grey clayey silty fine SAND (continued)	Ţ.Ŧ.		-			21.00 ²¹	D			74*						SPT final penetration 70mm		
				Brown coarse SAND		*:	1	21.30		::::::] B	34	14 36									
				Grey silty SAND		` ^`.·:	;	21.40		: : : : : : : : : : : : : : : : : : : :		1											
_	Ļ			Grey silty CLAY		X	1	21.80			21.80 22	D	35								_		
						×	1				22.00	UT100	36										
						<u>x_</u>	1		 			1											
						<u>×</u>					22.60		37 38										
-	+					<u>~</u>		-	 	•••••	23.00	⊔		10 10	49						_		
						<u>×</u>	4						40	10 12									
						-	-		1	k k	l .	1		13 14									
						Ĵ_X	1				24												
_	Γ										24.00 ²⁴	T100	41								_		
				Dark grey gravelly clayey me	dium SAND. Gravel of	¥ 0.		24.30] B	45										
				subangular fine shells Grey silty SAND		 x	4	24.70	::::: :::::		24.60	d E	42										
_	Ļ			Grey Silly SAND		·^.·:	;			6	25	i .		7.40									
						'×. ' .	,				25.00] U	43 44	7 10 12 12	67*						SPT final penetration 25mm		
							.*		 			1		206									
						×	.]					1											
-	t					\	1	-		· · · · · · · · · · · · · · · · · · ·	26.00 ²⁶	d b	46	12 13	46						-		
						-^`.:	;}					<u>В</u>	47	10 10 12 14									
						×.	.]				ľ	1		12 14									
							.*			6	_ ر												
_	Γ					[×].	.]				27.00 ²⁷	1 D	48	6 11	67*						SPT final penetration 10mm		
						\	1						49	18 27 5									
						-^`.·	;					1											
-	-					×	.]	L			28	4		40.45									
						<u> </u> :.:.	<i>.</i>				28.00	D B		12 15 26 24	77*						SPT final penetration 50mm		
						[×] ·	.]		 			1											
						\	1		: : : : : : : : : : : :	::::: ;	4	1											
-	t					·^.·:	;}	-			29.00 ²⁹	d F	52	9 15	74*						SPT final penetration 20mm		
						'× .	.] B		34 16									
						[:·:·	*					1											
_	L					×	:	L		8	4 30	<u> </u>											
						\.`.	1				30.00	D B	54 55	9 14	84*						SPT final penetration 50mm		
							[]] ^D	33	11 27 23									
						× .	,					1											
-	-					<u> </u> : . : .	4	-			·	1	-	10.17	77*						CDT final manaturation 20mm		
						×	;				31.00	D B		10 17 30 20	77*						SPT final penetration 30mm		
*WATER	I ▼ St ∇ W	tandir /ater	⊢ + ng water lev strikes	.H. Resp	onse zone AND B er seal TEST U	Bulk o	disturbed starbed saturbed san sturbed san sample	ample (Standard penetration Cone penetration Permeability test	ation test Bl n test	(35) PTN N=) Undist SPT N v	urbed value (b	sample	blow co	ount ting)	6	В	rightwe	ll Barn	vironmental Ltd ns, Ipswich Road	HOLE BHC10	SHEET 3 OF 4
					j	Distu	rbed jar sar				incl	uding se	eating					Bı	rightwe	II, Suff	folk, IP10 BJ	걸음	5 . ط
						S Envir	onmental s			<4	425 San				cron sie	ve		ΙĒ	elephor	ne: 01	603 298076	٠- ا	

CLIENT	: Suffo	lk Cou	nty C	Council	PROJECT: Lake L	othin	g				GR	DUND	LEVEL	3.0	75m				HOLE No. BHC101	
LOGGED				CHECKED BY:	EXCAVATION METHOD):			n (shell and auger) om 0.0 to 23.5m		Coc	rdinat	es: 65	387	0.537	, 292	661.	398	SHEET 4 OF 4	
FIELDWO TEMPLAT			H BETA	DATE:		:	150mm	cased fr	om 23.5 to 38.4m		DA	ΓES 12,	12/20)17 -	19/1	2/20:	17		PROJECT NO. 2543,GI	
Date/Time	Depth	Depth*	Piez.				Strata		Graphical Representation		ling/In-Si	tu Testin	3		Lab	orator	y Test	ing	Additional Tests and Notes	
and Depth	of Casing	of Water	Pié	Description o	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Dep	oths	No.	Blows	SPT N	<425 %	WC %	PL I	LL % M	r _{Cu} g/m³ kN/n	2	
			††	Grey silty SAND (continued)		×.	•		0 10 20 30 40	1										
_	L					×	1	-	79	32										
						·^·:	 		32.0	0 02 1	58 3 59	9 20 41 9	79*						SPT final penetration 10mm	
						×	-			‡										
-	_					×	.]	-	33.0	33 [3 60								-	
						×	1			ັ ‡ໍ	3 00									
						<u> </u> :::	}			1										
-	_					×. :		-	34.0	o 34 c		57	48						-	
						×					3 62	9 11 12 16								
						×				1										
_	_					×		<u> </u>	35.0	0 ³⁵ E	3 63									
						<u> </u> :∴:	\			- 1										
						×				26										
						×			36.0	0 36 [8 9 12 12	67*						SPT final penetration 40mm	
						×·				1		15 11								
_	_					ж .	1	- 37 00		37									_	
				Grey silty slightly gravelly fine S subangular fine shell fragments	AND. Gravel of	×°·:	}	37.00	37.1	0][3 66									
						×				- 1										
-	_					×		F		0 ³⁸ 1	0 67	15 20	85*						SPT final penetration 30mm	
						×o.				1	3 68	28 22								
						<u> </u> : . : .	}			1										
-	_					×		-	39.0	0 ³⁹] [3 69									
						×														
						×o·			87											
_	_					•		40.00	40.0	o ⁴⁰ c	70	17 20 22 28	87*						SPT final penetration 60mm	
										=		22 23								
										41-										
									l]										
-	-		$\perp \downarrow$				-	-		42 42									<u> </u>	
*WATER	▼ Stan ▼ Wat	iding wat er strikes	ter leve	el PIEZOMETER Upper s Respons Lower s	eal TEST U KEY P	Bulk o Undis Pistor	disturbed s disturbed san sturbed san n sample rbed jar sar	ample (nple k	S Standard penetration test Blows Cone penetration test Permeability test SPT N	(35) Ur N = SP N*120	ows for endisturbe TN value Total b	d sample (blows a lows/per	blow co	ount ing)	D	A 4 1	Brig Brig	htwell Ba htwell, Si	nvironmental Ltd rns, Ipswich Road uffolk, IP10 BJ	SHEET 4 OF 4 HOLE No.
				DEPTH All depths, level and	ES	S Envir	onmental s		<425		e % passii		cron sie	ve			Tele	phone: (11603 298076	

CLIENT	: Suffc	olk Cour	ty C	ouncil	PROJECT: Lake Lo	othing	g			GI	ROUND	LEVEI	3.0	92m					HOLE No. BHC102
LOGGED		0.4		CHECKED BY: SG	EXCAVATION METHOD):			on (shell and auger) rom 0.0 to 13.0m	Cc	ordinate	es: 6	5388	9.341	, 292	2661	L.44		SHEET 1 OF 4
FIELDWO TEMPLAT		OLMES EL AGS BH	BETA	DATE:					rom 0.0 to 13.0m rom 13.0 to 36.6m	DA	ATES 01/	12/20)17 -	11/1	2/20	17			PROJECT NO. 2543,GI
Date/Time	Depth	Depth*		•			Strata	i I	1		-Situ Testin				orato		sting		Additional Tests and Notes
and Depth	of Casing	of Water	Piez.	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths ≥	No	b. Blows	SPT N	<425 %			LL %	r ∕Ig/m³ i	Cu kN/m²	
_	_			CONCRETE and rebar (5mm)		ŽXX		0.00	1 0 H										
				MADE GROUND (Dark brown gr fine and medium brick and cond hydrocarbon odour)				0.17 0.30	0.30 ES	J1									PID VOC = 62 ppm
=	_		$\vee \vee \vdash$	CONCRETE MADE GROUND (Dark brown/b coarse sand. Gravel of fine and	ack very gravelly			1.00	1.00 1 ES	J2	!								PID VOC = 3 ppm
				concrete, with a very mild hydro Brown slightly clayey very grave SAND. Gravel is fine and mediur	ocarbon odour)			1.40	1.50 ES B	J3 B1									PID VOC = 2 ppm
-	_			subangular flints Grev slightly sandy fine and med	dium GRAVEL. Sand is			2.00	1.50 ES B	2									Water added from 2m to 36.5m
				medium coarse and gravel is sul flints. Moderate to strong hydro	orounded to angular ocarbon odour.	0.			2.50 ES 3.00- 3 B C	J4	ı								PID VOC = 40 and 6 ppm two tests
-	_					• • •		-	3.00- 3.50 B	4	8 10	45							-
									3.50 ES	J5	12 15								PID VOC = 2 and 4 ppm two tests
	_					• • •		-	3.50 ES 4.00 4 8 C	6	6 8 12 11 8 9	40							-
				Brown silty gravelly SAND. Grav		×°.		4.80	4.50 ES	J6									PID VOC = 1 ppm
				subrounded to angular flint. Mil hydrocarbon odour.	d to moderate	× · · ·			5.00- 1 B	8 J7	4 5 5 6	20							PID VOC = 1 ppm
-	_			Brown slightly gravelly medium fine and medium subrounded to	fine SAND. Gravel is	× .		6.00	6.00-6-B C	10	24 57	27							_
				occasional soft grey brown clay 8.0m bgl. Mild Hydrocarbon odd	up to 50mm thick from				5.50 ES 6.00-6 B C C 6.50 CS 7.00-7 B C 7.50 CS	J8	78								PID VOC = 1 ppm
5	_								7.50]ES	12 J9	4 6 7 10	27							PID VOC = 0 ppm
	_							_	8.00- 8.45 B 8.00- 8.50 ES 8.50	14 15 J10	5 45 55	19							PID VOC = 2 ppm
	_							_	9.00 SPT 9.45 B 9.00 S 9.50 ES 9.50 ES	17 18 J1:	3 57 1011	33							PID VOC = 0 ppm
_						0.		_	10.00-10 10.50 B S	20	23 45	23							-
*WATER		nding wate ter strikes		PIEZOMETER Upper St. Respons	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	isturbed s turbed sar sample bed jar sa	ample nple mple	K Permeability test SPT N N = SPT N N*120 = including	sturl I valu Total seat	bed sample ue (blows at I blows/per ting	blow c fter sea netratio	ount ting) n	D	N N	Brig Brig	ghṫwel ghtwel	l Barn II, Suff	vironmental Ltd sis, Ipswich Road folk, IP10 BJ 603 298076 BHC102 BHC102 BHC102
				DEPTH All depths, level and t				oil sample	<425 Sample 9	6 pas	sing 425 mi	icron si	eve		11) el	eprion	e. UT	603 298076

CLIENT	: Suffo	lk Cou	nty C	ouncil	PROJECT: Lake Lo	othin	ng					GRO	DUND	LEVEL	3.09	92m				HOLE No. BHC102		
LOGGED		DI NATC		CHECKED BY: SG	EXCAVATION METHOD				n (shell and auge om 0.0 to 13.0m	·)		Coo	rdinate	es: 65	3889	9.341,	2926	61.44		SHEET 2 OF 4		
FIELDWO TEMPLAT			H BETA	DATE:					om 13.0 to 36.6m	l		DAT	ES 01/	12/20)17 -	11/12	/201	7		PROJECT NO. 2543,6	il	
Date/Time	Depth	Depth*	Piez.				Strata		Graphical Represent	ation			tu Testin	g				Testing		Additional Tests and Notes		
and Depth	of Casing	of Water	ä	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30	Dept	hs Å	No.	Blows	SPT N	<425 %	WC %	PL LI % %	. r Mg/m	Cu kN/m²			
			TIT.	Brown slightly gravelly medium	fine SAND. Gravel is	0	•			10.50	ES	J12	77							PID VOC = 33 and 75 ppm		
-	_		田	fine and medium subrounded to occasional soft grey brown clay 8.0m bgl. Mild Hydrocarbon odd	up to 50mm thick from		:	-	\ <u>\</u>	11 00	11+ B	22	4.6	35						-		
				8.0m bgi. ivilia nyarocarbon oad	our. (continuea)	0	\cdot			11.50	ç	22	4 6 6 7 10 12	35								
							:		- <u> </u> -		‡											
_	_					0.	•	-			12 C		2 2 8 9	34						-		
				Brown gravelly CLAY. Gravel is f subrounded flint.	ne angular to	-0_		12.20	/	12.20	В	23	10 7									
				Brown gravelly silty SAND. Grav subangular to rounded flint.	el is fine and medium	×o		12.60	- <i> </i>		1											
-						** *		-		13.00	13 B C	24	2 5 5 5	22						-		
						×	.]			15.50	1		5 7									
_							.1	14.00			14									_		
				Brown silty slightly gravelly med fine and medium subangular to	ium SAND. Gravel is rounded flint.	×o		14.00	[14.00	B	25	5 7 9 9	36								
						× .	\cdot				1		99									
-	_					×	.]	-	No.	15 00	15 SP1	26	45	35						_		
						, xo.				15.45	B	27	77 10 11	33								
							.}		l : : : : l : : : : l : : : : l : : :	15.50			1011									
-	_					×.	·]	46.00	 	16.00	16 SP1	28	3 4	40						_		
				Grey/brown slightly clayey med	ium SAND.	-:-		16.20		16.45	B	29	8 8 11 13									
							•			16.50												
_	_					-:		=		17.00	17- SPT B	30 31	3 4 8 11	42						-		
				Grey silty fine and medium SAN	D.	×	$\overline{\cdot}$	17.40		17.00	S	51	11 12									
_	_					×.	.]	_			18									_		
										18.00	18 SP1	33	2 3 4 5	19								
						·^·	;			18.00	S		5 5									
-	_					×	;	-		19 00	19 1710	00 34	(60)							-		
						×	.]			19.45	B B	35	(66)									
						×.	:]			19.50	1											
-	_					·. ·	1	_		20.00	20- SPT	36	68	64*						SPT final penetration 70mm		
							.}			20.43	B	37	12 12 14 12									
						×	;				1											
*WATER	▼ Stan	ıding wat	er leve	el PIEZOMETER Dipper se			- 1 I disturbed s		Standard penetration	test Blows								L		Г	вΞ	2 2
	¥ Wat	er strikes	5	PI PIEZOMETER Upper so Respons Lower so	eal TEST U	Undi	disturbed san		Cone penetration tes Permeability test	SPT N	N = SPT	N value	d sample (blows a	fter seat	ting)	4	4 1	Geospl Briahtv	nere En vell Barr	vironmental Ltd ns, Ipswich Road	HOLE No. BHC102	SHEET 2 OF 4
					j	Distu	n sample Irbed jar sar			į	ncludin	g seating				7		3rightv	vell, Suf	folk, IP10 BJ 1603 298076	2 N	4
				DEPTH All depths, level and t			ronmental se er Sample	oil sample		<425	ample	% passin	ıg 425 mi	icron sie	eve	C		elepn	one: U	1003 290070		

CLIENT	: Suffo	lk Coun	ty C	Council	PROJECT: Lake L	othin	g					GRO	UND I	LEVEL	3.09	2m				HOLE No. BHC102
LOGGED		OL NATC		CHECKED BY: SG	EXCAVATION METHOD):			n (shell and auger) om 0.0 to 13.0m			Coor	dinate	es: 65	3889	9.341,	2926	61.44		SHEET 3 OF 4
FIELDWO TEMPLAT		EL AGS BH	BETA	DATE:					om 13.0 to 36.6m			DATE	S 01/	12/20)17 -	11/12	/2017	7		PROJECT NO. 2543,GI
Date/Time	Depth		Piez.				Strata		Graphical Representation	Sar	npling/		Testing	S		Labo	atory	Testing		Additional Tests and Notes
and Depth	of Casing	of Water	Ē	Description o	f Strata	Leg	Reduced Level	Depth		Depths			Blows	SPT N	<425 %	WC P	- LL %	r Mg/m	Cu kN/m²	
-	-		-+	Grey silty fine and medium SAN	D. (continued)	×.		-	0 10 20 30 40	1.00- ²¹ -	T100	38	(110)							
				a di a				21 50	2	1.45 - 1.00- :	В	43								
				Grey silty CLAY.		× -		21.30		1.50 : 1.70 :	D	39	(85)							
_	_					<u>×</u> _x		-	2	1.80-22 2.25	T100 B	40 42	(65)							-
						<u>×</u>			2	2.00- <u> </u>	D	41								
						<u>~</u>			2	2.50 -	1									
						X			2	3.00 ²³ -	SPT R	44 45	2 5 7 7	35						
						××			2	3.50	Š	75	10 11							
						× ×				24										
						×-			2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4.00- ² أُر 4.45 -	T100 B	46 48	(120)							
			H	Grey gravelly SAND. Gravel is fir	ne subangular shells.	F.X		24.50	2	4.00- I 4.50 I	D	47								
_	_					1		25.00	2	4.60 <u>:</u> 25	1									_
				Grey silty fine and medium SAN clay bands.	D with occasional thin	×		23.00	2 2 2	5.00- : 5.45 -	SPT B		4 8 10 11	48						
						×			2	5.00 5.50 :	S		12 15							
-	_					×·]	-	2 65 2 2	26	сот	51	5 10	65*						SPT final penetration 70mm
							1		2	6.45 ·	В		15 16 19	05						3FT Illiai penetration 70mm
						*. · ;			2	6.50	3		19							
-	_					×		-		7 00- ²⁷⁻	SPT	53	4 14	68*						SPT final penetration 50mm
						×·			2	7.45 7.00-	B		16 20 14	00						31 1 mai penetration 30mm
						×			2 2 68 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	7.50	Ĵ		-							
-	_					^· · ·	}	-	2	8.00- ²⁸	SPT		8 14	72*						SPT final penetration 40mm
						×	,		2	8.45 - 8.00- :	B S	56	16 22 12							·
				Grey very silty clayey SAND.				28.60	2	8.50										
-	-					<u>.</u> :-:		-	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	9.00- ²⁹	T100	57	(100)							_
			L	0 11 6 1 11 000		·		20 50	2	9.45 9.00- :	B SPT	59 59								
-				Grey silty fine and medium SAN clay pockets.	D, with occasional small	×	ļ	23.30	62	9.50 9.00-	D	58								
_	_					×		-	2	9.45 30- 9.60	D	61	38	61*						SPT final penetration 60mm
						×·	1		3	0.00- : 0.45 -	S	62	16 17 17							
						×	1		3 3 83	0.50										
=						×			3	1.00- 31 - 1.45 -	D B	63 64	8 25 24 20	83*						SPT final penetration 10mm
	<u> </u>		_+			_ <u>'×</u>			<u> </u>	:										
*WATER		nding wate er strikes	er leve	el PIEZOMETER Upper s	se zone AND B eal TEST U KEY P	Bulk d Undis Piston Distur	disturbed sa listurbed san turbed san sample bed jar sar onmental sa	ample C nple k nple	•	(35) N N = 5 N*1	Undisto SPT N v 20 = To oding se	urbed value (b otal blo eating	sample plows af ws/pen	blow co ter seat etratior	ount ting) 1	Jec		Brightw Brightw	ell Barr ell, Suf	vironmental Ltd ns, Ipswich Road folk, IP10 BJ 603 298076
				DEPTH All depths, level and				on sample	<42	o Sam	µіе % р	assing	425 MI	ci on sie	ve	O		Siopino		200 2007.0

CLIENT:	: Suffo	olk (Count	ty C	ouncil	PROJECT: Lake Lo	othin	ig				GRO	DUND	LEVEL	3.0	92m					HOLE No. BHC102
LOGGED E		101 v 4	EC		CHECKED BY: SG DATE:	EXCAVATION METHOD):			n (shell and auger) om 0.0 to 13.0m		Coo	rdinate	es: 65	388	9.34	1, 29	266	1.44		SHEET 4 OF 4
TEMPLATE				BETA			:	200mm	cased fr	om 13.0 to 36.6m			ES 01/)17 -	- 11/1	2/2	017			PROJECT NO. 2543,GI
Date/Time			pth*	Piez.				Strata		Graphical Representation		<u> </u>	u Testin	Ĭ			borat				Additional Tests and Notes
and Depth	of Casing		of ater	<u>a</u>	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value De	pths 2	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²	
	-				Grey silty fine and medium SAN clay pockets. <i>(continued)</i>	ID, with occasional small	×		-	31.1 8¢1.2 32.1 32.2	50]	65 66	6 10 24	84*							SPT final penetration 50mm
	_						×		-	32.	00-] S 50]		27 23	62 *							COTT (included the state of the
							×	*		33.1 33.3 33.3 33.1 78	00-	67 68	5 7 19 15 16	62*							SPT final penetration 35mm
	-						×	*		34. 34. 34. 34.	00- 04 D 15 B 00- S	69 70	3 25 28 22	78*							SPT final penetration 20mm
	-						×)	_	35. 35. 35. 35. 68	00- ³⁵ D	71 72	5 7 12 20 18	62*							SPT final penetration 40mm
	-						×	, , ,	_	36.0 36.0 36.0	00-307 D	73 74	6 12 10 12 14 14	68*							SPT final penetration 20mm
	-							<u>*</u>	37.00		37										Borehole ceased due to bailer lost and unabl continue.
_	-								-		38-										-
_	_								_		39-										-
	-								-		40										-
	_								-		41-										-
*WATER	▼ Sta ∇ Wa	anding	water trikes	r leve	PIEZOMETER Upper s Respon Lower s	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor Distu	disturbed s sturbed san n sample rbed jar san	ample (nple I nple	S Standard penetration test Blows C Cone penetration test K Permeability test SPT N	(35) Und N = SPT N*120 = including	listurbed N value Total bl g seating	d sample (blows at ows/per	blow co fter seat netration	ount ting) n			Br Br	ightwe ightwe	ell Barr ell, Suf	vironmental Ltd is, Ipswich Road folk, IP10 BJ 603 298076
					DEPTH All depths, level and			onmental s r Sample	oii sample	<425	Sample	% passin	ig 425 mi	icron sie	eve			٦١٥	, cpi io	10. UI	500 200010

CLIENT	: Suffo	lk County	Council	PROJECT: Lake Lo	othin	ng		/-!		-	\Box	GRO	UND	LEVEL	m					HOLE No. BHC103
LOGGED I		.na	CHECKED BY: SG DATE:	EXCAVATION METHOD):				nell and auger) 0.0 to 18.5m		L	Coor	rdinat	es:						SHEET 1 OF 4
		LIVI EL AGS BH BET							18.5 to 38.8m			DATI	ES 21/	11/20)17 -	29/1	L/201	.7		PROJECT NO. 2543,GI
ate/Time		Depth*				Strata		Gr	aphical Representation	Sai	_	/In-Situ	u Testin	3		Lab	oratory	/ Testir	g	Additional Tests and Notes
and Depth	of Casing	of 🛎 Water	Description of	of Strata	Leg	Reduced Level	Depth		SPT 'N' Value 10 20 30 40	Depths	Туре	No.	Blows	SPT N	<425 %	WC %	PL L % 9		Cu m³ kN/m²	2
-	_	-	TOPSOIL with cobble of brick a				0.00		,,,,,,,,,	0 -										
			MADE GROUND (Dark grey coa Asphalt)	erse sandy fine gravel of		\$	0.18 0.40			0.30		J1 J2								PID VOC = 0ppm PID VOC = 0ppm
			MADE GROUND (Dark grey browith fine to coarse gravel and	wn gravelly clayey Sand	\bowtie	À	- 0.90			0.50		JZ								PID VOC = Oppm
1	-		mortar) MADE GROUND (FILL) (Dark or	/	/ XX	4	1.20			1.00]	J3 J4								PID VOC = 0ppm PID VOC = 0ppm
			gravelly medium to coarse San (rounded flint)		/ 		1.50		<i>,</i>	1.50-	s	4	56	33						гів voc – орріп
	_		Dark orange brown / yellow br		/├;	:		7	/	2.00			78 108							
			\flint.		ˈF:;					2.00	1	J5								PID VOC = 1ppm
	_		Grey brown clayey slightly silty of fine subangular to subround moderate hydrocarbon odour, and hydrocarbon sheen.	led flint. Mild to		:	2.50			2.50- 3.00 2.50 ₃ .	B C	5 J6	5 4 5 5 6 8	24						PID VOC = 0ppm
			Brown grey gravelly slightly cla and medium subrounded to su	yey SAND. Gravel of fine bangular flint. Mild HC	<u> </u>				· · · · / · · · · · · · · · · · · · ·	3	1									
			odour in top 1m of this strata					:::::		3.50-	c	6 J7	4 6 6 6	19						PID VOC = 4ppm
-	-				ļ.:		-		 	3.50 ₄ .]	37	3 4							-
					7				<u> </u>]									
									::\[:: ::: :::	4.50- 5.00	C	7 J8	14 43	14						PID VOC = 25 & 7ppm (two tests)
+	-			_			-			4.50 ₅ .]		43							
			Orange brown slightly silty fine fine subangular to subrounded		×		5.30	:::::	 	5.30	D C	8	4.2	20						DID VOC - Onne
			Time subangular to subrounded	Timit gravei.	×				[<i>]</i>	6.00 5.50	3	J9	43 44 66	20						PID VOC = 0ppm
1	-				×					5.50 6. 6.00- 6.45	SPT C	10 11	3 3 4 5	16						PID VOC = 0ppm
										6.00- 6.50	1	J10	43							
	_				×.'	·	7.00			6.00]									
			Brown slightly gravelly SAND. (medium rounded subangular f		0	:	7.00			7.00- [*] 7.45	SPT S	12 13	7 8 12 12	46						PID VOC = 13 & 6ppm(two tests)
					·.·.	•				7.50 7.50	‡	J11	10 12							
+	-				0]	-			7.00 8.00- 8.	SPT	14	13	15						-
]				8.45 8.00-	S	15	3 4 4 4	13						
				7		.]				8.50 8.50]	J12								PID VOC = 0ppm
+	-		Brown gravelly medium and co	arse SAND	1	:	9.00		 	9.00-	SPT	16	56	33						-
						•				9.45 9.00-	S	17	77 910							
										9.50 9.50]	J13								PID VOC = 0ppm
1	_						_			10.00- ¹⁰ 10.45	SPT S	18 19	8 12 15 16							PID VOC = 0ppm
*WATER			vel PIEZOMETER Upper						ndard penetration test Bl											
	¥ Wa	ter strikes	vel PIEZOMETER Upper : Respon	seal TEST U	Undis	disturbed san			ne penetration test meability test SP	TN N=	SPT N	value (fter seat	ing)		YE	Brigh	twell Barı	nvironmental Ltd ns, Ipswich Road ffolk, IP10 BJ 1603 298076
				j	Distu	n sample rbed jar sar				incl	udings	seating				7		Brigh	twell, Sut	ffolk, IP10 BJ
			DEPTH All depths, level and			onmental s r Sample	oil sample	2	<4	25 Sam	ıple %	passing	g 425 mi	cron sie	ve			reiep	none: 0	1603 298076

LIENT:	Suffo	lk Cou	ınty (Council	PROJECT: Lake Lo	othin	ig		n (aball and access)		GR	OUND	LEVEL	m						HOLE No. BHC103		
OGGED B		. N. 4		CHECKED BY: SG DATE:	EXCAVATION METHOD				n (shell and auger) om 0.0 to 18.5m		Cod	ordinat	es:							SHEET 2 OF 4		
EMPLATE			BH BETA						om 18.5 to 38.8m			TES 21,		17 -	29/1	1/20	17			PROJECT NO. 2543,GI		
te/Time and	Depth of	Depth of	* Piez.				Strata		Graphical Representation		<u> </u>	itu Testin				orator				Additional Tests and Notes		
	Casing	Water	r =	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths	No.	Blows	SPT N	<425 %	WC %	PL	LL % M	r lg/m³	Cu kN/m²			
			T	Brown gravelly medium and co	arse SAND (continued)					10.00-	J14	19/70mr	n									
+	-			Grey brown becoming orange	brown gravelly SAND	0.	1	11.00		10.00 11	B 20 C	5 10 12 15								-		
				Gravel is subrounded to suban flints.	gular fine and medium					111 25		18 5/10m	m									
									-\													
Ť	-						:			12.00-	B 21	6 7 7 12	45							-		
						· 0` .				112.45	C	12 14										
1	-					· : : :	:	_		69 13										_		
							:			13.45	B 22 C	6 13 19 31	69*									
										13.60	D 23											
+								-		14.00- 14	B 24	10 12	72*							-		
						0.				14.50	С	14 16 20										
										75												
Ť	-					0				15.00- 15 15.50	B 25 C	10 15 15 20	75*							_		
							3			1 1		15										
+	-					ο.		-		15.80 16	D 26 B 27	3.8	49							-		
										16.50	C 2/	9 12 13 15	49									
						0			/			15 15										
+								17.20		17.00- ¹⁷ s	PT 28	12	27							_		
				Grey slightly silty fine SAND wit bands of clay. 18m - small band	h occasional small I of clay within bulk	×	;	17.20		17.45	B 29 S	3 7 8 9										
	_			sample.		×				17.80	D 20											
T						× · .				18.00-	31	(65)								Small band of clay within the b	oulk sam	ıple
					_	×	1			18.60	D 32											
+				Grey silty fine SAND.		· . · .	4	19.00		19 00- 19 c	PT 33	5 4	59*							-		
				S. C. Silly Tille Shirts.	7		}			19.45	B 34 S	10 20										
						×	;			19.50	-											
+	-					×		-		20.00-20	B 35	(85)								-		
						×:				20.45	36											
	_					×]			73										_		
	▼ Star ∇ Wat			el PIEZOMETER Upper s Respon Lower s	se zone AND B real TEST U KEY P	Bulk o Undis Pistor Distur	disturbed sa sturbed san n sample rbed jar sar	ample (nple i nple		(35) U SPT N N = SF N*120	ndisturbe T N value	ed sample e (blows a blows/per	blow co	ount ing)			Brig Brig	ıhtwel ıhtwel	ll Barn II, Suff	vironmental Ltd ns, Ipswich Road folk, IP10 BJ	HOLE No.	SHEET
				DEPTH All depths, level and	ES	Enviro	onmental s			<425 Samp			icron sie	ve			Tele	ephon	ie: 01	603 298076	٠,	

LOGGED		ik County	<u>Council</u>	PROJECT: Lake L	othing	g				GROL	JND L	EVEL	m				HOLE No. BHC103		
			CHECKED BY: SG	EXCAVATION METHOD):			n (shell and auger)		Coord	dinate	es:					SHEET 3 OF 4		
	ORK BY: J& TE REF: GE	.M EL AGS BH BE	DATE:					om 0.0 to 18.5m om 18.5 to 38.8m		DATE	S 21/	11/20	L7 - 29/1	1/201	 .7		PROJECT NO. 2543,	GI	
Date/Time	Depth		1			Strata		Graphical Representation Sa	mpling	/In-Situ			La	ooratory	Testing		Additional Tests and Note	5	
and Depth	of Casing	Depth* of Water	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	Туре	No.	Blows	SPT N	425 WC % %	PL L % 9	L r 6 Mg/m	Cu kN/m²			
-	-	-	Grey silty fine SAND. (continued		×.		-	0 10 20 30 40 73 21.00-2	SPT	37	8 15	73*					-		
					;;;>			21.45	B S	38	16 34								
			Grey silty CLAY.		X X		21.60	21.50	SDT	30		1							
-	†		Grey sandy SILT/ CLAY		× ×		22.00	0 10 20 30 40 73 21.00-21 21.00-21 21.50 21.50 22.00-22.45]	40	(49)						_		
					× _ ×			22.43]										
<u> </u>					×			22.60	D B	41 42									
					× _			23.00	SPT B	44	78 910	46							
					X			23.45	s	1	12 15								
					×		-	24.00. 24]	45	(48)						-		
					X			22.43 22.60 22.60 23.00 23.00 23.45 23.00 23.50 24.00 24.45	1	75	(10)								
			Grey silty slightly gravelly fine S subangular light grey calcareou	AND. Gravel is fine s shells.	. ×		24.50	24.60	D	46									
-	<u> </u>		Grey silty SAND with occasiona	fine shell fragments.	×		25.00	1	SPT B	47 48	68 910	46					_		
					× ·			25.00-	s	10	12 15								
]								_		
								26.00- ² 26.45	SPT B	49 50	5 8 12 38	63*							
:					× ;			26.00-	3										
	-				×		-	27 00-	SPT	51	5 7	62*					_		
			Grey clayey silty fine SAND with	a occasional fine shalls	·		27.40	27.45	B	52	11 20 19	02							
2			Grey clayey sitty fille SAND with	i occasional fille sitelis	1.7.			27.50 27.70	D	53									
-	<u> </u>				×:-		20 20	28.00-	-	54	(60)						_		
			Grey silty medium fine SAND.		× ;		20.20	25.45 25.25.00 25.50 26.00 26.00 26.00 26.65 26.00 26.50 27.00 27.45 27.00 27.70 27.70 28.00 28.45											
-					×:,					55									
				1	×			29.00-25 29.45 29.00- 29.50	SPT B S		8 9 15 24	67*							
j j					× · ·			29.00- 29.50	S		11								
	_			/	\>			†····· / /c	+	F0 /	10.16	76*					-		
j 3					*.·;			30.00-30 30.45 30.00-	B	58 59	10 16 21 29	76.							
					×			30.50]										
- 5	+				×		_ :	31.00-3	JSPT	60	8 14	72*					-		
								31.45	В	61	50								
WATEF		iding water le er strikes	DEPTH All depths, level and	se zone AND B eal TEST U KEY P J	Bulk d Undist Piston Distur Enviro	isturbed sa turbed sam sample bed jar san inmental so	ample C aple k aple	K Permeability test SPT N N = N: incl	Undis SPT N .20 = T uding s	sturbed s value (blow otal blow seating	sample lows af ws/pen	blow co ter seati etràtion	int ng)		Brightw Brightw	ell Barr ell, Suf	vironmental Ltd ns, Ipswich Road folk, IP10 BJ 1603 298076	HOLE No. BHC103	2543,GI SHEET 3 OF 4

CLIEN	T: 5	Suffol	k Cou	nty (Council	PROJECT: Lake Lo	othin	g						ROUN	D LEVE	L m						HOLE No. BHC103		
LOGGE					CHECKED BY: SG	EXCAVATION METHOD:				n (shell and au om 0.0 to 18.5			_(Coordina	ates:							SHEET 4 OF 4		
FIELDW TEMPLA			M L AGS BI	I BETA	DATE:					om 18.5 to 38.			1	ATES 2	1/11/2	017 -	29/1	1/20	17			PROJECT NO. 2543,G	I	
Date/Tim	e D	Depth	Depth*	Piez.				Strata		Graphical Repres	entation	San		n-Situ Test				orato	ry Tes	sting		Additional Tests and Notes		
and Depth	c	of Casing	of Water	Pie	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Val		Depths	Type	lo. Blow	SPT N	<425 %	WC %	PL %	LL N	r ∕Ig/m³	Cu kN/m²			
				Ħ	Grey silty SAND with occasional	fine shell fragments	×	1	31.50	0 10 20 30	40	31.00-	s							<u> </u>				
	1				and clayey bands		×:	>			69	31.50		A^{p}								_		
							·*.·;	}				32.00- 32 32.45 -	D B	52 7 12 53 16 2	69*									
							×					32.00-] 32.50]		9										
	1						× .		-		51	33										_		
												33.45	D (54 7 13 55 13 1	0									
							·^. · ;	}				33.50		12 1	Ь									
	+						× .	,	-			34										_		
							×					34.20- 34.65	D (66 8 19 14 1										
							×	1				34.50- 35.00	В (57 21										
	+								-			35.00- 35	D (68								_		
							×					35.45 - 35.00	В (59 12 2 18										
							×					35.50												
	Ť						×			>		36.00- ³⁶	D I	70 10 1 71 15 9								_		
							×					36.00-	Б.	9 11										
												30.30												
1/17	Τ						×				70	37.00- ³⁷ 37.50 -	B :	73 72 7 13	3 70*									
30/11							×					37.20- 37.65		23 2										
TQ	1						<u>.</u>		- 20 00		64	38										_		
7.0					Grey silty SAND with occasional	fine shell fragments	×7	,	38.00			38.00- ° - 38.45 -	D B	74 68 75 101	5									
GSS							×					38.00- 38.50		25										
4 D	1						× .	1	_			39		76 404	*							_		
GINTS				Ш								39.00- <u>1</u> 39.50 <u>-</u>	В	76 10 1 50										
<u>ਹ</u>						, i	× ;	>				39.50-	В	77										
G. G.	+					J	'×	1	40.00	 			D :	78 155	0							Borehole completed at 40.0	n	
ž T												-												
101												-												
AKE	+								-	 		41										_		
_ 												1												
2543,GI												-												
	<u>+</u> :R ₹	Z Stan	ding wat	er lev	el PIEZOMETER Dupper se	eal SAMPLE D	<u>⊢</u> −-	disturbed s	sample S	Standard penetra		42- ows SPT I	olows fo	or each 75	 mm incre	l ment						F.	m -	- (c r)
H BE	Ā	Z Wate	er strikes	5	el PIEZOMETER Upper se Respons Lower se	e zone AND B	Bulk d	listurbed san	ample (Cone penetration Permeability test	test	(35)	Jndistu	rbed samp	ole blow o	ount		1				vironmental Ltd ns, Ipswich Road	HOLE No. BHC103	2543,G SHEET 4 OF 4
AGS BH BETA					<u> </u>	KEY P	Piston	sample bed jar sar	•		3.	N*12		al blows/p				V	Brig	ghtwe	ell, Suf	folk, IP10 BJ	103 E N	ະ = ເຊິ່
ELA					DEPTH All depths, level and t	ES	Enviro	onmental s			<4			assing 425	micron si	eve		71	Tel	epho	ne: 01	603 298076	۶	
9					Der in All depths, level and t	micknesses in metres W	water	Jampie																



Project		Client	TRIAL PIT No			
Lake Lothing			Suffolk	IPC01		
Job No 2543,GI	Date 15-08-17 15-08-17	d Level (m)	IPCUI			
Fieldwork By		•	Logged By		Sheet	
GEL			LF		1 of 1	

Depth	DESCRIPTION	Legend	Depth	No	-
0.00-1.50	MADE GROUND (Dark brown and brown gravelly very silty fine sand Gravel of angular to subrounded fine to coarse flint and occasional fragments of brick and flexible surfacing) -				Groundwater not encountered during drilling
	-		0.30-1.00 0.30	B ES	
	0.50 Becoming dark yellow brown with depth				
			0.60	ES	
			0.70	D	
			0.90	ES	
_					
-			1.20	ES	Hand pit extended from 1.2m depth with hand
-			1.30	D	auger methods
_					Excavation completed at 1.5m depth due to poor
-					recovery with hand auger and continued collapse
-					

Shoring/Support: Stability: Checked By

Plant UsedHAND DUG



Project		Client		TRIAL PIT No			
Lake Lothing			Suffolk		IPC02		
Job No 2543,GI	Date 15-08-17 15-08-17	Groun	d Level (m)				
Fieldwork By			Logged By			Sheet	
GEL			LF			1 of 1	

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-1.40	MADE GROUND (Brown gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint and occasional fine brick fragments)		256		Groundwater not encountered during drilling
-	- - -		0.30-1.00 0.30	B ES	
			0.60	ES	
-	- - -		0.90	ES	
-			1.20	ES	Hand pit extended from 1.2m depth with hand auger methods
-					Excavation completed at 1.4m depth due to poor recovery with hand auger and continued collapse

Shoring/Support: Stability: Checked By Plant UsedHAND DUG



Project			Client	TRIAL PIT No		
Lake Lothing			Suffolk	IPC03		
Job No	Date 16-08-17	Groun	d Level (m)	Grid Reference ()	IPC03	
2543,GI	16-08-17					
Fieldwork By			Logged By		Sheet	
GEL			LF		1 of 1	

		T. T			
Depth	DESCRIPTION	Legend	Depth	No	
0.00-0.80	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint and occasional concrete and brick)				Groundwater not encountered during drilling
-	- - -	-	0.30-1.20 0.30	B ES	
-			0.60	ES	
0.80-1.20	MADE GROUND (Dark orange brown gravelly very silty fine sand. Gravel of angular to subrounded finen to course flint and occasional concrete and brick fragments		0.90	ES	
-	1.10 Becoming pale orange brown with depth				
-			1.20	ES	Excavation completed at 1.2m depth
-					
-		-			
_	-				

Shoring/Support: Stability: Checked By

Plant Used



Project		Client		TRIAL PIT No				
Lake Lothing			Suffolk		IPC04			
Job No Date 16-08-17 Group 16-08-17 16-08-17			round Level (m) Grid Reference ()			IPC04		
Fieldwork By			Logged By		Sh	eet		
GEL			LF			1 of 1		

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.60	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint and occasional concrete and brick)				Groundwater not encountered during drilling
_	0.40 - 0.50 Cobbles of concrete	-	0.30-1.00 0.30	B ES	
0.60-1.50	MADE GROUND (Brown slightly gravelly very silty fine sand. Gravel of subangular to subrounded flint)		0.60	ES	
_			0.90	ES	
_			1.20	ES	Hand pit extended from 1.2m depth with hand auger methods
-		-			Excavation completed at 1.5m depth due to poor recovery with hand auger and continued collapse
		-			

Shoring/Support: Stability: Checked By Plant Used



Project			Client	TRIAL PIT No		
Lake Lothing			Suffolk	IPC05		
Job No Date 16-08-17 Group			d Level (m)	IPCUS		
2543,GI	16-08-17					
Fieldwork By			Logged By		Sheet	
GEL			LF		1 of 1	

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.80	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of subangular to subrounded fine to coarse concrete, flint and brick)		Бериі	140	Groundwater not encountered during drilling
	_ - -		0.30-1.00 0.30	B1B J1ES	
			0.60	J2ES	
0.80-1.30	MADE GROUND (Brown slightly gravelly silty fine sand. Gravel of subangular to subrounded fine to coarse concrete and flint)		0.90	J3ES	
			1.20	J4ES	Hand pit extended from 1.2m depth with hand auger methods Excavation completed at 1.3m depth due to poor recovery with hand auger and continued collapse

All dimensions in metres Scale 1:16.666666666667

All dimensions in metres Scale 1:16.6666666666667

Method Inspection pit

Plant Used

Checked By
SG



Project			Client	TRIAL PIT No		
Lake Lothing			Suffolk	TPC01		
Job No Date 03-08-17 G			d Level (m)	17001		
2543,GI	03-08-17					
Fieldwork By			Logged By		Sheet	
HOLMES			LF		1 of 1	

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.40	TOPSOIL (Dark brown very silty gravelly fine and medium SAND. Gravel of angular to subangular fine to coarse flint, brick, concrete and occasional wood)	-	0.20	J1ES	No groundwater encountered
0.40-3.00	MADE GROUND (Yellow brown and pale yellow brown mottled gravelly fine and medium SAND. Gravel of angular to subrounded fine to coarse flint)		0.55 0.60	B1B J2ES	
	- - - - 		1.70 1.80	J3ES B2B	
-	- - - - - - - -		2.60 2.60	B3B J4ES	
		- - - - - - -			

Shoring/Support: Stability: Plant Used Checked By



Project			Client		TRIAL PIT No	
Lake Lothing		Suffolk	TPC02			
Job No	Date 17-08-17	Groun	Ground Level (m) Grid Reference ()		IPCUZ	
2543,GI	17-08-17			TM 53818 93025		
Fieldwork By		•	Logged By		Sheet	
HOLMES			LF		1 of 1	

					_
Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	FLEXIBLE SURFACING MADE GROUND (Dark brown slightly cobbly very silty sand and gravel.				Groundwater not encountered during excavation
	Gravel of angular to subangular fine to coarse brick, flint and concrete)				
-			0.30	J1ES	VOC = 0ppm (peak)
_	-				Plate Load Test undertaken at 0.5m depth
0.70-0.80	MADE GROUND (Brick layer)				
0.80-1.20	MADE GROUND (Black, dark grey and dark brown mottled gravelly medium sand. Gravel of subangular to rounded flint, brick and concrete with occasional cobbles of concrete)				Service encountered within the north of the pit, potential redundant drain. Service undisturbed and
			1.00 1.00	B1 J3ES	pit extended southwards Trial pit discontinued due to presence of communications cable at c. 1.0m depth, confirmed
1.20-1.40	MADE GROUND (Dark brown gravelly fine to medium sand with occasional gravel of subangular to rounded fine to coarse flint, brick and concrete)		1.30	J4ES	as redundant. Pit to be continued at a later date
1.40-1.50	MADE GROUND (Pale yellow and pale brown fine and medium sand)				
			1.50	J5ES	VOC = 0ppm (peak)
-		1			

Shoring/Support: Stability: Checked By Plant Used



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	TPC02	
Job No	Date 17-08-17	Groun	d Level (m)	Coordinates ()	IPCUZ
2543,GI Lake Lothing			2.80	653818.141, 293025.206	
Fieldwork By		•	Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	FLEXIBLE SURFACING				
0.15-0.70	- MADE GROUND (Dark brown slightly cobbly very silty sand and gravel Gravel of angular to subangular fine to coarse brick, flint and concrete)		0.30	J1ES	VOC = 0ppm (peak) Plate Load Test undertaken at 0.5m depth
0.70-0.80	MADE GROUND (Brick layer)	$\times\!\!\times\!\!\times\!\!\times$			0.5iii deptii
0.80-1.20	MADE GROUND (Black, dark grey and dark brown mottled gravelly medium sand. Gravel of subangular to rounded flint, brick and concrete with occasional cobbles of concrete)		1.00 1.00	B1B J3ES	Service encountered within the north of the pit, potential
1.20-1.40	MADE GROUND (Dark brown gravelly fine to medium sand with occasional gravel of subangular to rounded fine to coarse flint, brick and concrete)		1.30	J4ES	redundant drain. Service undisturbed and
757	MADE GROUND (Pale yellow and pale brown fine and medium sand)		1.50	J5ES	pit extended southwards
1.60-2.70	Yellow brown fine SAND with occasional wood fragments		1.70 1.80 2.50 2.70	J6ES B1 J7ES B2	VOC = Oppm (peak) VOC = Oppm (peak) VOC = Oppm (peak) Severe collapse of sidewalls from 1.6m bgl VOC = Oppm Moderate inflow of water at 1.9 m VOC = Oppm Trial pit terminated at 2.7m due to severe collapse

All dimensions in metres Scale 1:29.166666666667

Method Trial Pit/trench Shoring/Support: Stability:

Checked By Plant Used



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	TPC03	
Job No	Date 03-08-17	Groun	d Level (m)	Grid Reference ()	IPC03
2543,GI	03-08-17				
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth DESCRIPTION Legend Depth No Remarks/\(^{7}\) 0.00-0.15 CONCRETE (pale grey no rebar) O.15-0.35 MADE GROUND (Dark brown silty sand and gravel with cobbles of brick. Gravel of angular to subangular fine to coarse brick, concrete and flint) O.35-0.60 MADE GROUND (Dark brown silty very gravelly fine to coarse sand. Gravel of angular to subrounded fine to coarse brick and concrete) O.60-1.00 MADE GROUND (Pale brown fine and medium sand) D.80 J2ES O.80 J2ES Depth No Remarks/\(^{7}\) Remarks/\(^{7}\) Remarks/\(^{7}\) O.15-0.35 Remarks/\(^{7}\) O.35-0.60 O.40 O.40 O.40 O.50	0.5 for
0.15-0.35 MADE GROUND (Dark brown silty sand and gravel with cobbles of brick. Gravel of angular to subangular fine to coarse brick, concrete and flint) MADE GROUND (Dark brown silty very gravelly fine to coarse sand. Gravel of angular to subrounded fine to coarse brick and concrete) 0.60-1.00 MADE GROUND (Pale brown fine and medium sand) J1ES B1B Pit excavated to C Plate Load test)	
Gravel of angular to subangular fine to coarse brick, concrete and flint) MADE GROUND (Dark brown silty very gravelly fine to coarse sand. Gravel of angular to subrounded fine to coarse brick and concrete) MADE GROUND (Pale brown fine and medium sand) MADE GROUND (Pale brown fine and medium sand) J1ES B1B Pit excavated to C Plate Load test)	
0.35-0.60 MADE GROUND (Dark brown silty very gravelly fine to coarse sand. Gravel of angular to subrounded fine to coarse brick and concrete) 0.60-1.00 MADE GROUND (Pale brown fine and medium sand) 0.40 0.50 B1B Pit excavated to 0 Plate Load test)	
0.80 J2ES	counted
	counted
1.00.2.10 Pale vallow brown slightly gravelly fine and modium SAND. Gravel of	counted
\boxed{V} L subangular to subrounded fine to coarse flint. $\boxed{ \begin{bmatrix} \cdot \cdot \cdot \cdot \cdot \end{bmatrix} }$ 1.10 B2B	counted
J3ES Groundwater end from all walls of the held within nature	the pit -
sandsmoderate t	to fast
1.80 B3B	
├ → ∴ ∴	
2.10 D1D End of trial pit du 2.10 J4ES significant continue collapse of side w	nued
Conapse of side w	valis.

Shoring/Support: Stability:

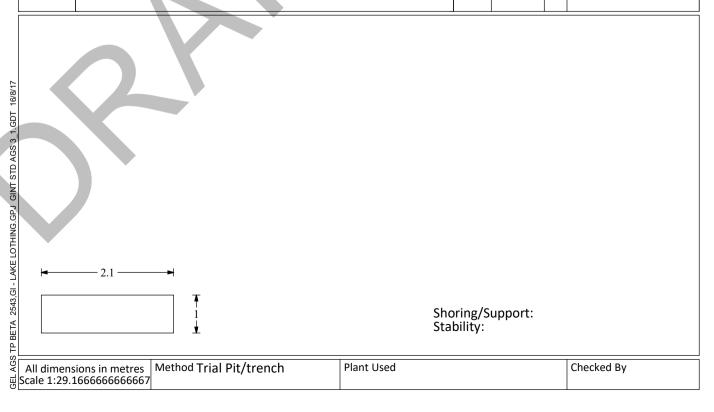
Plant Used

Checked By



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk (County Council	TPC04
Job No	Date 03-08-17	Groun	d Level (m)	Grid Reference ()	TPC04
2543,GI	03-08-17				
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	CONCRETE (Pale grey with 5mm rebar)				
0.15-0.50	- MADE GROUND (Brown very silty very gravelly fine to coarse SAND. Gravel - - of angular to subangular fine to coarse brick, concrete and occasional - - flint)		0.30	J1ES	VOC = 0ppm (peak)
0.50-1.10	weak natural organic odour. Gravel of angular to subrounded fine to coarse brick, flint and concrete)		0.55 0.55	B1B J2ES	
1.10-2.00	Orange brown silty slightly gravelly SAND. Gravel of fine and medium subangular to rounded flints.	хо 	1.20 1.20	B2B J3ES	VOC = 0ppm (peak)
2.00-2.70	1.80 becoming grey with depth Grey/black sandy CLAY with moderate natural organic odour.	xo			
			2.20 2.20	B3B J4ES	
			2.70 2.70	B4B J5ES	VOC = 0ppm (peak) Pit aborted at 2.7m due to significant collapse of sidewalls





Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	TPC05	
Job No 2543,GI	Date 31-07-17 31-07-17	Groun	d Level (m)	Grid Reference ()	IPCUS
Fieldwork By		•	Logged By		Sheet
			JG		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.15	CONCRETE	2 4 7			
0.15-0.25 0.25-1.10	Subangular to subrounded fine to coarse flint and concrete) MADE GROUND (Black and grey very gravelly medium to coarse sand.		0.30	1 J	VOC = 1.0 ppm (peak)
	 Gravel of subangular to subrounded fine to coarse clinker, brick and concrete) - - - - - 		0.50 0.50	1B 2J	VOC = 5.0 ppm (peak)
1.10-2.30	Grey brown sandy CLAY with weak natural organic odour and pockets of yellow brown sand		1.00 1.00 1.10	2B 3J 3B	VOC = 2.0 ppm (peak) VOC = 1.0 ppm (peak)
-			1.10 1.30	4J 5J	VOC = 1.0 ppm (peak)Slow seepage inflow of water at 1.3 m Continued collapse from 1.5m depth
7 -					Slow seepage inflow of water at 2 m
2.30-2.80	Dark grey slightly gravelly CLAY. Gravel of subangular to subrounded fine to medium chalk	<u> </u>	2.30 2.30	4B 6J	VOC = 1.0 ppm (peak)
2.80-3.10	Grey slightly gravelly medium to coarse SAND. Gravel of subrounded fine and medium flint	o	2.90 2.90	5B 7J	VOC = 0.0 ppm
					Trial pit completed at 3.1m depth
		1			

All dimensions in metres | Method Trial Pit/trench | Plant UsedMECHANICAL | EXCAVATOR | SG



Project			Client			TRIAL PIT No
Lake Lothing			Suffolk County Council			TDCOC
Job No	Date 01-08-17	Groun	d Level (m)	Grid Reference ()		TPC06
2543,GI	01-08-17		2.43			
Fieldwork By	·	•	Logged By			Sheet
			JG			1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	CONCRETE (with 5mm diameter rebar)	2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			
0.20-0.70	MADE GROUND (Brown grey gravelly fine to coarse sand. Gravel of angular fine and medium flint, brick concrete)		0.30	1 J	
	0.60 Redundant 20mm black pipe encountered				
0.70-0.90	MADE GROUND (Black slightly gravelly silty fine to coarse sand. Gravel of subangular to angular fine brick)		0.70 0.70	1B 2J	
0.90-1.90	Olive brown silty fine SAND	*****			
	- - -		1.10 1.10	2B 3J	
	1.50 Becoming slightly darker in colour with depth				Significant collapse of sidewalls to 1.5m depth
90-3.20	Black and dark grey CLAY with moderate natural organic odour	· . · . 			Slow seepage inflow of
	-		2.00 2.00	3B 4J	water at 1.9 m
	-				
			3.20 3.20	4B 5J	Trial pit completed at 3 depth

All dimensions in metres | Method Trial Pit/trench | Plant UsedMECHANICAL | Checked By | Scale 1:29.1666666666667 | SG



Project			Client		TRIAL PIT No	
Lake Lothing			Suffolk	County Council	TPC07	
Job No 2543,GI	Date 21-09-17 21-09-17	Groun	Ground Level (m) Grid Reference ()		IPCU/	
Fieldwork By			Logged By		Sheet	
			LF		1 of 1	

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	CONCRETE (Pale grey, 5mm diameter rebar)	7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			
0.20-0.40	MADE GROUND (Orange brown silty sand and gravel. Gravel of angular to subrounded fine to coarse flint and occasional brick)		0.30	J1ES	VOC = 0ppm (peak)
0.40-0.55	MADE GROUND (Black silty sand and gravel. Gravel of angular to subrounded fine to coarse brick, clinker and flint)		0.45	J2ES	VOC = 0ppm (peak)
0.55-1.40	MADE GROUND (Orange brown slightly gravelly fine to medium sand with occasional brown mottling. Gravel of subangular to subrounded fine to coarse flint and occasional brick fragments)				
,			0.90	J3ES	VOC = 0ppm (peak)
-			1.00	B1	Moderate inflow of wate at 1 m
1.40-1.50	Dark grey very sandy slightly gravelly CLAY. Gravel of subangular to				Trial pit aborted at 1.4m
1.40 1.50	subrounded fine to coarse flint	-	1.50 1.50	D1 J4ES	depth due to significant collapse of sidewalls
		-			



GEL AGS TP BETA 2543,GI - LAKE LOTHING.GPJ GINT STD AGS 3_1.GDT 27-9-17

TRIAL PIT LOG

Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TDCOO
Job No 2543,GI	Date 21-09-17 21-09-17	Groun	d Level (m)	Grid Reference ()	TPC08
Fieldwork By			Logged By		Sheet
			LF		1 of 1

CONCRETE (Pale grey, 5mm diameter rebar)	A 4 A			
-				
MADE GROUND (Orange brown silty sand and gravel. Gravel of angular to subrounded fine to coarse flint, concrete and occasional brick)		0.25	J1ES	
MADE GROUND (Black and dark grey gravelly clayey fine to coarse sand.		0.30	JZES	
MADE GROUND (Yellow brown and brown mottled fine to coarse sand with occasional flint gravel)		0.50	J3ES	
MADE GROUND (Dark brown and black mottled fine to coarse sand with occasional fine to coarse subrounded to rounded flint gravel and moderate natural organic odour)		1.00 1.00	B1 J4ES	
		1.60	J5ES	Moderate seepage inflow of water at 1.6 m
		2.00 2.00	B2 J6ES	
				Trial pit aborted at 2.5m depth due to significant collapse of sidewalls
	MADE GROUND (Yellow brown and black mottled fine to coarse sand with occasional fine to coarse subrounded fine to coarse sand with occasional flint gravel) MADE GROUND (Yellow brown and brown mottled fine to coarse sand with occasional flint gravel) MADE GROUND (Dark brown and black mottled fine to coarse sand with occasional fine to coarse sand with occasional fine to coarse subrounded to rounded flint gravel and	MADE GROUND (Park brown and black mottled fine to coarse sand with occasional fine to coarse subrounded for to coarse sand with occasional flint gravel) MADE GROUND (Dark brown and black mottled fine to coarse sand with occasional flint gravel)	Subrounded fine to coarse flint, concrete and occasional brick) MADE GROUND (Black and dark grey gravelly clayey fine to coarse sand. Gravel of angular to subrounded fine to coarse flint, brick and concrete) MADE GROUND (Yellow brown and brown mottled fine to coarse sand with occasional flint gravel) MADE GROUND (Dark brown and black mottled fine to coarse sand with occasional fine to coarse subrounded to rounded flint gravel and moderate natural organic odour) 1.00 1.60	Subrounded fine to coarse flint, concrete and occasional brick) MADE GROUND (Black and dark grey gravelly clayey fine to coarse sand. Gravel of angular to subrounded fine to coarse flint, brick and concrete) MADE GROUND (Yellow brown and brown mottled fine to coarse sand with occasional flint gravel) MADE GROUND (Dark brown and black mottled fine to coarse sand with occasional fine to coarse subrounded to rounded flint gravel and moderate natural organic odour) 1.00 1.60 JSES 1.60 JSES

All dimensions in metres Scale 1:25

All dimensions in metres Scale 1:25

All dimensions in metres Scale 1:25

All dimensions in metres Scale 1:25

All dimensions in metres Scale 1:25



Project	Project Client					TRIAL PIT No			
	Lake Lothing Suffolk County Council				TPC09				
Job No		Date 23-04-18	Groun	id Level (m)	Coordinates	5 ()			1703
	ake Lothing	23-04-08				,			
Fieldwork	Ву			Logged By					Sheet
				JG					1 of 1
Depth		С	ESCRIPT	ION		Legend	Depth	No	Remarks/Tests
0.00-0.50	MADE GRO Gravel of su flint)	UND (Dark brown and bubangular to subrounde	olack grav d fine ar	velly fine and mond medium clink	edium SAND. er, brick and	-	0.20	J1ES	VOC = 0ppm
0.50-1.40	MADE GRO of subangul	UND (Orange brown gra lar to rounded fine and	avelly fin medium	e and medium S flint and occasi	SAND. Gravel onal clinker)		0.60	J2ES	VOC = 0ppm
1.40-2.00	Grey browr	n CLAY with moderate n	atural or	ganic odour			1.50	J3ES	VOC = 0ppn Moderate inflow of water at 1.6 m
	- - - - - - - - - - -								Trial pit terminated at 2.0m bgl due to severe collapse
 -					Sh St	noring/Suability:	upport:		
All dimens	ions in metre	Method Trial Pit/tr	ench	Plant l	JsedMECHAN				Checked By



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC21
Job No	Date 17-08-17	Groun	d Level (m)	Grid Reference ()	IPCZI
2543,GI	17-08-17			TM 53780 92650	
Fieldwork By		•	Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.05	FLEXIBLE SURFACING				No significant collapse of sidewalls
0.05-0.15 0.15-0.70	MADE GROUND (Black and dark brown silty sand and gravel. Gravel of angular to subangular fine to coarse flint, clinker and brick)		0.10	J1ES	VOC = 0ppm (peak)
	MADE GROUND (Pale brown very silty very gravelly fine and medium	₩₩	0.25	J2ES	VOC = 0ppm (peak)
	sand. Gravel of angular to subangular fine to coarse brick, flint, concrete	>>>>			
	and clinker)	+	0.50	B1	Plate bearing test undertaken at 0.5m dept
0.70-1.40	MADE GROUND (Dark brown very sandy clay with natural organic odour)				
			0.80	J3ES	
		-			
	-	₩₩			
			1.20	В2	
1.40-3.10	Yellow brown and blue grey mottled slightly sandy gravelly CLAY with				
1.40-5.10	clayey sand pockets. Gravel of subangular to subrounded fine to coarse		1.45	J4ES	
	chálk and flint		1.60	D1	
	-				
		<u> </u>			
	2.00 Becoming dark yellow brown and blue grey mottled with depth] <u>-</u> :-:-	2.00	В3	Moderate seepage inflo
					or water at 2 m
			2.30	J5ES	
		<u></u>			
		<u> </u>	2.50	D2	
		<u> </u>			
	-	<u> </u>	3.00	B4	Fast seepage inflow of
					water at 3 m Trial pit completed at 3.1
		-			depth
		1			
		1		1	



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC22
Job No	Date 17-08-17	Groun	d Level (m)	Grid Reference ()	IPCZZ
2543,GI	17-08-17			TM 53820 92612	
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.35	MADE GROUND (Dark brown very gravelly very silty fine sand. Gravel of angular to subrounded fine to coarse flint, clinker, brick and fragments of clay pipe)		·		Groundwater not encountered during excavation
0.35-1.10	- POTENTIAL MADE GROUND (Pale brown gravelly fine and medium sand.		0.30	J1ES	VOC = 0ppm (peak)
-	- Gravel of angular to subrounded fine to coarse flint) -		0.50 0.60	B1 J2ES	Plate bearing test undertaken at 0.5m depth
-	- - -				
-					
1.10-3.00	Orange brown and pale brown mottled gravelly fine and medium SAND with occasional pockets of dark orange brown sand. Gravel of angular to subrounded fine to coarse flint	0	1.20	J3ES	
-			1.50	В2	
-					
-			2.10	J4ES	
-			2.60	В3	
-					
- - -		-	3.00 3.00	B4 J5ES	Trial pit completed at 3.0m depth
-		-			

All dimensions in metres Scale 1:29.16666666667

Method Trial Pit/trench
Scale 1:29.166666666667 Shoring/Support: Stability: Checked By Plant Used



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC23
Job No	Date 17-08-17	Groun	d Level (m)	Grid Reference ()	IPC25
2543,GI	17-08-17			TM 53812 92579	
Fieldwork By		•	Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-2.00	MADE GROUND (Pale brown very gravelly very silty fine and medium sand. Gravel of angular to subangular fine to coarse brick, concrete, flint and glass. Fragment of potential asbestos containing material				Groundwater not encountered during excavation
-	encountered)		0.30	J1ES	VOC = 0ppm (peak)
-	_ 0.40 Becoming dark brown with depth		0.50	B1	Plate bearing test
	0.60 Cobbles of concrete with rebar (20mm diameter) and brick 0.70 Layers of ash, clinker and burnt ground		0.60	J2ES	
-			1.00	J3ES	
-			1.50	B2	
-	-				
2.00-2.50	MADE GROUND (Dark brown slightly gravelly slightly clayey fine and medium sand. Gravel of angular to subrounded fine to coarse brick, concrete, flint, glass and wood)		2.00	J4ES	
			2.40	В3	
2.50-3.10	POTENTIAL MADE GROUND (Orange brown fine and medium sand) -		2.60	J5ES	
-			3.00	В4	Trial pit completed at 3.1m depth

All dimensions in metres Scale 1:29.16666666667

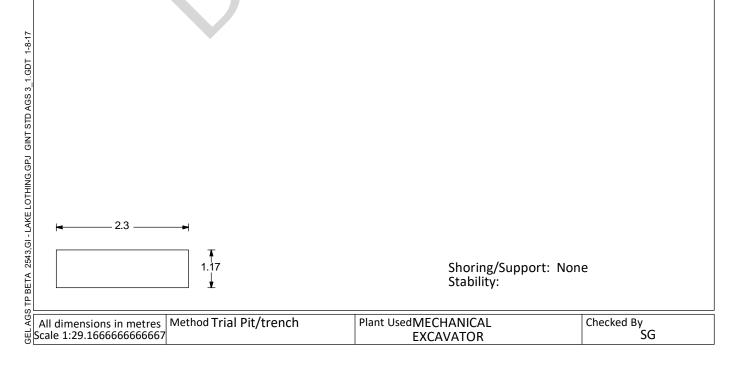
Method Trial Pit/trench Shoring/Support: Stability: Checked By

Plant Used



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC101
Job No	Date 01-08-17	Groun	d Level (m)	Grid Reference ()	IPCIUI
2543,GI	01-08-17		2.54		
Fieldwork By			Logged By		Sheet
			JG		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.20	_ CONCRETE (with 5mm rebar)				
).20-0.60	MADE GROUND (Orange brown silty sand and gravel. Gravel of subangular to angular fine to medium brick, concrete and flint)		0.30 J	1+B1	ES
.60-2.05	MADE GROUND (Pale yellow brown gravelly fine and medium sand. Gravel of fine and medium angular to subrounded brick and flint)		0.80 J	2+B2E	ES
	- - - _ 1.50 Becoming fine grained and less gravelly with depth				Significant collapse of sidewalls to 1.6m depth Moderate inflow of water 1.65 m
			1.80 J	3+B3E	Sat 1.65 m Trial pit completed at 2.05m depth
		- - -			
		- - - -			





Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC102
Job No	Date 04-08-17	Groun	d Level (m)	Grid Reference ()	IPC102
2543,GI	04-08-17				
Fieldwork By			Logged By		Sheet
HOLMES			LF		1 of 1

Depth	DESCRIPTION	Legend	Depth	No	Remarks/Tests
0.00-0.30	TOPSOIL (Dark brown silty slightly gravelly fine to coarse sand with rootlets. Gravel of subrounded and angular fine to coarse flint)		0.20	J1	VOC= 0ppm (peak)
0.30-1.40	MADE GROUND (Orange brown with occasional pale brown mottling slightly gravelly fine and medium sand. Gravel of subrounded to subangular fine to coarse flint)		0.50 0.50	B1 J2	VOC= 0ppm (peak)
1.40-2.80	Pale yellow brown slightly gravelly medium SAND. Gravel of subangular to subrounded fine to coarse flint.		1.60 1.60	B2 J3	VOC= 0ppm (peak)
- - - - - - -			2.40 2.40 2.80 2.80	B3 J4 B4 J5	VOC= 0ppm (peak) slow inflow of water at 2.7 m VOC= 0ppm (peak) End of trial pit due to collapse of sidewalls.
		- - - - - -			

All dimensions in metres | Method Trial Pit/trench | Plant Used | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Checked By | Chec



Project			Client		TRIAL PIT No
Lake Lothing			Suffolk	County Council	TPC103
Job No 2543,GI	Date 31-07-17 31-07-17	Groun	d Level (m)	Grid Reference ()	1103
Fieldwork By			Logged By		Sheet
			JG		1 of 1

DESCRIPTION CONCRETE MADE GROUND (Orange brown silty sand and gravel of subangular subrounded fine to coarse flint) MADE GROUND (Black silty gravelly fine to coarse sand with moder natural organic odour and burning odour. Gravel of angular to subangular fine to coarse flint, brick, concrete and occasional slate)	ate	0.30 0.50 0.50	No 1J 1B 2J	VOC = 0.0 ppm VOC = 1.0 ppm (peak)
MADE GROUND (Orange brown silty sand and gravel of subangular subrounded fine to coarse flint) MADE GROUND (Black silty gravelly fine to coarse sand with moder natural organic odour and burning odour. Gravel of angular to	ate	0.50	1B	VOC = 1.0 ppm (peak)
subrounded fine to coarse flint) MADE GROUND (Black silty gravelly fine to coarse sand with moder natural organic odour and burning odour. Gravel of angular to	ate	0.50	1B	VOC = 1.0 ppm (peak)
natural organic odour and burning odour. Gravel of angular to	7			
MADE GROUND (Dark brown fine and medium sand with moderate strong sulphurous odour)	to	1.10 1.10	2B 3J	
		1.50 1.50	3B 4J	Slow seepage inflow of water at 1.45 m VOC = 0.0 ppm
Pale brown fine SAND with weak to moderate sulphurous odour				
	+::::	2.00 2.00	4B 5J	
				Trial pit aborted due to significant collapse of sidewalls
	Pale brown fine SAND with weak to moderate sulphurous odour	Pale brown fine SAND with weak to moderate sulphurous odour	2.00	Pale brown fine SAND with weak to moderate sulphurous odour 2.00 4B

All dimensions in metres | Method Trial Pit/trench | Plant UsedMECHANICAL | EXCAVATOR | SG

CLIENT	: Suffo	lk C	ounty	Council		PROJECT: Lake	Lothin	g Mindo:	docc c-	mnlor	\dashv	GROUND	LEVE	L m						HOLE No. WSC05
LOGGED E				CHECKED BY: SG		EXCAVATION METHO	UD:	Window		·		GRID REF	EREN	CE:						SHEET 1 OF 1
FIELDWOI TEMPLAT			S BH BE	DATE: 18/10/2017			'	Uncased	ı to 5.0	m .		DATES 03	/10/2	017 -	17/	10/2	017			PROJECT NO. 2543,GI
ate/Time	Depth	Dep		1 '	-			Strata	1		_	g/In-Situ Testir				borat		esting		Additional Tests and Notes
and Depth	of Casing		oth* zight of zight ater		ription of	Strata	Leg	Reduced Level	Бери	SPT 'N' Value Depths	Туре	No. Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m	Cu ³ kN/m²	2
Ī	-			CONCRETE					0.00	0 1										Hand dug starter pit from ground level to 1
				MADE GROUND (Oran medium sand. Gravel of rounded flint and cond	of fine to	gravelly fine to coarse subrounded to		Ž X	0.20	0.25 0.40	J J	1 2								VOC = 0ppm VOC = 0ppm
				MADE GROUND (Dark medium sand. Gravel o rounded concrete, flin	grey/blace of fine to t, charcoa	k gravelly fine to coarse angular to al and clinker)			0.50		I+D	3								VOC = 0ppm
+	- 5	7 1.1		Pale brown/yellow gre medium SAND. Gravel to rounded flint and cl	y brown : of fine to				0.85	1.00	i+D	4								VOC = 0ppm
		1.:	15	to rounded mint and ci	icit		0.													Fast inflow of water at 1.15m Partial collapse of sidewalls to 1.3m
							ο.				J	4								VOC=7ppm (peak)
	_			1.80 Becoming organic		<u> </u>			- 1.95	2 -										_
				,, ,,	J		5													
						•	丢			2.50	J	5								VOC=486ppm (peak)
	_						E		L	3 -										_
							1													
				3.35 With a parting of Dark red brown silty fi		and (50mm)	×.	 - -	3.50	3.50	J	6								VOC=72ppm (peak)
	_			3.80 Becoming dark gr			×	· }												
			4	4.00 Becoming pale gr	ey with de	epth	×			4.00	В	1								
							×													
	_						×		- 5 00	5 -										
									5.00											Borehole completed at 5.0m. No further progress as too dense/blowing sands
WATER	▼ Stan ▼ Wat	ding er st	water le	vel PIEZOMETER	Upper se	e zone AND	B Bulk c	disturbed s	ample		Jndis	sturbed sample	e blow o	ount			Ge	eosph	ere Er	nvironmental Ltd
					Lower se	KEY	P Pistor J Distur	rbed jar sa	mple	N*120 includ	0 = T	I value (blows a Total blows/pe seating	netràtic	n		D	Br Br	ightw ightw	ell Bar ell, Su	nvironmental Ltd ns, Ipswich Road ffolk, IP10 BJ 1603 298076
				DEPTH All denths l	evel and t	hicknesses in metres		onmental s r Sample	oii sample	e <425 Samp	ıe %	passing 425 m	iicron si	eve				vehi ic	л I С . U	1000 20010

CLIEN	T: Suffo	olk Cou	nty (Council	PROJECT: Lake Lo	othing	g				GR	OUND	LEVE	L m					HOLE No. WSC14			
LOGGE				CHECKED BY: SG	EXCAVATION METHOD:		Window		•		Cod	ordinat	es:						SHEET 1 OF 1			
	ORK BY: D TE REF: G		H BETA	DATE:		ι	Jncased	to 5.0) m		DA	TES 02-	Nov-	 17 - 0	2-No	v-17			PROJECT NO. 2543,0	 3I		
Date/Tim		Depth'					Strata		Graphical Representation			itu Testin	g		Lat	orator	/ Testing		Additional Tests and Notes			
and Depth	of Casing	of Water	. Bie	Description of	Strata	Leg	Reduced Level	Depth		Depths ≥	No.	Blows	SPT N	<425 %	wc %	PL L % 9	L r 6 Mg/r	Cu n³ kN/m²				
			id	MADE GROUND (Dark brown Isl to coarse sand. Gravel of angul to coarse flint, concrete and bri MADE GROUND (Pale yellow br mottled slightly gravelly fine to angular to subangular fine to co Pale yellow brown fine and med occasional orange brown horizo 3.80 Pocket of dark grey sand w organic odour Orange brown slightly clayey fine Orange brown fine and mediun gravel of subrounded fine and mediun gravel of subrounded fine and mediun gravel of subrounded fine and mediun	ghtly silty gravelly fine ar to subrounded fine ck) Down and brown coarse sand. Gravel of arse flint, brick and tile) Itium SAND with moderate natural are and medium SAND	Leg	Reduced	Depth - 0.00 - 1.50 - 2.00 - 4.50	0 10 20 30 40	0 - 0.30 ES 1.00 1 - ES 2 - 2.30 ES 3 - 3	J1 J2 J3 J4	Blows	SPT N	<425 %	WC %	PL L	L r 6 Mg/r	Cu kN/m²				
	+			Orange brown very sandy CLAY				4.90 5.00		5 -									Blowing sands encountered backfilled to 4.0m depth	d at 5.0m	, borel	hole
GEL AGS BH BETA 2543,GI	R ¥ Sta ∇ Wa	l nding wa ter strike	ter leve	Upper s Respons Lower s	e zone AND B TEST U KEY P J ES	Bulk d Undist Piston Disturi Enviro	isturbed sa turbed san sample bed jar sar onmental s	ample nple nple	·	(35) Und PTN N = SPT	disturbe N value Total k g seatir	ed sample e (blows a blows/per ng	blow of fter sea netratio	ount iting) in	1	מנו	Geosp	here Er	ıvironmental	HOLE No. WSC14	SHEET 1 OF 1	PROJECT No. 2543,GI

CLIENT	: Suffo	lk Cou	nty C	ouncil	PROJECT: Lake Lo	thin	g							GRO	UND	LEVEI	L m						HOLE No. WSC16			
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:		Window	less sai	mple	er				Coor	rdinate	es:							SHEET 1 OF 1			
FIELDWO TEMPLAT			I BETA	DATE:		,	Uncased	to 1.1	. m					DATI	ES 31-	Oct-1	7 - 3:	1-Oc	t-17				PROJECT NO. 2543,G	ı		
Date/Time		Depth*	żz.				Strata		Gr	raphical Repr	esentation	Sa		/In-Situ	u Testin	g	—	La	borato	ory Tes	sting		Additional Tests and Notes			
and Depth	of Casing	of Water	Pie	Description of	Strata	Leg	Reduced	Depth		SPT 'N' V		Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL N	r ∕lg/m³	Cu kN/m²				
and	of Casing	of		MADE GROUND (Orange brown sand. Gravel of angular to subr flint, concrete and brick) MADE GROUND (Orange brown mottled fine and medium sand) CONCRETE	gravelly fine to coarse bunded fine to coarse and pale brown	Leg	Reduced Level	Depth		10 20	30 40	0.40 0.80 1	ES	J1	Blows	SPT N	<425 %	WC %	PL %	LL % N	r Mg/m³	Cu kN/m²	Groundwater not encounter excavation Hand pit aborted at 1.0m derobstruction			
	▼ Stan ∇ Wat	ding wat er strikes	er leve	PIEZOMETER Upper s Respons Lower si	e zone AND B eal TEST U KEY P	Bulk o Undis Pistor	disturbed s disturbed sa turbed sam n sample bed jar sar	ample aple	C Co	andard penet ne penetratic rmeability tes	n test	(35) PTN N = N*1	blows Undis SPT N	turbed value (d sample (blows at ows/per	blow c	ount ting)	2		Ge	osphe	ere Env	- vironmental	HOLE No.	2543,GI SHEET 1 OF 1	
				DEPTH All depths, level and t	ES	Enviro	onméntal s		e		<	425 San				icron sie	eve	()						

CLIENT	: Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	thin	g							GRO	DUND	LEVE	L m						HOLE No. WSC16a			_
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:		Window	less sai	mple	r				Coo	rdinat	es:							SHEET 1 OF 1			
FIELDWO TEMPLAT			н ветл	DATE:			Uncased	to 1.1	m						ES 31-		L7 - 3	1-00	:t-17				PROJECT NO. 2543,GI			
Date/Time		Depth	*				Strata		Gr	aphical Rep	resentation	Sa		g/In-Sit	u Testin	g		Lä	borato	ory Te	sting		Additional Tests and Notes			
and Depth	of Casing	of Water	. Bi	Description of	of Strata	Leg	Reduced	Depth		SPT 'N' \		Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL N	r Mg/m³	Cu kN/m²				
and	Casing	of	l ëi l	MADE GROUND (Orange brow sand. Gravel of angular to sub flint, concrete and brick) MADE GROUND (Orange brow mottled fine and medium sand CONCRETE	n gravelly fine to coarse rounded fine to coarse n and pale brown	Leg	Reduced Level	Depth - 0.00 0.70 - 1.00 1.10		10 20	30 40	Depths 0 0.30 0.70 1 1	ES	J1	Blows	SPT N	<425%	WC %	PL %	KL % N	r Mg/m³	Cu kN/m²	Groundwater not encountered excavation Hand pit aborted at 1.0m depobstruction			
	▼ Star ▼ Wat	nding wa ter strike	ter lev	rel PIEZOMETER Uppers Respon Lowers	se zone AND B seal TEST U KEY P	Bulk o Undis Pistor	listurbed sa turbed sam i sample	ample aple	C Cor	ndard pene ne penetrati meability te		(35) = PTN N = :*N	blow) Undi : SPT N	isturbed Value Total bl	d sample (blows a ows/per	blow c	ount ating)		100	Ge	eosphe	ere Env	- vironmental '	HOLE No.	2543,GI SHEET	
				DEPTH All depths, level and	J ES	Distur Enviro	bed jar san onmental s		9		<	inc 425 Sar	luding	seating	3			7	וכ					No.	,	

CLIENT: Suffol	k County	Council	PROJECT: Lake Lo	othin	g				GROUND LEV	/EL	m						HOLE No. WSC17
LOGGED BY: LF		CHECKED BY: SG	EXCAVATION METHOD:	:	Window		•		Coordinates:								SHEET 1 OF 1
FIELDWORK BY: DR TEMPLATE REF: GE		DATE:		·	Jncased	10 4.0	m		DATES 30-Oct	t-17	- 30	0-Oc	ct-17	,			PROJECT NO. 2543,GI
Date/Time Depth		-			Strata			oling	g/In-Situ Testing			Lá	abora		esting		Additional Tests and Notes
and of Depth Casing	of 출 Water	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Depths	ıybe	No. Blows SP	Y Y	<425 %	WC %	PL %	LL %	r Mg/m³	Cu kN/m²	
and of	of Water	TOPSOIL (Dark brown slightly gr sand. Gravel of angular to subrifint and occasional brick) MADE GROUND (Dark orange b fine to coarse sand. Gravel of s fine to coarse flint) Orange brown slightly gravelly f with occasional pale orange bro subangular to rounded fine to coarse flint) Orange brown and pale grey me fine and medium SAND Orange brown and pale brown fine and medium SAND with fre clay Stiff dark brown grey CLAY Stiff dark grey very gravelly CLA subangular to subrounded fine occasional flint	avelly fine to coarse bunded fine to coarse bunded fine to coarse frown slightly gravelly ubangular to rounded fine and medium SAND with pockets of coarse flint buttled slightly clayey mottled slightly clayey quent pockets of sandy	Leg	Reduced		SPT'N' Value	adh SS SS SS SS	SP SP	PT ·	<425 %	wc	PL	LL	r	Cu kN/m²	Inflow of water at 3.7m
*WATER ▼ Stan	ding water lever strikes	vel PIEZOMETER Upper so Respons Lower so	e zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	isturbed sa turbed san sample bed jar sar onmental s	ample (nple I nple	 Permeability test SPT N N = SP N*120 includi 	ndis T N) = T ing:	s for each 75mm inc sturbed sample blov value (blows after so otal blows/penetra seating passing 425 micror	w cou seatir ation	unt ng)				eosphe	ere Env	Blowing sands encountered at 4.0m, borehold backfilled to 3.0m depth SHEET Vironmental Vironmental

CLIENT	: Suffc	olk C	ounty	Council	PROJECT: Lake Lo	thing	3				GRC	UND LEV	EL m					HOLE No. WSC19a(1)	
LOGGED				CHECKED BY: LF	EXCAVATION METHOD:		Window		•		Coo	rdinates:	,					SHEET 1 OF 1	
FIELDWO TEMPLAT			S BH BET	DATE:		·	Jncased	to 4.0	m		DAT	ES 02-Jan	-18 -	02-Jan-1	3			PROJECT NO. 2543,GI	
Date/Time				,			Strata		Graphical Representation			u Testing		Labo	ratory	Testing		Additional Tests and Notes	
and Depth	of Casing		th* zi	Description of	Strata	Leg	Reduced Level	Depth	SPT 'N' Value Dep	pths 2	No.	Blows SP	T <4 I 9	25 WC P	L LL %	r Mg/m	Cu kN/m²		
_				TOPSOIL (Dark brown silty fine occasional angular to subround brick and flint)	co coarse sand with ed fine and medium			0.00	0.35	0 - 5 - ES	J1							VOC = 0ppm	
				MADE GROUND (Pale brown sli medium sand. Gravel of suban fine and medium flint)	ghtly gravelly fine and gular to subrounded			0.60	0.80	ES	J2							VOC = 0ppm	
				Pale brown slightly gravelly med Gravel of subangular to subroud flint	dium and coarse SAND. nded fine and medium			1.00										-	
				1.50 - 1.60 Band of gravelly sand	1				1.40		13	\						VOC = 0ppm	
-				2.90 - 3.00 Band of gravelly san	d			- 3.00	2.40	2 -) ES	J4							VOC = 2ppm (peak) Borehole collapsed to 2.65m bgl	
	,	3.5	0	Orange brown gravelly medium subangular to subrounded fine 3.50 - 3.60 Band of coarse flint	to coarse flint	0.		3.00	3.50		J5							Seepage inflow of water at 3.5m	
				3.50 - 5.60 ballu ül cualse illitt	gi avei	0		- 4.00	3.50	4 -	, ,,							VOC = 0ppm	
								4.00										Borehole aborted at 4.0m due to cont collapse from 3.0m to 4.0m bgl	inued
	_							_		5 -								-	
										1									
*WATER	₹ Sta ▼ Wa	nding iter sti	water le	vel PIEZOMETER Upper s H. Respons Lower s	e zone AND B eal TEST U KEY P	Bulk d Undist Piston Distur	disturbed isturbed san turbed san sample bed jar san nmental s	ample (nple nple	,	(35) Uno N = SPT N*120 = includin	disturbed N value = Total bl g seating	d sample blov (blows after : ows/penetra	w coun seating ation			Geospl	nere Er	HOLE No. WSC19a(1)	2543,GI SHEET
				DEPTH All depths, level and				on sumple		Junipic	, a passiii	5 723 IIIICI OI	. JIEVE	O				,	

CLIENT	: Suffo	lk Cou	nty (Council	PROJECT: Lake Lo	othin	g						GRO	UND	LEVE	L m						HOLE No. WSC19
LOGGED	BY: LF			CHECKED BY: SG	EXCAVATION METHOD	. \	Window	less sa	ampl	er	<u> </u>		Coor	dinate	es:							SHEET 1 OF 1
FIELDWO TEMPLAT			H BETA	DATE:		ı	Uncased	to 0.8	8 m				DATI	ES 01-	Nov-:	17 - C)1-N	ov-1	7			PROJECT NO. 2543,GI
Date/Time		Depth*		1			Strata		(raphical Representation	Sar	т—		u Testin				borat		esting		Additional Tests and Notes
and Depth	of Casing	l of	Piez.	Description of	f Strata	Leg	Reduced Level	Depth	n .	SPT 'N' Value	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m	Cu kN/m²	
_	-		††	TOPSOIL (Dark brown silty grav	elly fine to coarse sand	-	-	0.00	0	10 20 30 40	0 -	÷				"	,,	/	,,	.0/	,	-
1				with rootlets. Gravel of angula coarse brick, flint, concrete, me	r to subangular fine to]										
1				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,						0.30	ES	J1									
1				MADE GROUND (Dark brown v	ery silty gravelly fine to		\$	0.50	ļ													
1				coarse sand. Gravel of angular coarse flint, brick, metal and cli	to subangular fine to nker)	\bowtie		0.75			0.60	ES	J2									Hand pit aborted at 0.75m due to obstructio
1				CONCRETE				0.80														nand pit aborted at 0.75iii dde to obstructio
												1										
1																						
1												1										
1																						
1]										
-	-							_		 	2 -											-
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1									<u></u>			1										
1																						
_											3 -											
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5												1										
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5									/			1										
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												1										
3			$\bot \downarrow$	<u> </u>		<u>L</u> _	<u></u>			<u> </u>						<u> </u>						
*WATER	▼ Star ▼ Wat	nding wat ter strike	ter lev	el PIEZOMETER Upper s Respon Lower s	se zone AND B seal TEST U KEY P	Bulk d Undis Piston Distur	disturbed salisturbed sam turbed sam sample bed jar san	ample nple nple	C C		(35) TN N = : N*1	Undis SPT N 20 = T uding	sturbed value (otal blo seating	l sample blows at ows/pen	blow c fter sea netràtio	ount iting) n		がい	Ge	eosph	ere En	Vironmental
				DEPTH All depths, level and				P														. 2

CLIENT	Γ: Sι	uffol	k Coui	nty C	ouncil	PROJECT: Lake Lo	thin	g							GR	OUND	LEVE	L m						HOLE No. WSC19a			
LOGGED					CHECKED BY: SG	EXCAVATION METHOD:		Window							Coc	rdinat	tes:							SHEET 1 OF 1			
FIELDWO TEMPLAT				I BETA	DATE:			Uncased	ι το 5.0	m					DAT	ΓES 02	-Nov-	17 - 0)2-N	ov-1	7			PROJECT NO. 2543,	GI		
Date/Time		epth	Depth*	Piez.				Strata		Gra	phical Re	presentation	Sa		<u> </u>	tu Testir	ng		Lä	aborat	ory Te	esting		Additional Tests and Notes			
and Depth		of sing	of Water	Pie	Description of	Strata	Leg	Reduced Level	Depth	1		' Value	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL %	r Mg/m ³	Cu kN/m²				
_	╪			Ħŧ	TOPSOIL (Dark brown silty grave	lly fine to coarse sand			0.00	0 1	0 20	30 40	0	+							-		Ĺ	-			
					with rootlets. Gravel of angular coarse brick, flint, concrete, me	to subangular fine to								-													
													0.40]	J1												
														15	,,,												
					MADE GROUND (Grey and dark gravelly fine sand. Gravel of ang	gular to subrounded	\bowtie		0.65					1													
_	1				fine to coarse flint, clinker, char	coal and ash)	\bowtie		_				0.90 1	ES	J2									_			
							\bowtie		4.20					K													
				-	MADE GROUND (Black and dark MADE GROUND (Orange brown			•	1.20 1.30	 				1													
					with occasional black mottling)	Time to course suma	\bowtie						1.50	ES	J3												
							\bowtie							1													
					Pale yellow brown medium SAN subangular to subrounded fine	D with occasional			1.80					1													
-	t				subangular to subrounded fine	to mediam mine	• : • :		-				2	4										_			
							:·:·						. 2.10	ES	J4												
					Pale yellow brown very gravelly	medium to coarse	٥.		2.40					1													
					SAND becoming slightly gravelly subangular to subrounded fine	with depth. Gravel of to medium flint		4						,]													
							٥.						. 2.70	ES	J5												
-	+								- 🔻				3	-										-			
-		$\overline{+}$	3.20				· o: .						-	1										Inflow of water at 3.2m			
							• : • :						:	1										innow or water at sizm			
							٥.						-	1													
										\				1													
_	1						٥.		4.00				4	1													
					Dark orange brown slightly grav coarse SAND. Gravel of subang	elly medium and ular to subrounded fine			4.00					1													
					and medium flint								4.20	ES	J6												
													-	-													
													-	-													
														1													
	Ť						Ť	1	5.00				- - -	1										Blowing sands encountered	d at 5.0m	, boreh	ole
													:	1										backfilled to 3.0m depth			
				$\perp \downarrow$			L_						-	1													
*WATER			ding wat		PIEZOMETER Upper se Respons Lower se			disturbed s				etration test									7		•		٤Ŧ	1	25
	-¥-	vvate	ı sırıkes	'	H. Respons Lower se	eal TEST U	Undis	turbed san			e penetra neability		SPT N N =	SPT N	N value	d sample (blows a	after sea	ating)		11	G	nenh	oro En	vironmental	HOLE No. WSC19a	SHEET 1 OF	2543,GI
						j	Distur	sample bed jar sar					inc	luding	g seatin					7	GE	ospn	eie EN	wii Offitteritai	No.	1	<u>υ</u> [
					DEPTH All depths, level and t			onmental se r Sample	oil sample	2			<425 Sar	mple %	% passii	ng 425 m	nicron si	eve							•		2

CLIENT: Suffolk County Co	ouncil	PROJECT: Lake Lothin	g				GROU	JND L	EVEL	. m						HOLE No. WSC21			
LOGGED BY: LF	CHECKED BY: LF	EXCAVATION WETHOD.	Window		•		Coord	<u>lin</u> ate	es:_,							SHEET 1 OF 1			
FIELDWORK BY: GEL TEMPLATE REF: GEL AGS BH BETA	DATE:		Uncased	l to 3.2	m		DATES			8 - 02	2-Jar	n-18				PROJECT NO. 2543,G	1		
			Strata	1	Graphical Representation Samp		/In-Situ						tory Te	esting		Additional Tests and Notes			_
and of of Depth Casing Water	Description of	Strata Leg	Reduced Level	Deptil	0 10 20 30 40	Туре	No. B	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m³	Cu kN/m²				
	FLEXIBLE SURFACING		8	0.00	0											-			
	MADE GROUND (Brown silty grasand. Gravel of angular to subaflint and occasional brick)	avelly fine to coarse ngular fine to coarse		0.20	0.35 E	ES	J1									VOC = 0ppm			
	MADE GROUND (Yellow brown sand. Gravel of subangular to s coarse flint)	silty gravelly medium ubrounded fine to		0.50	0.75 E	ES	J2									VOC = 0ppm			
	Yellow brown fine and medium dark orange brown sand			1.50	-	ES	13									VOC = 0ppm			
	Brown clayey fine and medium dark orange brown bands	•••		2.40	2.25	ES	J4									VOC = 0ppm			
∑ 3.00	occasional dark orange brown v	reining			2.65 E	ES	J5									Borehole collapsed to 2.5m VOC = 0ppm	bgl		
3.00				3.20	3											Inflow of water at 3m			
				3.20												Refusal encountered at 3.2n	i bgi		
					4 -											-			
-					5-														
					5 7											-			
*WATER \$\ \Pi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Upper si	e zone AND B Bulk (eal TEST U Undis KEY P Pistor J Distu	disturbed sa sturbed san n sample rbed jar sar	ample (nple mple	C Permeability test SPT N N = SP N*120 includ	Jndis PT N 0 = T	turbed s	ample lows af	blow c	ount iting)		D)		eosph	ere En	vironmental	HOLE NO WSC21	SHEET 1 OF 1	רויטוריי
	DEPTH All depths, level and	ES Environ ES Environ Ethicknesses in metres W Water	onmental s	oil sample				425 mi	cron si	eve	(D				•		200

LOGGE FIELDW TEMPLA					PROJECT: Lake Lo		?					GROUND	LEVEL	. m					HOLE No. WSC22		
	001/		-	CHECKED BY: SG	EXCAVATION METHOD	:	Window		•			Coordinat	es:						SHEET 1 OF 1		
			.T AGS BH BET	DATE:		ι	Jncased	το 4.5	m			DATES 01-	-Nov-1	 17 - C)1-Nov	-17			PROJECT NO. 2543,0	 SI	
Date/Tim	e Depth		epth* ¿				Strata		Graphical Representation		pling/I	n-Situ Testin	g		Labo	ratory	Testing		Additional Tests and Notes		
and Depth	of Casing	g \	of Vater ≝	Description o	f Strata	Leg	Reduced Level	Depth	SPT 'N' Value 0 10 20 30 40	Depths	Type	No. Blows	SPT N	<425 %	WC P	L LL 6 %	r Mg/m	Cu kN/m²			
	†			FLEXIBLE SURFACING				0.00	0 10 20 30 40	0 -									_		
				MADE GROUND (Dark orange be to coarse sand. Gravel of angul to coarse brick, flint and concre	rown very gravelly fine ar to subrounded fine	\bigotimes		0.05 0.30		0.20	ES .	J1									
				MADE GROUND (Orange brown	fine and medium sand			0.30		-											
				with occasional fine to coarse f	int)					0.50	ES .	J2									
						$\otimes \otimes$															
	+					\bowtie		- 4 4 0		1-	7								-		
				Orange brown and pale brown fine and medium SAND	mottled slightly silty	× ;		1.10		1.20	ES .	J3									
						×:.															
						×·															
				Orange brown and pale grey m	ottled very sandy CLAY			1.70		1.80	ES .	J4									
	+			2.00 Orange brown horizons pr	esent with depth			_		2 -									_		
					•	<u>.</u>				4											
										1											
						<u>.</u>				2.50	[D1									
7	+			Orange brown and pale grey m	attled slightly clavey	<u> </u>		3.00		3 -									_		
3-11				fine and medium SAND	ottled slightly clayey	Ţ. <u></u>				1											
GDT						-:-:				3.30	ES .	J5									
3 -						.÷				1											
AGS						[-				1											
STD	1	\downarrow	4.00	3.90 - 4.00 Pocket of dark orang	ge brown slightly			4.00		4 -											
GINT				gravelly medium sand Orange fine and medium SAND	/			4.00	····										Inflow of water at 4m Blowing sands encountered borehole backfilled to 3.7m	at 4.5m	depth,
GPJ (4.20	ES .	J6							borenole backfilled to 3.7111		
NG.O								4.50											Borehole aborted at 4.5m d	epth due	to refusal
OTHING										-											
Ä L	1									5 -									_		
- I.6 - I.6]											
2543,GI										-											
	D V C+-	204.	<u> </u>	VOL DISTOMETED NO.	CAMPIE D		dicturbad -	ample (Standard ponetration test. St.	ours CDT !-	lours F	or oach 75	m insec	nort							
EL AGS BH BETA	R ¥ Sta ∇ W	andii /ater	ng water le strikes	vel PIEZOMETER Upper s Respon: Lower s	se zone AND B eal TEST U KEY P J ES	Bulk d Undist Piston Distur Enviro	isturbed sa turbed sam sample bed jar san inmental so	ample (aple i		(35) U T N N = SI N*12 includ	Jndistu PT N va 0 = Tot ding se	irbed sample alue (blows a tal blows/pei	e blow co fter sea netratio	ount ting) n	OEC		Geosph	ere En	vironmental	HOLE No. WSC22	2543,GI SHEET 1 OF 1

wn staining with depth	e) e) d gravelly cobbly sand.	J:	Window Uncased Strata Reduced Level	Depth 0.00 0.10 0.20 0.33 0.43	Gr	aphical Repr SPT 'N' V					/11/2	017 - <425 %	Lab	oratory	7 Testing r Mg/m	3 Cu kN/m²	SHEET 1 OF 1 PROJECT NO. 2543,GI Additional Tests and Notes
Description of GROUND (Asphalt) GROUND (Black type on GROUND (Black type on GROUND (Black type on GROUND (Multicoloure and cobbles of red brick d brown silty fine SANE coming dark yellow brown staining with depth	e) e) d gravelly cobbly sand.	Leg	Strata	Depth 0.00 0.10 0.20 0.33 0.43	Gr	SPT 'N' V	'alue	Depths	pling/In-S	Situ Testin	SPT	<425	Lab	oratory	Testing	Cu kN/m²	Additional Tests and Notes
GROUND (Asphalt) GROUND (Black type on GROUND (Black type on GROUND (Multicoloure and cobbles of red brick dispenses of the Grown silty fine SANE coming dark yellow brown staining with depth	e) e) d gravelly cobbly sand.		Reduced	Depth 0.00 0.10 0.20 0.33 0.43		SPT 'N' V	'alue	Depths	pling/In-S	Situ Testin	SPT	<425	Lab	oratory	Testing	Cu kN/m²	Additional Tests and Notes
GROUND (Asphalt) GROUND (Black type on GROUND (Black type on GROUND (Multicoloure and cobbles of red brick dispenses of the Grown silty fine SANE coming dark yellow brown staining with depth	e) e) d gravelly cobbly sand.		Reduced	Depth 0.00 0.10 0.20 0.33 0.43		SPT 'N' V	'alue	Depths			SPT	<425 %	wc			Cu kN/m²	1
GROUND (Black type on GROUND (Asphalt) GROUND (Black type on GROUND (Multicoloure and cobbles of red brici d brown silty fine SAND coming dark yellow brown staining with depth	e) d gravelly cobbly sand. k)	× · · · · · · · · · · · · · · · · · · ·		0.10 0.20 0.33 0.43				0 -									-
GROUND (Asphalt) GROUND (Black type on GROUND (Multicoloure and cobbles of red brici d brown silty fine SAND coming dark yellow brown staining with depth	e) d gravelly cobbly sand. k)	× · · ·		0.20 0.33 0.43												1	
GROUND (Black type on GROUND (Multicoloure and cobbles of red brici d brown silty fine SAND coming dark yellow brown was staining with depth	d gravelly cobbly sand.	X		0.33 0.43													
GROUND (Multicoloure and cobbles of red brici d brown silty fine SAND coming dark yellow brown was staining with depth	d gravelly cobbly sand.	× · · · ·		0.43]									
and cobbles of red brici d brown silty fine SANE coming dark yellow brown staining with depth	()	× · · · ·				 											
coming dark yellow brown staining with depth		× · · · · ·				.			D 1 J 1								
wn staining with depth	wn with frequent dark	× · · ·		0.70				0.80	J 2								
		× · · · · · · · · · · · · · · · · · · ·		_				1 -	J 3								_
	• , ,	×··	>	4.65		 											
range brown/yellow bro CLAY. Sand is fine. Frequ	own mottled very silty lent bands of silty fine	* .		1.65				-									
		× × × × × × × × × × × × × × × × × × ×						2 -	J 4								
ellow brown silty fine SA brown mottling	ND with frequent dark	×		2.65				3 -									Inflow of water at 2.5m
		× · · · · · · · · · · · · · · · · · · ·))					3.20	J 5								
ith a dark red brown ba	nd	×:.		- 4.00				4 -									Windowless sample hole completed at 4.
																	and the completed at 4.
.H. Respor	se zone AND B seal TEST U KEY P	Bulk d Undist Piston Distur	listurbed s turbed san I sample bed jar san	ample nple mple	C Cor K Per	ne penetratio	on test	(35) U PTN N = S	Jndisturb PT N value 0 = Total I	ed sample e (blows a blows/pe	e blow o	count ating)	4		3rightw	ell Barr	nvironmental Ltd ns, Ipswich Road ffolk, IP10 BJ 1603 298076
iti	h a dark red brown ba	METER Upper seal SAMPLE CRESponse zone AND BLOWER seal TEST LEST LEST LEST LEST LEST LEST LEST	METER Upper seal Response zone Lower seal KEY P Pistor J Distur	METER Upper seal Response zone Lower seal Lower seal KEY Piston sample J Disturbed jar sa	METER Upper seal SAMPLE D Small disturbed sample Response zone AND B Bulk disturbed sample Undisturbed ARETER Response zone Response zone Lower seal Lower seal TEST U Undisturbed sample Lower seal FEST U Undisturbed sample K Per P Piston sample J Disturbed jar sample	ARTER Response zone Response zone Lower seal Lower seal Lower seal KEY Piston sample J Disturbed jar sample J Disturbed J D	AETER Upper seal SAMPLE Response zone AND B Bulk disturbed sample Lower seal KEY P Piston sample KEY P Piston sample KEY P Priston sample KEY P Priston sample K Permeability test S	AETER Response zone AND B Bulk disturbed sample C C Cone penetration test Blows SPT to Lower seal KEY P Piston sample K Permeability test SPT N N = S N*12	AETER Upper seal Response zone AND B Response zone Lower seal KEY P Piston sample S ST N N = SPT N value N*120 = Total N*120 = T	AETER Response zone Response zone Lower seal KEY D Small disturbed sample Lower seal KEY Piston sample S Standard penetration test KEY D Small disturbed sample K Permeability test SPT N N = SPT N value (blows/pe N*120 = Total blows/pe N*120 = Total blows/pe N*120 = Total blows/pe	ARETER Response zone AND B Bulk disturbed sample C Cone penetration test Blows SPT blows for each 75mm increase Spring Bulk disturbed sample C Cone penetration test Spring N = SPT N value (blows after sea Spring N = SPT N value (blows after sea Spring N = Spring N	ARTER Response zone AND Lower seal Lower sea	AETER Response zone AND Response zone AND Lower seal TEST U Undisturbed sample S Standard penetration test Blows SPT blows for each 75mm increment C Cone penetration test SpT N N = SPT N value (blows after seating)	TETER Upper seal SAMPLE D Small disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment AND B Bulk disturbed sample C Cone penetration test C Cone penetration test C SPT N SPT N SPT N N SPT	TETER Not brown band AETER Response zone AND B Bulk disturbed sample S Standard penetration test Blows SPT blows for each 75mm increment (35) Undisturbed sample blow count Undisturbed sample C Cone penetration test SPT N N = SPT N value (blows after seating) Geosph Brightw	na dark red brown band AETER Upper seal Response zone ANDL Response zone ANDL Lower seal TEST U Undisturbed sample B Bulk disturbed sample C Cone penetration test SPT N N = SPT N value (blows after seating) Geosphere En Reisbonse zone ANDL SPT N value (blows after seating) RETER SPT N value (blows after seating) Geosphere En Reisbonse zone ANDL SPT N value (blows after seating)	

CLIENT	: Suffo	lk Co	unty	Council	PROJECT: Lake Lo	<u>othin</u>	g Mindou	doss so	I					(GRO	UND	LEVE	. m						HOLE No. BHC28		
LOGGED E				CHECKED BY: DATE:	EXCAVATION METHOD			less sar	-					_ (GRIE	REFE	RENC	CE:						SHEET 1 OF 1		
FIELDWOI FEMPLAT			ВН ВЕТ			,	ucaseo	d to 4.0	m					[DATI	ES 12/	10/20	017 -	13/1	0/20)17			PROJECT NO. 2543,0	il -	
ate/Time	Depth	Dep			1		Strata	9	Gra	phical Re	epresei	ntation	Sai			u Testin				oorato		sting		Additional Tests and Notes		
and Depth	of Casing	o Wa		Description	of Strata	Leg	Reduced Level	Depth	0 1		I' Value	e 40	Depths	Type	No.	Blows	SPT N	<425 %	WC %	PL %	LL % N	r ⁄Ig/m³	Cu kN/m²			
1	-			CONCRETE		P & 4		0.00					0 -											-		
				MADE GROUND (Orange brow gravel of fine to coarse angula concrete and occasional brick	vn slightly clayey sand & or to subrounded flint, fragments)			0.18 0.28																		
				CONCRETE CONCRETE (Concrete recover	ed as a gravel of fine to			0.45					0.50-		1									VOC=0ppm (peak)		
				coarse angular to subangular (red brick)	concrete with occasional	₩		0.60					0.80 0.50- 0.60	4	2									VOC=1ppm (peak)		
+	_			MADE GROUND (Dark brown frequent gravel of fine to coal chalk and strong medium den	se brick, flint, chert,			0.90				····	0.70 1.00	<u> </u>	3									_ VOC=0ppm (peak)		
				POSSIBLE MADE GROUND (So silty slightly gravelly clay. Gravand chert with occasional calc	ft olive brown slightly rel of fine to medium flint																			voe opp (peak)		
				POSSIBLE MADE GROUND (Da with pale grey veining)				1.40					1.40- 1.80	J	4									VOC=0ppm (peak)		
				, , , , , , , , , , , , , , , , , , , ,																						
	_			POSSIBLE MADE GROUND (Da	rk yellow brown slightly			1.90					2 -											_		
				clayey silty medium sand)																				_		
													2.20- 2.40	- - - -	5									VOC=0ppm (peak)		
				2.50 - 3.00 Becoming dark gre	y brown with depth								2.60-	j ,	6									VOC=0ppm (peak)		
													2.80													
+	-						1	-					3 -											_		
		_					}																			
								3.50																		
				Pale grey yellow brown silty fi occasional pale grey banding	ne to medium SAND with (20-40mm)	× ;	,	3.30					3.60- 3.90	J	7									VOC=0ppm (peak)		
15 mins	Z	7 3.89 3.11				× .	<u> </u>						3.90													
1	-	3.2				<u>.×.</u>		4.00					4 -											Medium inflow of water at Borehole completed at 4.0r		l collap
																								3.0m upon completion		
													1													
WATER	- ▼ Stan	ding '	vater le	vel PIEZOMETER Dupper			disturbed						lows SPT											-	ΒІ	<u>1 0</u>
	¥ Wat	er str	kes	vel PIEZOMETER Upper Respo Lower	seal TEST U	Undist Piston	listurbed s turbed sar sample	mple		e penetra neability			PTN N = N*1	SPT N v 20 = To	alue (tal blo	ows/per	fter sea	ting)		5	Brig	ghṫwe	ll Barn	vironmental Ltd is, Ipswich Road folk, IP10 BJ	HOLE No. BHC28	유민
				DEPTH All depths, level and	ES	Enviro		mple soil sample	!			•	incli 425 Sam	uding se ple % p			cron si	eve	7	7	Tel	epho	ne: 01	603 298076	•	

CLIENT	: Suffo	lk C	ounty	Council	PROJECT: Lake Lo	othin	g		1							GRC	UND	LEVE	L m						HOLE No. BHC101		
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:		 Window		•							GRIE	REFE	REN	CE:						SHEET 1 OF 1		
FIELDWO TEMPLAT			RH RET	DATE: 14/08/2017		ı	Uncased	to 1.3	m								ES 12/			- 13/	10/2	017			PROJECT NO. 2543,G	ı	
ate/Time	Depth	Dep			l		Strata		Gra	phica	Repre	senta	tion	Sa	mpling		u Testin		L				esting		Additional Tests and Notes		
and Depth	of Casing	o Wa	flä⊟	Description of	f Strata	Leg	Reduced Level	Depth	0 1		'N' Va		10	Depths	Туре	No.	Blows	SPT N	<425 %	wc %	PL %	LL %	r Mg/m	Cu kN/m²			
-	_			CONCRETE (Concrete with stee	l rebar (5mm diameter))			0.00	·					0 -											No groundwater encountered	ed during	g drillin
				MADE GROUND (Dark brown r with frequent gravel of fine to concrete, clinker and glass)	nedium to coarse sand coarse brick, flint,		4 4 2 2 2	0.15				• • • • • •		0.20	J	1									VOC=0ppm (peak)		
				CONCRETE (Concrete with iron	staining at base)		4.4	0.28																	Concrete on west edge exte depth of pit (former founda	nded to l tion)	beyon
				MADE GROUND (Dark brown s Gravel of fine to coarse brick, 1 with occasional decayed wood	lint, concrete and chalk			0.50																			
				0.60 Clay pipe (12mm diamete gravelly clay with strong hydro) filled with black carbon odour									0.60	-	2									VOC=1ppm (peak)		
				CONCRETE			× × × × × × × × × × × × × × × × × × ×	0.85							_												
-	-			Sandy GRAVEL of flint				1.05						1 :											-		
				3.0, 3.0.1223		• • •	•							1.20		3									VOC=0ppm (peak)		
						• •		1.28		• • • • •		•••••			,	3									Borehole terminated at 1.28 obstruction	m due to	concr
*WATER	▼ Star ∇ Wat			vel PIEZOMETER Upper: Respor	se zone AND B eal TEST U KEY P	Bulk o Undis Pistor Distur	disturbed disturbed s sturbed sar n sample rbed jar sar	ample nple mple	C Con K Perr	e pen	etratio	n test	S	(35) PTN N = N*1 incl) Undis SPT N L20 = T uding s	turbed value (otal blo seating	d sample (blows a ows/per	blow c fter sea netratio	ount iting) in		1	Bı Bı	rightw rightw	ell Barı ell, Suf	nvironmental Ltd ns, Ipswich Road ffolk, IP10 BJ	HOLE No. BHC101	SHEET 1 OF 1
				DEPTH All depths, level and			onmental s	oil sample					<	425 Sam	nple %	passin	g 425 m	icron si	eve				eiepno	ne: O	1603 298076	•	

CLIENT	: Suff	folk	County	Council	PROJECT: Lake Lo	othin	g			GROUND LEVEL m		HOLE No. WSC103
LOGGED				CHECKED BY: SG	EXCAVATION METHOD:	:	Window		•	GRID REFERENCE:		SHEET 1 OF 1
FIELDWO TEMPLAT			LT AGS BH BE	DATE: 18/10/2017 FA			Jncased	10 4.0		DATES 17/10/2017 -	17/10/2017	PROJECT NO. 2543,GI
Date/Time and Depth	Depth of Casing		Depth* Signature	Description o	f Strata	Leg	Strata Reduced	Depth	Graphical Representation Samplin SPT 'N' Value Depths	ng/In-Situ Testing No. Blows SPT <425	Laboratory Testing WC PL LL r Cu	Additional Tests and Notes
-	Casing	Б .	- ·	MADE GROUND (Dark grey bro	wn (vollow brown	XXX	Level	0.00	0 10 20 30 40 DEPHIS	No. Blows N %	% % % Mg/m ³ kN/m ²	-
				mottled desiccated silty fine to frequent rootlets/roots (<1mm MADE GROUND (Dark grey silty frequent gravel of flint, brick ar	medium sand with -5mm)) /			0.20	0.25	1		VOC=1ppm (peak)
					, ,				0.50	2		VOC=1ppm (peak)
				POSSIBLE MADE GROUND (fill)	Overse hyerys /deyl	\bigotimes		0.87	0.75 J	3		VOC=3ppm (peak)
-	_			grey brown mottled fine to cos subangular to subrounded flint 1.05 Becoming pale brown/dar mottled with depth	rse sand with frequent and chert)			_ 0.07	1.00- 1.20 1.00	1 4		VOC=2ppm (peak)
				Dark orange brown gravelly me Gravel of subangular to subrou 1.60 Occasional to frequent gra	nded fine to coarse flint			1.35	1.50 J	5		VOC=2ppm (peak)
-		\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	2.80	Black stained slightly gravelly m with faint heavy hydrocarbon o			X	2.40	2 -	6		Partial collapse of sidewalls to 2.26m VOC=8ppm (peak)
	_			3.00 Becoming pale grey staine Pale/dark yellow brown silty SA hydrocarbon odour		× · · · · · · · · · · · · · · · · · · ·		3.10	3.00- 4.00 B	2 7		Moderate inflow of water at 2.8m VOC=2ppm (peak)
			4			× · · ·		- 4.00	4			Borehole completed at 4.0m. No further progress due to blowing sands
*WATER	¥ St	tandi	ng water le	vel PIEZOMETER Upper s					5 Standard penetration test Blows SPT blow			-
*WATER	¥ W	vater	strikes	Respon: Lower s	eal TEST U KEY P J	Undist Piston Distur	isturbed sa turbed san sample bed jar sar onmental se	nple mple	K Permeability test SPT N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N = SPT N N N N = SPT N N N N = SPT N N N N N = SPT N N N N N N N N N N N N N N N N N N N	listurbed sample blow count N value (blows after seating) Total blows/penetration g seating % passing 425 micron sieve	Geosphere En Brightwell Barr Brightwell, Suf Telephone: 01	
				DEPTH All depths, level and	thicknesses in metres W	Water	Sample					

Annex C.2

GAS AND GROUNDWATER



MONITORING



pioratory	Hole Locati	on	BHC01									Date of Installation		20-04-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)			Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions		Comments	/ Pressure Rise or Fall
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)								
1st visit	09-05-2018	1006	<0.1	<2	0.5	19.8	<0.1	nm	nm	4	2.60	Hot, sunny, dry, breez	'y		
2nd visit	23-05-2018	1002	<0.1	<2	0.5	20.3	+0.9	nm	nm	1	2.40	Hot, sunny, dry, wind	У		
		CEN 425		212.44 1:2	A = 111				11077	,	N				
truments MARKS:	Used:	GFM436 gas an	nalyser / l	PID MultiR/	AE lite				NOTE:		Not applicable Not measured				
25.0							(EY:					Monitoring Visit			
25.0							(EY:			1	2	Monitoring Visit 3 4	5		5 KEY:
						-	M	ethane	0.0	_	2	=	5	(5 KEY:
25.0		-				-	M	lethane 6 v/v)	0.0	_	2	=	5	(5 KEY:
20.0		•				-	M				2	=	5	(5 KEY:
20.0						-	M		0.0		2	=	5		Groundwater
20.0							M	6 v/v)	1.0		2	=	5		
20.0							→ M (%	6 v/v) arbon ioxide	1.0		2	=	5		Groundwater
20.0 15.0							→ M (%	6 v/v) arbon	1.0		2	=	5		Groundwater
20.0							→ M (%	6 v/v) arbon ioxide	1.0 E		2	=	5		Groundwater
20.0 Locentration 15.0 10.0							→ Ca	6 v/v) arbon ioxide 6 v/v)	1.0		2	=	5		Groundwater
20.0 Concentration 15.0 10.0 5.0							M (%	6 v/v) arbon ioxide 6 v/v)	1.0 Depth (m)		2	=	5		Groundwater
20.0 15.0 10.0 5.0 0.0	1		3	4	5		M (%	6 v/v) arbon ioxide 6 v/v)	1.0 Depth (m) 2.0 3.0		2	=	5		Groundwater
20.0 15.0 10.0 5.0 0.0	1		3 itoring V	•	5		— M (%	6 v/v) arbon ioxide 6 v/v)	1.0 Depth (m)		2	=	5		Groundwater



xploratory	Hole Location	on	BHC02									Date of Installation	17-08-17	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fall
1st visit	09-05-2018	1006	<0.1	<2	2.4	14.5	<0.1	nm	nm	<0.1	1.30	Hot, sunny, dry, breezy		
2nd visit	23-05-2018	1023	<0.1	<2	3.6	13.1	<0.1	nm	nm	<0.1	1.23	Hot, sunny, dry, windy		
strument U	lsad:	GFM436 gas an	alvser / [DID MultiP	\F lita				NOTE:	n/a	Not applicable			
MARKS:		G. W. 190 Bas a	iaiyse. 7 .	TO WATER	iz iite					nm	Not measured			
25.0							KEY:			1	2	Monitoring Visit	5 6	KEY:
20.0								ethane v/v)		0.0	2			,
15.0										2.0				
Concentration 15.0								rbon oxide v/v)	Depth (m)	6.0				Groundwater Level (mbgl)
5.0		•							Õ	8.0				
0.0							'	ygen v/v)		10.0				
	1	2 3 Mon	itoring \	4 /isit	5	(5							
TE ike Lothin	g, Lowestoft	, Suffolk										REPORT 2543,GI	DATE May-18	



kploratory	/ Hole Locati	on	внсо7									Date of Installation	27-03-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments / Pre	essure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1006	<0.1	<2	<0.1	20.1	<0.1	nm	nm	<0.1	0.97	Hot, sunny, dry, breezy	Peak flow +7.4 l	/hr (at start)
2nd visit	23-05-2018	1023	0.1	1	0.2	20.5	+0.1	nm	nm	<0.1	1.51	Hot, sunny, dry, windy	Peak flow +1.5 l,	/hr (at start)
trument U	Jsed:	GFM436 gas an	alyser / I	PID MultiRA	AE lite				NOTE:	n/a	Not applicable			
MARKS:		-								nm	Not measured			
25.0						KI	EY:		1		2	Monitoring Visit 3 4	5 6 KE	Y:
20.0							Methan	e	0.0		<u> </u>			
							(% v/v)		2.0					
15.0														
<u>≅</u>							— Carbon	2	4.0					Groundwater Level mbgl)
ent							Dioxide (% v/v)	Depth (m)	6.0					
Concentration 15.0 10.0								Ō						
10.0 5.0								_	8.0					
						-	Oxygen (% v/v)							
5.0	1	2 3 Moni	toring V	4 sist	5	6	Oxygen (% v/v)		8.0					



ploratory	Hole Location	on	внсов									Date of Installation	16-03-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments /	Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1010	<0.1	<2	<0.1	17.8	<0.1	nm	nm	<0.1	1.69	Hot, sunny, dry, breezy	Peak flow -0.	7 l/hr (at start)
2nd visit	24-05-2018	1021	<0.1	<2	<0.1	19.0	<0.1	nm	nm	<0.1	1.96	Hot, sunny, dry, windy	Peak flow +0	.9 I/hr (at start)
trument U	l Jsed:	GFM436 gas an	alyser / F	PID MultiR/	AE lite				NOTE:	n/a	Not applicable	<u> </u>		
MARKS:										nm	Not measured			
25.0							KEY	:			1	Monitoring Visit 2 3 4	5	6 KEY:
20.0								——Met∣		0.0				1
20.0		•						(% v,	/v)	2.0				
i 15.0										2.0				
ıntra										4.0				Groundwater Level (mbgl)
Concentration 15.0							-	Carb Diox (% v,	ide	Depth (m)				
5.0										8.0				
0.0								—■ — Оху <u>е</u> (% v,	gen /v)	10.0				
3.0	1	2	3	4		5	6			12.0				
		Mo	onitoring	y Visit						12.0				
TE ke Lothin	g, Lowestoft	Suffolk										REPORT 2543,GI	DATE May-18	



xploratory	Hole Location	on	внсо9									Date of Installation	23-04-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane	e Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fal
1st visit	09-05-2018	1012	<0.1	<2	<0.1	15.3	-0.3	nm	nm	1	2.32	Hot, sunny, dry, breezy		
2nd visit	24-05-2018	1021	0.1	1	<0.1	19.2	<0.1	nm	nm	<0.1	2.37	Hot, sunny, dry, windy		
strument U MARKS:	Jsed:	GFM436 gas an	nalyser / F	PID MultiRA	AE lite				NOTE:		Not applicable Not measured		'	
25.0							KEY:			4	2	Monitoring Visit	_	₆ KEY:
20.0								lethane 6 v/v)	0.0	1	2	3 4	5	- KET.
15.0 15.0									2.0					Groundwater
15.0 10.0 10.0							Ca Di (%	arbon ioxide 6 v/v)	0.0 (m) (m) 6.0					Level (mbgl)
5.0									8.0					
0.0	1	2 3	<u> </u>	4	5			xygen 6 v/v)	10.0					_
	-		itoring V		J	·	-		12.0					J
TE ake Lothin	g, Lowestoft	, Suffolk										REPORT 2543,GI	DATE May-18	



cploratory	Hole Location	on	BHC14									Date of Installation	12-01-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane	e Content	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments /	Pressure Rise or Fal
			(70 V /V)	(/6 LLL)	(/0 V/V)	(/0 V /V)	(., ,							
1st visit	09-05-2018	1007	<0.1	<2	<0.1	18.7	-0.3	nm	nm	3	1.66	Hot, sunny, dry, breezy		
2nd visit	23-05-2018	1023	<0.1	<2	<0.1	19.9	<0.1	nm	nm	<0.1	2.30	Hot, sunny, dry, windy		
strument U MARKS:	Jsed:	GFM436 gas an	alyser / F	PID MultiRA	AE lite				NOTE:		Not applicable Not measured			
25.0						К	EY:					Monitoring Visit		VEV
20.0		•				_	┷─Metha	ine (%	0.	0 1	2	3 4	5	6 KEY:
15.0 g 15.0									0.	5				Groundwater
Concentration 15.0						_	Carboi Dioxid v/v)		Depth (m) 1.	0				Level (mbgl)
5.0									<u>م</u> 1.	5				
0.0	1	2 3		1	-	_	Oxyge v/v)	n (%	2.	0				
	1		itoring V	4 isit	5	(5		2.	5			İ]
TE	g, Lowestoft											REPORT	DATE May-18	



xploratory	Hole Locati	on	BHC24	(P)								Date of Installation	23-02-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane		Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1007	<0.1	<2	<0.1	19.3	<0.1	nm	nm	<0.1	1.81	Hot, sunny, dry, breezy	Peak flow +	50.4 l/hr (at start)
2nd visit	24-05-2018	1025	0.1	1	<0.1	20.4	+0.3	nm	nm	<0.1	1.35	Hot, sunny, dry, windy	Peak flow +	22.8 l/hr (at start)
trument U	lsed:	GFM436 gas an	alyser / F	PID MultiR/	AE lite			<u> </u>	NOTE:		Not applicable Not measured			
25.0							ŒY:					Monitoring Visit		
									0.0	1	2	3 4	5	6 KEY:
20.0		•						lethane 6 v/v)	0.0					
1 5.0									2.0					-
entra								arbon	4.0	_				Groundwater Level (mbgl)
Concentration 15.0 10.0							Di	ioxide 6 v/v)	Depth (m)					-
5.0									8.0					-
0.0	1	2 3	3	4	5		6	xygen 6 v/v)	10.0					
	-		itoring V	-	J		J			1		I I	I	I
TE												REPORT	DATE	



xploratory	Hole Location	on	ВНС24	(GG)								Date of Installation	23-02-18	
Return Visit #	Monitoring Date	Atmospheric Pressure (mb)	Methane		Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments /	Pressure Rise or Fal
1st visit	09-05-2018	1007	<0.1	<2	0.3	8.6	<0.1	nm	nm	<0.1	1.42	Hot, sunny, dry, breezy	Peak flow -0.	3 l/hr
2nd visit	24-05-2018	1025	<0.1	<2	0.6	14.7	<0.1	nm	nm	<0.1	1.24	Hot, sunny, dry, windy		
strument U	Jsed:	GFM436 gas an	alyser / F	PID MultiRA	AE lite				NOTE:		Not applicable Not measured			
25.0							EY:					Monitoring Visit		; KEY:
20.0								ethane	0.0	1	2	3 4	5 6	KET.
c							(70	v/v)	0.5					
15.0														A Commitment
Concentration 15.0 10.0							Die	rbon oxide v/v)	Depth (m) 1.0					Groundwater Level (mbgl)
5.0							-		2.0					
0.0	1						'	vygen v/v)	2.5					
	1		₃ itoring V	4 isit	5		6							
TE ake Lothin	g, Lowestoft		<u> </u>									REPORT 2543,GI	DATE May-18	



xploratory	Hole Locati	on	BHC27									Date of Installation	15-01-18	
teturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content	Carbon Dioxide	Oxygen	Flow Rate	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fal
			(% v/v)	(% LEL)	(% v/v)	(% v/v)	(l/hr)							
1st visit	09-05-2018	1016	<0.1	<2	<0.1	19.2	-0.1	nm	nm	<0.1	1.92	Hot, sunny, dry, breezy		
2nd visit	23-05-2018	1023	<0.1	<2	<0.1	16.8	-0.9	nm	nm	<0.1	2.10	Hot, sunny, dry, windy	Peak flow -	1.6I/hr (at start)
strument L	sed:	GFM436 gas an	nalvser / F	PID MultiRA	AE lite				NOTE:	n/a	Not applicable			
MARKS:										nm	Not measured			
25.0							KEY:					Monitoring Visit		
										1	2	3 4	5 6	KEY:
20.0							——Metha (% v/v)		0.0					
<u> </u>							, , ,		2.0					
15.0									4.0					Groundwater
Concentration 10.0							Carbon Dioxide (% v/v)	e	Depth (m)					Level (mbgl)
5.0									ම 8.0					
0.0							Oxyger (% v/v)	n)	10.0					
	1	2 3 Mon	itoring V	4 isit	5	6			12.0					



kploratory	Hole Locati	on	BHC102	2								Date of Installation	11-12-18	
eturn Visit #	Monitoring Date	Atmospheric Pressure (mb)		e Content (% LEL)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Flow Rate (I/hr)	H2S (ppm)	CO (ppm)	VOC (ppm)	Water Level (mbgl)	Weather Conditions	Comments	/ Pressure Rise or Fall
1st visit	09-05-2018	1007	<0.1	<2	0.2	20.0	<0.1	nm	nm	<0.1	4.02	Hot, sunny, dry, breezy		
2nd visit	23-05-2018	1023	<0.1	<2	0.1	20.2	<0.1	nm	nm	<0.1	4.14	Hot, sunny, dry, windy		
trument U MARKS:	Jsed:	GFM436 gas an	nalyser / F	PID MultiRA	AE lite				NOTE:		Not applicable Not measured		I	
25.0						KE	Y:		1		2	Monitoring Visit		; KEY:
20.0						_	┷─Methar (% v/v)		0.0		2	3 4	5 6	, KLI.
15.0 ·									2.0					Groundwater Level
Concentration						_	Carbon Dioxide (% v/v)		6.0					(mbgl)
5.0									8.0					
0.0	1	2 3		4	5	6	Oxygen (% v/v)		10.0					
	-		toring Vi		3	Ü			12.0 _					
TE ke Lothin	g, Lowestoft	, Suffolk										REPORT 2543,GI	DATE May-18	

Annex C.3

CHEMICAL TEST DATA





Depot Road Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Confirmation Receipt

Report No.: 18-14854-0

Initial Date of Issue:

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Lianne Fountain

Project 2543 GI Lake Loathing

Quotation No.: Q17-10179 Date Received: 25-May-2018

Order No.: Date Instructed: 29-May-2018

No. of Samples: 7

Turnaround (Wkdays): 5 Results Due: 04-Jun-2018

Date Confirmed: 29-May-2018

.B.Ellis

Confirmed By:

Details: Lorraine Ellis, Technical Admin



Summary of Testing

Client: Geosphere Environmental Ltd	C	hemtest Jo	ob No.	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854
Quotation No.: Q17-10179	Che	mtest Samp	ple ID:	628019	628909	628910	628911	628912	628913	628914
Order No.:	С	lient Sample	e Ref.:	BHC27	BHC08	BHC102	BHC24 (d)	BHC24 (s)	BHC01	BHC09
		Client Samp	ole ID.:	W1	W1	W1	W1	W1	W1	W1
		Sample	Туре:	WATER	WATER	WATER	WATER	WATER	WATER	WATER
		Top Dept	th (m):	2.10	2.54	2.09	2.74	1.52	2.04	6.03
		Date Sar	mpled:	23-May-2018	24-May-2018	24-May-2018	24-May-2018	24-May-2018	25-May-2018	24-May-2018
Suite										
Lake Lothing Water Suite				Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered



Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Chemtest Sample ID. Quotation No.: Q17-10179 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W₁ W1 W1 W1 Sample Type: WATER WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 24-May-2018 Date Sampled 23-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Units LOD Determinand Accred. Lake Lothing Water Suite На U 1010 N/A Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ammonia (Free) as N U 1220 mg/l 0.050 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Sulphate 11 1220 mg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Cyanide (Total) U 1300 0.050 Ordered Ordered Ordered Ordered Ordered Ordered Ordered mg/l IJ Lake Lothing Water Suite Cvanide (Free) 1300 0.050 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ma/l U Lake Lothing Water Suite Arsenic (Dissolved) 1450 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ 1450 20 Lake Lothing Water Suite Boron (Dissolved) ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Ordered Lake Lothing Water Suite Cadmium (Dissolved) 1450 μg/l 0.080 Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Chromium (Dissolved) 1450 µq/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Copper (Dissolved) 11 1450 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Mercury (Dissolved) U 1450 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Nickel (Dissolved) U 1450 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1450 Lake Lothing Water Suite Lead (Dissolved) ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1450 Lake Lothing Water Suite Selenium (Dissolved) µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Zinc (Dissolved) U 1450 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1490 20 Chromium (Hexavalent) ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C5-C6 Ν 1675 μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C6-C8 Ν 1675 µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1675 Lake Lothing Water Suite Aliphatic TPH >C8-C10 Ν µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C10-C12 Ν 1675 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Aliphatic TPH >C12-C16 1675 Ordered Ν µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered _ake Lothing Water Suite 1675 Aliphatic TPH >C16-C21 Ν ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C21-C35 Ν 1675 0.10 Ordered Ordered Ordered µq/l Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aliphatic TPH >C35-C44 Ν 1675 0.10 Ordered µg/l Ordered Ordered Ordered Ordered Ordered Ordered Total Aliphatic Hydrocarbons Lake Lothing Water Suite Ν 1675 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C5-C7 Ν 1675 0.10 Ordered Ordered Ordered Ordered Ordered µg/l Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C7-C8 Ν 1675 Ordered Ordered Ordered ua/l 0.10 Ordered Ordered Ordered Ordered ake Lothing Water Suite Aromatic TPH >C8-C10 Ν 1675 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1675 Lake Lothing Water Suite Aromatic TPH >C10-C12 Ν ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C12-C16 Ν 1675 0.10 Ordered Ordered Ordered Ordered Ordered μg/l Ordered Ordered Aromatic TPH >C16-C21 ake Lothing Water Suite Ν 1675 µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Aromatic TPH >C21-C35 Ν 1675 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l Ν 1675 Ordered ake Lothing Water Suite Aromatic TPH >C35-C44 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ν Lake Lothing Water Suite Total Aromatic Hydrocarbons 1675 ua/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Total Petroleum Hydrocarbons Ν 1675 μg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Naphthalene U 1700 μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Acenaphthylene 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ordered Acenaphthene U 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1700 μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Fluorene



Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Chemtest Sample ID. Quotation No.: Q17-10179 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W₁ W1 W1 W1 WATER Sample Type: WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 Date Sampled: 23-May-2018 24-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Units LOD Determinand Accred. Lake Lothing Water Suite Phenanthrene U 1700 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Anthracene U 1700 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Fluoranthene 11 1700 μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Pyrene U 1700 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered µq/l IJ Lake Lothing Water Suite 1700 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Benzo[a]anthracene ua/l U Lake Lothing Water Suite Chrysene 1700 µg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ 1700 Lake Lothing Water Suite Benzo[b]fluoranthene ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1700 Lake Lothing Water Suite Benzo[k]fluoranthene μg/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Benzo[a]pyrene 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Indeno(1,2,3-c,d)Pyrene U 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Dibenz(a,h)Anthracene U 1700 µq/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Benzola.h.ilpervlene U 1700 ua/l 0.10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1700 Lake Lothing Water Suite Total Of 16 PAH's ua/l 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1760 ake Lothing Water Suite Dichlorodifluoromethane µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Chloromethane U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ν 1760 Ordered Ordered Vinvl Chloride ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Bromomethane U 1760 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 2.0 Ordered Ordered Chloroethane µq/l Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Trichlorofluoromethane U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.1-Dichloroethene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Trans 1.2-Dichloroethene IJ 1760 Ordered µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered IJ ake Lothing Water Suite 1.1-Dichloroethane 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite cis 1,2-Dichloroethene U 1760 1.0 Ordered Ordered Ordered µg/l Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 Ordered Bromochloromethane µg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Trichloromethane U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,1,1-Trichloroethane U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 1.0 Ordered Ordered Ordered Ordered Tetrachloromethane ua/l Ordered Ordered Ordered ake Lothing Water Suite 1,1-Dichloropropene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ Lake Lothing Water Suite Benzene 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.2-Dichloroethane U 1760 2.0 Ordered Ordered Ordered Ordered Ordered ua/l Ordered Ordered Ν ake Lothing Water Suite Trichloroethene 1760 µq/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1.0 Lake Lothing Water Suite 1.2-Dichloropropane U 1760 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l U 1760 Ordered ake Lothing Water Suite Dibromomethane µg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Bromodichloromethane 1760 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite cis-1.3-Dichloropropene Ν 1760 μg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Toluene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Trans-1.3-Dichloropropene Ν 1760 μg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ordered 1,1,2-Trichloroethane U 1760 µg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Tetrachloroethene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered



Lake Lothing Water Suite

Bis(2-Chloroisopropyl)Ether

Ν

1790

μg/l

0.50

Testing Breakdown

Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Quotation No.: Q17-10179 Chemtest Sample ID. 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W1 W1 W1 W1 WATER Sample Type: WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 Date Sampled: 23-May-2018 24-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Units LOD Determinand Accred. Lake Lothing Water Suite 1,3-Dichloropropane U 1760 µg/l 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Dibromochloromethane U 1760 µg/l 10 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1.2-Dibromoethane ake Lothing Water Suite U 1760 μg/l 5.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Chlorobenzene Ν 1760 µq/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.1.1.2-Tetrachloroethane U 1760 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l U Lake Lothing Water Suite Ethylbenzene 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ 1760 Lake Lothing Water Suite m & p-Xvlene ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U 1760 Lake Lothing Water Suite o-Xvlene μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite Styrene 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Tribromomethane 11 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Isopropylbenzene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Bromobenzene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ν 1760 50 Lake Lothing Water Suite ua/l Ordered Ordered Ordered Ordered Ordered Ordered 1.2.3-Trichloropropane Ordered U ake Lothing Water Suite N-Propylbenzene 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2-Chlorotoluene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered U Lake Lothing Water Suite 1760 1.0 Ordered Ordered 1.3.5-Trimethylbenzene ua/l Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 4-Chlorotoluene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite U 1760 Ordered Ordered Ordered Tert-Butvlbenzene µg/l 1.0 Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,2,4-Trimethylbenzene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Sec-Butvlbenzene U 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite 1760 Ordered Ordered 1.3-Dichlorobenzene Ν µg/l 1.0 Ordered Ordered Ordered Ordered Ordered IJ ake Lothing Water Suite 4-Isopropyltoluene 1760 ua/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,4-Dichlorobenzene U 1760 1.0 Ordered Ordered Ordered Ordered Ordered µg/l Ordered Ordered Lake Lothing Water Suite U 1760 Ordered Ordered N-Butylbenzene µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.2-Dichlorobenzene U 1760 μg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1,2-Dibromo-3-Chloropropane U 1760 µg/l 50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.2.4-Trichlorobenzene U 1760 1.0 Ordered Ordered Ordered Ordered Ordered ua/l Ordered Ordered ake Lothing Water Suite Hexachlorobutadiene U 1760 µg/l 1.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered IJ Lake Lothing Water Suite 1.2.3-Trichlorobenzene 1760 ua/l 2.0 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Methyl Tert-Butyl Ether Ordered Lake Lothing Water Suite Ν 1760 Ordered Ordered Ordered Ordered Ordered μg/l 1.0 Ordered 1790 ake Lothing Water Suite N-Nitrosodimethylamine Ν µq/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Phenol Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l 2-Chlorophenol Ν 1790 Ordered Ordered Ordered ake Lothing Water Suite µg/l 0.50 Ordered Ordered Ordered Ordered Ν Lake Lothing Water Suite Bis-(2-Chloroethyl)Ether 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.3-Dichlorobenzene Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 1.4-Dichlorobenzene Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1790 Lake Lothing Water Suite 1.2-Dichlorobenzene Ν ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ordered 2-Methylphenol (o-Cresol) Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered

Ordered

Ordered

Ordered

Ordered

Ordered

Ordered

Ordered



Client: Geosphere Environmental Ltd Chemtest Job No.: 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 18-14854 Quotation No.: Q17-10179 Chemtest Sample ID. 628019 628909 628910 628911 628912 628913 628914 Order No.: Client Sample Ref BHC27 BHC08 **BHC102** BHC24 (d) BHC24 (s) BHC01 BHC09 Client Sample ID W1 W1 W₁ W1 W1 W1 W1 WATER Sample Type: WATER WATER WATER WATER WATER WATER Top Depth (m) 2.10 2.54 2.09 2.74 1.52 2.04 6.03 Date Sampled 23-May-2018 24-May-2018 24-May-2018 24-May-2018 24-May-2018 25-May-2018 24-May-2018 SOP Suite Determinand Units LOD Accred. Lake Lothing Water Suite Hexachloroethane Ν 1790 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite N-Nitrosodi-n-propylamine Ν 1790 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite 4-Methylphenol Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Nitrobenzene Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered µq/l Lake Lothing Water Suite Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Isophorone ua/l Lake Lothing Water Suite 2-Nitrophenol Ν 1790 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ν 1790 0.50 Lake Lothing Water Suite 2.4-Dimethylphenol ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1790 Lake Lothing Water Suite Bis(2-Chloroethoxy)Methane Ν μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2.4-Dichlorophenol Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite 1.2.4-Trichlorobenzene Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite Naphthalene Ν 1790 µq/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 4-Chloroaniline Lake Lothing Water Suite Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ν 1790 0.50 Lake Lothing Water Suite Hexachlorobutadiene ua/l Ordered Ordered Ordered Ordered Ordered Ordered Ordered 1790 ake Lothing Water Suite 4-Chloro-3-Methylphenol Ν µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered 2-Methylnaphthalene Lake Lothing Water Suite Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ν 1790 0.50 Ordered Ordered Hexachlorocyclopentadiene ua/l Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2,4,6-Trichlorophenol Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2.4.5-Trichlorophenol Ν 1790 Ordered Ordered Ordered µq/l 0.50 Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2-Chloronaphthalene Ν 1790 µq/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2-Nitroaniline Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ake Lothing Water Suite 1790 Ordered Acenaphthylene Ν µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered 1790 ake Lothing Water Suite Ν ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Dimethylphthalate Lake Lothing Water Suite 2,6-Dinitrotoluene Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered µq/l Ordered Ordered Lake Lothing Water Suite Ν 1790 0.50 Ordered Ordered Acenaphthene µg/l Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 3-Nitroaniline Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Dibenzofuran Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered µg/l Ordered Ordered Lake Lothing Water Suite Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered 4-Chlorophenylphenylether ua/l Ordered Ordered ake Lothing Water Suite 2,4-Dinitrotoluene Ν 1790 µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ν Lake Lothing Water Suite Fluorene 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Diethyl Phthalate Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered ua/l Ordered Ν 1790 ake Lothing Water Suite 4-Nitroaniline µq/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite 2-Methyl-4.6-Dinitrophenol Ν 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l Ν 1790 Ordered Ordered ake Lothing Water Suite Azobenzene µg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ν Lake Lothing Water Suite 4-Bromophenylphenyl Ether 1790 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered ua/l Lake Lothing Water Suite Hexachlorobenzene Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Pentachlorophenol Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Phenanthrene Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ordered Anthracene Ν 1790 ua/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Lake Lothing Water Suite Ν 1790 μg/l 0.50 Ordered Ordered Ordered Ordered Ordered Ordered Ordered Carbazole



Project: 2543 GI Lake Loa	Project: 2543 GI Lake Loathing											
Client: Geosphere Enviro	nmental Ltd		Cher	ntest Jo	ob No.:	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854	18-14854
Quotation No.: Q17-10179		(Chemte	st Sam	ple ID.:	628019	628909	628910	628911	628912	628913	628914
Order No.: Client Sample F		le Ref.:	BHC27	BHC08	BHC102	BHC24 (d)	BHC24 (s)	BHC01	BHC09			
			Clie	ent Sam	ple ID.:	W1	W1	W1	W1	W1	W1	W1
				Sample		WATER						
				Top Dep		2.10	2.54	2.09	2.74	1.52	2.04	6.03
				Date Sa	mpled:	23-May-2018	24-May-2018	24-May-2018	24-May-2018	24-May-2018	25-May-2018	24-May-2018
Suite	Determinand	Accred.	SOP	Units	LOD							
Lake Lothing Water Suite	Di-N-Butyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Pyrene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Butylbenzyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]anthracene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Chrysene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Di-N-Octyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Benzo[b]fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Benzo[k]fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]pyrene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Benzo[g,h,i]perylene	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	4-Nitrophenol	N	1790	μg/l	0.50	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered
Lake Lothing Water Suite	Total Phenols	U	1920	mg/l	0.030	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered	Ordered



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Confirmation Receipt

Report No.: 18-15148-0

Initial Date of Issue:

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Lianne Fountain

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 31-May-2018

Order No.: 2543, Gl **Date Instructed:** 31-May-2018

No. of Samples: 2

Turnaround (Wkdays): 3 Results Due: 04-Jun-2018

Date Confirmed: 31-May-2018

.B.Ellis

Confirmed By:

Details: Lorraine Ellis, Technical Admin



Summary of Testing

Client: Geosphere Environmental Ltd	(Chemtest Jo	b No.	18-15148	18-15148
Quotation No.: Q17-10179	Che	mtest Samp	ole ID:	630538	630539
Order No.: 2543, GI	(Client Sample	e Ref.:	BHC02	BHC07
		Client Samp	W2	W2	
	Sample Type:				WATER
		Top Dep	th (m):	1.10	1.15
		Bottom Dept	th (m):	1.40	1.40
		Date Sar	npled:	30-May-2018	30-May-2018
Suite					
Lake Lothing Water Suite				Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179				st Sam		630538	630539
Order No.: 2543, GI				nt Samp		BHC02	BHC07
			Clie	ent Sam	ple ID.:	W2	W2
				Sampl	е Туре:	WATER	WATER
				Top Dep	oth (m):	1.10	1.15
			Bot	tom De	oth (m):	1.40	1.40
				Date Sa	ampled:	30-May-2018	30-May-2018
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	рН	U	1010		N/A	Ordered	Ordered
Lake Lothing Water Suite	Ammonia (Free) as N	U	1220	mg/l	0.050	Ordered	Ordered
Lake Lothing Water Suite	Sulphate	U	1220	mg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Cyanide (Total)	U	1300	mg/l	0.050	Ordered	Ordered
Lake Lothing Water Suite	Cyanide (Free)	U	1300	mg/l	0.050	Ordered	Ordered
Lake Lothing Water Suite	Arsenic (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Boron (Dissolved)	U	1450	μg/l	20	Ordered	Ordered
Lake Lothing Water Suite	Cadmium (Dissolved)	U	1450	μg/l	0.080	Ordered	Ordered
Lake Lothing Water Suite	Chromium (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Copper (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Mercury (Dissolved)	U	1450	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Nickel (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Lead (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Selenium (Dissolved)	U	1450	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Zinc (Dissolved)	Ū	1450	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Chromium (Hexavalent)	Ū	1490	µg/l	20	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C5-C7	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C7-C8	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C8-C10	N	1675	µg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C10-C12	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C12-C16	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C16-C21	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C21-C35	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Aromatic TPH >C35-C44	N	1675	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Total Petroleum Hydrocarbons	N	1675	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Naphthalene	Ü	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthylene	Ü	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthene	U	1700	μg/l	0.10	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd		Che	ntest Jo	b No.:	18-15148	18-15148
Quotation No.: Q17-10179			Chemte	st Sam	ple ID.:	630538	630539
Order No.: 2543, GI			Clie	nt Samp	le Ref.:	BHC02	BHC07
			Clie	ent Sam	ple ID.:	W2	W2
				Sample	е Туре:	WATER	WATER
				Top Dep	oth (m):	1.10	1.15
			Bot	tom Dep	1.40	1.40	
				Date Sa	mpled:	30-May-2018	30-May-2018
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	Fluorene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Phenanthrene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Anthracene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Fluoranthene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Pyrene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]anthracene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Chrysene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[b]fluoranthene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[k]fluoranthene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]pyrene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Benzo[g,h,i]perylene	U	1700	μg/l	0.10	Ordered	Ordered
Lake Lothing Water Suite	Total Of 16 PAH's	U	1700	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Dichlorodifluoromethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Chloromethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Vinyl Chloride	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Bromomethane	U	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Chloroethane	U	1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Trichlorofluoromethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1-Dichloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1-Dichloroethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	cis 1,2-Dichloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Bromochloromethane	U	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Trichloromethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1,1-Trichloroethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Tetrachloromethane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1-Dichloropropene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Benzene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2-Dichloroethane	U	1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Trichloroethene	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2-Dichloropropane	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Dibromomethane	U	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Bromodichloromethane	U	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	cis-1,3-Dichloropropene	N	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Toluene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Trans-1,3-Dichloropropene	N	1760	μg/l	10	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd			ntest J		18-15148	18-15148
Quotation No.: Q17-10179			Chemte	st Sam	ple ID.:	630538	630539
Order No.: 2543, GI				nt Samp		BHC02	BHC07
			Cli	ent Sam		W2	W2
				Sampl	e Type:	WATER	WATER
				Top De	oth (m):	1.10	1.15
			Bot	tom Dep	oth (m):	1.40	1.40
				Date Sa	ampled:	30-May-2018	30-May-201
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	1,1,2-Trichloroethane	U	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	Tetrachloroethene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,3-Dichloropropane	U	1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Dibromochloromethane	U	1760	μg/l	10	Ordered	Ordered
Lake Lothing Water Suite	1,2-Dibromoethane	U	1760	μg/l	5.0	Ordered	Ordered
Lake Lothing Water Suite	Chlorobenzene	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	Ordered	Ordered
Lake Lothing Water Suite	Ethylbenzene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	m & p-Xylene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	o-Xylene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Styrene	Ū	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Tribromomethane	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Isopropylbenzene	Ū	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Bromobenzene	Ū	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2,3-Trichloropropane	N	1760	µg/l	50	Ordered	Ordered
Lake Lothing Water Suite	N-Propylbenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	2-Chlorotoluene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,3,5-Trimethylbenzene	Ü	1760	µg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	4-Chlorotoluene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Tert-Butylbenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2,4-Trimethylbenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Sec-Butylbenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1.3-Dichlorobenzene	N	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	4-Isopropyltoluene	U	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,4-Dichlorobenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	N-Butylbenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	1,2-Dichlorobenzene	Ü	1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	,	U	1760		50	Ordered	Ordered
Lake Lothing Water Suite	1,2-Dibromo-3-Chloropropane 1,2,4-Trichlorobenzene	U	1760	μg/l μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	Hexachlorobutadiene	U	1760		1.0	Ordered	Ordered
Lake Lothing Water Suite	1.2.3-Trichlorobenzene	U	1760	μg/l	2.0	Ordered	
	, ,-	N		μg/l			Ordered
Lake Lothing Water Suite	Methyl Tert-Butyl Ether		1760	μg/l	1.0	Ordered	Ordered
Lake Lothing Water Suite	N-Nitrosodimethylamine	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Phenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Chlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	1,3-Dichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	1,4-Dichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd		Chei	mtest Jo	b No.:	18-15148	18-15148
Quotation No.: Q17-10179			Chemte	st Sam	ole ID.:	630538	630539
Order No.: 2543, GI			Clie	nt Samp	le Ref.:	BHC02	BHC07
			Cli	ent Sam	ple ID.:	W2	W2
				Sample	е Туре:	WATER	WATER
				Top Dep	` '	1.10	1.15
			Bot	tom Dep	oth (m):	1.40	1.40
				Date Sa	mpled:	30-May-2018	30-May-2018
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	1,2-Dichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Hexachloroethane	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Methylphenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Nitrobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Isophorone	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Nitrophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4-Dimethylphenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4-Dichlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Naphthalene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Chloroaniline	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Hexachlorobutadiene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Methylnaphthalene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Hexachlorocyclopentadiene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4,6-Trichlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4,5-Trichlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Chloronaphthalene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Nitroaniline	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthylene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Dimethylphthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,6-Dinitrotoluene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Acenaphthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	3-Nitroaniline	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Dibenzofuran	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Chlorophenylphenylether	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2,4-Dinitrotoluene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Fluorene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Diethyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Nitroaniline	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Azobenzene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Hexachlorobenzene	N	1790	μg/l	0.50	Ordered	Ordered



Client: Geosphere Enviro	nmental Ltd		Chei	mtest Jo	ob No.:	18-15148	18-15148
Quotation No.: Q17-10179		(Chemte	st Sam	ple ID.:	630538	630539
Order No.: 2543, GI			Clie	nt Samp	le Ref.:	BHC02	BHC07
			Clie	ent Sam	ple ID.:	W2	W2
				Sampl	е Туре:	WATER	WATER
				Top Dep	oth (m):	1.10	1.15
			Bot	tom De	\ /	1.40	1.40
				Date Sa	ampled:	30-May-2018	30-May-2018
Suite	Determinand	Accred.	SOP	Units	LOD		
Lake Lothing Water Suite	Pentachlorophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Phenanthrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Anthracene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Carbazole	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Di-N-Butyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Pyrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Butylbenzyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]anthracene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Chrysene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Di-N-Octyl Phthalate	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[b]fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[k]fluoranthene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[a]pyrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Benzo[g,h,i]perylene	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	4-Nitrophenol	N	1790	μg/l	0.50	Ordered	Ordered
Lake Lothing Water Suite	Total Phenols	U	1920	mg/l	0.030	Ordered	Ordered



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk

			17424916	17424917	17424918	17424919
Order details			17424310	17424317	17424310	17424313
		SDG ID.	180423-34	180423-34	180423-34	180423-34
		Status	Authorised	Authorised	Authorised	Authorised
		Project Site	Lowestoft	Lowestoft	Lowestoft	Lowestoft
		Project	62240712	62240712	62240712	62240712
		Contact	Neil Balderston	Neil Balderston	Neil Balderston	Neil Balderstone
Sampling details	Sam	anla Description	W/S01	WS02	WS03	WS04
	San	nple Description	Authorised	Authorised	Authorised	Authorised
		Sample Depth		0.00-0.20	0.00-0.20	0.00-0.20
						SURFACE_WAT
	AG	S Sample Type	OON AOL_WA	OOK! AOL_WA	OON AOL_WA	OON AGE_WAT
		mple Reference				
	7.00 04.	Date Sampled	19/04/2018	19/04/2018	19/04/2018	19/04/2018
		Received On		23/04/2018	23/04/2018	23/04/2018
		Date Complete		30/04/2018	30/04/2018	30/04/2018
Laboratory data		Date Complete	00/01/2010	00/01/2010	00/01/2010	00/01/2010
Carbon						
	Organic Carbon, Total	mg/l	<3	<3	<3	<3
Inorganics	Allediate Total 0.035					100
	Alkalinity, Total as CaCO3	•	135	124	122	122
	Ammoniacal Nitrogen as N	•	<0.2	<0.2	<0.2	<0.2
	Apparent Colour	•	27.3 18400	13.7	9.61	11.3
	Chloride	•		18500 46.7	18000	18300 45.1
	Conductivity @ 20 deg.C Nitrate as NO3		45.8 <0.3	<0.3	46.3 <0.3	45.1 <0.3
		pH Units	7.9	7.92	7.93	7.9
	Phosphate (Ortho as PO4)		<0.05	<0.05	<0.05	<0.05
	Sulphate	-	2640	2620	2610	2600
	Suspended solids, Total	•	42.3	36.8	40.8	34.2
	True Colour	-	1.38	1.95	1.49	1.51
Filtered (Dissolved) Metals		J				
	Aluminium (diss.filt)	μg/l	<60	<60	<60	<60
	Arsenic (diss.filt)	μg/l	<3	<3	<3	<3
	Cadmium (diss.filt)	μg/l	<0.48	<0.48	<0.48	<0.48
	Chromium (diss.filt)	μg/l	<6	<6	<6	<6
	Copper (diss.filt)		3.32	1.84	<1.8	<1.8
	Iron (Dis.Filt)	_	<0.114	<0.114	<0.114	<0.114
	Lead (diss.filt)		<1.2	<1.2	<1.2	<1.2
	Manganese (diss.filt)		<18	18.5	22.3	18.9
	Mercury (diss.filt)		<0.01	<0.01	<0.01	<0.01
	Nickel (diss.filt)	. •	3.13	<2.4	<2.4	3.32
Unfiltered (Total) Metals	Zinc (diss.filt)	μg/ι	26.8	19.9	21.2	8.88
ominiorea (Total) Wetais	Calcium (Tot. Unfilt.)	ma/l	440	450	415	461
	Magnesium (Tot. Unfilt.)	•	1130	1160	1150	1130
	Potassium (Tot. Unfilt.)	· ·	361	356	355	349
	Sodium (Tot. Unfilt.)	•	8440	8940	9050	8890
			U -1 U	0070	3030	3030
Gasoline Range Organics	,					
Gasoline Range Organics	,	Ü	<100	<100	<100	<100
Gasoline Range Organics	(GRO)	μg/l	<100 <10	<100 <10	<100 <10	<100 <10
	(GRO) EPH (C6-C10) GRO >C5-C10	μg/l				
EPH (Extractable Petroleu	(GRO) EPH (C6-C10) GRO >C5-C10 m Hydrocarbons) EPH Range >C10 - C40 (aq)	hā\l				
EPH (Extractable Petroleu	(GRO) EPH (C6-C10) GRO >C5-C10 m Hydrocarbons) EPH Range >C10 - C40 (aq) up (TPH CWG)	hall hall	<10 <100	<10 <100	<10 <100	<10 <100
EPH (Extractable Petroleu	(GRO) EPH (C6-C10) GRO >C5-C10 m Hydrocarbons) EPH Range >C10 - C40 (aq) up (TPH CWG) Benzene	hây hây hây	<100 <100	<10 <100	<10 <100	<10 <100 <7
EPH (Extractable Petroleu	(GRO) EPH (C6-C10) GRO >C5-C10 m Hydrocarbons) EPH Range >C10 - C40 (aq) up (TPH CWG) Benzene Ethylbenzene	hây hây hây hây	<100 <100 <7 <5	<100 <100 <7 <5	<100 <100 <7 <5	<10 <100 <7 <5
EPH (Extractable Petroleu I TPH Criteria Working Grou	(GRO) EPH (C6-C10) GRO >C5-C10 m Hydrocarbons) EPH Range >C10 - C40 (aq) up (TPH CWG) Benzene Ethylbenzene m,p-Xylene	hay, hay hay	<100 <100 <7 <5 <8	<100 <100 <7 <5 <8	<100 <100 <7 <5 <8	<10 <100 <7 <5 <8
EPH (Extractable Petroleu I TPH Criteria Working Grou	(GRO) EPH (C6-C10) GRO >C5-C10 m Hydrocarbons) EPH Range >C10 - C40 (aq) up (TPH CWG) Benzene Ethylbenzene m,p-Xylene yl tertiary butyl ether (MTBE)	hay, hay, hay, hay,	<100 <100 <7 <5 <8 <3	<100 <100 <7 <5 <8 <3	<100 <100 <7 <5 <8 <3	<10 <100 <7 <5 <8 <3
EPH (Extractable Petroleu I TPH Criteria Working Grou	(GRO) EPH (C6-C10) GRO > C5-C10 m Hydrocarbons) EPH Range > C10 - C40 (aq) up (TPH CWG) Benzene Ethylbenzene m,p-Xylene yl tertiary butyl ether (MTBE) o-Xylene	hay, hay, hay, hay, hay,	<100 <100 <7 <5 <8 <3 <3	<100 <100 <7 <5 <8 <3 <3	<100 <100 <7 <5 <8 <3 <3	<10 <100 <7 <5 <8 <3 <3
EPH (Extractable Petroleu I TPH Criteria Working Grou	(GRO) EPH (C6-C10) GRO > C5-C10 m Hydrocarbons) EPH Range > C10 - C40 (aq) up (TPH CWG) Benzene Ethylbenzene m,p-Xylene yl tertiary butyl ether (MTBE) o-Xylene Sum of detected BTEX	hay, hay, hay, hay, hay,	<100 <100 <7 <5 <8 <3 <3 <28	<100 <1000 <7 <5 <8 <3 <3 <28	<100 <1000 <7 <5 <8 <3 <3 <28	<10 <100 <100 <7 <5 <8 <3 <3 <28
TPH Criteria Working Grou	(GRO) EPH (C6-C10) GRO > C5-C10 m Hydrocarbons) EPH Range > C10 - C40 (aq) up (TPH CWG) Benzene Ethylbenzene m,p-Xylene yl tertiary butyl ether (MTBE) o-Xylene	hay, hay, hay, hay, hay, hay,	<100 <100 <7 <5 <8 <3 <3	<100 <100 <7 <5 <8 <3 <3	<100 <100 <7 <5 <8 <3 <3	<10 <100 <7 <5 <8 <3 <3





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Email: info@chemtest.co.uk

Final Report

Report No.:	17-20019-1
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Initial Date of Issue: 07-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing L20, Lowestoft

Quotation No.: Date Received: 01-Aug-2017

Order No.: 2543, GI Date Instructed: 01-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 07-Aug-2017

Date Approved: 07-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-20019
Quotation No.:		Chemte	st Sam	ple ID.:	491165
Order No.: 2543, GI			nt Samp		BHC06
		Clie	ent Sam		J3
			Sampl	е Туре:	SOIL
			Top De	oth (m):	0.5
			Date Sa	ampled:	28-Jul-2017
Determinand	Accred.	SOP	Units	LOD	
рН	U	1010		N/A	8.0
Ammonia (Free)	U	1220	mg/l	0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	< 1.0
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.5
Boron (Dissolved)	U	1450	μg/l	20	37
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	15
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	1.5
Lead (Dissolved)	U	1450	μg/l	1.0	6.3
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	3.4
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	Ü	1700	μg/l	0.10	< 0.10
Acenaphthene	Ü	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd		Che	ntest Jo	ob No.:	17-20019
Quotation No.:			st Sam		491165
Order No.: 2543, GI			nt Samp		BHC06
		Clie	ent Sam		J3
			Sample	е Туре:	SOIL
			Top Dep	oth (m):	0.5
			Date Sa	ampled:	28-Jul-2017
Determinand	Accred.	SOP	Units	LOD	
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
, , , , , , , , , , , , , , , , , , , ,	1 '*	1700	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd			ntest Jo		17-20019
Quotation No.:	(st Sam		491165
Order No.: 2543, GI			nt Samp		BHC06
		Cli	ent Sam		J3
				е Туре:	SOIL
			Top Dep		0.5
			Date Sa	ampled:	28-Jul-2017
Determinand	Accred.	SOP	Units	LOD	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	µg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Denzolalbarene	IN	1790	μg/i	0.50	< 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.:	(Chemtest Sample ID.:				
Order No.: 2543, GI		BHC06				
		J3				
	Sample Type: Top Depth (m): Date Sampled:				SOIL	
					0.5	
					28-Jul-2017	
Determinand	Accred.	SOP	Units	LOD		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.:	(Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Client Sample ID.: Sample Type:					
		SOIL					
	Top Depth (m):				0.5		
		Date Sampled:					
		Asbestos Lab:			COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	11		
Soil Colour	N	2040		N/A	Brown		
Other Material	N	2040		N/A	Stones		
Soil Texture	N	2040		N/A	Sand		
pH	M	2010		N/A	6.9		
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	0.43		
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.011		
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50		
Ammonium (Water Soluble)	M	2120	g/l	0.01	< 0.01		
Sulphate (Total)	M	2430	mg/kg	100	490		
Arsenic	M	2450	mg/kg	1.0	10		
Cadmium	М	2450	mg/kg	0.10	0.10		
Chromium	М	2450	mg/kg	1.0	9.0		
Copper	М	2450	mg/kg	0.50	57		
Mercury	М	2450	mg/kg	0.10	0.36		
Nickel	М	2450	mg/kg	0.50	17		
Lead	М	2450	mg/kg	0.50	85		
Selenium	М	2450	mg/kg	0.20	< 0.20		
Zinc	М	2450	mg/kg	0.50	83		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	3.2		
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	12		
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	26		
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	28		
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	69		
Aromatic TPH >C5-C7	N	2680	0	1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	2.5		
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	44		
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	21		
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-20019
Quotation No.:	Chemtest Sample ID.:				491165
Order No.: 2543, GI		Client Sample Ref.:			BHC06
		Cli	ent Sam		J3
				e Type:	SOIL
			Top Dep	, ,	0.5
			Date Sa	mpled:	28-Jul-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	68
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	140
Naphthalene	М	2700	mg/kg	0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10
Anthracene	М	2700	mg/kg	0.10	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10
Chrysene	M	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	M	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0
Chloromethane	M	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	M	2760	μg/kg	1.0	< 1.0
Bromomethane	M	2760	μg/kg	20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethene	M	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0
1 CH GOHIOTOTHE HIGHE					
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-20019 491165
Quotation No.:	(Chemtest Sample ID.:			
Order No.: 2543, GI		Client Sample Ref.:			BHC06
		Cli	ent Sam		J3
	Sample Type:				SOIL
			Top Dep	, ,	0.5
			Date Sa	_	28-Jul-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
1,2-Dichloroethane	М	2760)	2.0	< 2.0
Trichloroethene	М	2760		1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0
Dibromomethane	М	2760	μg/kg	1.0	< 1.0
Bromodichloromethane	М	2760		5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	М	2760	μg/kg	1.0	3.9
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	16
m & p-Xylene	М	2760	μg/kg	1.0	58
o-Xylene	М	2760	μg/kg	1.0	570
Styrene	М	2760	μg/kg	1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	19
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	1100
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	70
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
	М	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	IVI				
1,2-Dichlorobenzene 1,2-Dibromo-3-Chloropropane	U	2760		50	< 50
	4		μg/kg μg/kg	50 1.0	< 50 < 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-20019
Quotation No.:	(st Samı		491165
Order No.: 2543, GI			nt Samp		BHC06
		Cli	ent Sam		J3
	Sample Type			e Type:	SOIL
			Top Dep	oth (m):	0.5
			Date Sa	mpled:	28-Jul-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760) י	1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50
Phenol	М	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790)	0.50	< 0.50
1,3-Dichlorobenzene	М	2790		0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790		0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50
Isophorone	М	2790		0.50	< 0.50
2-Nitrophenol	N	2790		0.50	< 0.50
2,4-Dimethylphenol	N	2790		0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	2.0
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	М	2790		0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790		0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	1.3
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	М	2790		0.50	< 0.50
2,4,5-Trichlorophenol	М	2790		0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50
Acenaphthylene	М	2790		0.50	< 0.50
Dimethylphthalate	М	2790		0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50
Acenaphthene	М	2790		0.50	< 0.50
3-Nitroaniline	N	2790	,	0.50	< 0.50
Dibenzofuran	М	2790	J	0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-20019
Quotation No.:	(st Sam		491165
Order No.: 2543, GI		Client Sample Ref.:			BHC06
		Cli	ent Sam		J3
		Sample Type:			SOIL
			Top Dep		0.5
			Date Sa	ampled:	28-Jul-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
4-Chlorophenylphenylether	M	2790	١	0.50	< 0.50
2,4-Dinitrotoluene	M	2790	١	0.50	< 0.50
Fluorene	М	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	M	2790		0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	М	2790) י	0.50	< 0.50
Anthracene	M	2790	mg/kg	0.50	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Fluoranthene	M	2790	mg/kg	0.50	< 0.50
Pyrene	M	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	M	2790	mg/kg	0.50	< 0.50
Chrysene	M	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010
PCB 52	M	2815	mg/kg	0.010	< 0.010
PCB 90+101	М	2815	mg/kg	0.010	< 0.010
PCB 118	М	2815	mg/kg	0.010	< 0.010
PCB 153	М	2815	mg/kg	0.010	< 0.010
PCB 138	М	2815			< 0.010
PCB 180	М	2815			< 0.010
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10
Total Phenols	М	2920)	0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai Keport			
Report No.:	17-20021-1		
Initial Date of Issue:	09-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing		
Quotation No.:		Date Received:	01-Aug-2017
Order No.:	2543, GI	Date Instructed:	01-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	09-Aug-2017
Date Approved:	09-Aug-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543, GI Lake Lothin	g
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Project: 2543, GI Lake Lothing									
Chemtest Job No:	17-20021						Landfill W	/aste Acceptano	e Criteria
Chemtest Sample ID:	491172							Limits	
Sample Ref:	BHC06							Stable, Non-	
Sample ID:	J3							reactive	Hazardous
Top Depth(m):	0.5						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	28-Jul-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			1.0	3	5	6
Loss On Ignition	2610	U	%			2.7			10
Total BTEX	2760	U	mg/kg			0.023	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			270	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				7.6		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.018		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at L	/S 10 l/kg
Arsenic	1450	U	0.0068	0.0066	< 0.050	0.066	0.5	2	25
Barium	1450	U	0.048	0.033	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0093	0.013	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0092	0.0043	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0014	0.0037	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0015	0.017	< 0.010	0.15	0.5	10	50
Antimony	1450	U	0.0042	0.0040	< 0.010	0.040	0.06	0.7	5
Selenium	1450	U	< 0.0010	0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0037	0.011	< 0.50	< 0.50	4	50	200
Chloride	1220	U	5.6	2.0	11	24	800	15000	25000
Fluoride	1220	U	0.31	0.21	< 1.0	2.2	10	150	500
Sulphate	1220	U	16	7.7	32	87	1000	20000	50000
Total Dissolved Solids	1020	N	150	74	300	830	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	28	16	56	170	500	800	1000

Soild Information		
Dry mass of test portion/kg	0.175	
Moisture (%)	11	

Leachate Test Information			
Leachant volume 1st extract/l	0.328		
Leachant volume 2nd extract/l	1.400		
Eluant recovered from 1st extract/l	0.214		

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-20200-1
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Initial Date of Issue: 09-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 02-Aug-2017

Order No.: 2543, Gl Date Instructed: 03-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 09-Aug-2017

Date Approved: 09-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	492029		
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam	ple ID.:	J3		
			Sample	е Туре:	SOIL		
			Top Dep	oth (m):	1.00		
			Date Sa	ampled:	31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	14		
рН	U	2010		N/A	6.5		
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.60		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.097		
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		
Ammonium (Extractable)	U	2425	mg/kg	0.50	25		
Sulphate (Total)	U	2430	%	0.010	0.16		
Arsenic	U	2450	mg/kg	1.0	9.2		
Cadmium	U	2450		0.10	0.19		
Chromium	U	2450	mg/kg	1.0	13		
Copper	U	2450	mg/kg	0.50	55		
Mercury	U	2450	mg/kg	0.10	0.23		
Nickel	U	2450	mg/kg	0.50	16		
Lead	U	2450	mg/kg	0.50	98		
Selenium	U	2450	mg/kg	0.20	< 0.20		
Zinc	U	2450	mg/kg	0.50	140		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	4.9		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	12		
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	90		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680) י	5.0	110		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680	0	1.0	< 1.0		
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	2.7		
Aromatic TPH >C21-C35	U	2680)	1.0	170		
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam		J3		
				e Type:	SOIL		
			Top Dep	, ,	1.00		
			Date Sa	mpled:	31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	180		
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	280		
Naphthalene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthene	U	2700	mg/kg	0.10	< 0.10		
Fluorene	U	2700	mg/kg	0.10	< 0.10		
Phenanthrene	U	2700)	0.10	< 0.10		
Anthracene	U	2700	mg/kg	0.10	< 0.10		
Fluoranthene	U	2700	mg/kg	0.10	0.73		
Pyrene	U	2700	mg/kg	0.10	0.87		
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.61		
Chrysene	U	2700	mg/kg	0.10	0.30		
Benzo[b]fluoranthene	U	2700		0.10	< 0.10		
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10		
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10		
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10		
Total Of 16 PAH's	U	2700	mg/kg	2.0	2.5		
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0		
Chloromethane	U	2760	μg/kg	1.0	< 1.0		
Vinyl Chloride	U	2760		1.0	< 1.0		
Bromomethane	U	2760		20	< 20		
Chloroethane	U	2760		2.0	< 2.0		
Trichlorofluoromethane	U	2760		1.0	< 1.0		
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0		
1,1-Dichloroethane	U	2760		1.0	< 1.0		
cis 1,2-Dichloroethene	U	2760	_	1.0	< 1.0		
Bromochloromethane	U	2760		5.0	< 5.0		
Trichloromethane	U	2760	μg/kg	1.0	< 1.0		
1,1,1-Trichloroethane	U	2760		1.0	< 1.0		
Tetrachloromethane	U	2760		1.0	< 1.0		
1,1-Dichloropropene	U	2760	-	1.0	< 1.0		
Benzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0		
Trichloroethene	U	2760	μg/kg	1.0	< 1.0		



Project: 2543, GI Lake Lothing, Lowestoft Clients Cooperage Environmental Ltd. Chamtest Joh No.							
Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	 	Client Sample ID.:					
Order No.: 2543, GI	_	Client Sample Ref.: Client Sample ID.:					
	_	Cile			J3		
				e Type:	SOIL		
			Top Dep	, ,	1.00		
			Date Sa		31-Jul-2017		
=	.			os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Dibromomethane	U	2760	μg/kg	1.0	< 1.0		
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0		
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10		
Toluene	U	2760	μg/kg	1.0	< 1.0		
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10		
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10		
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0		
Dibromochloromethane	U	2760	μg/kg	10	< 10		
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0		
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0		
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0		
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0		
o-Xylene	U	2760	μg/kg	1.0	< 1.0		
Styrene	U	2760	μg/kg	1.0	< 1.0		
Tribromomethane	U	2760	μg/kg	1.0	< 1.0		
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0		
Bromobenzene	U	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50		
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0		
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0		
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0		
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0		
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50		
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichlorobenzene	Ū	2760	µg/kg	2.0	< 2.0		
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	< 1.0		
N-Nitrosodimethylamine	Ū		mg/kg	0.50	< 0.50		
·							



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam		J3		
				е Туре:	SOIL		
			Top Dep	, ,	1.00		
			Date Sa		31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP		LOD			
Phenol	U	2790	٥	0.50	< 0.50		
2-Chlorophenol	U	2790) י	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	U	2790) י	0.50	< 0.50		
1,3-Dichlorobenzene	U	2790		0.50	< 0.50		
1,4-Dichlorobenzene	N	2790		0.50	< 0.50		
1,2-Dichlorobenzene	U	2790) י	0.50	< 0.50		
2-Methylphenol	U	2790		0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		
Isophorone	U	2790	mg/kg	0.50	< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50		
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Naphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
Acenaphthylene	U	2790		0.50	< 0.50		
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		
2,6-Dinitrotoluene	U	2790		0.50	< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790		0.50	< 0.50		
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50		
4-Chlorophenylphenylether	U	2790		0.50	< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		
Fluorene	U	2790	ŭ	0.50	< 0.50		



Client: Geosphere Environmental Ltd		17-20200					
Quotation No.: Q17-10179		Chemtest Sample ID.: Client Sample Ref.:					
Order No.: 2543, GI		TPC05					
		Cli	ent Sam		J3		
			Sample	е Туре:	SOIL		
			Top Dep	oth (m):	1.00		
			Date Sa	mpled:	31-Jul-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Pentachlorophenol	N	2790		0.50	< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		
Anthracene	U	2790	mg/kg	0.50	< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	U	2790		0.50	< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	1.1		
Pyrene	U	2790	mg/kg	0.50	1.0		
Butylbenzyl Phthalate	U	2790	_ ,	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.93		
Chrysene	U	2790		0.50	0.68		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790		0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.4		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	0.57		
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.68		
Indeno(1,2,3-c,d)Pyrene	U	2790		0.50	0.54		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790		0.50	0.63		
PCB 81	N	2815	mg/kg	0.010	< 0.010		
PCB 77	N	2815		0.010	< 0.010		
PCB 105	N	2815		0.010	< 0.010		
PCB 114	N	2815	mg/kg	0.010	< 0.010		
PCB 118	N	2815		0.010	< 0.010		
PCB 123	N	2815		0.010	< 0.010		
PCB 126	N	2815	mg/kg	0.010	< 0.010		
PCB 156	N	2815	mg/kg	0.010	< 0.010		
PCB 157	N	2815	mg/kg	0.010	< 0.010		
PCB 167	N	2815		0.010	< 0.010		
PCB 169	N	2815		0.010	< 0.010		
PCB 189	N	2815		0.010	< 0.010		
Total PCBs (12 Congeners)	N	2815	٥	0.12	< 0.12		
	U	2920)	0.30			



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- N Unaccredited
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- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-20201-1

Initial Date of Issue: 09-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 02-Aug-2017

Order No.: 2543, Gl Date Instructed: 03-Aug-2017

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 09-Aug-2017

Date Approved: 09-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179			st Sam	492035 TPC103	492037	
Order No.: 2543, GI		Client Sample Ref.:				TPC103
		Client Sample ID.:				J4
				e Type:	SOIL	SOIL
			Top Dep	, ,	0.50	1.50
			Date Sa	_	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	=	=
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	12	10
рН	M	2010		N/A	7.4	7.2
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	1.2	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	M	2425	mg/kg	0.50	28	2.9
Sulphate (Total)	M	2430	%	0.010	0.11	0.022
Arsenic	M	2450	mg/kg	1.0	8.2	< 1.0
Cadmium	M	2450	mg/kg	0.10	0.19	< 0.10
Chromium	M	2450	mg/kg	1.0	8.1	4.1
Copper	M	2450	mg/kg	0.50	100	3.7
Mercury	M	2450	mg/kg	0.10	0.34	< 0.10
Nickel	M	2450	mg/kg	0.50	10	3.0
Lead	M	2450	mg/kg	0.50	540	15
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	140	6.7
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680		1.0	1.4	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	12	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	2.2	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	16	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	0	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	4.2	< 1.0
Aromatic TPH >C21-C35	М	2680	mg/kg	1.0	110	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179	(st Sam	492035	492037	
Order No.: 2543, GI	Client Sample Ref.:				TPC103	TPC103
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	, ,	0.50	1.50
			Date Sa	_	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	ט	5.0	120	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	130	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	1.0	< 0.10
Anthracene	М	2700	mg/kg	0.10	0.21	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	2.3	< 0.10
Pyrene	M	2700	mg/kg	0.10	2.0	< 0.10
Benzo[a]anthracene	М	2700	mg/kg	0.10	2.7	< 0.10
Chrysene	М	2700	mg/kg	0.10	1.3	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	1.8	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	0.80	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	1.0	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	0.72	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	0.17	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	0.53	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	15	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-20201
Quotation No.: Q17-10179	(Chemtest Sample ID.:				492037
Order No.: 2543, GI			nt Samp		TPC103	TPC103
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	oth (m):	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP		LOD		
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760		5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760		10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10
1,1,2-Trichloroethane	М	2760	100	10	< 10	< 10
Tetrachloroethene	М	2760	1.0	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	М	2760		1.0	< 1.0	< 1.0
m & p-Xylene	М	2760		1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	М	2760		1.0	< 1.0	< 1.0
Tribromomethane	U	2760		1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	100	1.0	< 1.0	< 1.0
Bromobenzene	M	2760	100	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50
N-Propylbenzene	U	2760		1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760		1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	M	2760	י פייו	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760		1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760		1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760		1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760		1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760		1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760		1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760		1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	1.0	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	100	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760		50	< 50	< 50
1,2,4-Trichlorobenzene	M	2760		1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760		1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	1.0.0	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760		1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179	(st Sam		492035	492037
Order No.: 2543, GI		Client Sample Ref.:			TPC103	TPC103
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	, ,	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	М	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-20201	17-20201	
Quotation No.: Q17-10179	(st Sam	492035 TPC103	492037	
Order No.: 2543, GI		Client Sample Ref.:				TPC103
		Cli	ent Sam		J2	J4
				е Туре:	SOIL	SOIL
			Top De	oth (m):	0.50	1.50
			Date Sa	ampled:	31-Jul-2017	31-Jul-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP		LOD		
Diethyl Phthalate	M	2790	ו	0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	1.8	< 0.50
Anthracene	M	2790	mg/kg	0.50	0.59	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	2.9	< 0.50
Pyrene	М	2790	mg/kg	0.50	2.1	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	1.4	< 0.50
Chrysene	М	2790	mg/kg	0.50	1.1	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790		0.50	1.6	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	0.55	< 0.50
Benzo[a]pyrene	М	2790	mg/kg	0.50	0.77	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790		0.50	< 0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010	
PCB 81	N	2815	mg/kg		1 0.0 1 0	< 0.010
PCB 52	M	2815	mg/kg	0.010	< 0.010	1 0.010
PCB 77	N	2815		0.010	1 0.010	< 0.010
PCB 105	N	2815	mg/kg			< 0.010
PCB 90+101	M	2815			< 0.010	1 0.010
PCB 114	N	2815	mg/kg		. 0.010	< 0.010
PCB 118	M	2815	mg/kg	0.010	< 0.010	. 0.010
PCB 118	N	2815	,		. 0.010	< 0.010
PCB 153	M	2815			< 0.010	V 0.010
PCB 133	N	2815	ו		\ 0.010	< 0.010
PCB 138	M	2815	mg/kg		< 0.010	\ 0.010
PCB 126	N	2815	mg/kg		< 0.010	< 0.010
PCB 180	M	2815			< 0.010	\ 0.010
FUD 160	IVI	2015	mg/kg	0.010	< 0.010]



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-20201	17-20201
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	492035	492037
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	TPC103	TPC103
		Cli	ent Sam	ple ID.:	J2	J4
			Sampl	SOIL	SOIL	
			Top Dep	oth (m):	0.50	1.50
			Date Sa	31-Jul-2017	31-Jul-2017	
			Asbest	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450			Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule		Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Details:

rınai Keport			
Report No.:	17-20560-1		
Initial Date of Issue:	14-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	04-Aug-2017
Order No.:	2543, GI	Date Instructed:	04-Aug-2017
No. of Samples:	3		
Turnaround (Wkdays):	6	Results Due:	11-Aug-2017
Date Approved:	14-Aug-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo		17-20560	
Quotation No.: Q17-10179	(st Sam	493823	493826	
Order No.: 2543, GI			nt Samp	TPC101	TPC06	
		Cli	ent Sam		J3	J3
				е Туре:	SOIL	SOIL
			Top Dep	oth (m):	1.80	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	10.0	8.9
Ammonia (Free) as N	U	1220	mg/l	0.010	0.099	0.061
Sulphate	U	1220	mg/l	1.0	8.7	8.2
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	5.3	4.1
Boron (Dissolved)	U	1450	μg/l	20	< 20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	2.6	2.8
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	1.4
Selenium (Dissolved)	U	1450	μg/l	1.0	1.3	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0	2.1
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-20560	17-20560
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	493823	493826
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	TPC101	TPC06
·		Cli	ent Sam	J3	J3	
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	1.80	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-20560	17-20560	
Quotation No.: Q17-10179			st Sam	493823	493826	
Order No.: 2543, GI			nt Samp	TPC101	TPC06	
		Clie	ent Sam		J3	J3
			Sample		SOIL	SOIL
			Top Dep	oth (m):	1.80	1.10
			Date Sa	mpled:	01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
	N	1790	μg/l	0.50	< 0.50	< 0.50
Renzolkitluoranthene		1130	μy/i	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene				0.50	~ 0.50	~ O 50
Benzo[k]fluoranthene Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene	N N	1790 1790	μg/l μg/l	0.50	< 0.50 < 0.50	< 0.50 < 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		Che	mtest Jo	17-20560	17-20560	
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	493823	493826
Order No.: 2543, GI		Clie	nt Samp	TPC101	TPC06	
		Cli	ent Sam	J3	J3	
			Sample	SOIL	SOIL	
			Top Dep	1.80	1.10	
	Date Sampled:				01-Aug-2017	01-Aug-2017
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	0.45	0.050



Client: Geosphere Environmental Ltd			mtest Jo		17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(st Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam	ple ID.:	J3	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.80	0.70	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017	01-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	IN-TRANSIT
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	17	13	17
pH	М	2010		N/A	9.9	8.2	8.5
Boron (Hot Water Soluble)	М		mg/kg	0.40	< 0.40	0.66	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.027	0.11	0.13
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	< 0.50	6.9	3.6
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.079	0.042
Arsenic	М	2450	mg/kg	1.0	< 1.0	14	8.6
Cadmium	М	2450	mg/kg	0.10	< 0.10	0.16	0.11
Chromium	М	2450	mg/kg	1.0	3.0	10	11
Copper	М	2450	mg/kg	0.50	1.6	480	8.3
Mercury	М	2450	mg/kg	0.10	< 0.10	0.34	< 0.10
Nickel	М	2450	mg/kg	0.50	1.7	17	13
Lead	М	2450	mg/kg	0.50	11	110	12
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	7.8	230	23
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	М	2625	%	0.40			0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	2.9	< 1.0
Aromatic TPH >C21-C35	M	2680		1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(st Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam		J3	J2	J3
				e Type:	SOIL	SOIL	SOIL
			Top Dep	, ,	1.80	0.70	1.10
			Date Sa	mpled:	01-Aug-2017	01-Aug-2017	01-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	IN-TRANSIT
Determinand	Accred.	SOP		LOD			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	0.91	< 0.10
Pyrene	М	2700	mg/kg	0.10	< 0.10	0.98	< 0.10
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	1.0	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10	0.49	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	0.78	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	0.39	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	0.91	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	5.5	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(st Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam		J3	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.80	0.70	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017	01-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	IN-TRANSIT
Determinand	Accred.	SOP	Units	LOD			
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	M	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1.2.3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(est Sam		493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101 J3	TPC06	TPC06
		Client Sample ID.:				J2	J3
		Sample Type: Top Depth (m):				SOIL	SOIL
						0.70	1.10
			Date Sa	_	01-Aug-2017	01-Aug-2017	01-Aug-2017
				COVENTRY	COVENTRY	IN-TRANSIT	
Determinand	Accred.	SOP		LOD			
N-Nitrosodimethylamine	M	2790		0.50	< 0.50	< 0.50	< 0.50
Phenol	M	2790	0	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790		0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	M	2790		0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790		0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790		0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	0	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790		0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790		0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	М	2790		0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	М	2790		0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	М	2790		0.50	< 0.50	< 0.50	< 0.50
2.4-Dinitrotoluene	М	2790			< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(Chemtest Sample ID.:			493823	493825	493826
Order No.: 2543, GI			nt Samp		TPC101	TPC06	TPC06
		Cli	ent Sam		J3	J2	J3
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.80	0.70	1.10
			Date Sa	ampled:	01-Aug-2017	01-Aug-2017	01-Aug-2017
		Asbestos Lab: 0		COVENTRY	COVENTRY	IN-TRANSIT	
Determinand	Accred.	SOP	Units	LOD			
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Chrysene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
PCB 28	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 81	N	2815	mg/kg	0.010			< 0.010
PCB 52	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 77	N	2815					< 0.010
PCB 105	N	2815	mg/kg	0.010			< 0.010
PCB 90+101	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010			< 0.010
PCB 118	М	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 118	N	2815	mg/kg				< 0.010
PCB 153	М	2815	mg/kg		< 0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010			< 0.010
PCB 138	M	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010			< 0.010



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-20560	17-20560	17-20560
Quotation No.: Q17-10179	(Chemtest Sample ID.:			493823	493825	493826
Order No.: 2543, GI		Client Sample Ref.: Client Sample ID.: Sample Type: Top Depth (m):		TPC101	TPC06	TPC06	
				J3	J2	J3	
				SOIL	SOIL	SOIL	
				1.80	0.70	1.10	
		Date Sampled:				01-Aug-2017	01-Aug-2017
		Asbestos Lab: (COVENTRY	COVENTRY	IN-TRANSIT	
Determinand	Accred.	SOP	Units	LOD			
PCB 180	M	2815	mg/kg	0.010	< 0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010			< 0.010
PCB 157	N	2815	mg/kg	0.010			< 0.010
PCB 167	N	2815	mg/kg	0.010			< 0.010
PCB 169	N	2815	mg/kg	0.010			< 0.010
PCB 189	N	2815	mg/kg	0.010			< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12			< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	17-20561-1		
Initial Date of Issue:	15-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	04-Aug-2017
Order No.:	2543, GI	Date Instructed:	04-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	14-Aug-2017
Date Approved:	15-Aug-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project. 2545, Greake Lottling, Lowe									
Chemtest Job No:	17-20561						Landfill W	Vaste Acceptant	ce Criteria
Chemtest Sample ID:	493830						Limits		
Sample Ref:	TPC06							Stable, Non-	
Sample ID:	J3							reactive	Hazardous
Top Depth(m):	1.10						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	01-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.27	3	5	6
Loss On Ignition	2610	U	%			1.3			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				8.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.047		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.0030	0.0076	< 0.050	0.070	0.5	2	25
Barium	1450	U	0.0095	0.013	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	0.0016	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0071	0.0044	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	0.0029	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0045	< 0.010	0.039	0.5	10	50
Antimony	1450	U	0.0025	0.0028	< 0.010	0.028	0.06	0.7	5
Selenium	1450	U	0.0015	0.0023	< 0.010	0.022	0.1	0.5	7
Zinc	1450	U	0.0015	0.0051	< 0.50	< 0.50	4	50	200
Chloride	1220	U	3.3	1.4	< 10	16	800	15000	25000
Fluoride	1220	U	0.31	0.24	< 1.0	2.5	10	150	500
Sulphate	1220	U	18	12	35	130	1000	20000	50000
Total Dissolved Solids	1020	N	88	71	170	730	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	11	14	< 50	140	500	800	1000

Soild Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	19			

Leachate Test Information				
Leachant volume 1st extract/l	0.309			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.218			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-20562-1		
Initial Date of Issue:	15-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	07-Aug-2017
Order No.:	2543 GI	Date Instructed:	09-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	15-Aug-2017
Date Approved:	15-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		17-20562					
Quotation No.: Q17-10179		ple ID.:	493835				
Order No.: 2543 GI		BHC06					
		Client Sample ID.:					
			Sample	е Туре:	SOIL		
			Top Der		2.00		
			Date Sa	` '	01-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	18		
pH	U	2010		N/A	8.5		
Boron (Hot Water Soluble)	Ü	2120	mg/kg	0.40	0.43		
Sulphate (2:1 Water Soluble) as SO4	Ü	2120	g/l	0.010	0.15		
Cyanide (Free)	Ü	2300)	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		
Ammonium (Extractable)	Ü	2425	mg/kg	0.50	2.4		
Sulphate (Total)	Ü	2430	%	0.010	0.22		
Arsenic	U	2450	mg/kg	1.0	8.9		
Cadmium	Ü	2450	_	0.10	< 0.10		
Chromium	U	2450		1.0	6.2		
Copper	U	2450)	0.50	5.2		
Mercury	U	2450	•	0.10	< 0.10		
Nickel	U	2450		0.50	6.4		
Lead	U	2450		0.50	54		
Selenium	U	2450	mg/kg	0.20	0.51		
Zinc	U	2450	mg/kg	0.50	16		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Organic Matter	U	2625	%	0.40	0.81		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C21-C35	U	2680		1.0	< 1.0		
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C16-C21	U	2680)	1.0	< 1.0		
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543 GI		Client Sample Ref.:					
		Client Sample ID.:					
			Sample	е Туре:	SOIL		
			Top Dep	oth (m):	2.00		
			Date Sa	mpled:	01-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10		
Naphthalene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthene	U	2700		0.10	< 0.10		
Fluorene	U	2700		0.10	< 0.10		
Phenanthrene	U	2700		0.10	< 0.10		
Anthracene	U		mg/kg	0.10	< 0.10		
Fluoranthene	U		mg/kg	0.10	< 0.10		
Pyrene	U		mg/kg	0.10	< 0.10		
Benzo[a]anthracene	U	2700		0.10	< 0.10		
Chrysene	U	2700	mg/kg	0.10	< 0.10		
Benzo[b]fluoranthene	U	2700		0.10	< 0.10		
Benzo[k]fluoranthene	U	2700		0.10	< 0.10		
Benzo[a]pyrene	U	2700		0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10		
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10		
Benzo[g,h,i]perylene	U		mg/kg	0.10	< 0.10		
Total Of 16 PAH's	U	2700		2.0	< 2.0		
Dichlorodifluoromethane	U	2760		1.0	< 1.0		
Chloromethane	U	2760		1.0	< 1.0		
Vinyl Chloride	U	2760		1.0	< 1.0		
Bromomethane	U	2760		20	< 20		
Chloroethane	U	2760		2.0	< 2.0		
Trichlorofluoromethane	U	2760		1.0	< 1.0		
1,1-Dichloroethene	U	2760		1.0	< 1.0		
Trans 1.2-Dichloroethene	U	2760		1.0	< 1.0		
1,1-Dichloroethane	Ü	2760		1.0	< 1.0		
cis 1,2-Dichloroethene	Ü	2760		1.0	< 1.0		
Bromochloromethane	U	2760		5.0	< 5.0		
Trichloromethane	Ü	2760		1.0	< 1.0		
1,1,1-Trichloroethane	U	2760		1.0	< 1.0		
Tetrachloromethane	U	2760		1.0	< 1.0		
1,1-Dichloropropene	U	2760		1.0	< 1.0		
Benzene	U	2760		1.0	< 1.0		
1,2-Dichloroethane	Ü	2760		2.0	< 2.0		
Trichloroethene	U	2760		1.0	< 1.0		
		00	アヴ′′゚゚゚゚		, 1.0		



Client: Geosphere Environmental Ltd		17-20562			
Quotation No.: Q17-10179		493835			
Order No.: 2543 GI		BHC06			
		J5			
			Sample		SOIL
			Top Dep	, ,	2.00
			Date Sa	_	01-Aug-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0
Dibromomethane	U	2760)	1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760		1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	1.9
m & p-Xylene	U	2760	μg/kg	1.0	3.4
o-Xylene	U	2760	μg/kg	1.0	2.2
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	2.7
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	8.8
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	8.1
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760		1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0
1,2,5 1116111010061126116	_				



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543 GI		Client Sample Ref.:						
		Client Sample ID.:						
				e Type:	SOIL			
			Top Dep	, ,	2.00			
			Date Sa	mpled:	01-Aug-2017			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP		LOD				
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50			
Phenol	U	2790) י	0.50	< 0.50			
2-Chlorophenol	U	2790) י	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	U	2790		0.50	< 0.50			
1,3-Dichlorobenzene	U	2790		0.50	< 0.50			
1,4-Dichlorobenzene	N	2790) י	0.50	< 0.50			
1,2-Dichlorobenzene	U	2790		0.50	< 0.50			
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	U	2790)	0.50	< 0.50			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50			
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50			
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50			
Isophorone	U	2790	0	0.50	< 0.50			
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			
2,4-Dimethylphenol	N	2790)	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50			
2,4-Dichlorophenol	U	2790	5	0.50	< 0.50			
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50			
Naphthalene	U	2790)	0.50	< 0.50			
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50			
Hexachlorobutadiene	U	2790)	0.50	< 0.50			
4-Chloro-3-Methylphenol	U	2790		0.50	< 0.50			
2-Methylnaphthalene	U	2790	_	0.50	< 0.50			
4-Nitrophenol	N	2790	0	0.50	< 0.50			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50			
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2,4,5-Trichlorophenol	U	2790)	0.50	< 0.50			
2-Chloronaphthalene	U	2790		0.50	< 0.50			
2-Nitroaniline	U	2790	5	0.50	< 0.50			
Acenaphthylene	U	2790	5	0.50	< 0.50			
Dimethylphthalate	U	2790	٥	0.50	< 0.50			
2,6-Dinitrotoluene	U	2790		0.50	< 0.50			
Acenaphthene	U	2790	,	0.50	< 0.50			
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50			
Dibenzofuran	U	2790	9	0.50	< 0.50			
4-Chlorophenylphenylether	U	2790)	0.50	< 0.50			
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50			



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543 GI			nt Samp		BHC06		
		Cli	ent Sam		J5		
			Sample	е Туре:	SOIL		
			Top Dep	oth (m):	2.00		
			Date Sa	_	01-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Fluorene	U	2790	mg/kg	0.50	< 0.50		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		
Anthracene	U	2790	mg/kg	0.50	< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Pyrene	U	2790	mg/kg	0.50	< 0.50		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		
Chrysene	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
Total Phenols	U	2920		0.30	< 0.30		



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Details:

			•
Report No.:	17-20669-1		
Initial Date of Issue:	15-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543.91 Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	07-Aug-2017
Order No.:	2543.91	Date Instructed:	09-Aug-2017
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	15-Aug-2017
Date Approved:	15-Aug-2017		
Approved By:			

Keith Jones, Technical Manager



Client: Geosphere Environmental Ltd		17-20669						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543.91		Client Sample Ref.:						
		Client Sample ID.:						
		Sample Type:						
			Top Dep	oth (m):	0.20			
			Date Sa	ampled:	03-Aug-2017			
Determinand	Accred.	SOP	Units	LOD				
рН	U	1010		N/A	8.1			
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010			
Sulphate	U	1220	mg/l	1.0	1.1			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.7			
Boron (Dissolved)	U	1450	μg/l	20	27			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	4.2			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	1.2			
Lead (Dissolved)	U	1450	μg/l	1.0	6.3			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	11			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.: 2543.91		Client Sample Ref.:						
		Client Sample ID.:						
				e Type:	SOIL			
			Top Dep	, ,	0.20			
			Date Sa	ampled:	03-Aug-2017			
Determinand	Accred.	SOP	Units	LOD				
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
Toluene	U	1760	μg/l	1.0	< 1.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			



Client: Geosphere Environmental Ltd		Chei	ntest Jo	ob No.:	17-20669				
Quotation No.: Q17-10179		Chemtest Sample ID.:							
Order No.: 2543.91		Client Sample Ref.:							
01401 110 20 10.01		Client Sample ID.:							
				e Type:	J1 SOIL				
			Top Dep		0.20				
		Date Sampled:							
Determinand	Accred.	SOP	Units		03-Aug-2017				
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50				
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50				
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50				
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50				
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50				
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50				
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50				
Acenaphthylene	N	1790	μg/l	0.50	< 0.50				
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50				
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50				
Acenaphthene	N	1790	μg/l	0.50	< 0.50				
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50				
Dibenzofuran	N	1790	μg/l	0.50	< 0.50				
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50				
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50				
Fluorene	N	1790	μg/l	0.50	< 0.50				
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50				
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50				
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50				
Azobenzene	N	1790	μg/l	0.50	< 0.50				
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50				
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50				
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50				
Phenanthrene	N	1790	μg/l	0.50	< 0.50				
Anthracene	N	1790	μg/l	0.50	< 0.50				
Carbazole	N	1790	μg/l	0.50	< 0.50				
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50				
Fluoranthene	N N	1790	μg/l	0.50	< 0.50				
Pyrene	N	1790	μg/l	0.50	< 0.50				
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50				
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50				
Chrysene	N	1790	μg/l	0.50	< 0.50				
Bis(2-Ethylhexyl)Phthalate	N N	1790	μg/l	0.50	< 0.50				
Di-N-Octyl Phthalate	N	1790		0.50	< 0.50				
Benzo[b]fluoranthene	N N	1790	μg/l	0.50					
Benzo[k]fluoranthene	N N	1790	μg/l	0.50	< 0.50 < 0.50				
	N N		μg/l						
Benzo[a]pyrene Indeno(1,2,3-c,d)Pyrene	N N	1790	μg/l	0.50	< 0.50				
	N N	1790	μg/l	0.50	< 0.50				
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50				



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	494333	
Order No.: 2543.91		Clie	le Ref.:	TPC01		
		Cli	ple ID.:	J1		
			е Туре:	SOIL		
			Top Dep	oth (m):	0.20	
			Date Sa	ampled:	03-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest Jo			17-20669	17-20669	17-20669
Quotation No.: Q17-10179	Chemtest Sample ID.:		494325	494329	494331	494333		
Order No.: 2543.91	Client Sample Ref.:		TPC03	TPC04	TPC04	TPC01		
		Cli	ent Sam		J2	J2	J4	J1
				e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	, ,	0.80	0.55	2.20	0.20
			Date Sa		03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbesto: Detected
Moisture	N	2030	%	0.020	2.8	16	7.0	3.7
рН	М	2010		N/A	8.3	9.8	8.8	7.8
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	< 0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	0.072	< 0.010	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	1.8	2.0	1.5	2.6
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.13	0.010	0.064
Arsenic	M	2450	mg/kg	1.0	4.6	17	7.6	9.3
Cadmium	M	2450	mg/kg	0.10	< 0.10	0.14	< 0.10	0.21
Chromium	M	2450	mg/kg	1.0	4.2	21	12	7.2
Copper	M	2450	mg/kg	0.50	1.5	66	7.8	21
Mercury	M	2450	mg/kg	0.10	< 0.10	0.30	0.10	0.29
Nickel	M	2450	mg/kg	0.50	3.3	24	11	9.3
Lead	M	2450	mg/kg	0.50	14	110	11	70
Selenium	М	2450	mg/kg	0.20	0.29	0.57	0.28	0.68
Zinc	M	2450	mg/kg	0.50	11	59	18	84
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	М	2625	%	0.40		17		5.9
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	1.6	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	57	< 1.0	65
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	59	< 5.0	65
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	1.4	< 1.0	10
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	25	< 1.0	110



Client: Geosphere Environmental Ltd			mtest Jo		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(Chemte	est Sam	ple ID.:	494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Client Sample ID.:			J2	J2	J4	J1
				е Туре:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	0.55	2.20	0.20
			Date Sa	ampled:	03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	27	< 5.0	120
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	85	< 10	190
Naphthalene	М	2700	mg/kg	0.10	< 0.10	0.37	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	0.10	< 0.10	< 0.10
Acenaphthene	М	2700		0.10	< 0.10	0.13	< 0.10	< 0.10
Fluorene	М	2700		0.10	< 0.10	0.27	< 0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	1.5	< 0.10	0.72
Anthracene	М	2700	0	0.10	< 0.10	0.32	< 0.10	0.34
Fluoranthene	М	2700		0.10	< 0.10	2.1	< 0.10	2.1
Pyrene	М	2700	0 0	0.10	< 0.10	2.3	< 0.10	2.8
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10	1.2
Chrysene	М	2700		0.10	< 0.10	1.1	< 0.10	1.6
Benzo[b]fluoranthene	M	2700	0 0	0.10	< 0.10	1.3	< 0.10	1.6
Benzo[k]fluoranthene	M	2700		0.10	< 0.10	0.52	< 0.10	0.62
Benzo[a]pyrene	M	2700		0.10	< 0.10	1.0	< 0.10	1.0
Indeno(1,2,3-c,d)Pyrene	M	2700		0.10	< 0.10	0.40	< 0.10	0.48
Dibenz(a,h)Anthracene	M	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2700	0 0	0.10	< 0.10	0.25	< 0.10	0.24
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	13	< 2.0	13
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinvl Chloride	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	M	2760		20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1.2-Dichloroethene	M	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760		5.0	< 1.0 < 5.0	< 5.0	< 5.0	< 1.0 < 5.0
Bromochioromethane Trichloromethane	M	2760	μg/kg μg/kg	1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0
	M			1.0				
1,1,1-Trichloroethane		2760			< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(st Sam		494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Clie	ent Sam		J2	J2	J4	J1
				e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep		0.80	0.55	2.20	0.20
			Date Sa		03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,4,0 11101101000140110		4100	µy/ny	۷.٠	~ 2.0	~ 2.0	< ∠.U	~ 2.0



Client: Geosphere Environmental Ltd			ntest Jo		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(st Sam		494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
	Client Sample ID.:			J2	J2	J4	J1	
			Sample		SOIL	SOIL	SOIL	SOIL
			Top Dep		0.80	0.55	2.20	0.20
			Date Sa	mpled:	03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD				
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
- Oniorophonyiphonyiculoi	171	2100	mg/ng	5.50	7 0.50	\ 0.50	\ 0.50	7 0.50



Client: Geosphere Environmental Ltd			mtest J		17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(st Sam		494325	494329	494331	494333
Order No.: 2543.91			nt Samp		TPC03	TPC04	TPC04	TPC01
		Cli	ent Sam		J2	J2	J4	J1
		Sample ¹			: SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	0.80	0.55	2.20	0.20
			Date Sa	ampled:	03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790)	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	1.5	< 0.50	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	0.69	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	3.0	< 0.50	1.2
Pyrene	М	2790	mg/kg	0.50	< 0.50	2.7	< 0.50	1.8
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	1.9	< 0.50	1.8
Chrysene	М		mg/kg	0.50	< 0.50	1.4	< 0.50	1.1
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	2.1	< 0.50	1.9
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	0.88	< 0.50	0.75
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	1.4	< 0.50	0.83
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	М	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 81	N	-	mg/kg	0.010	< 0.010		< 0.010	
PCB 52	М		mg/kg			< 0.010		< 0.010
PCB 77	N		mg/kg		< 0.010		< 0.010	
PCB 105	N		mg/kg		< 0.010		< 0.010	
PCB 90+101	М		mg/kg			< 0.010		< 0.010
PCB 114	N	-	mg/kg		< 0.010		< 0.010	
PCB 118	М		mg/kg			< 0.010		< 0.010
PCB 118	N	-	mg/kg	0.010	< 0.010		< 0.010	
PCB 153	М		mg/kg			< 0.010		< 0.010
PCB 123	N	1	mg/kg	0.010	< 0.010	1 2.0.0	< 0.010	
PCB 138	M		mg/kg		, 5.5.5	< 0.010	, 5.0.0	< 0.010
PCB 126	N		mg/kg		< 0.010		< 0.010	



Results - Soil

Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-20669	17-20669	17-20669	17-20669
Quotation No.: Q17-10179	(Chemtest Sample ID.:		494325	494329	494331	494333	
Order No.: 2543.91		Client Sample Ref.:		TPC03	TPC04	TPC04	TPC01	
		Client Sample ID.:		J2	J2	J4	J1	
		Sample Type:		SOIL	SOIL	SOIL	SOIL	
			Top Dep	oth (m):	0.80	0.55	2.20	0.20
		Date Sampled: 03-Aug-2		03-Aug-2017	03-Aug-2017	03-Aug-2017	03-Aug-2017	
		Asbestos Lab: Co		COVENTRY	COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
PCB 180	M	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010		< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12		< 0.12	
Total PCBs (7 Congeners)	N	2815 mg/kg 0.10			< 0.10		< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-20779-1

Initial Date of Issue: 15-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543 GI, Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 08-Aug-2017

Order No.: 2543, Gl Date Instructed: 09-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 15-Aug-2017

Date Approved: 15-Aug-2017

Approved By:							
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Details: Keith Jones, Technical Manager

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	494807	
Order No.: 2543, GI			nt Samp		TPC102	
		Client Sample ID.: Sample Type:				
			Top Dep	oth (m):	0.50	
			Date Sa	ampled:	04-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	ı	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	2.6	
рН	М	2010		N/A	7.5	
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	0.65	
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	
Ammonium (Extractable)	M	2425	mg/kg	0.50	1.6	
Sulphate (Total)	М	2430	%	0.010	< 0.010	
Arsenic	M	2450	mg/kg	1.0	4.8	
Cadmium	M	2450		0.10	< 0.10	
Chromium	M	2450	mg/kg	1.0	4.0	
Copper	M	2450	mg/kg	0.50	1.8	
Mercury	M	2450	mg/kg	0.10	< 0.10	
Nickel	M	2450	mg/kg	0.50	2.9	
Lead	M	2450	mg/kg	0.50	5.2	
Selenium	М	2450	mg/kg	0.20	0.48	
Zinc	М	2450	mg/kg	0.50	11	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	0	5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0	
Aromatic TPH >C8-C10	M	2680		1.0	< 1.0	
Aromatic TPH >C10-C12	М	2680		1.0	< 1.0	
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C21-C35	М	2680)	1.0	< 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(st Sam		494807	
Order No.: 2543, GI			nt Samp		TPC102	
		Client Sample ID.: Sample Type:				
			Top Dep	, ,	0.50	
			Date Sa		04-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Total Aromatic Hydrocarbons	N	2680	0	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680	0	10.0	< 10	
Naphthalene	M	2700	mg/kg	0.10	< 0.10	
Acenaphthylene	M	2700	J	0.10	< 0.10	
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	
Fluorene	M	2700	5	0.10	< 0.10	
Phenanthrene	М	2700)	0.10	< 0.10	
Anthracene	M	2700	mg/kg	0.10	< 0.10	
Fluoranthene	М	2700	mg/kg	0.10	0.16	
Pyrene	M	2700	mg/kg	0.10	0.20	
Benzo[a]anthracene	M	2700	5	0.10	< 0.10	
Chrysene	M	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	M	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	M	2700	0	0.10	< 0.10	
Benzo[a]pyrene	M	2700	mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	M	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	M	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	M	2700	0	2.0	< 2.0	
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	
Chloromethane	M	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	M	2760	μg/kg	1.0	< 1.0	
Bromomethane	M	2760	μg/kg	20	< 20	
Chloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	M	2760	0	1.0	< 1.0	
1,1-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	М	2760		1.0	< 1.0	
cis 1,2-Dichloroethene	М	2760	0	1.0	< 1.0	
Bromochloromethane	U	2760		5.0	< 5.0	
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	
Tetrachloromethane	М	2760) י	1.0	< 1.0	
1,1-Dichloropropene	U	2760		1.0	< 1.0	
Benzene	М	2760	μg/kg	1.0	< 1.0	
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	
Trichloroethene	М	2760) י	1.0	< 1.0	
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	

Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(st Sam		494807 TPC102		
Order No.: 2543, GI		Client Sample Ref.:					
		Client Sample ID.: Sample Type:					
			Top Dep	, ,	0.50		
			Date Sa		04-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Dibromomethane	M	2760	μg/kg	1.0	< 1.0		
Bromodichloromethane	M	2760	0	5.0	< 5.0		
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10		
Toluene	М	2760	μg/kg	1.0	< 1.0		
Trans-1,3-Dichloropropene	N	2760		10	< 10		
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10		
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0		
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0		
Dibromochloromethane	U	2760	μg/kg	10	< 10		
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0		
Chlorobenzene	M	2760	μg/kg	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0		
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0		
m & p-Xylene	M	2760	μg/kg	1.0	< 1.0		
o-Xylene	М	2760	μg/kg	1.0	< 1.0		
Styrene	М	2760	μg/kg	1.0	< 1.0		
Tribromomethane	U	2760	μg/kg	1.0	< 1.0		
Isopropylbenzene	М	2760		1.0	< 1.0		
Bromobenzene	М	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50		
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0		
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0		
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0		
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
Tert-Butylbenzene	U	2760		1.0	< 1.0		
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0		
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0		
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0		
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0		
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50		
1,2,4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0		
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0		
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0		
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50		



Client: Geosphere Environmental Ltd	Chemtest Job No				17-20779	
Quotation No.: Q17-10179			st Sam		494807	
Order No.: 2543, GI			nt Samp		TPC102	
		Cli	ent Sam		J2	
				е Туре:	SOIL	
		Top Depth (m)				
			Date Sa	mpled:	04-Aug-2017	
			Asbest		COVENTRY	
Determinand	Accred.	SOP		LOD		
Phenol	М	2790	mg/kg	0.50	< 0.50	
2-Chlorophenol	М	2790	5	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	
1,2-Dichlorobenzene	М	2790	0	0.50	< 0.50	
2-Methylphenol	М	2790	5	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	
4-Methylphenol	М	2790		0.50	< 0.50	
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	
Isophorone	М	2790		0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	
Naphthalene	М	2790	mg/kg	0.50	< 0.50	
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	
Acenaphthene	М	2790	mg/kg	0.50	< 0.50	
3-Nitroaniline	N	2790		0.50	< 0.50	
Dibenzofuran	М	2790	mg/kg	0.50	< 0.50	
4-Chlorophenylphenylether	М	2790		0.50	< 0.50	
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	
Fluorene	М	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd	Chemtest Job No				17-20779	
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	494807	
Order No.: 2543, GI			nt Samp		TPC102	
		Clie	ent Sam		J2 SOIL	
		Sample Type				
			Top Dep	oth (m):	0.50	
			Date Sa	mpled:	04-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	
Azobenzene	М	2790	mg/kg	0.50	< 0.50	
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	M	2790	mg/kg	0.50	< 0.50	
Anthracene	М	2790	mg/kg	0.50	< 0.50	
Carbazole	М	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Pyrene	М	2790	mg/kg	0.50	< 0.50	
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	
Chrysene	М	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	
PCB 28	М	2815	mg/kg	0.010	< 0.010	
PCB 52	М	2815	mg/kg	0.010	< 0.010	
PCB 90+101	М	2815		0.010	< 0.010	
PCB 118	М	2815	mg/kg	0.010	< 0.010	
PCB 153	М	2815	mg/kg	0.010	< 0.010	
PCB 138	М	2815	mg/kg	0.010	< 0.010	
PCB 180	М	2815	mg/kg	0.010	< 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

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Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-20903-1		
Initial Date of Issue:	17-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	09-Aug-2017
Order No.:	2543, GI	Date Instructed:	09-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	17-Aug-2017
Date Approved:	17-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing, Lowestoft

Project: 2543, GI Lake Lothing, Lower	<u>stoft</u>								
Chemtest Job No:	17-20903						Landfill V	/aste Acceptan	ce Criteria
Chemtest Sample ID:	495407							Limits	
Sample Ref:	TPC03							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	0.80						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	03-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			0.55			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				8.3		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0080		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	_/S 10 I/kg
Arsenic	1450	U	0.0068	0.0020	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.011	0.0032	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0044	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0045	0.0016	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0016	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0044	0.0011	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0093	0.0021	0.019	0.030	0.5	10	50
Antimony	1450	U	0.0090	0.0018	0.018	0.027	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.016	0.0045	< 0.50	< 0.50	4	50	200
Chloride	1220	U	2.1	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.29	0.12	< 1.0	1.4	10	150	500
Sulphate	1220	U	1.9	< 1.0	< 10	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	41	14	82	170	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	13	< 50	140	500	800	1000

Soild Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	2.7				

Leachate Test Information					
Leachant volume 1st extract/l	0.345				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.207				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

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CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-21231-1

Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 14-Aug-2017

Order No.: 2543, Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 01-Sep-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Project: 2543, GI Lake Lothing								
Client: Geosphere Environmental Ltd			ntest Jo		17-21231			
Quotation No.: Q17-10179	ļ (st Sam		496746			
Order No.: 2543, GI			nt Samp		BHC02			
		Clie	ent Sam		J1			
				e Type:	SOIL			
			Top Dep		0.25			
		ampled:	10-Aug-2017					
Determinand	Accred.	SOP	Units					
рН	U	1010		N/A	11.0			
Ammonia (Free) as N	U	1220	mg/l	0.010	0.089			
Sulphate	U	1220	mg/l	1.0	45			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.4			
Boron (Dissolved)	U	1450	μg/l	20	210			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	7.4			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	2.8			
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			



Client: Geosphere Environmental Ltd Chemtest Job No.: 17-21231							
Client: Geosphere Environmental Ltd	-	Chemtest Job No.: Chemtest Sample ID.:					
Quotation No.: Q17-10179 Order No.: 2543, GI	+ '		nt Samp		496746 BHC02		
Order No.: 2543, GI	+		ent Sam				
	+	CIR		e Type:	J1 SOIL		
	+		Top Dep		0.25		
	+	ampled:	10-Aug-2017				
Determinand	Accred.	SOP	Units		10-Aug-2017		
Anthracene	U Accied.	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	Ü	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	Ü	1760	μg/l	1.0	< 1.0		
Ethylbenzene	Ü	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		b No.:	17-21231			
Quotation No.: Q17-10179	(Chemte	ple ID.:	496746		
Order No.: 2543, GI			nt Samp		BHC02	
		Clie	ent Sam		J1	
				е Туре:	SOIL	
		Top Depth (m)				
		Date Sampled:				
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	



Results - Leachate

Client: Geosphere Environmental Ltd	Chemtest Job No				17-21231
Quotation No.: Q17-10179	(Chemte	ple ID.:	496746	
Order No.: 2543, GI		Clie	le Ref.:	BHC02	
		Clie	ple ID.:	J1	
			e Type:	SOIL	
			oth (m):	0.25	
			Date Sa	ampled:	10-Aug-2017
Determinand	Accred.	Accred. SOP Units LOD			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Project: 2543, GI Lake Lothing					17-21231	
Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(st Sam		496746	
Order No.: 2543, GI			nt Samp		BHC02	
		Client Sample ID.				
		e Type:	SOIL			
		oth (m):	0.25			
			Date Sa		10-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	9.0	
рН	U	2010		N/A	11.0	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	4.2	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.41	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.89	
Sulphate (Total)	U	2430	%	0.010	0.20	
Arsenic	U	2450	mg/kg	1.0	8.1	
Cadmium	U	2450	mg/kg	0.10	< 0.10	
Chromium	U	2450	mg/kg	1.0	15	
Copper	U	2450	mg/kg	0.50	27	
Mercury	U	2450	mg/kg	0.10	< 0.10	
Nickel	U	2450	mg/kg	0.50	14	
Lead	U	2450	mg/kg	0.50	27	
Selenium	U	2450	mg/kg	0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	40	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	



Project: 2543, GI Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.:					
Quotation No.: Q17-10179	<u> </u>		st Sam		496746		
Order No.: 2543, GI			nt Samp		BHC02		
		Clie	ent Sam		J1		
				e Type:	SOIL		
			Top Dep		0.25		
			Date Sa		10-Aug-2017		
			Asbest		COVENTRY		
Determinand	Accred.	SOP		LOD			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	2680		10.0	< 10		
Naphthalene	U	2700) י	0.10	< 0.10		
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10		
Acenaphthene	U	2700	0	0.10	< 0.10		
Fluorene	U	2700	mg/kg	0.10	< 0.10		
Phenanthrene	U	2700	mg/kg	0.10	0.82		
Anthracene	U	2700	mg/kg	0.10	< 0.10		
Fluoranthene	U	2700)	0.10	0.66		
Pyrene	U	2700	_	0.10	0.79		
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10		
Chrysene	U	2700)	0.10	< 0.10		
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10		
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10		
Total Of 16 PAH's	U	2700	mg/kg	2.0	2.3		
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0		
Chloromethane	U	2760	μg/kg	1.0	< 1.0		
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0		
Bromomethane	U	2760	μg/kg	20	< 20		
Chloroethane	U	2760	μg/kg	2.0	< 2.0		
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0		
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0		
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0		
Trichloromethane	U	2760	μg/kg	1.0	< 1.0		
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0		
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0		
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0		
Benzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0		
Trichloroethene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179			st Sam		496746		
Order No.: 2543, GI			nt Samp		BHC02		
		Cli	ent Sam		J1		
		Sample Type					
		Top Depth (m):					
			Date Sa	ampled:	10-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Dibromomethane	U	2760	μg/kg	1.0	< 1.0		
Bromodichloromethane	U	2760	0	5.0	< 5.0		
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10		
Toluene	U	2760	μg/kg	1.0	< 1.0		
Trans-1,3-Dichloropropene	N	2760		10	< 10		
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10		
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0		
Dibromochloromethane	U	2760	. 0	10	< 10		
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0		
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	U	2760)	2.0	< 2.0		
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0		
m & p-Xylene	U	2760	. 0	1.0	< 1.0		
o-Xylene	U	2760	μg/kg	1.0	< 1.0		
Styrene	U	2760	. 0	1.0	< 1.0		
Tribromomethane	U	2760	μg/kg	1.0	< 1.0		
Isopropylbenzene	U	2760	0	1.0	< 1.0		
Bromobenzene	U	2760	. 0	1.0	< 1.0		
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50		
N-Propylbenzene	U	2760		1.0	< 1.0		
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0		
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0		
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0		
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0		
1,4-Dichlorobenzene	U	2760		1.0	< 1.0		
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50		
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0		
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0		
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0		
Methyl Tert-Butyl Ether	U	2760	5	1.0	< 1.0		
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.					
Quotation No.: Q17-10179	(Chemtest Sample ID.					
Order No.: 2543, GI		Client Sample Ref.:					
		Client Sample ID.					
		Sample Type:					
			Top Dep		0.25		
			Date Sa	impled:	10-Aug-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP		LOD			
Phenol	U	2790	mg/kg	0.50	< 0.50		
2-Chlorophenol	U	2790) י	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50		
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
1,4-Dichlorobenzene	N	2790		0.50	< 0.50		
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50		
4-Methylphenol	U	2790		0.50	< 0.50		
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50		
Isophorone	U	2790		0.50	< 0.50		
2-Nitrophenol	N		mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50		
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50		
Naphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50		
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50		
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50		
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50		
2,6-Dinitrotoluene	U	2790		0.50	< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790		0.50	< 0.50		
Dibenzofuran	U	2790		0.50	< 0.50		
4-Chlorophenylphenylether	U	2790		0.50	< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		
Fluorene	U	2790		0.50	< 0.50		



Project: 2543, GI Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.:	17-21231				
Quotation No.: Q17-10179	(st Sam		496746 BHC02		
Order No.: 2543, GI		Client Sample Ref.:					
		Clie	ent Sam		J1		
		e Type:	SOIL				
			Top Dep		0.25		
			Date Sa		10-Aug-2017		
			Asbest		COVENTRY		
Determinand	Accred.	SOP		LOD			
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50		
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50		
Anthracene	U	2790		0.50	< 0.50		
Carbazole	U	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Pyrene	U	2790	mg/kg	0.50	< 0.50		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		
Chrysene	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
PCB 81	N	2815	mg/kg	0.010	< 0.010		
PCB 77	N	2815	mg/kg	0.010	< 0.010		
PCB 105	N	2815	mg/kg	0.010	< 0.010		
PCB 114	N	2815	mg/kg	0.010	< 0.010		
PCB 118	N	2815			< 0.010		
PCB 123	N	2815			< 0.010		
PCB 126	N	2815	mg/kg	0.010	< 0.010		
PCB 156	N		mg/kg		< 0.010		
PCB 157	N		mg/kg		< 0.010		
PCB 167	N	2815			< 0.010		
PCB 169	N	2815	mg/kg		< 0.010		
PCB 189	N	2815	mg/kg		< 0.010		
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12		
Total Phenols	U	2920	mg/kg	0.30	< 0.30		



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
496746	BHC02	J1	10-Aug-2017	В	Amber Glass 250ml
496746	BHC02	J1	10-Aug-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17	7-21370-1
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Initial Date of Issue: 30-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2546, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 15-Aug-2017

Order No.: 2546. Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 30-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd		ob No.:	17-21370		
Quotation No.: Q17-10179	(st Sam		497442
Order No.: 2546. GI			nt Samp		BHC02
		Cli	ent Sam		J7
		e Type:	SOIL		
		oth (m):	3		
			Date Sa	mpled:	11-Aug-2017
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	13
рН	М	2010		N/A	8.6
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.014
Cyanide (Free)	М	2300	mg/kg	0.50	0.70
Cyanide (Total)	М	2300	mg/kg	0.50	8.4
Ammonium (Extractable)	М	2425	mg/kg	0.50	< 0.50
Sulphate (Total)	М	2430	%	0.010	0.049
Arsenic	М	2450	mg/kg	1.0	< 1.0
Cadmium	М	2450	mg/kg	0.10	< 0.10
Chromium	М	2450	mg/kg	1.0	4.3
Copper	М	2450	mg/kg	0.50	3.5
Mercury	М	2450	mg/kg	0.10	< 0.10
Nickel	М	2450	mg/kg	0.50	2.7
Lead	М	2450	mg/kg	0.50	4.8
Selenium	М	2450	mg/kg	0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	8.8
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Organic Matter	М	2625	%	0.40	< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	0	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	9	1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680)	1.0	< 1.0
Aromatic TPH >C21-C35	М	2680		1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680)	10.0	< 10
	М	2700	mg/kg	0.10	< 0.10



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2546. GI			nt Samp		BHC02	
		Cli	ent Sam		J7	
			Sample	e Type:	SOIL	
		Top Depth (m)				
			Date Sa	impled:	11-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	
Fluorene	М	2700	mg/kg	0.10	< 0.10	
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	
Anthracene	М	2700	mg/kg	0.10	< 0.10	
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	
Pyrene	М	2700		0.10	< 0.10	
Benzo[a]anthracene	М	2700		0.10	< 0.10	
Chrysene	М	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	
Benzo[a]pyrene	М	2700		0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	М	2700		0.10	< 0.10	
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	
Chloromethane	М	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	
Bromomethane	М	2760		20	< 20	
Chloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	М	2760		1.0	< 1.0	
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	М	2760		1.0	< 1.0	
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	
Benzene	М	2760	μg/kg	1.0	< 1.0	
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
Toluene	M	2760	μg/kg	1.0	< 1.0	



Project: 2546, GI Lake Lothing, Lowestoft					
Client: Geosphere Environmental Ltd		ob No.:	17-21370		
Quotation No.: Q17-10179	<u> </u>		st Sam		497442
Order No.: 2546. GI			nt Samp		BHC02
		Clie	ent Sam		J7
				e Type:	SOIL
			Top Dep	, ,	3
			Date Sa		11-Aug-2017
Determinand	Accred.		Units		
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	M	2760	μg/kg	10	< 10
Tetrachloroethene	M	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0
Chlorobenzene	M	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0
m & p-Xylene	М	2760		1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	M	2760	μg/kg	1.0	< 1.0
Bromobenzene	M	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50
Phenol	М	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2546. GI		Client Sample Ref.:					
		Client Sample ID.:					
		Sample Type: Top Depth (m):					
		Date Sampled:					
Determinand	Accred.	Accred. SOP Units LOD					
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50		
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50		
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50		
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50		
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50		
Nitrobenzene	М	2790		0.50	< 0.50		
Isophorone	М	2790		0.50	< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N	2790		0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50		
2,4-Dichlorophenol	М	2790		0.50	< 0.50		
1,2,4-Trichlorobenzene	М	2790		0.50	< 0.50		
Naphthalene	М	2790		0.50	< 0.50		
4-Chloroaniline	N	2790	_ ,	0.50	< 0.50		
Hexachlorobutadiene	М	2790	_	0.50	< 0.50		
4-Chloro-3-Methylphenol	М	2790		0.50	< 0.50		
2-Methylnaphthalene	М	2790	_	0.50	< 0.50		
4-Nitrophenol	N	2790		0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790	_	0.50	< 0.50		
2,4,6-Trichlorophenol	М	2790		0.50	< 0.50		
2,4,5-Trichlorophenol	М	2790	5	0.50	< 0.50		
2-Chloronaphthalene	М	2790		0.50	< 0.50		
2-Nitroaniline	М	2790)	0.50	< 0.50		
Acenaphthylene	М	2790		0.50	< 0.50		
Dimethylphthalate	М	2790		0.50	< 0.50		
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50		
Acenaphthene	М	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790		0.50	< 0.50		
Dibenzofuran	M	2790	_	0.50	< 0.50		
4-Chlorophenylphenylether	M	2790	0	0.50	< 0.50		
2,4-Dinitrotoluene	M	2790	٥	0.50	< 0.50		
Fluorene	M	2790		0.50	< 0.50		
Diethyl Phthalate	М	2790	0	0.50	< 0.50		
4-Nitroaniline	M	2790	ŭ	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50		
Azobenzene	M	2790		0.50	< 0.50		
4-Bromophenylphenyl Ether	M	2790	9	0.50	< 0.50		
Hexachlorobenzene	M	2790)	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2546. GI		Client Sample Ref.: Client Sample ID.:				
				e Type:	SOIL	
			Top Dep	oth (m):	3	
			Date Sa	ampled:	11-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	
Anthracene	М	2790	mg/kg	0.50	< 0.50	
Carbazole	M	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Pyrene	М	2790	mg/kg	0.50	< 0.50	
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	
Chrysene	М	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50	
PCB 28	M	2815	mg/kg	0.010	< 0.010	
PCB 52	М	2815	mg/kg	0.010	< 0.010	
PCB 90+101	М	2815	mg/kg	0.010	< 0.010	
PCB 118	М	2815	mg/kg	0.010	< 0.010	
PCB 153	М	2815	mg/kg	0.010	< 0.010	
PCB 138	М	2815	mg/kg	0.010	< 0.010	
PCB 180	М	2815	mg/kg	0.010	< 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-21712-1

Initial Date of Issue: 31-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543.GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 17-Aug-2017

Order No.: 2543, G1 Date Instructed: 23-Aug-2017

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 31-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Project: 2543.Gl Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.: ple ID.:	17-21712				
Quotation No.: Q17-10179	(499158					
Order No.: 2543, G1		IPC01					
		J1					
		SOIL					
			Top Der		0.30		
		15-Aug-2017					
Determinand	Accred.	SOP	Units				
рН	U	1010		N/A	8.3		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.023		
Sulphate	U	1220	mg/l	1.0	23		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	8.5		
Boron (Dissolved)	U	1450	μg/l	20	22		
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.11		
Chromium (Dissolved)	U	1450	μg/l	1.0	1.5		
Copper (Dissolved)	U	1450	μg/l	1.0	10		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	4.4		
Lead (Dissolved)	U	1450	μg/l	1.0	25		
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Zinc (Dissolved)	U	1450	μg/l	1.0	20		
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543, G1		Client Sample Ref.:					
		Client Sample ID.: Sample Type: Top Depth (m):					
		Date Sampled:					
Determinand	Accred.	Accred. SOP Units LOD					
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, G1		Client Sample Ref.:					
		Client Sample ID.: Sample Type: Top Depth (m):					
		Date Sampled:					
Determinand	Accred.	Accred. SOP Units LOD					
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Acenaphthylene	N	1790	μg/l	0.50	< 0.50		
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50		
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Acenaphthene	N	1790	μg/l	0.50	< 0.50		
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Dibenzofuran	N	1790	μg/l	0.50	< 0.50		
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50		
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Fluorene	N	1790	μg/l	0.50	< 0.50		
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50		
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50		
Azobenzene	N	1790	μg/l	0.50	< 0.50		
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50		
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50		
Phenanthrene	N	1790	μg/l	0.50	< 0.50		
Anthracene	N	1790	μg/l	0.50	< 0.50		
Carbazole	N	1790	μg/l	0.50	< 0.50		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Fluoranthene	N	1790	μg/l	0.50	< 0.50		
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50		
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50		



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, G1		Clie	le Ref.:	IPC01		
		Cli	ent Sam	ple ID.:	J1	
			е Туре:	SOIL		
			oth (m):	0.30		
			ampled:	15-Aug-2017		
Determinand	Accred.	SOP				
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-21712
Quotation No.: Q17-10179	(st Sam	499158	499163	
Order No.: 2543, G1		Client Sample Ref.:				IPC02
		Client Sample ID.: Sample Type:				J2
						SOIL
			Top Dep	0.30	0.60	
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
		Asbestos Lab:			COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	1	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	2.1	1.8
рН	М	2010		N/A	7.8	7.6
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	1.5	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	0.014	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	3.1	0.75
Sulphate (Total)	М	2430	%	0.010	0.13	< 0.010
Arsenic	М	2450	mg/kg	1.0	12	2.1
Cadmium	М	2450	mg/kg	0.10	0.78	0.12
Chromium	М	2450	mg/kg	1.0	62	4.7
Copper	М	2450	mg/kg	0.50	35	6.6
Mercury	М	2450	mg/kg	0.10	0.11	< 0.10
Nickel	М	2450	mg/kg	0.50	18	4.3
Lead	М	2450	mg/kg	0.50	170	28
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	130	42
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	47	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	47	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	2.4	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	13	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	36	< 1.0
Aromatic TPH >C21-C35	М	2680	mg/kg	1.0	200	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Che	mtest Jo	17-21712	17-21712	
Quotation No.: Q17-10179			st Sam	499158	499163	
Order No.: 2543, G1		Clie	nt Samp	IPC01	IPC02	
		Cli	ent Sam		J1	J2
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	mpled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	250	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	300	< 10
Naphthalene	М	2700	mg/kg	0.10	3.1	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	1.9	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	5.7	< 0.10
Fluorene	M	2700	mg/kg	0.10	5.8	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	30	0.15
Anthracene	М	2700	mg/kg	0.10	8.8	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	30	0.38
Pyrene	М	2700	mg/kg	0.10	29	0.33
Benzo[a]anthracene	М	2700	mg/kg	0.10	12	< 0.10
Chrysene	М	2700	mg/kg	0.10	16	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	14	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	6.4	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	12	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	7.8	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	5.1	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	9.3	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	200	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	M	2760	μg/kg	20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Che	mtest Jo	17-21712	17-21712	
Quotation No.: Q17-10179		Chemte	st Sam	499158	499163	
Order No.: 2543, G1		Client Sample Ref.:			IPC01	IPC02
		Cli	ent Sam		J1	J2
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-21712	17-21712	
Quotation No.: Q17-10179			est Sam		499158	499163
Order No.: 2543, G1			nt Samp	IPC01	IPC02	
		Cli	ent Sam		J1	J2
			Sample	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Phenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	0.75	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	1.1	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	М	2790	mg/kg	0.50	1.6	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	М	2790	mg/kg	0.50	1.5	< 0.50
4-Chlorophenylphenylether	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	М		mg/kg	0.50	1.6	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	17-21712	17-21712	
Quotation No.: Q17-10179	(Chemte	st Sam	499158	499163	
Order No.: 2543, G1		Clie	nt Samp	IPC01	IPC02	
		Cli	ent Sam	ple ID.:	J1	J2
			Sampl	е Туре:	SOIL	SOIL
			Top De	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	9.3	< 0.50
Anthracene	М	2790	mg/kg	0.50	2.9	< 0.50
Carbazole	М	2790	mg/kg	0.50	1.3	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	5.0	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	9.9	< 0.50
Pyrene	М	2790	mg/kg	0.50	8.0	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	4.4	< 0.50
Chrysene	М	2790	mg/kg	0.50	4.0	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	4.9	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	1.7	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	4.0	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790) י	0.50	< 0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010	
PCB 81	N	2815	mg/kg	0.010		< 0.010
PCB 52	M	2815			< 0.010	
PCB 77	N	2815	mg/kg	0.010		< 0.010
PCB 105	N	2815	ט			< 0.010
PCB 90+101	M	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815				< 0.010
PCB 118	М		mg/kg		< 0.010	
PCB 118	N		mg/kg			< 0.010
PCB 153	М	2815			< 0.010	
PCB 123	N	2815	mg/kg	0.010		< 0.010
PCB 138	М	2815	0		< 0.010	
PCB 126	N	2815	mg/kg	0.010		< 0.010
PCB 180	M	2815	mg/kg	0.010	< 0.010	



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-21712	17-21712
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	499158	499163
Order No.: 2543, G1		Clie	nt Samp	le Ref.:	IPC01	IPC02
		Cli	ent Sam		J1	J2
			Sample	e Type:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.60
			Date Sa	ampled:	15-Aug-2017	15-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
499158	IPC01	J1	15-Aug-2017	В	Amber Glass 250ml
499158	IPC01	J1	15-Aug-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-21913-1
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Initial Date of Issue: 31-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2547 GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 18-Aug-2017

Order No.: 2543 Gl Date Instructed: 23-Aug-2017

No. of Samples: 3

Turnaround (Wkdays): 5 Results Due: 30-Aug-2017

Date Approved: 31-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Project: 2547 GI Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.:					
Quotation No.: Q17-10179	(ple ID.: le Ref.:	500003				
Order No.: 2543 GI		IPC05					
		Clie	ent Sam		J4		
				e Type:	SOIL		
			Top Dep		1.20		
			Date Sa		16-Aug-2017		
Determinand	Accred.	SOP	Units				
рН	U	1010		N/A	8.4		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.019		
Sulphate	U	1220	mg/l	1.0	< 1.0		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.7		
Boron (Dissolved)	U	1450	μg/l	20	< 20		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Copper (Dissolved)	U	1450	μg/l	1.0	3.2		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Lead (Dissolved)	U	1450	μg/l	1.0	2.2		
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Zinc (Dissolved)	U	1450	μg/l	1.0	4.0		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		



Project: 2547 GI Lake Lothing Client: Geosphere Environmental Ltd Chemtest Job No.: 17-21913							
Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543 GI		Client Sample Ref.:					
		Cli	ent Sam		J4		
			Sample	e Type:	SOIL		
			Top Dep		1.20		
			Date Sa	ampled:	16-Aug-2017		
Determinand	Accred.	SOP	Units	LOD			
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	Ū	1760	μg/l	1.0	< 1.0		
Toluene	Ū	1760	μg/l	1.0	< 1.0		
Ethylbenzene	Ü	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	Ü	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N N	1790	μg/l μg/l	0.50	< 0.50		
Naphthalene	N	1790		0.50	< 0.50		
4-Chloroaniline	N N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N N	1790	μg/l	0.50	< 0.50		
пехаснюторитасне	IN	1790	μg/l	U.SU	< 0.50		



Project: 2547 Gl Lake Lothing							
Client: Geosphere Environmental Ltd		ob No.:	17-21913				
Quotation No.: Q17-10179	(ple ID.:	500003				
Order No.: 2543 GI			nt Samp		IPC05		
		Clie	ent Sam		J4		
				e Type:	SOIL		
			Top Dep		1.20		
			Date Sa		16-Aug-2017		
Determinand	Accred.	SOP	Units				
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Acenaphthylene	N	1790	μg/l	0.50	< 0.50		
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50		
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Acenaphthene	N	1790	μg/l	0.50	< 0.50		
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Dibenzofuran	N	1790	μg/l	0.50	< 0.50		
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50		
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Fluorene	N	1790	μg/l	0.50	< 0.50		
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50		
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50		
Azobenzene	N	1790	μg/l	0.50	< 0.50		
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50		
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50		
Phenanthrene	N	1790	μg/l	0.50	< 0.50		
Anthracene	N	1790	μg/l	0.50	< 0.50		
Carbazole	N	1790	μg/l	0.50	< 0.50		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Fluoranthene	N	1790	μg/l	0.50	< 0.50		
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50		
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50		



Results - Leachate

1 TOJECL 2547 Of Lake Louining						
Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-21913	
Quotation No.: Q17-10179	(Chemte	500003			
Order No.: 2543 GI		Clie	le Ref.:	IPC05		
		Cli	ple ID.:	J4		
		Sample Type:				
			Top Dep	oth (m):	1.20	
			Date Sa	ampled:	16-Aug-2017	
Determinand	Accred.	Accred. SOP Units LOD				
Benzo[g,h,i]perylene	N	N 1790 μg/l 0.50				
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-21913	17-21913	17-21913
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Cli	ent Sam	•	J3	J3	J4
			Sample	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-201
		Asbestos Lab: CO		COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	=	=	-
Asbestos Identification	U	2192	%	0.001	No Asbestos	No Asbestos	No Asbesto
Aspestos Identification	U	2192	70	0.001	Detected	Detected	Detected
Moisture	N	2030	%	0.020	4.3	4.4	1.9
рН	М	2010		N/A	7.6	7.7	7.6
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	0.44	0.84	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	< 0.010	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	4.7	5.9	3.1
Sulphate (Total)	М	2430	%	0.010	0.017	0.040	< 0.010
Arsenic	М	2450	mg/kg	1.0	4.8	7.0	< 1.0
Cadmium	М	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chromium	М	2450	mg/kg	1.0	6.6	6.9	3.5
Copper	М	2450	mg/kg	0.50	3.3	11	4.8
Mercury	М	2450		0.10	< 0.10	< 0.10	< 0.10
Nickel	М	2450		0.50	4.8	6.9	2.8
Lead	М	2450		0.50	9.8	44	7.8
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	14	36	17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680		1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680		1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	0	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	0	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	9 9	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	0	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	0	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680		1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	Ü	2680	mg/kg	1.0	7.3	13	< 1.0
Aromatic TPH >C21-C35	M	2680		1.0	< 1.0	2.3	< 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-21913	17-21913	17-21913	
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Cli	ent Sam	•	J3	J3	J4
			Sampl	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	7.3	15	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	15	< 10
Naphthalene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	М		mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	М	2700		0.10	< 0.10	0.62	< 0.10
Anthracene	М	2700	mg/kg	0.10	< 0.10	0.20	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Pyrene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Benzo[a]anthracene	М	2700		0.10	< 0.10	0.96	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10	0.55	< 0.10
Benzo[b]fluoranthene	М	2700		0.10	< 0.10	0.55	< 0.10
Benzo[k]fluoranthene	М	2700	0 0	0.10	< 0.10	0.15	< 0.10
Benzo[a]pyrene	М	_	mg/kg	0.10	< 0.10	0.31	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700		0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	M	2700	0 0	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	М	2700		0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	М	2700		2.0	< 2.0	5.7	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	M	2760		1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	M	2760		20	< 20	< 20	< 20
Chloroethane	U	2760	1.0.0	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1.1-Dichloroethane	M	2760		1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
1.1.1-Trichloroethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
1.2-Dichloroethane	M	2760	100	2.0	< 1.0	< 1.0	< 1.0
,			μg/kg				_
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-21913	17-21913
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	499994	499998	500003
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	IPC03	IPC04	IPC05
		Cli	ent Sam	ple ID.:	J3	J3	J4
			Sample	е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
		Date Sampled: 16-		16-Aug-2017	16-Aug-2017	16-Aug-2017	
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760		10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760		5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760		2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760		1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760		1.0	< 1.0	< 1.0	< 1.0
Styrene	М	2760		1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760		1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50	< 50
N-Propylbenzene	U	2760		1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760		1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	Ü	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	M	2760	100	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760		50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	M	2760		1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760		1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-21913	17-21913	17-21913	
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Client Sample ID.:				J3	J4
				e Type:	SOIL 0.90	SOIL	SOIL
		Top Depth (m):				0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	0	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790		0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790		0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	M	2790		0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790		0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	M	2790		0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790		0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790		0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790		0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	9 9	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790		0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N N	2790		0.50	< 0.50	< 0.50	< 0.50
	M		mg/kg mg/kg				
Dibenzofuran 4 Chlorophopulahanulathar	M			0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether		2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	M	2790	5	0.50	< 0.50	< 0.50	< 0.50
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		17-21913	17-21913	17-21913
Quotation No.: Q17-10179	(est Sam		499994	499998	500003
Order No.: 2543 GI			nt Samp		IPC03	IPC04	IPC05
		Cli	ent Sam		J3	J3	J4
		Sample Type:			SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.90	0.90	1.20
			Date Sa	ampled:	16-Aug-2017	16-Aug-2017	16-Aug-2017
		Asbestos Lab: CO		COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	0	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	M	2790		0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Chrysene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790		0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	М		mg/kg	0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790		0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
PCB 28	М	2815		0.010	< 0.010		< 0.010
PCB 81	N	2815	mg/kg	0.010		< 0.010	
PCB 52	М	2815	0 0	0.010	< 0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010		< 0.010	
PCB 105	N		mg/kg			< 0.010	
PCB 90+101	M		mg/kg		< 0.010		< 0.010
PCB 114	N		mg/kg			< 0.010	3.0.0
PCB 118	M		mg/kg		< 0.010		< 0.010
PCB 118	N		mg/kg			< 0.010	. 3.0.0
PCB 153	M	2815			< 0.010	, 5.5.5	< 0.010
PCB 123	N	2815		0.010	1 0.010	< 0.010	3.010
PCB 138	M	2815		0.010	< 0.010	. 0.010	< 0.010
PCB 126	N		mg/kg	0.010	, 0.010	< 0.010	3 3.0 10
PCB 180	M		mg/kg		< 0.010	. 0.010	< 0.010



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-21913	17-21913	17-21913	
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	499994	499998	500003
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	IPC03	IPC04	IPC05
		Client Sample ID.:		J3	J3	J4	
		Sample Type:		SOIL	SOIL	SOIL	
		Top Depth (m):		0.90	0.90	1.20	
		Date Sampled: 16		16-Aug-2017	16-Aug-2017	16-Aug-2017	
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
PCB 156	N	2815	mg/kg	0.010		< 0.010	
PCB 157	N	2815	mg/kg	0.010		< 0.010	
PCB 167	N	2815	mg/kg	0.010		< 0.010	
PCB 169	N	2815	mg/kg	0.010		< 0.010	
PCB 189	N	2815				< 0.010	
Total PCBs (12 Congeners)	N	2815 mg/kg 0.12			< 0.12		
Total PCBs (7 Congeners)	N	2815	2815 mg/kg 0.10		< 0.10		< 0.10
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-21942-1		
Initial Date of Issue:	30-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	21-Aug-2017
Order No.:	2543,GI	Date Instructed:	23-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	30-Aug-2017
Date Approved:	30-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Project: 2543, GI Lake Lothing Client: Geosphere Environmental Ltd Chemtest Job No.: 17-21942							
Client: Geosphere Environmental Ltd							
Quotation No.: Q17-10179			st Sam	•	500182		
Order No.: 2543,GI			nt Samp		BHC03 J4		
		Client Sample ID.:					
		Sample Type:					
			Top Dep	\ /	1.30		
			Date Sa		15-Aug-2017		
				os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	9.4		
рН	U	2010		N/A	7.9		
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.059		
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	5.5		
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.62		
Sulphate (Total)	U	2430	%	0.010	0.047		
Arsenic	U	2450	mg/kg	1.0	< 1.0		
Cadmium	U	2450		0.10	< 0.10		
Chromium	U	2450	mg/kg	1.0	2.4		
Copper	U	2450	mg/kg	0.50	0.99		
Mercury	U	2450	mg/kg	0.10	< 0.10		
Nickel	U	2450	mg/kg	0.50	2.5		
Lead	U	2450	mg/kg	0.50	3.7		
Selenium	U	2450	mg/kg	0.20	< 0.20		
Zinc	U	2450	mg/kg	0.50	7.5		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		



Project: 2543, GI Lake Lothing Client: Geosphere Environmental Ltd Chemtest Job No.: 17-21942								
Client: Geosphere Environmental Ltd		Chemtest Job No.						
Quotation No.: Q17-10179	<u> </u>		st Sam		500182			
Order No.: 2543,GI			nt Samp		BHC03			
		ple ID.:	J4					
		e Type:	SOIL					
			Top Dep		1.30			
			Date Sa		15-Aug-2017			
	\perp		Asbest		COVENTRY			
Determinand	Accred.	SOP		LOD				
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	2680		10.0	< 10			
Naphthalene	U	2700) י	0.10	< 0.10			
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10			
Acenaphthene	U	2700	0	0.10	< 0.10			
Fluorene	U	2700	mg/kg	0.10	< 0.10			
Phenanthrene	U	2700	mg/kg	0.10	< 0.10			
Anthracene	U	2700	mg/kg	0.10	< 0.10			
Fluoranthene	U	2700	0	0.10	< 0.10			
Pyrene	U	2700		0.10	< 0.10			
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10			
Chrysene	U	2700	5	0.10	< 0.10			
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10			
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10			
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10			
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10			
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0			
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0			
Chloromethane	U	2760	μg/kg	1.0	< 1.0			
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0			
Bromomethane	U	2760	μg/kg	20	< 20			
Chloroethane	U	2760	μg/kg	2.0	< 2.0			
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0			
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0			
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0			
Trichloromethane	U	2760	μg/kg	1.0	< 1.0			
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0			
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0			
Benzene	U	2760	μg/kg	1.0	< 1.0			
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0			
Trichloroethene	U	2760	μg/kg	1.0	< 1.0			
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0			



Project: 2543, GI Lake Lothing					.=
Client: Geosphere Environmental Ltd		ob No.:	17-21942		
Quotation No.: Q17-10179		500182			
Order No.: 2543,GI		BHC03			
		J4			
		SOIL			
			Top Dep		1.30
			Date Sa		15-Aug-2017
_			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	
Dibromomethane	U	2760	μg/kg	1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		17-21942						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543,GI		Client Sample Ref.:						
		Client Sample ID.: Sample Type: Top Depth (m):						
			Date Sa	mpled:	15-Aug-2017			
			Asbest	os Lab:	COVENTRY			
Determinand	Accred.	SOP		LOD				
Phenol	U	2790	mg/kg	0.50	< 0.50			
2-Chlorophenol	U	2790) י	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50			
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50			
1,4-Dichlorobenzene	N	2790		0.50	< 0.50			
1,2-Dichlorobenzene	U	2790) י	0.50	< 0.50			
2-Methylphenol	U	2790		0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50			
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50			
4-Methylphenol	U	2790		0.50	< 0.50			
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50			
Isophorone	U	2790		0.50	< 0.50			
2-Nitrophenol	N		mg/kg	0.50	< 0.50			
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50			
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50			
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50			
Naphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50			
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50			
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50			
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50			
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50			
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50			
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50			
2,6-Dinitrotoluene	U	2790		0.50	< 0.50			
Acenaphthene	U	2790	mg/kg	0.50	< 0.50			
3-Nitroaniline	N	2790		0.50	< 0.50			
Dibenzofuran	U	2790		0.50	< 0.50			
4-Chlorophenylphenylether	U	2790		0.50	< 0.50			
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50			
Fluorene	U	2790		0.50	< 0.50			



Project: 2543, GI Lake Lothing		-			
Client: Geosphere Environmental Ltd		ob No.:	17-21942		
Quotation No.: Q17-10179	<u> </u>	500182			
Order No.: 2543,GI		BHC03			
		J4			
		SOIL			
			Top Dep		1.30
			Date Sa Asbest		15-Aug-2017
			COVENTRY		
Determinand	Accred.	SOP		LOD	
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50
Azobenzene	U	2790	0	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50
Anthracene	U	2790		0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50
PCB 81	N	2815	0		< 0.010
PCB 77	N	2815	mg/kg		< 0.010
PCB 105	N	2815			< 0.010
PCB 114	N	2815)		< 0.010
PCB 118	N	2815) י		< 0.010
PCB 123	N	2815			< 0.010
PCB 126	N	2815			< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010
PCB 157	N		mg/kg	0.010	< 0.010
PCB 167	N	2815			< 0.010
PCB 169	N	2815	mg/kg		< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010
Total PCBs (12 Congeners)	N	2815	ו	0.12	< 0.12
Total Phenols	U	2920	mg/kg	0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 17-21969-1

Initial Date of Issue: 31-Aug-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 21-Aug-2017

Order No.: 2543,Gl Date Instructed: 24-Aug-2017

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 31-Aug-2017

Date Approved: 31-Aug-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Client: Geosphere Environmental Ltd			mtest Jo	17-21969	17-21969	
Quotation No.: Q17-10179			st Sam	500309	500311	
Order No.: 2543,GI			nt Samp	TPC02	TPC21	
		Cli	ent Sam	J1	J2	
				e Type:	SOIL	SOIL
			Top De	, ,	0.30	0.25
			Date Sa		17-Aug-2017	17-Aug-2017
			Asbest		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units			
ACM Type	U	2192		N/A	Cement	-
Asbestos Identification	U	2192	%	0.001	Chrysotile	No Asbestos Detected
Moisture	N	2030	%	0.020	3.4	9.2
рН	M	2010		N/A	11.8	9.6
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.44	< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	0.17	0.013
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	< 0.50	0.78
Sulphate (Total)	М	2430	%	0.010	0.67	0.11
Arsenic	M	2450	mg/kg	1.0	15	11
Cadmium	M	2450	mg/kg	0.10	< 0.10	0.13
Chromium	M	2450	mg/kg	1.0	25	13
Copper	M	2450	mg/kg	0.50	14	11
Mercury	M	2450	mg/kg	0.10	0.11	0.17
Nickel	М	2450	mg/kg	0.50	14	11
Lead	M	2450	mg/kg	0.50	45	53
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.50	47	58
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	52
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	52
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	7.8	4.2
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	260
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo	17-21969	17-21969	
Quotation No.: Q17-10179	(st Sam	500309	500311	
Order No.: 2543,GI		Client Sample Ref.:			TPC02	TPC21
	Client Sample ID.:		J1	J2		
	Sample Typ			e Type:	SOIL	SOIL
			Top Dep	, ,	0.30	0.25
			Date Sa	mpled:	17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	7.8	270
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	320
Naphthalene	М	2700	mg/kg	0.10	< 0.10	0.16
Acenaphthylene	М	2700	mg/kg	0.10	< 0.10	0.37
Acenaphthene	M		mg/kg	0.10	< 0.10	0.23
Fluorene	М	2700	mg/kg	0.10	< 0.10	0.40
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	1.8
Anthracene	M	2700	mg/kg	0.10	< 0.10	0.80
Fluoranthene	М	2700	mg/kg	0.10	0.34	4.7
Pyrene	М	2700	mg/kg	0.10	0.18	4.4
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	2.8
Chrysene	М	2700	mg/kg	0.10	< 0.10	2.8
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	3.8
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.5
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	3.4
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	2.2
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	0.70
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	2.5
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	33
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	М	2760	μg/kg	1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-21969	17-21969
Quotation No.: Q17-10179	(Chemte	st Sam	500309	500311	
Order No.: 2543,GI		Client Sample Ref.: Client Sample ID.: Sample Type:			TPC02	TPC21
					J1	J2
					SOIL	SOIL
	Top Depth (m):		0.30	0.25		
			Date Sa	ampled:	17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	М	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	17-21969	17-21969	
Quotation No.: Q17-10179	(st Sam	500309	500311	
Order No.: 2543,GI			nt Samp	TPC02	TPC21	
		Cli	ent Sam	J1	J2	
				e Type:	SOIL	SOIL
			Top Dep	0.30	0.25	
			Date Sa		17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	М	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	М	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo			17-21969
Quotation No.: Q17-10179	(st Sam		500309	500311
Order No.: 2543,GI		Client Sample Ref.:			TPC02	TPC21
		Client Sample ID.:				J2
				е Туре:	SOIL	SOIL
			Top De	, ,	0.30	0.25
			Date Sa	ampled:	17-Aug-2017	17-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	0.88
Pyrene	М	2790	mg/kg	0.50	< 0.50	0.75
Butylbenzyl Phthalate	М	1	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	0.56
Chrysene	М	2790	mg/kg	0.50	< 0.50	0.64
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	1.0
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	0.77
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg		< 0.50	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg		< 0.50	< 0.50
PCB 28	М	2815	mg/kg			< 0.010
PCB 81	N	2815	mg/kg		< 0.010	
PCB 52	М	2815	mg/kg			< 0.010
PCB 77	N		mg/kg		< 0.010	
PCB 105	N		mg/kg		< 0.010	
PCB 90+101	M	+	mg/kg			< 0.010
PCB 114	N	-	mg/kg		< 0.010	
PCB 118	M	2815	0			< 0.010
PCB 118	N		mg/kg		< 0.010	
PCB 153	M	2815	mg/kg			< 0.010
PCB 123	N	2815	mg/kg		< 0.010	
PCB 138	M	2815				< 0.010
PCB 126	N	2815	0		< 0.010	10.0.0
PCB 180	M		mg/kg			< 0.010



Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-21969	17-21969	
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	500309	500311
Order No.: 2543,GI		Clie	nt Samp	le Ref.:	TPC02	TPC21
		Cli	ent Sam	ple ID.:	J1	J2
			Sampl	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	0.30	0.25
		Date Sampled:			17-Aug-2017	17-Aug-2017
		Asbestos Lab:		COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	·
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	·	< 0.10
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



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- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
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CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-22275-1
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Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 23-Aug-2017

Order No.: 2543, Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 7 Results Due: 01-Sep-2017

Date Approved: 01-Sep-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing									
Chemtest Job No: 17-22275							Landfill W	/aste Acceptand	e Criteria
Chemtest Sample ID:	501892							Limits	
Sample Ref:	IPC02							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	0.60						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	15-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.76	3	5	6
Loss On Ignition	2610	U	%			1.0			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	U				7.3		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.025		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.0019	0.0032	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.011	0.026	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	0.00022	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0039	0.0064	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0023	0.0013	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	0.0011	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0045	0.031	< 0.010	0.28	0.5	10	50
Antimony	1450	U	0.0067	0.0057	0.013	0.058	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0070	0.029	< 0.50	< 0.50	4	50	200
Chloride	1220	U	2.5	2.2	< 10	22	800	15000	25000
Fluoride	1220	U	0.22	0.26	< 1.0	2.6	10	150	500
Sulphate	1220	U	< 1.0	1.8	< 10	16	1000	20000	50000
Total Dissolved Solids	1020	N	39	30	78	310	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	15	17	< 50	170	500	800	1000

Soild Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	2.2				

Leachate Test Information						
Leachant volume 1st extract/l	0.346					
Leachant volume 2nd extract/l	1.400					
Eluant recovered from 1st extract/l	0.184					

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

'-22316-1

Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2456 GI, Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 23-Aug-2017

Order No.: 2456 Gl Date Instructed: 23-Aug-2017

No. of Samples: 1

Turnaround (Wkdays): 7 Results Due: 01-Sep-2017

Date Approved: 01-Sep-2017

Approved By:

Details: Robert Monk, Technical Development

Chemist



Results - 2 Stage WAC

Project: 2456 GI, Lake Lothing, Lowestoft

Project: 2456 GI, Lake Lothing, Lot	westort								
Chemtest Job No:	17-22316						Landfill W	/aste Acceptano	ce Criteria
Chemtest Sample ID:	502056							Limits	
Sample Ref:	BHC02							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	3.00						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	11-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			0.51			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	U				7.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0090		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at L	/S 10 l/kg
Arsenic	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.016	0.0068	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0014	0.0013	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0018	0.0029	< 0.010	0.028	0.5	10	50
Antimony	1450	U	0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0035	0.0031	< 0.50	< 0.50	4	50	200
Chloride	1220	U	1.7	11	< 10	100	800	15000	25000
Fluoride	1220	U	0.097	0.097	< 1.0	< 1.0	10	150	500
Sulphate	1220	U	32	6.0	63	85	1000	20000	50000
Total Dissolved Solids	1020	N	70	40	140	430	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	12	12	< 50	120	500	800	1000

Soild Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	14				

Leachate Test Information					
Leachant volume 1st extract/l	0.321				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.173				

Waste Acceptance Criteria

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SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
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1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

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All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
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Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-22419-1		
Initial Date of Issue:	31-Aug-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	24-Aug-2017
Order No.:	2543, GI	Date Instructed:	24-Aug-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	31-Aug-2017
Date Approved:	31-Aug-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		17-22419			
Quotation No.: Q17-10179	(502623			
Order No.: 2543, GI		TPC21			
		ple ID.:	J4		
		e Type:	SOIL		
			Top Dep	oth (m):	1.45
		22-Aug-2017			
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	19
рН	U	2010		N/A	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.53
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010
Cyanide (Free)	U	2300		0.50	< 0.50
Cyanide (Total)	U	2300		0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	6.9
Sulphate (Total)	U	2430	%	0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	16
Cadmium	U	2450	mg/kg	0.10	0.63
Chromium	U	2450	mg/kg	1.0	28
Copper	U	2450	mg/kg	0.50	64
Mercury	U	2450	mg/kg	0.10	0.15
Nickel	U	2450	mg/kg	0.50	47
Lead	U	2450	mg/kg	0.50	88
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	150
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	0	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	9	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680)	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
	U	2700	mg/kg	0.10	< 0.10
Naphthalene	U	2100	mg/kg	0.10	₹ 0.10



Client: Geosphere Environmental Ltd		17-22419 502623				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		TPC21				
		J4				
		SOIL				
			Top Dep	, ,	1.45	
			Date Sa	mpled:	22-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Acenaphthene	U		mg/kg	0.10	< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	
Anthracene	U	2700	mg/kg	0.10	< 0.10	
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Pyrene	U	2700	mg/kg	0.10	< 0.10	
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	
Chrysene	U	2700	5	0.10	< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	
Chloromethane	U	2760		1.0	< 1.0	
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	
Bromomethane	U	2760	μg/kg	20	< 20	
Chloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloropropene	U	2760		1.0	< 1.0	
Benzene	U	2760		1.0	< 1.0	
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichloroethene	U	2760		1.0	< 1.0	
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	
Dibromomethane	U	2760		1.0	< 1.0	
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
Toluene	U	2760		1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760		10	< 10	



Client: Geosphere Environmental Ltd		17-22419				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Cli	ent Sam		J4 SOIL	
		Sample Type:				
			Top Dep	oth (m):	1.45	
			Date Sa	impled:	22-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	
Dibromochloromethane	U	2760	μg/kg	10	< 10	
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	
o-Xylene	U	2760	μg/kg	1.0	< 1.0	
Styrene	U	2760	μg/kg	1.0	< 1.0	
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	
Phenol	U	2790	mg/kg	0.50	< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd		17-22419 502623				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		TPC21				
		J4				
		e Type:	SOIL			
			Top Dep	oth (m):	1.45	
			Date Sa	mpled:	22-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	
Isophorone	U	2790		0.50	< 0.50	
2-Nitrophenol	N	2790		0.50	< 0.50	
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	
Naphthalene	U	2790		0.50	< 0.50	
4-Chloroaniline	N	2790		0.50	< 0.50	
Hexachlorobutadiene	U	2790	_ ,	0.50	< 0.50	
4-Chloro-3-Methylphenol	Ü	2790	_	0.50	< 0.50	
2-Methylnaphthalene	U	2790		0.50	< 0.50	
4-Nitrophenol	N	2790	_	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	
2,4,6-Trichlorophenol	U	2790	٥	0.50	< 0.50	
2,4,5-Trichlorophenol	Ü	2790		0.50	< 0.50	
2-Chloronaphthalene	U	2790	5	0.50	< 0.50	
2-Nitroaniline	Ü	2790		0.50	< 0.50	
Acenaphthylene	Ü	2790		0.50	< 0.50	
Dimethylphthalate	Ü	2790		0.50	< 0.50	
2,6-Dinitrotoluene	Ü	2790		0.50	< 0.50	
Acenaphthene	Ü	2790	mg/kg	0.50	< 0.50	
3-Nitroaniline	N	2790		0.50	< 0.50	
Dibenzofuran	U	2790	٥	0.50	< 0.50	
4-Chlorophenylphenylether	Ü	2790	_	0.50	< 0.50	
2.4-Dinitrotoluene	Ü	2790	0	0.50	< 0.50	
Fluorene	Ü	2790	٥	0.50	< 0.50	
Diethyl Phthalate	U	2790		0.50	< 0.50	
4-Nitroaniline	U	2790	0	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	ŭ	0.50	< 0.50	
Azobenzene	U	2790	mg/kg	0.50	< 0.50	
		_			< 0.50	
4-Bromonhenylphenyl Ether	1 11	7/UN				
4-Bromophenylphenyl Ether Hexachlorobenzene	U	2790 2790	٥	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Client Sample ID.:				
				e Type:	SOIL	
			Top Dep		1.45	
			Date Sa	impled:	22-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	
Anthracene	U	2790	mg/kg	0.50	< 0.50	
Carbazole	U	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Pyrene	U	2790	mg/kg	0.50	< 0.50	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	
Chrysene	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

2420-1

Initial Date of Issue: 01-Sep-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 24-Aug-2017

Order No.: 2543, Gl Date Instructed: 24-Aug-2017

No. of Samples: 3

Turnaround (Wkdays): 5 Results Due: 31-Aug-2017

Date Approved: 01-Sep-2017

Approved By:					
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Details: Keith Jones, Technical Manager



Client: Geosphere Environmental Ltd		17-22420				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Client Sample ID.:				
			Sampl	e Type:	SOIL	
			Top De	oth (m):	1.00	
			Date Sa	ampled:	21-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	9.1	
Ammonia (Free) as N	U	1220	mg/l	0.010	0.057	
Sulphate	U	1220	mg/l	1.0	24	
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	
Arsenic (Dissolved)	U	1450	μg/l	1.0	7.0	
Boron (Dissolved)	U	1450	μg/l	20	25	
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	
Chromium (Dissolved)	U	1450	μg/l	1.0	1.9	
Copper (Dissolved)	U	1450	μg/l	1.0	7.4	
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Lead (Dissolved)	U	1450	μg/l	1.0	2.3	
Selenium (Dissolved)	U	1450	μg/l	1.0	1.6	
Zinc (Dissolved)	U	1450	μg/l	1.0	3.1	
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	
Naphthalene	U	1700	µg/l	0.10	< 0.10	
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	
Acenaphthene	Ü	1700	μg/l	0.10	< 0.10	
Fluorene	Ü	1700	μg/l	0.10	< 0.10	
Phenanthrene	Ū	1700	μg/l	0.10	< 0.10	



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-22420			
Quotation No.: Q17-10179			st Sam		502630			
Order No.: 2543, GI			nt Samp		TPC23			
		Client Sample ID.:						
		Sample Type:						
			Top Dep		1.00			
		Date Sampled						
Determinand	Accred.	SOP	Units		21-Aug-2017			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	Ū	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	Ü	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	Ü	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	Ü	1700	μg/l	2.0	< 2.0			
Benzene	Ü	1760	μg/l	1.0	< 1.0			
Toluene	Ü	1760	μg/l	1.0	< 1.0			
Ethylbenzene	Ü	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			
			r 9''					



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(st Sam		502630			
Order No.: 2543, GI		Client Sample Ref.:						
		ple ID.:	J3					
				e Type:	SOIL			
			Top Dep	, ,	1.00			
		Date Sampled:						
Determinand	Accred.	SOP	Units	LOD				
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50			
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.: TP0				
		Cli	J3			
		Sample Type:				
			Top Dep	oth (m):	1.00	
			Date Sa	ampled:	21-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179			st Sam		502625	502630	502632
Order No.: 2543, GI			nt Samp		TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	2.8	15	8.4
pH	М	2010		N/A	7.0	8.3	8.0
Boron (Hot Water Soluble)	М		mg/kg	0.40	< 0.40	0.81	0.68
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	0.050	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	М	2425	mg/kg	0.50	3.4	6.1	3.5
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.12	< 0.010
Arsenic	М	2450	mg/kg	1.0	2.2	20	6.5
Cadmium	М	2450	mg/kg	0.10	< 0.10	0.43	< 0.10
Chromium	М	2450	mg/kg	1.0	4.5	21	9.2
Copper	М	2450	mg/kg	0.50	3.2	140	6.0
Mercury	М	2450	mg/kg	0.10	< 0.10	0.16	< 0.10
Nickel	М	2450	mg/kg	0.50	3.6	44	12
Lead	М	2450	mg/kg	0.50	10	270	8.4
Selenium	М	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20
Zinc	М	2450	mg/kg	0.50	55	310	31
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	М	2625	%	0.40			0.47
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	29	< 1.0
Aromatic TPH >C21-C35	М	2680		1.0	< 1.0	150	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	502625	502630	502632
Order No.: 2543, GI			nt Samp		TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
			Sample	e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	mpled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	7.8	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	190	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	190	< 10
Naphthalene	M	2700	mg/kg	0.10	< 0.10	0.44	< 0.10
Acenaphthylene	M	2700	mg/kg	0.10	< 0.10	0.79	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	0.19	< 0.10
Fluorene	M	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2700	mg/kg	0.10	< 0.10	0.75	< 0.10
Anthracene	M	2700		0.10	< 0.10	0.21	< 0.10
Fluoranthene	M	2700	mg/kg	0.10	< 0.10	1.6	< 0.10
Pyrene	М	2700	mg/kg	0.10	< 0.10	1.6	< 0.10
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	1.1	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10	0.72	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.5	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	1.1	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2700	mg/kg	0.10	< 0.10	0.90	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	0.19	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	1.1	< 0.10
Total Of 16 PAH's	M	2700	mg/kg	2.0	< 2.0	13	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	M	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1.2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(st Sam		502625 TPC22	502630	502632
Order No.: 2543, GI		Client Sample Ref.:				TPC23	TPC23
		Cli	ent Sam		J2	J3	J5
				e Type:	SOIL	SOIL	SOIL
			Top Dep	, ,	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	M	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-22420	17-22420	17-22420
Quotation No.: Q17-10179		Chemtest Sample ID.:		502625	502630	502632	
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
N-Nitrosodimethylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
	M	2790		0.50	< 0.50		
Acenaphthene			mg/kg			< 0.50	< 0.50
3-Nitroaniline	N M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest J		17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(st Sam		502625	502630	502632
Order No.: 2543, GI			nt Samp		TPC22	TPC23	TPC23
		Cli	ent Sam	ple ID.:	J2	J3	J5
				е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Fluorene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	М	2790	mg/kg	0.50	< 0.50	0.60	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	1.0	< 0.50
Pyrene	М	2790	mg/kg	0.50	< 0.50	0.80	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	M	2790	mg/kg	0.50	< 0.50	0.66	< 0.50
Chrysene	M	2790	mg/kg	0.50	< 0.50	0.75	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50	1.2	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50	0.63	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010	1 0.00	< 0.010
PCB 81	N N	2815	mg/kg	0.010	, 0.010	< 0.010	, 0.010
PCB 52	M	2815	mg/kg	0.010	< 0.010	1 0.010	< 0.010
PCB 77	N N	2815	mg/kg	0.010	, 0.010	< 0.010	10.010
PCB 105	N	2815	mg/kg	0.010		< 0.010	
PCB 90+101	M	2815	mg/kg		< 0.010	10.010	< 0.010
PCB 114	N N	2815	mg/kg		V 0.010	< 0.010	V 0.010
PCB 118	M	2815	mg/kg		< 0.010	1 0.010	< 0.010
PCB 118	N	2815	mg/kg		\ 0.010	< 0.010	\ 0.010
PCB 153	M	2815	0		< 0.010	< 0.010	< 0.010
PCB 133	N	2815	mg/kg	0.010	\ 0.010	< 0.010	\ 0.010
PCB 123	M	2815	mg/kg	0.010	< 0.010	V 0.010	< 0.010
PCB 136	N		mg/kg		\ 0.010	< 0.010	V 0.010
FOD 120	IN	2010	mg/kg	0.010		< 0.010	1



Results - Soil

Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-22420	17-22420	17-22420
Quotation No.: Q17-10179	(Chemtest Sample ID.:			502625	502630	502632
Order No.: 2543, GI		Client Sample Ref.:		TPC22	TPC23	TPC23	
		Cli	ent Sam	ple ID.:	J2	J3	J5
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.60	1.00	2.60
			Date Sa	ampled:	21-Aug-2017	21-Aug-2017	21-Aug-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD			
PCB 180	M	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010		< 0.010	
PCB 157	N	2815	mg/kg	0.010		< 0.010	
PCB 167	N	2815	mg/kg	0.010		< 0.010	
PCB 169	N	2815	mg/kg	0.010		< 0.010	
PCB 189	N	2815	mg/kg	0.010		< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10		< 0.10
Total Phenols	M	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-22844-1		
Initial Date of Issue:	13-Sep-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	30-Aug-2017
Order No.:	2543, GI	Date Instructed:	07-Sep-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	13-Sep-2017
Date Approved:	13-Sep-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-22844
Quotation No.: Q17-10179		Chemtest Sample ID.:			
Order No.: 2543, GI Determinand		Client Sample Ref.:			
		Client Sample ID.:			
		Sample Type:			
		Top Depth (m): Date Sampled:			
	Accred.	SOP	Units		25-Aug-2017
Hq	U	1010	011110	N/A	8.4
Ammonia (Free) as N	U	1220	mg/l	0.010	0.017
Sulphate	Ü	1220	mg/l	1.0	100
Cyanide (Total)	Ü	1300	mg/l	0.050	< 0.050
Cyanide (Free)	Ü	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.3
Boron (Dissolved)	Ü	1450	μg/l	20	68
Cadmium (Dissolved)	Ü	1450	µg/l	0.080	< 0.080
Chromium (Dissolved)	Ü	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	Ü	1450	μg/l	1.0	5.1
Mercury (Dissolved)	Ü	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	Ü	1450	µg/l	1.0	1.0
Lead (Dissolved)	Ü	1450	μg/l	1.0	2.3
Selenium (Dissolved)	Ü	1450	μg/l	1.0	1.7
Zinc (Dissolved)	Ü	1450	μg/l	1.0	7.8
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	1.7
Acenaphthylene	U	1700	μg/l	0.10	1.0
Acenaphthene	U	1700	μg/l	0.10	1.2
Fluorene	U	1700	μg/l	0.10	2.1
Phenanthrene	U	1700	μg/l	0.10	2.3



Client: Geosphere Environmental Ltd		Chemtest Job No.:			
Quotation No.: Q17-10179	(Chemtest Sample ID.:			
Order No.: 2543, GI		Clier	nt Samp	le Ref.:	BHC04
		Client Sample ID.:			
				е Туре:	SOIL
			Top Dep	oth (m):	0.90
			Date Sa	ampled:	25-Aug-2017
Determinand	Accred.	SOP	Units	LOD	
Anthracene	U	1700	μg/l	0.10	0.15
Fluoranthene	U	1700	μg/l	0.10	2.2
Pyrene	U	1700	μg/l	0.10	2.1
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	13
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	2.1
Ethylbenzene	U	1760	μg/l	1.0	1.6
m & p-Xylene	U	1760	μg/l	1.0	9.4
o-Xylene	U	1760	μg/l	1.0	4.1
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
1 TONGOT HOTODULAGIOTIC	IN	1790	μ 9 /1	0.50	\ U.JU



Project: 2543, Gi Lake Lotning, Lowestort						
Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-22844 504746	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
	Client Sample ID.:				J3	
				e Type:	SOIL	
			Top Dep		0.90	
			Date Sa		25-Aug-2017	
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2.4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	µg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
טוטפווב(מ,וו)אוווווומטפוופ	IN	1790	μg/i	0.50	< 0.50	



Results - Leachate

Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-22844
Quotation No.: Q17-10179	(Chemtest Sample ID.:			
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC04
	Client Sample ID.:				J3
	Sample Type:				SOIL
	Top Depth (m):				0.90
			Date Sa	mpled:	25-Aug-2017
Determinand	Accred.	SOP	Units	LOD	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd		Chemtest Job No.:			
Quotation No.: Q17-10179	(Chemtest Sample ID.:			
Order No.: 2543, GI		Client Sample Ref.:			
		Client Sample ID.:			
			Sample	е Туре:	SOIL
			Top Dep	oth (m):	0.90
			Date Sa	ampled:	25-Aug-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
ACM Type	U	2192		N/A	ı
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected
Moisture	N	2030	%	0.020	2.1
рН	U	2010		N/A	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.3
Sulphate (Total)	U	2430	%	0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	3.3
Cadmium	U	2450		0.10	0.10
Chromium	U	2450	mg/kg	1.0	8.5
Copper	U	2450	mg/kg	0.50	7.3
Mercury	U	2450	mg/kg	0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	7.0
Lead	U	2450	mg/kg	0.50	40
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	86
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	280
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	440
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	720
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	20000
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	510
Total Aliphatic Hydrocarbons	N	2680	0	5.0	22000
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	0	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	•	1.0	42
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	120
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	490
Aromatic TPH >C21-C35	U	2680)	1.0	7100
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	2900



Client: Geosphere Environmental Ltd		Chemtest Job No.:			
Quotation No.: Q17-10179		Chemtest Sample ID.:			
Order No.: 2543, GI		Client Sample Ref.:			
		Client Sample ID.:			J3
				e Type:	SOIL
			Top Dep	, ,	0.90
			Date Sa		25-Aug-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Total Aromatic Hydrocarbons	N	2680	٥	5.0	11000
Total Petroleum Hydrocarbons	N	2680	0	10.0	33000
Naphthalene	U	2700	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	J	0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10
Fluorene	U	2700	0	0.10	< 0.10
Phenanthrene	U	2700)	0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.12
Pyrene	U	2700	mg/kg	0.10	0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0
Bromomethane	U	2760		20	< 20
Chloroethane	U	2760		2.0	< 2.0
Trichlorofluoromethane	U	2760		1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0
1,1-Dichloroethane	U	2760		1.0	< 1.0
cis 1,2-Dichloroethene	U	2760		1.0	< 1.0
Bromochloromethane	U	2760		5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760		1.0	< 1.0
Tetrachloromethane	U	2760		1.0	< 1.0
1,1-Dichloropropene	U	2760		1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	9.4
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0
Trichloroethene	Ü	2760		1.0	< 1.0
1,2-Dichloropropane	U	2760	-	1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Client Sample ID.:				
			Sample	е Туре:	SOIL	
			Top Dep	oth (m):	0.90	
			Date Sa	mpled:	25-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	
Bromodichloromethane	U	2760	ט י	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
Toluene	U	2760	μg/kg	1.0	16	
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	
Dibromochloromethane	U	2760	μg/kg	10	< 10	
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	
Ethylbenzene	U	2760	μg/kg	1.0	7.6	
m & p-Xylene	U	2760	μg/kg	1.0	27	
o-Xylene	U	2760	μg/kg	1.0	15	
Styrene	U	2760	μg/kg	1.0	< 1.0	
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	
Bromobenzene	U	2760	100	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	
N-Propylbenzene	U	2760		1.0	< 1.0	
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760	י פייו	1.0	8.9	
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
Tert-Butylbenzene	U	2760		1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	12	
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dichlorobenzene	U	2760		1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
Hexachlorobutadiene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	2760	μg/kg	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-22844
Quotation No.: Q17-10179	(Chemte	st Sam	ole ID.:	504746
Order No.: 2543, GI		Client Sample Ref.:			
	Client Sample ID.:				J3
			Sample	е Туре:	SOIL
			Top Dep		0.90
			Date Sa	mpled:	25-Aug-2017
			Asbesto	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Cli	ent Sam		J3	
				e Type:	SOIL	
			Top Dep	, ,	0.90	
			Date Sa	mpled:	25-Aug-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	U	2790) י	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	
Azobenzene	U	2790)	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	U	2790) י	0.50	< 0.50	
Pentachlorophenol	N	2790		0.50	< 0.50	
Phenanthrene	U	2790	mg/kg	0.50	8.0	
Anthracene	U	2790	mg/kg	0.50	2.7	
Carbazole	U	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	mg/kg	0.50	30	
Pyrene	U	2790	mg/kg	0.50	28	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	22	
Chrysene	U	2790	mg/kg	0.50	21	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	31	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	14	
Benzo[a]pyrene	U	2790	mg/kg	0.50	21	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	11	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	3.8	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	12	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	ו		< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg		< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815		0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
504746	BHC04	J3	25-Aug-2017	В	Amber Glass 250ml
504746	BHC04	J3	25-Aug-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

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- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i mai report			
Report No.:	17-23648-1		
Initial Date of Issue:	15-Sep-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	07-Sep-2017
Order No.:		Date Instructed:	07-Sep-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	15-Sep-2017
Date Approved:	15-Sep-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing, Lowestof	t
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Project: 2543, Gi Lake Lotning, L	owestort								
Chemtest Job No:	17-23648						Landfill V	laste Acceptant	ce Criteria
Chemtest Sample ID:	508390							Limits	
Sample Ref:								Stable, Non-	
Sample ID:	BHC04							reactive	Hazardous
Top Depth(m):	0.90						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	30-Aug-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.42	3	5	6
Loss On Ignition	2610	U	%	1		0.96			10
Total BTEX	2760	U	mg/kg	1		0.085	6		
Total PCBs (7 Congeners)	2815	U	mg/kg	1		< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	1		21000	500		
Total (Of 17) PAH's	2700	N	mg/kg	1		< 2.0	100		
pH	2010	U		1		7.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0020		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.0044	0.0043	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.087	0.051	< 0.50	0.57	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0011	0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.011	0.0057	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.032	0.0092	0.064	0.13	0.5	10	30
Nickel	1450	U	0.0039	0.0014	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0035	0.0035	< 0.010	0.035	0.5	10	50
Antimony	1450	U	0.030	0.019	0.060	0.21	0.06	0.7	5
Selenium	1450	U	0.0038	0.0030	< 0.010	0.031	0.1	0.5	7
Zinc	1450	U	0.031	0.0070	< 0.50	< 0.50	4	50	200
Chloride	1220	U	10	1.1	20	26	800	15000	25000
Fluoride	1220	U	0.87	0.64	1.7	6.8	10	150	500
Sulphate	1220	U	550	76	1100	1600	1000	20000	50000
Total Dissolved Solids	1020	N	720	130	1400	2300	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	30	20	60	220	500	800	1000

Soild Information						
Dry mass of test portion/kg	0.175					
Moisture (%)	2.6					

Leachate Test Information						
Leachant volume 1st extract/l	0.345					
Leachant volume 2nd extract/l	1.400					
Eluant recovered from 1st extract/l	0.295					

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
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2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-25501-1
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Initial Date of Issue: 06-Oct-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 28-Sep-2017

Order No.: Date Instructed: 29-Sep-2017

No. of Samples: 5

Turnaround (Wkdays): 5 Results Due: 05-Oct-2017

Date Approved: 06-Oct-2017

Approved By:	
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Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd			mtest Jo		17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517037	517043
Order No.:			nt Samp		TPC08	BH13CP
		Clie	ent Sam		J6	J6
				e Type:	SOIL	SOIL
			Top Dep	, ,	2.00	2.00
			Date Sa	ampled:	22-Sep-2017	21-Sep-2017
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	7.5	8.0
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	4.9	3.7
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.3	1.4
Boron (Dissolved)	U	1450	μg/l	20	< 20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	0.52
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	1.1	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	1.9	< 1.0
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	18
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	76
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	94
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	8.0
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	110
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	110
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	210
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10



Project: 2543, GI Lake Lothing, Lowestoft									
Client: Geosphere Environmental Ltd			mtest Jo		17-25501	17-25501			
Quotation No.: Q17-10179	(st Sam		517037	517043			
Order No.:			nt Samp		TPC08	BH13CP			
		Clie	ent Sam		J6	J6			
				e Type:	SOIL	SOIL			
			Top Dep	, ,	2.00	2.00			
			Date Sa		22-Sep-2017	21-Sep-2017			
Determinand	Accred.	SOP	Units	LOD					
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0			
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50			



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Order No.:			nt Samp		TPC08	BH13CP
		Cli	ent Sam	J6	J6	
			Sample	SOIL	SOIL	
			Top Dep	2.00	2.00	
			Date Sa		22-Sep-2017	21-Sep-2017
Determinand	Accred.	SOP	Units	LOD		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
	_	1790	μg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μu/i	0.50	< 0.50	< 0.50



Results - Leachate

· · · · · · · · · · · · · · · · · · ·						
Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-25501	17-25501
Quotation No.: Q17-10179	(Chemte	est Sam	ple ID.:	517037	517043
Order No.:		Clie	nt Samp	le Ref.:	TPC08	BH13CP
		Cli	ent Sam	ple ID.:	J6	J6
			Sampl	SOIL	SOIL	
			Top Dep	oth (m):	2.00	2.00
			Date Sa	ampled:	22-Sep-2017	21-Sep-2017
Determinand	Accred.	SOP	Units			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest Jo		17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Cli	ent Sam		J3	J4	J6	J6	J7
			Sample	е Туре:	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.00	1.50	2.00	2.00	3.00
			Date Sa	mpled:	22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTR	
Determinand	Accred.	SOP	Units	LOD					
ACM Type	U	2192		N/A	-	-	-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbesto Detected
Moisture	N	2030	%	0.020	7.0	9.6	15	9.6	7.9
pH	M	2010	,,	N/A	8.4	8.7	8.1	9.1	8.3
Boron (Hot Water Soluble)	M		mg/kg	0.40	< 0.40	0.50	1.1	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.010	< 0.010	< 0.010	0.040	0.084	< 0.010
Cyanide (Free)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	M	2425	mg/kg	0.50	1.0	2.3	7.5	< 0.50	0.69
Sulphate (Total)	M	2430	%	0.010	0.021	0.012	0.26	0.23	< 0.010
Arsenic	M	2450	mg/kg	1.0	7.6	9.0	5.8	7.7	26
Cadmium	M	2450	mg/kg	0.10	0.14	< 0.10	< 0.10	< 0.10	< 0.10
Chromium	M	2450	mg/kg	1.0	10	9.9	6.0	8.2	18
Copper	M	2450	mg/kg	0.50	13	11	4.9	3.2	7.6
Mercury	M	2450	mg/kg	0.10	0.18	0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	6.8	9.9	6.5	5.7	14
Lead	M	2450	mg/kg	0.50	74	22	15	5.6	9.8
Selenium	M	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.50	240	74	53	15	110
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	M	2625	%	0.40	1.7	1.1	0.88		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.1
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	6.9	71
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	73	270
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	71	240
Aliphatic TPH >C21-C35	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	100
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	150	680
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	22
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	26	150
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	8.8	< 1.0	< 1.0	< 1.0	57
Aromatic TPH >C21-C35	M		mg/kg	1.0	17	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Cli	ent Sam		J3	J4	J6	J6	J7
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	1.50	2.00	2.00	3.00
		Date Sampled:			22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD					
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	28	< 5.0	< 5.0	26	230
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	28	< 10	< 10	180	910
Naphthalene	М	2700	mg/kg	0.10	0.69	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	М	2700	mg/kg	0.10	2.7	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	0.79	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	М	2700	mg/kg	0.10	5.1	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	25	1.1	0.33	< 0.10	< 0.10
Anthracene	М	2700	mg/kg	0.10	7.8	0.33	0.11	< 0.10	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	21	1.0	0.61	< 0.10	< 0.10
Pyrene	M	2700	mg/kg	0.10	19	1.1	0.88	< 0.10	< 0.10
Benzo[a]anthracene	M	2700	mg/kg	0.10	12	0.90	0.18	< 0.10	< 0.10
Chrysene	М	2700	mg/kg	0.10	12	0.66	0.23	< 0.10	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	11	0.67	0.49	< 0.10	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	4.3	0.15	0.11	< 0.10	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	7.8	0.33	0.40	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	5.7	0.54	0.38	< 0.10	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	1.4	0.34	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	4.2	0.33	0.18	< 0.10	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	140	7.5	3.9	< 2.0	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	µg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	µg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Clie	ent Sam		J3	J4	J6	J6	J7
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		1.00	1.50	2.00	2.00	3.00	
		Date Sampled:		22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201	
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTR
Determinand	Accred.	SOP	Units	LOD					
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10	53	160
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	M	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	М	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	11	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	26	< 1.0
2-Chlorotoluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	120
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	34	120
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	16	32
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo			17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Cli	ent Sam		J3	J4	J6	J6	J7
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.00	1.50	2.00	2.00	3.00
		Date Sam		mpled:	22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201
			Asbest	os Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD					
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.5
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-25501	17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(st Sam		517025	517031	517037	517043	517044
Order No.:			nt Samp		TPC02	TPC07	TPC08	BH13CP	BH13CP
		Cli	ent Sam		J3	J4	J6	J6	J7
				е Туре:	SOIL	SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	1.00	1.50	2.00	2.00	3.00
	Date Sampled:			22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-201	
		Asbestos Lab:			COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units						
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.88
Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	M	2790	mg/kg	0.50	0.63	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	M		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	M	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 52	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 77	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 105	N	-	mg/kg		_		< 0.010		< 0.010
PCB 90+101	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 114	N		mg/kg				< 0.010		< 0.010
PCB 118	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 118	N		mg/kg	0.010			< 0.010		< 0.010
PCB 153	М		mg/kg		< 0.010	< 0.010		< 0.010	
PCB 123	N		mg/kg				< 0.010		< 0.010
	М	_	mg/kg		< 0.010	< 0.010		< 0.010	
PCB 138	IVI	2013	my/kg	0.010	< 0.010	4 0.010		~ 0.010	



Results - Soil

Client: Geosphere Environmental Ltd		Chai	mtest Jo	sh Na i	17 05501	17.05501	17 OFFO1	17 05501	17 OFF01
•						17-25501	17-25501	17-25501	17-25501
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	517025	517031	517037	517043	517044
Order No.:		Clie	nt Samp	le Ref.:	TPC02	TPC07	TPC08	BH13CP	BH13CP
		Client Sample ID.:			J3	J4	J6	J6	J7
		Sample Type:				SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	1.50	2.00	2.00	3.00
		Date Sampled:			22-Sep-2017	21-Sep-2017	22-Sep-2017	21-Sep-2017	21-Sep-2017
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD					
PCB 180	М	2815	mg/kg	0.010	< 0.010	< 0.010		< 0.010	
PCB 156	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010			< 0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010			< 0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12			< 0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	< 0.10		< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
517043	BH13CP	J6	21-Sep-2017	В	Amber Glass 250ml
517043	BH13CP	J6	21-Sep-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

9-1

Initial Date of Issue: 12-Oct-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543, GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 03-Oct-2017

Order No.: 2543, Gl Date Instructed: 05-Oct-2017

No. of Samples: 3

Turnaround (Wkdays): 5 Results Due: 11-Oct-2017

Date Approved: 12-Oct-2017

Approved By:								
The bill colleage connect to deployed. The fit may have been record, connect, or stated. Notify that the bill point to the connection and invades.								

Details: Robert Monk, Technical Manager



Project: 2543, GI Lake Lothing								
Client: Geosphere Environmental Ltd				ob No.:				
Quotation No.: Q17-10179	(st Sam	•	519841			
Order No.: 2543, GI			nt Samp		BHC30 J4			
		Client Sample ID.:						
		Sample Type						
		oth (m): ampled:	1.15					
		27-Sep-2017						
Determinand	Accred.		Units					
рН	U	1010		N/A	9.0			
Ammonia (Free) as N	U	1220	mg/l	0.010	0.030			
Sulphate	U	1220	mg/l	1.0	40			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.3			
Boron (Dissolved)	U	1450	μg/l	20	< 20			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	1.8			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Lead (Dissolved)	U	1450	μg/l	1.0	1.3			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	3.5			
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			



Project: 2543, GI Lake Lothing					
Client: Geosphere Environmental Ltd			ntest Jo		17-26029
Quotation No.: Q17-10179	(st Sam		519841
Order No.: 2543, GI			nt Samp		BHC30
		ple ID.:	J4		
		e Type:	SOIL		
		oth (m):	1.15		
		mpled:	27-Sep-2017		
Determinand	Accred.	SOP	Units		
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50



Project: 2543, GI Lake Lothing								
Client: Geosphere Environmental Ltd		ob No.:	17-26029 519841					
Quotation No.: Q17-10179		Chemtest Sample ID.: Client Sample Ref.:						
Order No.: 2543, GI		BHC30						
		ple ID.: e Type:	J4					
		SOIL						
		1.15						
		Date Sampled:						
Determinand	Accred.	SOP		LOD				
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50			
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			



Results - Leachate

Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Clie	le Ref.:	BHC30		
		Cli	ple ID.:	J4		
			е Туре:	SOIL		
			oth (m):	1.15		
	Date Sampled				27-Sep-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest J		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(st Sam		519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020	14	13	11
pH	М	2010		N/A	8.9	8.4	8.9
Boron (Hot Water Soluble)	М	2120	mg/kg	0.40	< 0.40	1.5	< 0.40
Sulphate (2:1 Water Soluble) as SO4	М	2120	g/l	0.010	< 0.010	0.048	< 0.010
Cyanide (Free)	М	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	М	2300	mg/kg	0.50	< 0.50	< 0.50	
Ammonium (Extractable)	М	2425	mg/kg	0.50	0.84	3.5	< 0.50
Sulphate (Total)	М	2430	%	0.010	< 0.010	0.29	< 0.010
Arsenic	М	2450	mg/kg	1.0	8.5	41	10
Cadmium	M	2450	mg/kg	0.10	0.14	0.84	0.15
Chromium	M	2450	mg/kg	1.0	11	33	10
Copper	M	2450	mg/kg	0.50	7.4	250	16
Mercury	М	2450	mg/kg	0.10	0.10	0.63	< 0.10
Nickel	M	2450	mg/kg	0.50	12	64	12
Lead	M	2450	mg/kg	0.50	14	1500	21
Selenium	М	2450	mg/kg	0.20	< 0.20	0.73	< 0.20
Zinc	М	2450	mg/kg	0.50	29	330	30
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	М	2625	%	0.40			0.78
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	1.9	< 1.0
Aliphatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	3.3	< 1.0
Aliphatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	14	< 1.0
Aliphatic TPH >C16-C21	М	2680	mg/kg	1.0	< 1.0	56	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	120	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	33	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	220	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	М	2680	mg/kg	1.0	< 1.0	7.5	< 1.0
Aromatic TPH >C10-C12	М	2680	mg/kg	1.0	< 1.0	8.6	< 1.0
Aromatic TPH >C12-C16	М	2680	mg/kg	1.0	< 1.0	64	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	330	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	1800	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(Chemtest Sample ID.:			519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
				е Туре:	SOIL	SOIL	SOIL
			Top Dep	, ,	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	170	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	2400	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	2600	< 10
Naphthalene	М	2700	mg/kg	0.10	< 0.10	3.0	< 0.10
Acenaphthylene	М	2700		0.10	< 0.10	1.0	< 0.10
Acenaphthene	М	2700	mg/kg	0.10	< 0.10	0.93	< 0.10
Fluorene	М	2700	mg/kg	0.10	< 0.10	1.2	< 0.10
Phenanthrene	М	2700	mg/kg	0.10	< 0.10	8.3	0.14
Anthracene	М	2700	mg/kg	0.10	< 0.10	3.1	< 0.10
Fluoranthene	М	2700	mg/kg	0.10	< 0.10	13	0.20
Pyrene	М	2700	mg/kg	0.10	< 0.10	17	0.30
Benzo[a]anthracene	М	2700	mg/kg	0.10	< 0.10	8.1	< 0.10
Chrysene	М	2700	mg/kg	0.10	< 0.10	10	< 0.10
Benzo[b]fluoranthene	М	2700	mg/kg	0.10	< 0.10	12	< 0.10
Benzo[k]fluoranthene	М	2700	mg/kg	0.10	< 0.10	4.0	< 0.10
Benzo[a]pyrene	М	2700	mg/kg	0.10	< 0.10	12	< 0.10
Indeno(1,2,3-c,d)Pyrene	М	2700	mg/kg	0.10	< 0.10	7.9	< 0.10
Dibenz(a,h)Anthracene	М	2700	mg/kg	0.10	< 0.10	2.4	< 0.10
Benzo[g,h,i]perylene	М	2700	mg/kg	0.10	< 0.10	14	< 0.10
Total Of 16 PAH's	М	2700	mg/kg	2.0	< 2.0	120	< 2.0
Dichlorodifluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	М	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest Jo		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
1,2-Dichloropropane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	М	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	М	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	M	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	М	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	Ü	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	M	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			mtest J		17-26029	17-26029	17-26029
Quotation No.: Q17-10179	(st Sam		519841	519843	519847
Order No.: 2543, GI			nt Samp		BHC30	BHC31	BHC32
		Cli	ent Sam		J4	J2	J3
				e Type:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
N-Nitrosodimethylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	М	2790	mg/kg	0.50	< 0.50	0.65	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	М	2790	mg/kg	0.50	< 0.50	0.59	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-26029	17-26029	17-26029
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	519841	519843	519847
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC30	BHC31	BHC32
		Cli	ent Sam	ple ID.:	J4	J2	J3
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	1.15	0.40	0.75
			Date Sa	ampled:	27-Sep-2017	27-Sep-2017	27-Sep-2017
			Asbest	os Lab:	COVENTRY	COVENTRY	
Determinand	Accred.	SOP	Units	LOD			
Fluorene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	M	2790	mg/kg	0.50	< 0.50	2.9	< 0.50
Anthracene	М	2790	mg/kg	0.50	< 0.50	1.3	< 0.50
Carbazole	M	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	М	2790	mg/kg	0.50	< 0.50	5.5	< 0.50
Pyrene	М	2790		0.50	< 0.50	7.0	< 0.50
Butylbenzyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	М	2790	mg/kg	0.50	< 0.50	3.9	< 0.50
Chrysene	М	2790	mg/kg	0.50	< 0.50	3.9	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	М	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	М	2790	mg/kg	0.50	< 0.50	6.4	< 0.50
Benzo[k]fluoranthene	М	2790	mg/kg	0.50	< 0.50	2.3	< 0.50
Benzo[a]pyrene	М	2790	mg/kg	0.50	< 0.50	4.8	< 0.50
Indeno(1,2,3-c,d)Pyrene	М	2790	mg/kg	0.50	< 0.50	3.5	< 0.50
Dibenz(a,h)Anthracene	М	2790	mg/kg	0.50	< 0.50	1.2	< 0.50
Benzo[g,h,i]perylene	М	2790	mg/kg	0.50	< 0.50	4.9	< 0.50
PCB 28	М	2815	mg/kg	0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010		
PCB 52	М	2815	mg/kg			< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010		
PCB 105	N	2815	mg/kg		< 0.010		
PCB 90+101	M	2815	mg/kg	0.010		< 0.010	
PCB 114	N	2815			< 0.010		
PCB 118	M	2815	mg/kg			< 0.010	
PCB 118	N	2815			< 0.010		
PCB 153	M	2815	mg/kg			< 0.010	
PCB 123	N	2815	mg/kg		< 0.010		
PCB 138	M	2815	mg/kg			< 0.010	
PCB 126	N		mg/kg		< 0.010		



Results - Soil

Olient Occambana Francisco manufall (d.		Cha	t. a.t. l.	ala Nia a	47.00000	47.00000	47.00000
Client: Geosphere Environmental Ltd		Chemtest Job No.:				17-26029	17-26029
Quotation No.: Q17-10179		Chemtest Sample ID.:			519841	519843	519847
Order No.: 2543, GI		Client Sample Ref.:		BHC30	BHC31	BHC32	
		Client Sample ID.:		J4	J2	J3	
		Sample Type:		SOIL	SOIL	SOIL	
		Top Depth (m):		1.15	0.40	0.75	
		Date Sampled: 2		27-Sep-2017	27-Sep-2017	27-Sep-2017	
		Asbestos Lab:		COVENTRY	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
PCB 180	М	2815	mg/kg	0.010		< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010		
PCB 157	N	2815	mg/kg	0.010	< 0.010		
PCB 167	N	2815	mg/kg	0.010	< 0.010		
PCB 169	N	2815	mg/kg	0.010	< 0.010		
PCB 189	N	2815	mg/kg	0.010	< 0.010		
Total PCBs (12 Congeners)	N	N 2815 mg/kg 0.12		< 0.12			
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10	
Total Phenols	М	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
519841	BHC30	J4	27-Sep-2017	В	Amber Glass 250ml
519841	BHC30	J4	27-Sep-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





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Email: info@chemtest.co.uk

Final Report

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Report No.:	17-26235-1		
Initial Date of Issue:	16-Oct-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	06-Oct-2017
Order No.:	2543, GI	Date Instructed:	06-Oct-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	16-Oct-2017
Date Approved:	16-Oct-2017		
Approved By:			



Results - 2 Stage WAC

Project: 2543, GI Lake Lothing, Lowestoft

Project: 2543, GI Lake Lothing, Lo	owestort								
Chemtest Job No:	17-26235						Landfill W	/aste Acceptano	ce Criteria
Chemtest Sample ID:	520920							Limits	
Sample Ref:	BHC13							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	2.00						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	03-Oct-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			1.1			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			87	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	U				9.0		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.0050		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at L	/S 10 l/kg
Arsenic	1450	U	0.0076	0.0093	< 0.050	0.091	0.5	2	25
Barium	1450	U	0.021	0.0095	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0016	0.0016	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0022	0.0024	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.013	0.0029	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0013	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0020	< 0.010	0.017	0.5	10	50
Antimony	1450	U	0.0028	0.0012	< 0.010	0.014	0.06	0.7	5
Selenium	1450	U	0.0011	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	0.0044	0.0013	< 0.50	< 0.50	4	50	200
Chloride	1220	U	9.3	3.2	19	41	800	15000	25000
Fluoride	1220	U	0.37	0.17	< 1.0	2.0	10	150	500
Sulphate	1220	U	130	21	260	360	1000	20000	50000
Total Dissolved Solids	1020	N	260	69	520	960	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	14	< 50	140	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	4.6				

Leachate Test Information					
Leachant volume 1st extract/l	0.341				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.251				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- N/E not evaluated
 - < "less than"
 - "greater than"

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The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





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Email: info@chemtest.co.uk

Final Report

rınai Kepon			
Report No.:	17-26355-1		
Initial Date of Issue:	18-Oct-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	06-Oct-2017
Order No.:	Q17-10179	Date Instructed:	10-Oct-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	16-Oct-2017
Date Approved:	18-Oct-2017		
Approved By:			



Project: Lake Lothing, Lowestoft Client: Geosphere Environmental Ltd Chemtest Job No.: 17-26355							
Client: Geosphere Environmental Ltd				17-26355			
Quotation No.: Q17-10179	+ '		st Sam		521396		
Order No.: Q17-10179	_		nt Samp		BHC05		
		Cli	ent Sam		J3		
		e Type:	SOIL 0.6				
		Top Depth (m) Date Sampled					
=	.				03-Oct-2017		
Determinand	Accred.	SOP	Units				
pH	U	1010		N/A	9.5		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.63		
Sulphate	U	1220	mg/l	1.0	24		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	25		
Boron (Dissolved)	U	1450	μg/l	20	39		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	2.4		
Copper (Dissolved)	U	1450	μg/l	1.0	19		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	2.3		
Lead (Dissolved)	U	1450	μg/l	1.0	2.9		
Selenium (Dissolved)	U	1450	μg/l	1.0	3.7		
Zinc (Dissolved)	U	1450	μg/l	1.0	2.2		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	5.8		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	29		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	97		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	6.9		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	140		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	140		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		Chemtest Job No.					
Quotation No.: Q17-10179			st Sam		521396		
Order No.: Q17-10179			nt Samp ent Sam	BHC05			
		J3					
				e Type:	SOIL		
			Top Dep	oth (m):	0.6		
			Date Sa		03-Oct-2017		
Determinand	Accred.	SOP	Units	LOD			
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N N	1790	μg/l μg/l	0.50	< 0.50		
Hexachlorobutadiene	N N	1790					
mexacillorobutaciene	IN	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.					
Quotation No.: Q17-10179	(ple ID.:	521396			
Order No.: Q17-10179			nt Samp		BHC05		
		Cli	ent Sam		J3 SOIL		
		Sample Type					
		Top Depth (m)					
		Date Sampled:					
Determinand	Accred.	SOP	Units	LOD			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Acenaphthylene	N	1790	μg/l	0.50	< 0.50		
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50		
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Acenaphthene	N	1790	μg/l	0.50	< 0.50		
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Dibenzofuran	N	1790	μg/l	0.50	< 0.50		
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50		
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Fluorene	N	1790	μg/l	0.50	< 0.50		
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50		
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50		
Azobenzene	N	1790	μg/l	0.50	< 0.50		
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50		
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50		
Phenanthrene	N	1790	μg/l	0.50	< 0.50		
Anthracene	N	1790	μg/l	0.50	< 0.50		
Carbazole	N	1790	μg/l	0.50	< 0.50		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Fluoranthene	N	1790	μg/l	0.50	< 0.50		
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50		
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50		



Results - Leachate

Client: Geosphere Environmental Ltd		Che	ob No.:	17-26355		
Quotation No.: Q17-10179		Chemte	ple ID.:	521396		
Order No.: Q17-10179		Client Sample Ref.:				
		Cli	ple ID.:	J3		
		е Туре:	SOIL			
			Top Dep	oth (m):	0.6	
			Date Sa	ampled:	03-Oct-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Project: Lake Lothing, Lowestoft						
Client: Geosphere Environmental Ltd		Chemtest Job No.				
Quotation No.: Q17-10179	(st Sam		521396	
Order No.: Q17-10179			nt Samp		BHC05	
		Cli	ent Sam		J3	
			Sample	e Type:	SOIL	
			Top Dep		0.6	
			Date Sa	ampled: os Lab:	03-Oct-2017	
		COVENTRY				
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	7.6	
рН	U	2010		N/A	9.1	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.62	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.10	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50	3.4	
Ammonium (Extractable)	U	2425	mg/kg	0.50	27	
Sulphate (Total)	U	2430	%	0.010	0.063	
Arsenic	U	2450	mg/kg	1.0	9.1	
Cadmium	U	1	mg/kg	0.10	< 0.10	
Chromium	U	2450	mg/kg	1.0	7.8	
Copper	U	2450	mg/kg	0.50	48	
Mercury	U	2450	mg/kg	0.10	0.21	
Nickel	U	2450	mg/kg	0.50	12	
Lead	U		mg/kg	0.50	110	
Selenium	U	2450	mg/kg	0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	52	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	2.3	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	100	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	100	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C16-C21	U	+	mg/kg	1.0	1.1	
Aromatic TPH >C21-C35	U	1	mg/kg	1.0	51	
Aromatic TPH >C35-C44	N	1	mg/kg	1.0	< 1.0	



Client: Geosphere Environmental Ltd		Chemtest Job No.				
Quotation No.: Q17-10179	(Chemte	ple ID.:	521396		
Order No.: Q17-10179		Clie	nt Samp	le Ref.:	BHC05	
		Cli	ent Sam	•	J3	
			Sample	e Type:	SOIL	
			Top Dep		0.6	
		Date Sampled:				
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	52	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	160	
Naphthalene	U	2700	mg/kg	0.10	< 0.10	
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	1.1	
Anthracene	U	2700	mg/kg	0.10	0.26	
Fluoranthene	U	2700	mg/kg	0.10	1.4	
Pyrene	U	2700	mg/kg	0.10	1.5	
Benzo[a]anthracene	U	2700	3 3	0.10	1.3	
Chrysene	U	2700	mg/kg	0.10	0.66	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	0.79	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.29	
Benzo[a]pyrene	U	2700	mg/kg	0.10	0.37	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	0.25	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700		0.10	0.29	
Total Of 16 PAH's	U	2700	mg/kg	2.0	8.2	
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	
Chloromethane	U	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	
Bromomethane	U	2760	μg/kg	20	< 20	
Chloroethane	N	2760	μg/kg	2.0	< 2.0	
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1,1-Trichloroethane	U	2760		1.0	< 1.0	
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	
Benzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	
Trichloroethene	U	2760	100	1.0	< 1.0	
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(est Sam nt Samp		521396	
Order No.: Q17-10179		BHC05				
		J3				
		SOIL				
			Top Dep		0.6	
			Date Sa	ampled:	03-Oct-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP		LOD		
Dibromomethane	U	2760		1.0	< 1.0	
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760	ט י	10	< 10	
Toluene	U	2760	μg/kg	1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	
Dibromochloromethane	N	2760	μg/kg	10	< 10	
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	
Ethylbenzene	U	2760	1.0.0	1.0	< 1.0	
m & p-Xylene	U	2760		1.0	< 1.0	
o-Xylene	U	2760	μg/kg	1.0	< 1.0	
Styrene	U	2760	μg/kg	1.0	< 1.0	
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760)	1.0	< 1.0	
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	
Tert-Butylbenzene	N	2760)	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	
Sec-Butylbenzene	N	2760		1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
N-Butylbenzene	N	2760		1.0	< 1.0	
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	
1,2,3-Trichlorobenzene	N	2760	100	2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	



The right chemistry to deliver results Project: Lake Lothing, Lowestoft	5				
Client: Geosphere Environmental Ltd			mtest Jo		17-26355
Quotation No.: Q17-10179	(521396			
Order No.: Q17-10179			nt Samp		BHC05
		Cli	ent Sam	ple ID.: e Type:	J3
		SOIL			
			Top Dep Date Sa	, ,	0.6
		03-Oct-2017			
			Asbest		COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50



Project: Lake Lothing, Lowestoft						
Client: Geosphere Environmental Ltd			ntest Jo		17-26355	
Quotation No.: Q17-10179	<u> </u>		st Sam		521396	
Order No.: Q17-10179			nt Samp		BHC05	
		Clie	ent Sam		J3	
				e Type:	SOIL	
			Top Dep		0.6	
			Date Sa		03-Oct-2017	
			Asbest		COVENTRY	
Determinand	Accred.	SOP		LOD		
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	
Azobenzene	U		mg/kg	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	
Anthracene	U	2790		0.50	< 0.50	
Carbazole	U	2790	mg/kg	0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Fluoranthene	U	2790	ו	0.50	0.64	
Pyrene	U	2790		0.50	0.52	
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	
Chrysene	U	2790	mg/kg	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg		< 0.010	
PCB 105	N	2815			< 0.010	
PCB 114	N	2815	mg/kg		< 0.010	
PCB 118	N	2815) י		< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815			< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N		mg/kg		< 0.010	
PCB 167	N	2815			< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815	mg/kg		< 0.010	
Total PCBs (12 Congeners)	N		mg/kg		< 0.12	
Total Phenols	U		mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- I/S Insufficient Sample
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- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Keport			
Report No.:	17-26646-1		
Initial Date of Issue:	18-Oct-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI, Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	10-Oct-2017
Order No.:		Date Instructed:	10-Oct-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	18-Oct-2017
Date Approved:	18-Oct-2017		
Approved By:			



Results - 2 Stage WAC

Project: 2543 GI, Lake Lothing, Lowestoff

Project: 2543 GI, Lake Lotning, L	owestort								
Chemtest Job No:	17-26646						Landfill V	laste Acceptant	ce Criteria
Chemtest Sample ID:	522627							Limits	
Sample Ref:	BHC05							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	0.60						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	03-Oct-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			1.9	3	5	6
Loss On Ignition	2610	U	%			2.4			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			13	500		
Total (Of 17) PAH's	2700	N	mg/kg			19	100		
pH	2010	U				9.5		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.011		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	EN 12457-3 at I	/S 10 l/kg
Arsenic	1450	U	0.025	0.012	< 0.050	0.14	0.5	2	25
Barium	1450	U	0.030	0.030	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0076	0.0056	< 0.050	0.059	0.5	10	70
Copper	1450	U	0.10	0.012	0.20	0.13	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.023	0.034	< 0.050	0.33	0.5	10	30
Nickel	1450	U	0.013	0.0026	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	0.014	0.0038	0.028	0.052	0.06	0.7	5
Selenium	1450	U	0.014	0.0063	0.028	0.073	0.1	0.5	7
Zinc	1450	U	0.010	0.0071	< 0.50	< 0.50	4	50	200
Chloride	1220	U	23	270	46	2400	800	15000	25000
Fluoride	1220	U	0.30	0.33	< 1.0	3.3	10	150	500
Sulphate	1220	U	130	140	260	1400	1000	20000	50000
Total Dissolved Solids	1020	N	280	750	560	6900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	36	20	72	220	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	7.1				

Leachate Test Information					
Leachant volume 1st extract/l	0.337				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.234				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- N/E not evaluated
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 - "greater than"

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The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





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Final Report

i mai report			
Report No.:	17-29274-1		
Initial Date of Issue:	17-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	03-Nov-2017
Order No.:	2543, GI	Date Instructed:	13-Nov-2017
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	17-Nov-2017
Date Approved:	17-Nov-2017		
Approved By:			



Client: Geosphere Environmental Ltd			mtest Jo	17-29274	17-29274	
Quotation No.: Q17-10179	(est Sam		534724	534740
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	WSC17	WSC19
		Cli	ent Sam	J5	J1	
			Sample	SOIL	SOIL	
			Top Dep	1.60	0.30	
			Date Sa	ampled:	30-Oct-2017	01-Nov-2017
				os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A		-
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected
Moisture	N	2030	%	0.020	8.8	9.7
pH	U	2010		N/A	7.2	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	0.46
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	1.0	4.1
Sulphate (Total)	U	2430	%	0.010	< 0.010	0.048
Arsenic	U	2450	mg/kg	1.0	12	9.9
Cadmium	U	2450		0.10	< 0.10	0.21
Chromium	U	2450	mg/kg	1.0	15	12
Copper	U	2450	mg/kg	0.50	10	47
Mercury	U	2450		0.10	< 0.10	0.13
Nickel	U	2450		0.50	16	24
Lead	U	2450	mg/kg	0.50	12	160
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	40	170
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	0.43	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680		1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	21
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	21
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	84



Client: Geosphere Environmental Ltd			mtest Jo			17-29274
Quotation No.: Q17-10179	(est Sam		534724	534740
Order No.: 2543, GI			nt Samp		WSC17	WSC19
		Cli	ent Sam	J5	J1	
	Sample Type:				SOIL	SOIL
			Top Dep	1.60	0.30	
			Date Sa	ampled:	30-Oct-2017	01-Nov-2017
			Asbest	os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Aromatic TPH >C35-C44	N	2680	ט	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	85
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	110
Naphthalene	U	2700	mg/kg	0.10	< 0.10	0.18
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	0.81
Anthracene	U	2700	mg/kg	0.10	< 0.10	0.23
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	2.1
Pyrene	U	2700	mg/kg	0.10	< 0.10	1.9
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	1.3
Chrysene	U	2700	mg/kg	0.10	< 0.10	1.1
Benzo[b]fluoranthene	U	•	mg/kg	0.10	< 0.10	1.5
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	0.53
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	1.1
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	0.70
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	0.70
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	12
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1.2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd			ntest Jo	17-29274	17-29274	
Quotation No.: Q17-10179	(st Sam		534724	534740
Order No.: 2543, GI			nt Samp		WSC17	WSC19
		Clie	ent Sam	J5	J1	
			Sample	SOIL	SOIL	
			Top Dep	1.60	0.30	
			Date Sa	ampled:	30-Oct-2017	01-Nov-2017
			Asbest	os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1.2.3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
	IN					< Z.U



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-29274	17-29274
Quotation No.: Q17-10179	Chemtest Sample ID.:			534724	534740	
Order No.: 2543, GI		Client Sample Ref.:			WSC17	WSC19
	Client Sample ID.:				J5	J1
		Sample Type:			SOIL	SOIL
	Top Depth (m):				1.60	0.30
	Date Sampled:				30-Oct-2017	01-Nov-2017
		Asbestos Lab:				COVENTRY
Determinand	Accred.	SOP	Units	LOD		
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	0	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	0	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	0	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790		0.50	< 0.50	< 0.50
2-Methylphenol	U	2790		0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790		0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	0	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	0	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	0	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	17-29274	17-29274
Quotation No.: Q17-10179			st Sam		534724	534740
Order No.: 2543, GI			nt Samp		WSC17	WSC19
		Cli	ent Sam		J5	J1
			Sampl	SOIL	SOIL	
			Top De	1.60	0.30	
			Date Sa	ampled:	30-Oct-2017	01-Nov-2017
				os Lab:		COVENTRY
Determinand	Accred.	SOP		LOD		
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	5	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	5	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	5	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	0.51
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	1.8
Pyrene	U	2790	mg/kg	0.50	< 0.50	1.5
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	0.92
Chrysene	U	2790	mg/kg	0.50	< 0.50	0.74
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	1.4
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	0.52
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	0.90
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	0.66
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	0.86
PCB 81	N	2815	mg/kg	0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010		< 0.010
PCB 105	N	2815		0.010		< 0.010
PCB 114	N	2815				< 0.010
PCB 118	N	2815				< 0.010
PCB 123	N	2815	mg/kg	0.010		< 0.010
PCB 126	N	2815	mg/kg	0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815				< 0.010
PCB 167	N	2815	mg/kg			< 0.010
PCB 169	N	2815		0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12



Client: Geosphere Environmental Ltd		Che	mtest Jo	17-29274	17-29274	
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	534724	534740
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	WSC17	WSC19
		Cli	ent Sam	ple ID.:	J5	J1
			Sample	SOIL	SOIL	
			Top Dep	oth (m):	1.60	0.30
			Date Sa	impled:	30-Oct-2017	01-Nov-2017
			Asbest	os Lab:		COVENTRY
Determinand	Accred.	SOP	Units	LOD		
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



SOP	Title	Parameters included	Method summary
2920	Phenols in Soils by HPLC	Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote:	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Keport			
Report No.:	17-29383-1		
Initial Date of Issue:	21-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	06-Nov-2017
Order No.:	2543, GI	Date Instructed:	13-Nov-2017
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	17-Nov-2017
Date Approved:	21-Nov-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Project: 2543, GI Lake Lothing									
Client: Geosphere Environmental Ltd			ntest J		17-29383				
Quotation No.: Q17-10179	(st Sam		535385				
Order No.: 2543, GI		le Ref.:	WSC19A						
		Clie	ent Sam		J3				
		e Type:	SOIL						
			Top Der		1.50				
		02-Nov-2017							
Determinand	Accred.	SOP	Units						
рН	U	1010		N/A	8.4				
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010				
Sulphate	U	1220	mg/l	1.0	3.2				
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050				
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050				
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.1				
Boron (Dissolved)	U	1450	μg/l	20	23				
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080				
Chromium (Dissolved)	U	1450	μg/l	1.0	1.3				
Copper (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50				
Nickel (Dissolved)	U	1450	μg/l	1.0	6.3				
Lead (Dissolved)	U	1450	μg/l	1.0	1.1				
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Zinc (Dissolved)	U	1450	μg/l	1.0	5.1				
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10				
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0				
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10				
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0				
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10				
Naphthalene	U	1700	μg/l	0.10	< 0.10				
Acenaphthylene	U	1700	μg/l	0.10	< 0.10				
Acenaphthene	U	1700	μg/l	0.10	< 0.10				
Fluorene	U	1700	μg/l	0.10	< 0.10				
Phenanthrene	U	1700	μg/l	0.10	< 0.10				



Project: 2543, GI Lake Lothing									
Client: Geosphere Environmental Ltd			ntest Jo						
Quotation No.: Q17-10179	(st Sam		535385				
Order No.: 2543, GI			nt Samp		WSC19A				
		ple ID.:	J3						
				e Type:	SOIL				
			Top Dep Date Sa		1.50				
		02-Nov-2017							
Determinand	Accred.	SOP							
Anthracene	U	1700	μg/l	0.10	< 0.10				
Fluoranthene	U	1700	μg/l	0.10	< 0.10				
Pyrene	U	1700	μg/l	0.10	< 0.10				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10				
Chrysene	U	1700	μg/l	0.10	< 0.10				
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10				
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10				
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10				
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10				
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0				
Benzene	U	1760	μg/l	1.0	< 1.0				
Toluene	U	1760	μg/l	1.0	< 1.0				
Ethylbenzene	U	1760	μg/l	1.0	< 1.0				
m & p-Xylene	U	1760	μg/l	1.0	< 1.0				
o-Xylene	U	1760	μg/l	1.0	< 1.0				
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0				
Phenol	N	1790	μg/l	0.50	< 0.50				
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50				
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50				
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50				
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50				
Hexachloroethane	N	1790	μg/l	0.50	< 0.50				
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50				
4-Methylphenol	N	1790	μg/l	0.50	< 0.50				
Nitrobenzene	N	1790	μg/l	0.50	< 0.50				
Isophorone	N	1790	μg/l	0.50	< 0.50				
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50				
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50				
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50				
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50				
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50				
Naphthalene	N	1790	μg/l	0.50	< 0.50				
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50				
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50				



Project: 2543, GI Lake Lothing					
Client: Geosphere Environmental Ltd			ntest Jo		17-29383
Quotation No.: Q17-10179			st Sam		535385
Order No.: 2543, GI			nt Samp		WSC19A
		Clie	ent Sam		J3
		e Type:	SOIL		
			Top Dep Date Sa	, ,	1.50
		02-Nov-2017			
Determinand	Accred.	SOP	Units		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		Che	ob No.:	17-29383		
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543, GI		Client Sample Ref.:				
		Cli	ple ID.:	J3		
			е Туре:	SOIL		
			Top Dep	oth (m):	1.50	
			Date Sa	ampled:	02-Nov-2017	
Determinand	Accred.	Accred. SOP Units LOD		LOD		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
Total Phenois	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			ntest Jo		17-29383	17-29383	17-29383	17-29383
Quotation No.: Q17-10179	(st Sam		535381	535385	535386	535390
Order No.: 2543, GI			nt Samp		WSC14	WSC19A	WSC19A	WSC22
		Client Sample ID.:			J3	J3	J4	J2
	Sample Type:			SOIL	SOIL	SOIL	SOIL	
		Top Depth (m):			1.70	1.50	2.10	0.50
			Date Sa	ampled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-201
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	1	-		ı
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	No Asbestos Detected		No Asbesto Detected
Moisture	N	2030	%	0.020	7.7	3.7	5.9	5.0
pH	U	2010		N/A	8.6	8.3	8.0	9.1
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	< 0.40	1.2
Sulphate (2:1 Water Soluble) as SO4	Ü	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	0.34
Cyanide (Free)	Ü	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	Ü	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	Ü	2425	mg/kg	0.50	< 0.50	0.68	0.67	< 0.50
Sulphate (Total)	U	2430	%	0.010	0.051	< 0.010	< 0.010	0.096
Arsenic	U	2450	mg/kg	1.0	12	29	1.6	8.0
Cadmium	U	2450	mg/kg	0.10	0.23	< 0.10	< 0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	16	27	8.2	8.6
Copper	U	2450	mg/kg	0.50	20	30	2.2	5.1
Mercury	U	2450	mg/kg	0.10	< 0.10	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	17	37	6.2	7.2
Lead	Ü	2450	mg/kg	0.50	150	110	8.4	18
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	59	130	12	21
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	10.00	7 0.00	< 0.40	1 0.00
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	Ü	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	Ü	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	3.4	< 1.0	< 1.0	16
Aromatic TPH >C10-C21	U	2680	mg/kg	1.0	13	< 1.0	< 1.0	1.4



Client: Geosphere Environmental Ltd			mtest Jo			17-29383	17-29383	17-29383
Quotation No.: Q17-10179	(st Sam		535381	535385	535386	535390
Order No.: 2543, GI		Client Sample Ref.:			WSC14	WSC19A	WSC19A	WSC22
		Cli	ent Sam		J3	J3	J4	J2
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	mpled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	16	< 5.0	< 5.0	18
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	16	< 10	< 10	18
Naphthalene	U	2700	mg/kg	0.10	0.19	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	0.16	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	0.52	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	0.20	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	1.1	0.21	< 0.10	0.36
Pyrene	U	2700	mg/kg	0.10	0.93	0.23	< 0.10	0.30
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.49	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	0.18	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	Ü	2700	mg/kg	0.10	0.39	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	0.27	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	4.4	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinvl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1.2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1.2-Dichloroethene	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N N	2760		5.0	< 5.0	< 5.0	< 5.0	< 5.0
Bromocniorometnane Trichloromethane	U	2760	μg/kg μg/kg	1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0	< 5.0 < 1.0
	U	2760		1.0		_	_	
1,1,1-Trichloroethane Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
			μg/kg		< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd			ntest Jo		17-29383	17-29383	17-29383	17-29383
Quotation No.: Q17-10179	(st Sam		535381	535385	535386	535390
Order No.: 2543, GI		Client Sample Ref.:			WSC14	WSC19A	WSC19A	WSC22
		Clie	ent Sam		J3	J3	J4	J2
			Sample	е Туре:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	ampled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-201
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
1.2.4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
1,2,0-111011010001120110	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd	Chemtest Job No.:		17-29383	17-29383	17-29383	17-29383		
Quotation No.: Q17-10179	(st Sam		535381	535385	535386	535390
Order No.: 2543, GI			nt Samp		WSC14	WSC19A	WSC19A	WSC22
		Cli	ent Sam		J3	J3	J4	J2
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	mpled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-201
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd	Chemtest Job No.:		17-29383	17-29383	17-29383	17-29383		
Quotation No.: Q17-10179			st Sam		535381	535385	535386	535390
Order No.: 2543, GI			nt Samp		WSC14	WSC19A	WSC19A	WSC22
		Cli	ent Sam		J3	J3	J4	J2
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	1.70	1.50	2.10	0.50
			Date Sa		02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017
			Asbest	os Lab:	COVENTRY	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	1.7	< 0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	0.54	< 0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	3.0	< 0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	2.4	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	1.2	< 0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	1.0	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.2	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.75	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010		
PCB 81	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 52	U	2815	mg/kg	0.010		< 0.010		
PCB 77	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 90+101	U	2815	mg/kg	0.010		< 0.010		
PCB 114	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 118	U	2815	mg/kg	0.010		< 0.010		
PCB 118	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 153	Ü	2815	mg/kg	0.010		< 0.010		. 3.0.3
PCB 123	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 138	Ü	2815	mg/kg	0.010	7 0.010	< 0.010		1 0.010
PCB 126	N	2815	mg/kg	0.010	< 0.010	1 0.010		< 0.010



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-29383	17-29383	17-29383	17-29383	
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	535381	535385	535386	535390
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	WSC14	WSC19A	WSC19A	WSC22
		Cli	ent Sam	ple ID.:	J3	J3	J4	J2
			Sampl	е Туре:	SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	1.70	1.50	2.10	0.50
			Date Sa	ampled:	02-Nov-2017	02-Nov-2017	02-Nov-2017	01-Nov-2017
		Asbestos Lab:		COVENTRY	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
PCB 180	U	2815	mg/kg	0.010		< 0.010		
PCB 156	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010			< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12			< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10		
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
535385	WSC19A	J3	02-Nov-2017	В	Amber Glass 250ml
535385	WSC19A	J3	02-Nov-2017	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Keport			
Report No.:	17-29990-1		
Initial Date of Issue:	22-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	13-Nov-2017
Order No.:	2543,GI	Date Instructed:	13-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	21-Nov-2017
Date Approved:	22-Nov-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Proj	ect:	2543	,GI	Lake	Lothing

Project: 2543,GI Lake Lothing									
Chemtest Job No:	17-29990						Landfill W	/aste Acceptano	ce Criteria
Chemtest Sample ID:	538111							Limits	
Sample Ref:								Stable, Non-	
Sample ID:	WSC14							reactive	Hazardous
Top Depth(m):	1.70						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	02-Nov-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.23	3	5	6
Loss On Ignition	2610	U	%			0.92			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			100	500		
Total (Of 17) PAH's	2700	Ν	mg/kg			110	100		
рН	2010	U				9.0		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.016		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using BS	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	0.0013	0.0033	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0068	0.0050	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0013	0.0019	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0030	0.0021	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0019	0.0011	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	0.0010	0.0042	< 0.010	0.037	0.5	10	50
Antimony	1450	U	0.0042	0.0066	< 0.010	0.063	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	0.0067	< 0.50	< 0.50	4	50	200
Chloride	1220	U	2.0	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.76	0.67	1.5	6.8	10	150	500
Sulphate	1220	U	17	7.7	34	90	1000	20000	50000
Total Dissolved Solids	1020	N	69	54	140	560	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	46	< 50	420	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	4.4			

Leachate Test Information					
Leachant volume 1st extract/l	0.342				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.246				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

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- A Date of sampling not supplied
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- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	17-30076-1		
Initial Date of Issue:	17-Nov-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 G-I - Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	13-Nov-2017
Order No.:	2543, G-I	Date Instructed:	13-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	17-Nov-2017
Date Approved:	17-Nov-2017		
Approved By:			

Robert Monk, Technical Manager



Project: 2543 G-I - Lake Lothing						
Client: Geosphere Environmental Ltd	Chemtest Job No.:					
Quotation No.: Q17-10179	(st Sam	•	538508	
Order No.: 2543, G-I			nt Samp		WSC23	
		Clie	ent Sam		J1	
				e Type:	SOIL	
			Top De		0.50	
			Date Sa		09-Nov-2017	
Determinand	Accred.	SOP	Units			
рН	U	1010		N/A	9.7	
Ammonia (Free) as N	U	1220	mg/l	0.010	0.053	
Sulphate	U	1220	mg/l	1.0	16	
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	
Arsenic (Dissolved)	U	1450	μg/l	1.0	10	
Boron (Dissolved)	U	1450	μg/l	20	37	
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	
Chromium (Dissolved)	U	1450	μg/l	1.0	1.8	
Copper (Dissolved)	U	1450	μg/l	1.0	2.8	
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	
Nickel (Dissolved)	U	1450	μg/l	1.0	2.1	
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Selenium (Dissolved)	U	1450	μg/l	1.0	1.1	
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0	
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	84	
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	74	
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	60	
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	220	
Total Petroleum Hydrocarbons	N	1675	μg/l	10	220	
Naphthalene	U	1700	μg/l	0.10	< 0.10	
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	
Acenaphthene	U	1700	μg/l	0.10	< 0.10	
Fluorene	U	1700	μg/l	0.10	< 0.10	
Phenanthrene	U	1700	μg/l	0.10	8.4	



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-30076	
Quotation No.: Q17-10179	(st Sam		538508
Order No.: 2543, G-I	Client Sample Ref.:				WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
Determinand	Accred.	SOP		LOD	
Anthracene	U	1700	μg/l	0.10	2.8
Fluoranthene	U	1700	μg/l	0.10	7.6
Pyrene	U	1700	μg/l	0.10	6.7
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	26
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50



Project: 2543 G-I - Lake Lothing						
Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-30076	
Quotation No.: Q17-10179	(st Sam		538508	
Order No.: 2543, G-I			nt Samp		WSC23	
		Clie	ent Sam		J1	
				e Type:	SOIL	
			Top Dep		0.50	
			Date Sa		09-Nov-2017	
Determinand	Accred.	SOP	Units			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	0.92	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	5.6	
Anthracene	N	1790	μg/l	0.50	1.9	
Carbazole	N	1790	μg/l	0.50	1.8	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	9.5	
Pyrene	N	1790	μg/l	0.50	7.5	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	1.3	
Chrysene	N	1790	μg/l	0.50	0.94	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	



Results - Leachate

1 TO COLL ZO TO O T LUNC LOTTING					
Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-30076
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	538508
Order No.: 2543, G-I		Clie	nt Samp	le Ref.:	WSC23
		Client Sample ID.:			J1
	Sample Type:			е Туре:	SOIL
			Top Dep	oth (m):	0.50
			Date Sa	ampled:	09-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd	Project: 2543 G-I - Lake Lothing					
<u> </u>	Chemtest Job No.:			17-30076		
Quotation No.: Q17-10179	Chemtest Sample ID.:				538508	
Order No.: 2543, G-I	Client Sample Ref.:				WSC23	
		Clie	ent Sam		J1	
				e Type:	SOIL	
			Top Dep	\ /	0.50	
			Date Sa		09-Nov-2017	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	7.8	
рН	U	2010		N/A	8.7	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.58	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.032	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.51	
Sulphate (Total)	U	2430	%	0.010	0.21	
Arsenic	U	2450	mg/kg	1.0	12	
Cadmium	U	2450	mg/kg	0.10	0.17	
Chromium	U	2450	mg/kg	1.0	24	
Copper	U	2450	mg/kg	0.50	36	
Mercury	U	2450	mg/kg	0.10	0.19	
Nickel	U	2450	mg/kg	0.50	27	
Lead	U	2450	mg/kg	0.50	120	
Selenium	U	2450	mg/kg	0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	71	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	22	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	38	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	39	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	100	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	Ü	2680	mg/kg	1.0	12	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	74	
	Ü	2680	mg/kg	1.0	360	
Aromatic TPH >C16-C21						
Aromatic TPH >C16-C21 Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	2700	



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:				
Quotation No.: Q17-10179	(st Sam		538508
Order No.: 2543, G-I			nt Samp		WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	
Total Aromatic Hydrocarbons	N	2680	0	5.0	3700
Total Petroleum Hydrocarbons	N	2680) י	10.0	3800
Naphthalene	U	2700) י	0.10	0.73
Acenaphthylene	U		mg/kg	0.10	2.4
Acenaphthene	U	2700	0	0.10	1.1
Fluorene	U	2700	mg/kg	0.10	1.3
Phenanthrene	U	2700	mg/kg	0.10	11
Anthracene	U	2700	mg/kg	0.10	4.9
Fluoranthene	U	2700	J	0.10	42
Pyrene	U	2700		0.10	45
Benzo[a]anthracene	U	2700	0	0.10	20
Chrysene	U	2700	5	0.10	22
Benzo[b]fluoranthene	U	2700	0	0.10	32
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	12
Benzo[a]pyrene	U	2700	mg/kg	0.10	26
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	18
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	5.1
Benzo[g,h,i]perylene	U	2700		0.10	16
Total Of 16 PAH's	U	2700	mg/kg	2.0	260
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:			17-30076	
Quotation No.: Q17-10179			st Sam		538508
Order No.: 2543, G-I		Client Sample Ref.:			WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP		LOD	
Dibromomethane	U	2760	μg/kg	1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50



Project: 2543 G-I - Lake Lothing					
Client: Geosphere Environmental Ltd	Chemtest Job No.:				
Quotation No.: Q17-10179	,	Chemtest Sample ID.:			538508
Order No.: 2543, G-I		Client Sample Ref.:			WSC23
		Clie	ent Sam		J1
			Sample		SOIL
			Top Dep		0.50
			Date Sa		09-Nov-2017
			Asbest		COVENTRY
Determinand	Accred.	SOP		LOD	0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790		0.50	< 0.50
1,3-Dichlorobenzene	U	2790	0	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	0.88
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	0.75
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	0.94



Client: Geosphere Environmental Ltd		Chemtest Job No.:			17-30076
Quotation No.: Q17-10179			st Sam		538508
Order No.: 2543, G-I		Client Sample Ref.:			WSC23
		Clie	ent Sam		J1
				e Type:	SOIL
			Top Dep	` '	0.50
			Date Sa		09-Nov-2017
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	8.3
Anthracene	U	2790	mg/kg	0.50	4.0
Carbazole	U	2790	mg/kg	0.50	1.3
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	25
Pyrene	U	2790	mg/kg	0.50	24
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	12
Chrysene	U	2790	mg/kg	0.50	12
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	19
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	7.6
Benzo[a]pyrene	U	2790	mg/kg	0.50	16
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	12
PCB 28	U	2815	mg/kg	0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

rınai Keport			
Report No.:	17-31448-1		
Initial Date of Issue:	04-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Lothing, L14		
Quotation No.:	Q17-10179	Date Received:	24-Nov-2017
Order No.:	2543 GI	Date Instructed:	24-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	30-Nov-2017
Date Approved:	04-Dec-2017		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.: Chemtest Sample ID.:				
Quotation No.: Q17-10179	С				545141	
Order No.: 2543 GI		Client Sample Ref.: Client Sample ID.:			BHC103	
					8	
			Sample		SOIL	
			op Dept		4.5	
			ate Sar		22-Nov-2017	
Determinand	Accred.	SOP				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	
Naphthalene	U	1700	μg/l	0.10	< 0.10	
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	
Acenaphthene	U	1700	μg/l	0.10	< 0.10	
Fluorene	U	1700	μg/l	0.10	< 0.10	
Phenanthrene	U	1700	μg/l	0.10	< 0.10	
Anthracene	U	1700	μg/l	0.10	< 0.10	
Fluoranthene	U	1700	μg/l	0.10	< 0.10	
Pyrene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	
Chrysene	U	1700	μg/l	0.10	< 0.10	
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	
Benzene	U	1760	μg/l	1.0	< 1.0	
Toluene	U	1760	μg/l	1.0	< 1.0	
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	
o-Xylene	U	1760	μg/l	1.0	< 1.0	
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	
Phenol	N	1790	μg/l	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chemtest Job No.: Chemtest Sample ID.:			
Quotation No.: Q17-10179	С				545141
Order No.: 2543 GI			Sample		BHC103
		Client Sample ID.:			8
			Sample		SOIL
		T	op Dept	th (m):	4.5
			ate Sar		22-Nov-2017
Determinand	Accred.	SOP	Units		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	µg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2.4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790		0.50	< 0.50
·	N N	1790	μg/l	0.50	
Azobenzene 4 Promonhandahand Ethar			μg/l		< 0.50
4-Bromophenylphenyl Ether	N N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	IN	1790	μg/l	0.50	< 0.50



Results - Leachate

1 TO JOST. 2040 OF LAKE LOURING, E14						
Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	C	Chemtest Sample ID.:				
Order No.: 2543 GI		Client Sample Ref.:				
		Clie	nt Samp	le ID.:	8	
			Sample	Type:	SOIL	
		T	op Dept	th (m):	4.5	
			ate Sar	npled:	22-Nov-2017	
Determinand	Accred.	SOP	Units	LOD		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	



Client: Geosphere Environmental Ltd		17-31448			
Quotation No.: Q17-10179		ple ID.:	545141		
Order No.: 2543 GI		(Client Samp	le Ref.:	BHC103
			Client Sam	ple ID.:	8
			Sampl	e Type:	SOIL
			Top De	pth (m):	4.5
			Date Sa	ampled:	22-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.020	7.9
рН	U	2010		N/A	8.7
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.0
Sulphate (Total)	U	2430	%	0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	8.5
Cadmium	U	2450	mg/kg	0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	6.4
Copper	U	2450	mg/kg	0.50	5.0
Mercury	U	2450	mg/kg	0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	5.2
Lead	U	2450	mg/kg	0.50	3.5
Selenium	U	2450	mg/kg	0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	18
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-31448
Quotation No.: Q17-10179			mtest Sam	•	545141
Order No.: 2543 GI	Client Sample Ref.:			BHC103	
			Client Sam		8
				e Type:	SOIL
			Top De		4.5
				ampled:	22-Nov-201
Determinand	Accred.	SOP	Units	LOD	
Anthracene	U	2700	mg/kg	0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0
Trichloroethene	Ü	2760	μg/kg	1.0	< 1.0
1,2-Dichloropropane	Ü	2760	μg/kg	1.0	< 1.0
Dibromomethane	Ü	2760	μg/kg	1.0	< 1.0
Bromodichloromethane	Ü	2760	μg/kg	5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	Ü	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg μg/kg	10	< 10
					< 5.0
					< 1.0
1,2-Dibromoethane Chlorobenzene	U	2760 2760	μg/kg μg/kg	5.0 1.0	



Client: Geosphere Environmental Ltd		17-31448			
Quotation No.: Q17-10179	Chemtest Sample ID.:				545141
Order No.: 2543 GI		(Client Samp		BHC103
			Client Sam		8
				e Type:	SOIL
			Top Dep		4.5
			Date Sa		22-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760	1.0 µg/kg	1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-31448
Quotation No.: Q17-10179			mtest Sam		545141
Order No.: 2543 GI		(Client Samp		BHC103
			Client Sam		8
				e Type:	SOIL
			Top De		4.5
			Date Sa		22-Nov-2017
Determinand	Accred.	SOP	Units	LOD	
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50



Project: 2545 Gi Lake Lotning, L14						
Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.: 2543 GI		Client Sample Ref.:				
			Client Sam	ple ID.:	8	
			Sampl	е Туре:	SOIL	
			Top De	pth (m):	4.5	
			Date Sa	ampled:	22-Nov-2017	
Determinand	Accred.	SOP	Units	LOD		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
PCB 28	U	2815	mg/kg	0.010	< 0.010	
PCB 52	U	2815	mg/kg	0.010	< 0.010	
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	
PCB 118	U	2815	mg/kg	0.010	< 0.010	
PCB 153	U	2815	mg/kg	0.010	< 0.010	
PCB 138	U	2815	mg/kg	0.010	< 0.010	
PCB 180	U	2815	mg/kg	0.010	< 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



SOP	Title	Parameters included	Method summary
2920	Phenols in Soils by HPLC	Phenol, Methylphenols, Dimethylphenols, 1-	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

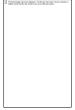
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report				
Report No.:	17-31794-1			
Initial Date of Issue:	06-Dec-2017			
Client	Geosphere Envi	ronmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ			
Contact(s):	Stephen Gilchris	it		
Project	254391 L14 Lak	e Lothing		
Quotation No.:	Q17-10179		Date Received:	29-Nov-2017
Order No.:	254391		Date Instructed:	29-Nov-2017
No. of Samples:	4			
Turnaround (Wkdays):	5		Results Due:	05-Dec-2017
Date Approved:	06-Dec-2017			
Approved By:				

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.							
Quotation No.: Q17-10179	(st Sam		546616				
Order No.: 254391			nt Samp		BH102				
		Cli	ent Sam		V1				
				е Туре:	SOIL				
			Top De		0.30				
				ampled:	24-Nov-2017				
Determinand	Accred.	SOP	Units						
pH	U	1010		N/A	10.4				
Ammonia (Free) as N	U	1220		0.010	0.057				
Sulphate	U	1220		1.0	17				
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050				
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050				
Arsenic (Dissolved)	U	1450	μg/l	1.0	6.7				
Boron (Dissolved)	U	1450	μg/l	20	< 20				
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080				
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Copper (Dissolved)	U	1450	μg/l	1.0	32				
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50				
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Lead (Dissolved)	U	1450	μg/l	1.0	14				
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Chromium (Hexavalent)	U	1490	μg/l	20	< 20				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10				
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10				
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0				
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10				
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10				
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0				
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10				
Naphthalene	U	1700	μg/l	0.10	< 0.10				
Acenaphthylene	U	1700	μg/l	0.10	< 0.10				
Acenaphthene	U	1700	μg/l	0.10	< 0.10				
Fluorene	U	1700	μg/l	0.10	< 0.10				
Phenanthrene	U	1700	μg/l	0.10	< 0.10				
Anthracene	U	1700	μg/l	0.10	< 0.10				
Fluoranthene	U	1700	μg/l	0.10	< 0.10				
Pyrene	U	1700	μg/l	0.10	< 0.10				



Client: Geosphere Environmental Ltd		Chemtest Job No.							
Quotation No.: Q17-10179			st Sam		17-31794 546616				
Order No.: 254391			nt Samp		BH102				
			ent Sam		V1				
				e Type:	SOIL				
		oth (m):	0.30						
			Date Sa		24-Nov-2017				
Determinand	Accred.	SOP	Units	LOD					
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10				
Chrysene	U	1700	μg/l	0.10	< 0.10				
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10				
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10				
Dibenz(a,h)Anthracene	Ü	1700	μg/l	0.10	< 0.10				
Benzo[g,h,i]perylene	Ü	1700	μg/l	0.10	< 0.10				
Total Of 16 PAH's	Ü	1700	μg/l	2.0	< 2.0				
Benzene	Ü	1760	μg/l	1.0	< 1.0				
Toluene	Ü	1760	μg/l	1.0	< 1.0				
Ethylbenzene	U	1760	μg/l	1.0	< 1.0				
m & p-Xylene	U	1760	μg/l	1.0	< 1.0				
o-Xylene	U	1760	μg/l	1.0	< 1.0				
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0				
Phenol	N	1790	µg/l	0.50	< 0.50				
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50				
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50				
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50				
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50				
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50				
Hexachloroethane	N	1790	μg/l	0.50	< 0.50				
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50				
4-Methylphenol	N	1790	μg/l	0.50	< 0.50				
Nitrobenzene	N	1790	μg/l	0.50	< 0.50				
Isophorone	N	1790	μg/l	0.50	< 0.50				
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50				
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50				
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50				
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50				
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50				
Naphthalene	N	1790	μg/l	0.50	< 0.50				
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50				
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50				
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50				
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50				
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50				
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50				
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50				
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50				



Client: Geosphere Environmental Ltd	17-31794				
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	546616
Order No.: 254391		Clie	nt Samp	le Ref.:	BH102
		Cli	ent Sam		V1
			Sampl	е Туре:	SOIL
			Top De	oth (m):	0.30
		ampled:	24-Nov-2017		
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd	Chemtest Job No.:				17-31794	17-31794	17-31794	17-31794
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp		BH102	BH102	BHC27	BHC27
			Client San		V1	V3	V2	V3
				le Type:	SOIL	SOIL	SOIL	SOIL
				pth (m):	0.30	1.50	0.60	1.60
				ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-201
				tos Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	Fibres/Clumps		-	
Asbestos Identification	U	2192	%	0.001	Chrysotile		No Asbestos Detected	
Moisture	N	2030	%	0.020	11	6.0	15	24
рН	U	2010		N/A	11.2	8.6	9.5	7.7
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	1.1	0.81	1.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.23	0.055	0.15	0.043
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	0.90	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	< 0.50	1.8	0.94	3.3
Sulphate (Total)	U	2430	%	0.010	0.26	0.029	0.22	0.098
Arsenic	U	2450	mg/kg	1.0	32	10	25	25
Cadmium	U	2450	mg/kg	0.10	0.88	< 0.10	0.85	0.16
Chromium	U	2450	mg/kg	1.0	18	12	21	24
Copper	U	2450	mg/kg	0.50	77	6.0	57	14
Mercury	U	2450	mg/kg	0.10	0.34	0.14	0.40	0.16
Nickel	U	2450	mg/kg	0.50	32	11	22	24
Lead	U	2450	mg/kg	0.50	330	47	250	44
Selenium	U	2450	mg/kg	0.20	0.54	< 0.20	< 0.20	0.31
Zinc	U	2450	mg/kg	0.50	670	59	1600	110
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40		1.1
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	2.7	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	2.9	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	33	46	78	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	34	49	81	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	1.0	29	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	24	88	23	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	200	170	130	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	230	280	150	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	260	330	230	< 10



Client: Geosphere Environmental Ltd			hemtest J		17-31794	17-31794	17-31794	17-31794
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp	ole Ref.:	BH102	BH102	BHC27	BHC27
			Client Sam		V1	V3	V2	V3
			Samp	le Type:	SOIL	SOIL	SOIL	SOIL
			Top De	pth (m):	0.30	1.50	0.60	1.60
				ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017
			Asbest	tos Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	3.6	< 0.10	1.6	< 0.10
Anthracene	U	2700	mg/kg	0.10	0.26	< 0.10	0.36	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	4.0	< 0.10	4.2	0.23
Pyrene	U	2700	mg/kg	0.10	3.3	< 0.10	4.0	0.24
Benzo[a]anthracene	U	2700	mg/kg	0.10	1.0	< 0.10	2.6	< 0.10
Chrysene	U	2700	mg/kg	0.10	1.7	< 0.10	3.3	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	1.7	< 0.10	4.1	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.54	< 0.10	1.7	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	1.2	< 0.10	2.7	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	0.72	< 0.10	1.9	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.55	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	0.66	< 0.10	1.8	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	19	< 2.0	29	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	Ü	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	< 10	< 10	< 10	< 10
Toluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			Chemtest J		17-31794	17-31794	17-31794	17-31794	
Quotation No.: Q17-10179		Che	mtest Sam	ple ID.:	546616	546618	546620	546621	
Order No.: 254391		(Client Samp	le Ref.:	BH102	BH102	BHC27	BHC27	
			Client Sam		V1	V3	V2	V3	
				е Туре:	SOIL	SOIL	SOIL	SOIL	
			Top De	oth (m):	0.30	1.50	0.60	1.60	
			Date Sa	ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017	
			Asbest	os Lab:	COVENTRY		COVENTRY		
Determinand	Accred.	SOP	Units	LOD					
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10	
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
o-Xylene	U	2760	1.0 µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50	
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50	
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
1,3-Dichlorobenzene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
1,2-Dichlorobenzene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
2-Methylphenol	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	



Client: Geosphere Environmental Ltd			hemtest J		17-31794	17-31794	17-31794	17-31794
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp		BH102	BH102	BHC27	BHC27
			Client Sam		V1	V3	V2	V3
				е Туре:	SOIL	SOIL	SOIL	SOIL
				pth (m):	0.30	1.50	0.60	1.60
		Date Sampled:			24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017
				os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	1.2	< 0.50	1.7	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.57	< 0.50
Carbazole	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole		2130						



Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		17-31794	17-31794	17-31794	17-31794	
Quotation No.: Q17-10179			mtest Sam		546616	546618	546620	546621
Order No.: 254391		(Client Samp	ole Ref.:	BH102	BH102	BHC27	BHC27
			Client San		V1	V3	V2	V3
				le Type:	SOIL	SOIL	SOIL	SOIL
			Top De	pth (m):	0.30	1.50	0.60	1.60
			Date S	ampled:	24-Nov-2017	24-Nov-2017	24-Nov-2017	24-Nov-2017
			Asbes	tos Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Fluoranthene	U	2790	mg/kg	0.50	1.9	< 0.50	5.7	< 0.50
Pyrene	U	2790	mg/kg	0.50	1.6	< 0.50	4.8	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.89	< 0.50	3.9	< 0.50
Chrysene	U	2790	mg/kg	0.50	1.2	< 0.50	3.7	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.5	< 0.50	5.2	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	2.1	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.79	< 0.50	3.2	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	0.61	< 0.50	2.6	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	1.0	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	0.70	< 0.50	2.8	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 52	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 90+101	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 118	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 153	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 138	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 180	U	2815	mg/kg	0.010		< 0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010			< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010			< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12			< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10	< 0.10	
Total Phenois	Ü	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	, , , ,
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

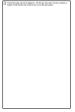
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report			
Report No.:	17-31797-1		
Initial Date of Issue:	07-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	254391 L14 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	29-Nov-2017
Order No.:	254391	Date Instructed:	29-Nov-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	07-Dec-2017
Date Approved:	07-Dec-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 254391 L14 Lake Lothing									
Chemtest Job No:	17-31797						Landfill V	Vaste Acceptand	ce Criteria
Chemtest Sample ID:	546633							Limits	
Sample Ref:	V1							Stable, Non-	
Sample ID:	BHC102							reactive	Hazardous
Top Depth(m):	0.30						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	24-Nov-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			7.2	3	5	6
Loss On Ignition	2610	U	%			11			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		-
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			140	500		
Total (Of 17) PAH's	2700	N	mg/kg			18	100		
рН	2010	U				11.0		>6	-
Acid Neutralisation Capacity	2015	N	mol/kg			0.11		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	'S 10 l/kg
Arsenic	1450	U	0.0023	0.0028	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.090	0.032	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.042	0.013	0.083	0.17	0.5	10	70
Copper	1450	U	0.014	0.0064	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.012	0.0034	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	0.0044	0.0038	< 0.010	0.039	0.06	0.7	5
Selenium	1450	U	0.0021	0.0017	< 0.010	0.017	0.1	0.5	7
Zinc	1450	U	0.0010	< 0.0010	< 0.50	< 0.50	4	50	200
Chloride	1220	U	19	3.5	38	55	800	15000	25000
Fluoride	1220	U	0.24	0.19	< 1.0	2.0	10	150	500
Sulphate	1220	U	70	24	140	300	1000	20000	50000
Total Dissolved Solids	1020	N	260	180	520	1900	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	19	12	< 50	130	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	13			

Leachate Test Information					
Leachant volume 1st extract/l	0.325				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.225				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Keport			
Report No.:	17-32753-1		
Initial Date of Issue:	14-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI L14 Lake Loathing		
Quotation No.:		Date Received:	07-Dec-2017
Order No.:	2543 GI	Date Instructed:	07-Dec-2017
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	13-Dec-2017
Date Approved:	13-Dec-2017		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd			mtest J		17-32753	17-32753	17-32753
Quotation No.:	Chemtest Sample ID.:			551527	551529	551535	
Order No.: 2543 GI	Client Sample Ref.:				BHC102	BHC102	BHC102
		Cli	ent Sam	ple ID.:	J4	J6	J12
			Sampl	e Type:	SOIL	SOIL	SOIL
			Top De	oth (m):	2.50	4.50	10.50
			Date Sa	ampled:	04-Dec-2017	04-Dec-2017	04-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
Moisture	N	2030	%	0.020	20	2.7	15
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	70	2.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	220	15	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	190	21	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	100	18	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	580	56	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	4.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	110	1.4	< 1.0
Aromatic TPH >C16-C21	U	2680		1.0	49	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680		1.0	38	11	< 1.0
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680		5.0	200	13	< 5.0
Total Petroleum Hydrocarbons	N	2680		10.0	780	69	< 10
Naphthalene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.15
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.17
Benzo[a]anthracene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	0	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760		1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760		1.0	< 1.0	< 1.0	< 1.0
Bromomethane	Ü	2760	µg/kg	20	< 20	< 20	< 20
Chloroethane	N	2760		2.0	< 2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd			mtest Jo		17-32753	17-32753	17-32753
Quotation No.:	Chemtest Sample ID.:			551527	551529	551535	
Order No.: 2543 GI	Client Sample Ref.:				BHC102	BHC102	BHC102
		Cli	ent Sam		J4	J6	J12
				е Туре:	SOIL	SOIL	SOIL
			Top De		2.50	4.50	10.50
			Date Sa		04-Dec-2017	04-Dec-2017	04-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760		1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760		2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760		5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10
Toluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10
1,1,2-Trichloroethane	Ü	2760		10	< 10	< 10	< 10
Tetrachloroethene	Ü	2760	1.0.0	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760		2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	Ü	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760		1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760		1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760		1.0	110	< 1.0	< 1.0
Bromobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	190	< 1.0	< 1.0
2-Chlorotoluene	U	2760		1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760		1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760		1.0	2800	< 1.0	< 1.0
	_		μg/kg	1.0			
Sec-Butylbenzene 1,3-Dichlorobenzene	N U	2760 2760	μg/kg μg/kg	1.0	110 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0



Results - Soil

Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-32753	17-32753	17-32753
Quotation No.:	(Chemtest Sample ID.:			551527	551529	551535
Order No.: 2543 GI		Client Sample Ref.:		BHC102	BHC102	BHC102	
		Cli	ent Sam	ple ID.:	J4	J6	J12
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top De	oth (m):	2.50	4.50	10.50
		Date Sampled: (04-Dec-2017	04-Dec-2017	04-Dec-2017	
Determinand	Accred.	SOP	Units	LOD			
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	N 2760 μg/kg 2.0		< 2.0	< 2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
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- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Initial Date of Issue: 18-Dec-2017

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543 GI, L14 Lake Lothing

Quotation No.: Q17-10179 Date Received: 11-Dec-2017

Order No.: 2543, Gl Date Instructed: 11-Dec-2017

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 15-Dec-2017

Date Approved: 18-Dec-2017

Approved By:					
The block improvement is displayed. The file may have been record, covered, or debted. Verilly that the life points to the accord file and location.					

Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd	ere Environmental Ltd Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI			nt Samp		BHC101		
		Clie	ent Sam	ple ID.:	J4		
			Sampl	e Type:	SOIL		
			Top De		2.10		
				ampled:	07-Dec-2017		
Determinand	Accred.	SOP	Units				
рН	U	1010		N/A	9.8		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.12		
Sulphate	U	1220	mg/l	1.0	82		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.9		
Boron (Dissolved)	U	1450	μg/l	20	< 20		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	2.0		
Copper (Dissolved)	U	1450	μg/l	1.0	4.3		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Zinc (Dissolved)	U	1450	μg/l	1.0	4.3		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		17-33041 552743					
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543, GI			nt Samp		BHC101		
		Client Sample ID.:					
				e Type:	SOIL		
			Top De		2.10		
				ampled:	07-Dec-2017		
Determinand	Accred.	SOP	Units				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	µg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		17-33041			
Quotation No.: Q17-10179	(ple ID.:	552743		
Order No.: 2543, GI		le Ref.:	BHC101		
		ple ID.:	J4		
			Sampl	е Туре:	SOIL
			Top De	oth (m):	2.10
			Date Sa		07-Dec-2017
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI			nt Samp		BHC101		
		Client Sample ID.:					
		Sample Type:					
			Top De		2.10		
			Date Sa	ampled:	07-Dec-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		
Moisture	N	2030	%	0.020	5.3		
рН	U	2010		N/A	10.3		
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.12		
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.6		
Sulphate (Total)	U	2430	%	0.010	0.34		
Arsenic	U	2450	mg/kg	1.0	16		
Cadmium	U	2450		0.10	< 0.10		
Chromium	U	2450	mg/kg	1.0	21		
Copper	U	2450	mg/kg	0.50	9.1		
Mercury	U	2450	mg/kg	0.10	< 0.10		
Nickel	U	2450	mg/kg	0.50	16		
Lead	U	2450	mg/kg	0.50	19		
Selenium	U	2450		0.20	< 0.20		
Zinc	U	2450	mg/kg	0.50	29		
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	8.1		
Aliphatic TPH >C12-C16	U	2680		1.0	100		
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	210		
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	29		
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	350		
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0		
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0		
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0		
Aromatic TPH >C12-C16	U		mg/kg	1.0	52		
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	810		
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	860		
Total Petroleum Hydrocarbons	N	2680		10.0	1200		
Naphthalene	U	2700	mg/kg	0.10	< 0.10		



Client: Geosphere Environmental Ltd							
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI			nt Samp		BHC101		
		ple ID.:	J4				
				e Type:	SOIL		
			Top Dep		2.10		
			Date Sa		07-Dec-2017		
				os Lab:	COVENTRY		
Determinand	Accred.	SOP					
Acenaphthylene	U		mg/kg		< 0.10		
Acenaphthene	U		mg/kg	0.10	< 0.10		
Fluorene	U		mg/kg	0.10	< 0.10		
Phenanthrene	U		mg/kg	0.10	< 0.10		
Anthracene	U	2700	mg/kg	0.10	< 0.10		
Fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Pyrene	U		mg/kg	0.10	< 0.10		
Benzo[a]anthracene	U		mg/kg	0.10	< 0.10		
Chrysene	U	2700	mg/kg	0.10	< 0.10		
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10		
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10		
Benzo[g,h,i]perylene	U		mg/kg	0.10	< 0.10		
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0		
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0		
Chloromethane	U	2760		1.0	< 1.0		
Vinyl Chloride	U	2760		1.0	< 1.0		
Bromomethane	U	2760		20	< 20		
Chloroethane	N	2760	μg/kg	2.0	< 2.0		
Trichlorofluoromethane	U	2760		1.0	< 1.0		
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0		
Trans 1,2-Dichloroethene	U		μg/kg	1.0	< 1.0		
1,1-Dichloroethane	U	2760		1.0	< 1.0		
cis 1,2-Dichloroethene	U	2760		1.0	< 1.0		
Bromochloromethane	N	2760		5.0	< 5.0		
Trichloromethane	U	2760		1.0	< 1.0		
1,1,1-Trichloroethane	U	2760		1.0	< 1.0		
Tetrachloromethane	Ü	2760		1.0	< 1.0		
1,1-Dichloropropene	N	2760		1.0	< 1.0		
Benzene	Ü	2760		1.0	< 1.0		
1,2-Dichloroethane	Ü	2760		2.0	< 2.0		
Trichloroethene	Ü	2760		1.0	< 1.0		
1,2-Dichloropropane	Ü	2760		1.0	< 1.0		
Dibromomethane	Ü		μg/kg	1.0	< 1.0		
Bromodichloromethane	Ü		μg/kg	5.0	< 5.0		
cis-1,3-Dichloropropene	N		μg/kg	10	< 10		
Toluene	U	2760		1.0	< 1.0		
Trans-1,3-Dichloropropene	N	_	μg/kg μg/kg	1.0	< 10		
Trans 1,5-Dionioroproperie	U	2760		10	< 10		



Client: Geosphere Environmental Ltd	17-33041				
Quotation No.: Q17-10179		552743			
Order No.: 2543, GI			st Sam nt Samp		BHC101
01001110 2040, 01			ent Sam		J4
		e Type:	SOIL		
			Top Der		2.10
			Date Sa		07-Dec-2017
				os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760		5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0
m & p-Xylene	Ü	2760	μg/kg	1.0	< 1.0
o-Xylene	Ü	2760	μg/kg	1.0	< 1.0
Styrene	Ü	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	N	2760		1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	N	2760		1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179		Chemtest Sample ID.: Client Sample Ref.:					
Order No.: 2543, GI		BHC101					
		ple ID.:	J4				
			Sample	e Type:	SOIL		
			Top Dep	oth (m):	2.10		
			Date Sa		07-Dec-2017		
				os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units				
N-Nitrosodi-n-propylamine	U	2790	mg/kg		< 0.50		
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
Nitrobenzene	U		mg/kg		< 0.50		
Isophorone	U		mg/kg	0.50	< 0.50		
2-Nitrophenol	N		mg/kg	0.50	< 0.50		
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50		
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50		
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50		
Naphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50		
Hexachlorobutadiene	U	2790		0.50	< 0.50		
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50		
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50		
4-Nitrophenol	N	2790		0.50	< 0.50		
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50		
2,4,6-Trichlorophenol	U			0.50	< 0.50		
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50		
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50		
2-Nitroaniline	U		mg/kg	0.50	< 0.50		
Acenaphthylene	U		mg/kg	0.50	< 0.50		
Dimethylphthalate	U	1	mg/kg	0.50	< 0.50		
2,6-Dinitrotoluene	U		mg/kg	0.50	< 0.50		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50		
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50		
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50		
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50		
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50		
Fluorene	U	2790	mg/kg	0.50	< 0.50		
Diethyl Phthalate	U		mg/kg	0.50	< 0.50		
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50		
Azobenzene	U	2790	mg/kg	0.50	< 0.50		
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50		
Hexachlorobenzene	Ü	2790)	0.50	< 0.50		
Pentachlorophenol	N	_	mg/kg	0.50	< 0.50		
Phenanthrene	Ü		mg/kg	0.50	< 0.50		
Anthracene	Ü	2790	mg/kg	0.50	< 0.50		
Carbazole	Ü	2790	mg/kg	0.50	< 0.50		
Di-N-Butyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50		
Fluoranthene	U		mg/kg	0.50	< 0.50		



Client: Geosphere Environmental Ltd	ient: Geosphere Environmental Ltd Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543, GI		Client Sample Ref.:					
		Cli	ent Sam	ple ID.:	J4		
				е Туре:	SOIL		
			Top Dep	oth (m):	2.10		
			Date Sa		07-Dec-2017		
			Asbest	os Lab:	COVENTRY		
Determinand	Accred.	SOP	Units	LOD			
Pyrene	U	2790	mg/kg	0.50	< 0.50		
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50		
Chrysene	U	2790	mg/kg	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50		
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50		
PCB 28	U	2815)		< 0.010		
PCB 52	U	2815	mg/kg	0.010	< 0.010		
PCB 90+101	U	2815	mg/kg	0.010	< 0.010		
PCB 118	U	2815	mg/kg	0.010	< 0.010		
PCB 153	U	2815	mg/kg	0.010	< 0.010		
PCB 138	U	2815	mg/kg	0.010	< 0.010		
PCB 180	U	2815	mg/kg	0.010	< 0.010		
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10		
Total Phenols	U	2920	mg/kg	0.30	< 0.30		



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report			
Report No.:	17-33044-1		
Initial Date of Issue:	19-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI, L14 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	11-Dec-2017
Order No.:	2543 GI	Date Instructed:	11-Dec-2017
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	19-Dec-2017
Date Approved:	19-Dec-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543 GI, L14 Lake Lothing

Project: 2543 GI, L14 Lake Lotning	9								
Chemtest Job No:	17-33044						Landfill V	Vaste Acceptano	e Criteria
Chemtest Sample ID:	552760							Limits	
Sample Ref:	BHC101							Stable, Non-	
Sample ID:	J4							reactive	Hazardous
Top Depth(m):	2.10						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	07-Dec-2017							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			0.38	3	5	6
Loss On Ignition	2610	U	%			3.1			10
Total BTEX	2760	U	mg/kg			0.039	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			1500	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		-
рН	2010	U				10.5		>6	-
Acid Neutralisation Capacity	2015	N	mol/kg			0.097		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	0.0018	0.0012	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.020	0.0044	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0090	0.0018	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0029	< 0.0010	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0052	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.0027	0.0012	< 0.010	0.014	0.1	0.5	7
Zinc	1450	U	0.0070	0.0029	< 0.50	< 0.50	4	50	200
Chloride	1220	U	66	16	130	230	800	15000	25000
Fluoride	1220	U	0.19	0.17	< 1.0	1.7	10	150	500
Sulphate	1220	U	53	20	110	250	1000	20000	50000
Total Dissolved Solids	1020	N	250	120	500	1400	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	23	13	< 50	150	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	6.2				

Leachate Test Information					
Leachant volume 1st extract/l	0.339				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.259				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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All water samples will be retained for 14 days from the date of receipt

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Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

· mai report			
Report No.:	17-33607-1		
Initial Date of Issue:	21-Dec-2017		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI, L14 Lake Loathing, Lowestoft		
Quotation No.:		Date Received:	15-Dec-2017
Order No.:	2543 GI	Date Instructed:	15-Dec-2017
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	21-Dec-2017
Date Approved:	21-Dec-2017		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo		17-33607	17-33607	17-33607
Quotation No.:	(st Sam		555523	555525	555531
Order No.: 2543 GI			nt Samp		BHC101	BHC101	BHC101
		Cli	ent Sam		J6	J8	J14
				e Type:	SOIL	SOIL	SOIL
			Top Depth (m):		3.00	4.00	10.00
			Date Sa		12-Dec-2017	12-Dec-2017	13-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
Moisture	N	2030	%	0.020	15	25	20
Aliphatic TPH >C5-C6	N	2680		1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	60	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	260	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	270	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	450	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	1000	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	3.8	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	110	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	50	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	200	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	360	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	1400	< 10	< 10
Naphthalene	U	2700		0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	Ü	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	Ü	2700	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd			mtest J		17-33607	17-33607	17-33607
Quotation No.:	(st Sam		555523	555525	555531
Order No.: 2543 GI			nt Samp		BHC101	BHC101	BHC101
		Cli	ent Sam		J6	J8	J14
				e Type:	SOIL	SOIL	SOIL
			Top De	. ,	3.00	4.00	10.00
			Date Sa		12-Dec-2017	12-Dec-2017	13-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760) -	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	56	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	7.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	13	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	µg/kg	1.0	36	11	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	11	9.3	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0





Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	17-33607	17-33607	17-33607
Quotation No.:	(Chemtest Sample ID.:		555523	555525	555531	
Order No.: 2543 GI		Client Sample Ref.:		BHC101	BHC101	BHC101	
		Cli	ent Sam	ple ID.:	J6	J8	J14
			Sampl	е Туре:	SOIL	SOIL	SOIL
		Top Depth (m):			3.00	4.00	10.00
			Date Sa	ampled:	12-Dec-2017	12-Dec-2017	13-Dec-2017
Determinand	Accred.	SOP	Units	LOD			
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	0 μg/kg 1.0		< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg 2.0		< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0



SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL Tel: 01638 606070

Email: info@chemtest.co.uk

interim Repo	rt		
Report No.:	18-00159-0		
Initial Date of Issue:			
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Lothing		
Quotation No.:		Date Received:	04-Jan-2018
Order No.:	2543 GI	Date Instructed:	05-Jan-2018
No. of Samples:	5		
Turnaround (Wkdays):	10	Results Due:	18-Jan-2018
Date Approved:			
Approved By:			
Details:			



Client: Geosphere Environmental Ltd				ob No.:	
Quotation No.:	(st Sam		559757
Order No.: 2543 GI			nt Samp		WSC19A
		Cli	ent Sam		J2
				е Туре:	SOIL
			Top De		0.80 02-Jan-2018
		Date Sampled:			
Determinand	Accred.	SOP	Units		
рН	U	1010		N/A	8.3
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	2.9
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	7.9
Boron (Dissolved)	U	1450	μg/l	20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	1.5
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	5.2
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	4.9
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd Chemtest Job No.:					
Quotation No.:			st Sam		18-00159 559757
Order No.: 2543 GI			nt Samp		WSC19A
			ent Sam		J2
				e Type:	SOIL
			Top Dep		0.80
			Date Sa	ampled:	02-Jan-2018
Determinand	Accred.	SOP		LOD	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chei	ob No.:	18-00159	
Quotation No.:	(Chemte	st Sam	ple ID.:	559757
Order No.: 2543 GI		Clier	nt Samp	le Ref.:	WSC19A
		Clie	ent Sam	ple ID.:	J2
			Sampl	е Туре:	SOIL
			Top Dep	oth (m):	0.80
		ampled:	02-Jan-2018		
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd				ob No.:	18-00159	18-00159	18-00159	18-00159
Quotation No.:			est Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam		J2	J4	J2	J3
				e Type:	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.80	2.40	0.75	1.75	
				ampled:	02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
				os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-		-	
Asbestos Identification	U	2192	%	0.001	No Asbestos		No Asbestos	
					Detected		Detected	
Moisture	N	2030	%	0.020	4.8	4.6	3.8	12
рН	U	2010		N/A	8.2	8.2	8.3	8.0
Boron (Hot Water Soluble)	U	2120	9. 9	0.40	0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	9 9		< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	1.2	1.2	1.1	1.7
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010	< 0.010	0.018
Arsenic	U	2450		1.0	< 1.0	< 1.0	< 1.0	13
Cadmium	U	2450	3 3	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chromium	U	2450		1.0	3.2	2.4	5.0	7.9
Copper	U	2450)	0.50	5.4	1.8	2.9	5.5
Mercury	U	2450			< 0.10	< 0.10	< 0.10	< 0.10
Nickel	U	2450		0.50	2.1	1.4	2.9	5.3
Lead	U	2450			54	4.4	5.6	6.4
Selenium	U	2450		0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	U	2450	0 0	0.50	16	8.1	11	18
Chromium (Hexavalent)	N	2490		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	0	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	9. 9	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	0 0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680		5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:	(est Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam		J2	J4	J2	J3
			Sample		SOIL	SOIL	SOIL	SOIL
			Top Dep		0.80	2.40	0.75	1.75
			Date Sa			02-Jan-2018	02-Jan-2018	02-Jan-2018
				os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	0 0	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	9 9	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	0 0	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	9	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:			st Sam		559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sampl	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa	ampled:	02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.2.3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenoi 2-Chlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
	U		mg/kg					
Bis-(2-Chloroethyl)Ether 1,3-Dichlorobenzene	U	2790 2790	mg/kg	0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
,			mg/kg					
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene 2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
	1 []	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:		Chemte	est Sam	ole ID.:	559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	Ü	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	Ü	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	Ü	2790	9 9	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
	U	2790		0.50		< 0.50	< 0.50	
Carbazole Di-N-Butyl Phthalate	U	2790		0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50

Results - Soil

Client: Geosphere Environmental Ltd		Chemtest Job No.:		18-00159	18-00159	18-00159	18-00159	
Quotation No.:			st Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam		J2	J4	J2	J3
			Sampl		SOIL	SOIL	SOIL	SOIL
		Top Depth (m):		0.80	2.40	0.75	1.75	
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest		COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010			< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010			
PCB 52	U	2815	mg/kg	0.010			< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010			
PCB 105	N	2815	mg/kg	0.010	< 0.010			
PCB 90+101	U	2815	mg/kg	0.010			< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010			
PCB 118	U		mg/kg	0.010			< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010			
PCB 153	U	2815	mg/kg	0.010			< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010			
PCB 138	U	2815	mg/kg	0.010			< 0.010	
PCB 126	N		mg/kg	0.010	< 0.010			
PCB 180	U		mg/kg	0.010			< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010			
PCB 157	N		mg/kg	0.010	< 0.010			
PCB 167	N		mg/kg	0.010	< 0.010			
PCB 169	N	2815	mg/kg	0.010	< 0.010			
PCB 189	N		mg/kg	0.010	< 0.010			
Total PCBs (12 Congeners)	N		mg/kg	0.12	< 0.12			
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10			< 0.10	
Total Phenois	Ü		mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



Results - 2 Stage WAC

Project: 2543 GI Lake Lothing

Project: 2543 GI Lake Lothing	10.00150			_			1 WIII W	M1- A1	- 0-111-	
Chemtest Job No:	18-00159						LandfIII Waste Acceptance Crite			
Chemtest Sample ID:	559758							Limits		
Sample Ref:	WSC19A							Stable, Non-		
Sample ID:	J3							reactive	Hazardous	
Top Depth(m):	1.40						Inert Waste	hazardous	Waste	
Bottom Depth(m):							Landfill	waste in non-	Landfill	
Sampling Date:	02-Jan-2018							hazardous		
Determinand	SOP	Accred.	Units					Landfill		
Total Organic Carbon	2625	U	%			< 0.20	3	5	6	
Loss On Ignition	2610	U	%			0.40			10	
Total BTEX	2760	U	mg/kg			< 0.010	6		-	
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		-	
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		-	
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100			
рН	2010	U				8.3		>6	-	
Acid Neutralisation Capacity	2015	N	mol/kg			0.052		To evaluate	To evaluate	
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test	
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg	
Arsenic	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	2	25	
Barium	1450	U	To Follow	To Follow	To Follow	To Follow	20	100	300	
Cadmium	1450	U	To Follow	To Follow	To Follow	To Follow	0.04	1	5	
Chromium	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	10	70	
Copper	1450	U	To Follow	To Follow	To Follow	To Follow	2	50	100	
Mercury	1450	U	To Follow	To Follow	To Follow	To Follow	0.01	0.2	2	
Molybdenum	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	10	30	
Nickel	1450	U	To Follow	To Follow	To Follow	To Follow	0.4	10	40	
Lead	1450	U	To Follow	To Follow	To Follow	To Follow	0.5	10	50	
Antimony	1450	U	To Follow	To Follow	To Follow	To Follow	0.06	0.7	5	
Selenium	1450	U	To Follow	To Follow	To Follow	To Follow	0.1	0.5	7	
Zinc	1450	U	To Follow	To Follow	To Follow	To Follow	4	50	200	
Chloride	1220	U	4.5	2.2	< 10	25	800	15000	25000	
Fluoride	1220	U	0.10	0.099	< 1.0	< 1.0	10	150	500	
Sulphate	1220	U	3.3	< 1.0	< 10	< 10	1000	20000	50000	
Total Dissolved Solids	1020	N	To Follow	To Follow	To Follow	To Follow	4000	60000	100000	
Phenol Index	1920	U	To Follow	To Follow	To Follow	To Follow	1	-	-	
Dissolved Organic Carbon	1610	U	To Follow	To Follow	To Follow	To Follow	500	800	1000	

Solid Information						
Dry mass of test portion/kg	0.175					
Moisture (%)	5.6					

Leachate Test Information						
Leachant volume 1st extract/l	0.340					
Leachant volume 2nd extract/l	1.400					
Eluant recovered from 1st extract/l	0.261					

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.



SOP	Title	Parameters included	Method summary
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

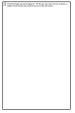
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL

Tel: 01638 606070

Final Report			Email: info@chemtest.co.u
Report No.:	18-00159-1		
Initial Date of Issue:	18-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Lothing		
Quotation No.:		Date Received:	04-Jan-2018
Order No.:	2543 GI	Date Instructed:	05-Jan-2018
No. of Samples:	5		
Turnaround (Wkdays):	10	Results Due:	18-Jan-2018
Date Approved:	18-Jan-2018		
Approved By: Details:	Martin Dyer, Laboratory Manager		
Detallo.	warun byer, Laboratory Manager		



Client: Geosphere Environmental Ltd		Che	ntest Jo	ob No.:	18-00159
Quotation No.:			st Sam		559757
Order No.: 2543 GI			nt Samp		WSC19A
			ent Sam		J2
				e Type:	SOIL
			Top De		0.80
			Date Sa	ampled:	02-Jan-2018
Determinand	Accred.	SOP			
рН	U	1010		N/A	8.3
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010
Sulphate	U	1220	mg/l	1.0	2.9
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	7.9
Boron (Dissolved)	U	1450	μg/l	20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	1.5
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	5.2
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	4.9
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd		Che	ntest Jo	ob No.:	18-00159
Quotation No.:			st Sam		559757
Order No.: 2543 GI			nt Samp		WSC19A
			ent Sam		J2
				e Type:	SOIL
			Top Dep		0.80
			Date Sa	ampled:	02-Jan-2018
Determinand	Accred.	SOP		LOD	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chei	ntest Jo	ob No.:	18-00159
Quotation No.:	(Chemte	st Sam	ple ID.:	559757
Order No.: 2543 GI		Clier	nt Samp	le Ref.:	WSC19A
		Clie	ent Sam	ple ID.:	J2
			Sampl	е Туре:	SOIL
			Top Dep	oth (m):	0.80
			Date Sa	ampled:	02-Jan-2018
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest J		18-00159	18-00159	18-00159	18-00159
Quotation No.:			st Sam		559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sampl	e Type:	SOIL	SOIL	SOIL	SOIL
			Top De	oth (m):	0.80	2.40	0.75	1.75
				ampled:	02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-		-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.020	4.8	4.6	3.8	12
pH	Ü	2010	70	N/A	8.2	8.2	8.3	8.0
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.40	< 0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	Ü	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Cyanide (Free)	Ü	2300	Ü	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	Ü	2300	0 0		< 0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	Ü	2425	mg/kg		1.2	1.2	1.1	1.7
Sulphate (Total)	Ü	2430	%	0.010	< 0.010	< 0.010	< 0.010	0.018
Arsenic	Ü	2450		1.0	< 1.0	< 1.0	< 1.0	13
Cadmium	Ü	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chromium	Ü	2450	0 0	1.0	3.2	2.4	5.0	7.9
Copper	Ü	2450	mg/kg	0.50	5.4	1.8	2.9	5.5
Mercury	Ü	2450	0	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	Ü	2450		0.50	2.1	1.4	2.9	5.3
Lead	Ü	2450		0.50	54	4.4	5.6	6.4
Selenium	Ü	2450		0.20	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	U	2450	0 0	0.50	16	8.1	11	18
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680		5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	0	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	9 9	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	0		< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:			est Sam		559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	•	J2	J4	J2	J3
			Sample		SOIL	SOIL	SOIL	SOIL
			Top Dep		0.80	2.40	0.75	1.75
			Date Sa			02-Jan-2018	02-Jan-2018	02-Jan-2018
				os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	0 0	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	9 9	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2700	0 0	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	9	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760		1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760		10	< 10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:			st Sam		559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sampl	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa	ampled:	02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.4-Dichlorobenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1.2.3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenoi 2-Chlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
	U		mg/kg					
Bis-(2-Chloroethyl)Ether 1,3-Dichlorobenzene	U	2790 2790	mg/kg	0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
,			mg/kg					
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene 2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
	1 []	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:		Chemte	est Sam	ole ID.:	559757	559759	559762	559763
Order No.: 2543 GI		Clie	nt Samp	le Ref.:	WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam	ple ID.:	J2	J4	J2	J3
			Sample	e Type:	SOIL	SOIL	SOIL	SOIL
			Top Dep	oth (m):	0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	Ü	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	Ü	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	Ü	2790	9 9	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	Ü	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N N	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	U	2790		0.50	< 0.50	< 0.50	< 0.50	< 0.50
	U	2790		0.50		< 0.50	< 0.50	
Carbazole Di-N-Butyl Phthalate	U	2790		0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50

Results - Soil

Client: Geosphere Environmental Ltd			mtest Jo		18-00159	18-00159	18-00159	18-00159
Quotation No.:		Chemte	st Sam	ple ID.:	559757	559759	559762	559763
Order No.: 2543 GI			nt Samp		WSC19A	WSC19A	WSC21	WSC21
		Cli	ent Sam		J2	J4	J2	J3
			Sampl		SOIL	SOIL	SOIL	SOIL
			Top De		0.80	2.40	0.75	1.75
			Date Sa		02-Jan-2018	02-Jan-2018	02-Jan-2018	02-Jan-2018
			Asbest	os Lab:	COVENTRY		COVENTRY	
Determinand	Accred.	SOP	Units	_				
Fluoranthene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010			< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010			
PCB 52	U	2815	mg/kg	0.010			< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010			
PCB 105	N	2815	mg/kg	0.010	< 0.010			
PCB 90+101	U	2815	mg/kg	0.010			< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010			
PCB 118	U	2815	mg/kg	0.010			< 0.010	
PCB 118	N	•	mg/kg	0.010	< 0.010			
PCB 153	U	2815	mg/kg	0.010			< 0.010	
PCB 123	N		mg/kg	0.010	< 0.010			
PCB 138	U	2815	mg/kg	0.010			< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010			
PCB 180	U		mg/kg	0.010			< 0.010	
PCB 156	N		mg/kg	0.010	< 0.010			
PCB 157	N	2815	mg/kg	0.010	< 0.010			
PCB 167	N		mg/kg	0.010	< 0.010			
PCB 169	N		mg/kg	0.010	< 0.010			
PCB 189	N		mg/kg	0.010	< 0.010			
Total PCBs (12 Congeners)	N		mg/kg	0.12	< 0.12			
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10			< 0.10	
Total Phenois	Ü		mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



Results - 2 Stage WAC

Project: 2543 GI Lake Lothing

Project: 2543 GI Lake Lothing									
Chemtest Job No:	18-00159						Landfill V	Vaste Acceptano	ce Criteria
Chemtest Sample ID:	559758							Limits	
Sample Ref:	WSC19A							Stable, Non-	
Sample ID:	J3							reactive	Hazardous
Top Depth(m):	1.40						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	02-Jan-2018							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			0.40			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
рН	2010	J				8.3		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.052		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	0.0012	< 0.0010	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0042	0.0058	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0018	< 0.0010	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0011	< 0.010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.0010	< 0.50	< 0.50	4	50	200
Chloride	1220	U	4.5	2.2	< 10	25	800	15000	25000
Fluoride	1220	U	0.10	0.099	< 1.0	< 1.0	10	150	500
Sulphate	1220	U	3.3	< 1.0	< 10	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	53	31	110	340	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	8.4	7.7	< 50	78	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	5.6			

Leachate Test Information					
Leachant volume 1st extract/l	0.340				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.261				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.



SOP	Title	Parameters included	Method summary
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

rınaı Keport			
Report No.:	18-00228-1		
Initial Date of Issue:	12-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543/GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	05-Jan-2018
Order No.:	2543/G1	Date Instructed:	05-Jan-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	11-Jan-2018
Date Approved:	11-Jan-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-00228	18-00228
Quotation No.: Q17-10179			est Sam	560161	560163	
Order No.: 2543/G1		Clie	nt Samp	le Ref.:	BHC14	BHC14
		Client Sample ID.:			J5	J7
			Sampl	е Туре:	SOIL	SOIL
			Top Dep	pth (m):	3.10	5.10
				ampled:	03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Moisture	N	2030	%	0.020	16	11
рН	U	2010		N/A	9.3	8.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120		0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425		0.50	< 0.50	< 0.50
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010
Arsenic	U	2450		1.0	5.1	5.1
Cadmium	U	2450		0.10	< 0.10	< 0.10
Chromium	U	2450		1.0	4.6	5.1
Copper	U	2450	mg/kg	0.50	3.5	3.8
Mercury	U	2450		0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	4.6	4.4
Lead	U	2450		0.50	3.2	2.7
Selenium	U	2450		0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	13	10
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625		0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680		1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680		1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C12-C16	U		mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C21-C35	U		mg/kg	1.0	[C] < 1.0	< 1.0
Aliphatic TPH >C35-C44	N		mg/kg	1.0	[C] < 1.0	< 1.0
Total Aliphatic Hydrocarbons	N		mg/kg	5.0	[C] < 5.0	< 5.0
Aromatic TPH >C5-C7	N		mg/kg	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C7-C8	N		mg/kg	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680		1.0	[C] < 1.0	< 1.0
Aromatic TPH >C10-C12	U	1	mg/kg	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C12-C16	Ü	2680	0	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C16-C21	Ü	2680		1.0	[C] < 1.0	< 1.0
Aromatic TPH >C21-C35	Ü	2680	0 0	1.0	[C] < 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	0 0	1.0	[C] < 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	0 0	5.0	[C] < 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	0 0	10.0	[C] < 10	< 10
Naphthalene	Ü		mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	Ü	2700		0.10	< 0.10	< 0.10
Acenaphthene	Ü	2700		0.10	< 0.10	< 0.10
Fluorene	Ü	_	mg/kg		< 0.10	< 0.10
	, –	~		00		



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-00228	18-00228
Quotation No.: Q17-10179	(st Sam		560161	560163
Order No.: 2543/G1			nt Samp		BHC14	BHC14
		Client Sample ID.:			J5	J7
			Sampl	e Type:	SOIL	SOIL
			Top De		3.10	5.10
			Date Sa		03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U		mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Chloromethane	U	2760	. 0	1.0	[C] < 1.0	< 1.0
Vinyl Chloride	U	2760		1.0	[C] < 1.0	< 1.0
Bromomethane	Ü	2760		20	[C] < 20	< 20
Chloroethane	N	2760	μg/kg	2.0	[C] < 2.0	< 2.0
Trichlorofluoromethane	Ü	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,1-Dichloroethene	Ü	2760		1.0	[C] < 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	[C] < 1.0	< 1.0
1,1-Dichloroethane	Ü		μg/kg	1.0	[C] < 1.0	< 1.0
cis 1,2-Dichloroethene	Ü	2760		1.0	[C] < 1.0	< 1.0
Bromochloromethane	N	2760		5.0	[C] < 5.0	< 5.0
Trichloromethane	Ü	2760		1.0	[C] < 1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760		1.0	[C] < 1.0	< 1.0
Tetrachloromethane	Ü	2760		1.0	[C] < 1.0	< 1.0
1,1-Dichloropropene	N	2760		1.0	[C] < 1.0	< 1.0
Benzene	Ü	2760		1.0	[C] < 1.0	< 1.0
1,2-Dichloroethane	Ü	2760		2.0	[C] < 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2-Dichloropropane	Ü	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Dibromomethane	Ü	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Bromodichloromethane	Ü	2760	. 0	5.0	[C] < 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	. 0	10	[C] < 10	< 10
Toluene	U	2760		1.0	[C] < 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,1,2-Trichloroethane	U	2760	μg/kg	10	[C] < 10	< 10
Tetrachloroethene	U	2760		1.0	[C] < 1.0	< 1.0
1,3-Dichloropropane	N	2760		2.0	[C] < 1.0 [C] < 2.0	< 2.0
Dibromochloromethane	N N	2760		10	[C] < 2.0 [C] < 10	< 10
	U		9			
1,2-Dibromoethane	U	2/60	μg/kg	5.0	[C] < 5.0	< 5.0



Client: Geosphere Environmental Ltd		Che	mtest Jo	18-00228	18-00228	
Quotation No.: Q17-10179		Chemte	est Sam	560161	560163	
Order No.: 2543/G1			nt Samp		BHC14	BHC14
		Client Sample ID.:				J7
				е Туре:	SOIL	SOIL
			Top Dep		3.10	5.10
			Date Sa	ampled:	03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Chlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[C] < 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Isopropylbenzene	U	2760		1.0	[C] < 1.0	< 1.0
Bromobenzene	U	2760		1.0	[C] < 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	[C] < 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
2-Chlorotoluene	U	2760		1.0	[C] < 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760		1.0	[C] < 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,3-Dichlorobenzene	U	2760		1.0	[C] < 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[C] < 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[C] < 1.0	< 1.0
Hexachlorobutadiene	N	2760		1.0	[C] < 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[C] < 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760		1.0	[C] < 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
1,4-Dichlorobenzene	N	2790		0.50	[C] < 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Methylphenol	U	2790		0.50	[C] < 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	[C] < 0.50	< 0.50
Hexachloroethane	N	2790		0.50	[C] < 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790		0.50	[C] < 0.50	< 0.50
4-Methylphenol	U	2790		0.50	[C] < 0.50	< 0.50
Nitrobenzene	U	2790		0.50	[C] < 0.50	< 0.50
Isophorone	U	2790		0.50	[C] < 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-00228
Quotation No.: Q17-10179	(st Sam	560161	560163	
Order No.: 2543/G1			nt Samp		BHC14	BHC14
		Client Sample ID.:			J5	J7
				е Туре:	SOIL	SOIL
			Top De		3.10	5.10
			Date Sa		03-Jan-2018	03-Jan-2018
Determinand	Accred.	SOP				
2,4-Dimethylphenol	N	2790	0	0.50	[C] < 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U		mg/kg	0.50	[C] < 0.50	< 0.50
2,4-Dichlorophenol	U		mg/kg	0.50	[C] < 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	9	0.50	[C] < 0.50	< 0.50
Naphthalene	U	2790		0.50	[C] < 0.50	< 0.50
4-Chloroaniline	N	2790	0	0.50	[C] < 0.50	< 0.50
Hexachlorobutadiene	U	2790		0.50	[C] < 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	0	0.50	[C] < 0.50	< 0.50
2-Methylnaphthalene	U	2790		0.50	[C] < 0.50	< 0.50
4-Nitrophenol	N	2790		0.50	[C] < 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	[C] < 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	5	0.50	[C] < 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2,6-Dinitrotoluene	U	2790		0.50	[C] < 0.50	< 0.50
Acenaphthene	U	2790		0.50	[C] < 0.50	< 0.50
3-Nitroaniline	N	2790) י	0.50	[C] < 0.50	< 0.50
Dibenzofuran	U	2790	9 9	0.50	[C] < 0.50	< 0.50
4-Chlorophenylphenylether	U	2790		0.50	[C] < 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	0	0.50	[C] < 0.50	< 0.50
Fluorene	U	2790	0	0.50	[C] < 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	[C] < 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790		0.50	[C] < 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	[C] < 0.50	< 0.50
Benzo[a]anthracene	U	2790		0.50	[C] < 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[C] < 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50





Client: Geosphere Environmental Ltd Chemtest Job No.: 18-00228 18-00228								
Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-00228		
Quotation No.: Q17-10179	(Chemte	est Sam	ple ID.:	560161	560163		
Order No.: 2543/G1		Clie	nt Samp	le Ref.:	BHC14	BHC14		
		Cli	ent Sam	ple ID.:	J5	J7		
			Sampl	е Туре:	SOIL	SOIL		
			Top De	oth (m):	3.10	5.10		
		Date Sampled:				03-Jan-2018		
Determinand	Accred.	SOP	Units	LOD				
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[C] < 0.50	< 0.50		
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30		



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
560161	BHC14	J5	03-Jan-2018	С	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

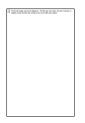
- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Approved By:

Details:



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-00330-1		
Initial Date of Issue:	12-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GL Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	08-Jan-2018
Order No.:	2543,GL	Date Instructed:	08-Jan-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	12-Jan-2018
Date Approved:	11-Jan-2018		

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.: Chemtest Sample ID.:						
Quotation No.: Q17-10179	(560625			
Order No.: 2543,GL			nt Samp		BHC102 W1			
		Client Sample ID.:						
		Sample Type:						
				ampled:	04-Jan-2018			
Determinand	Accred.	SOP	Units	LOD				
рН	U	1010		N/A	8.4			
Ammonia (Free) as N	U	1220	mg/l	0.010	0.25			
Sulphur	N	1220	mg/l	1.0	18			
Sulphate	U	1220	mg/l	1.0	53			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	9.2			
Boron (Dissolved)	U	1450	μg/l	20	150			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	5.1			
Copper (Dissolved)	U	1450	μg/l	1.0	8.8			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	9.9			
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Selenium (Dissolved)	U	1450	μg/l	1.0	2.2			
Zinc (Dissolved)	U	1450	μg/l	1.0	24			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			



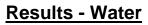
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	560625			
Order No.: 2543,GL		Clie	nt Samp	le Ref.:	BHC102			
		Client Sample ID.:						
		Sample Type:						
		Date Sampled:						
Determinand	Accred.	SOP	Units	LOD				
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0			
Chloromethane	U	1760	μg/l	1.0	< 1.0			
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0			
Bromomethane	U	1760	μg/l	5.0	< 5.0			
Chloroethane	U	1760	μg/l	2.0	< 2.0			
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0			
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Bromochloromethane	U	1760	μg/l	5.0	< 5.0			
Trichloromethane	U	1760	μg/l	1.0	< 1.0			
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0			
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0			
Trichloroethene	N	1760	μg/l	1.0	< 1.0			
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0			
Dibromomethane	U	1760	μg/l	10	< 10			
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0			
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
Toluene	U	1760	μg/l	1.0	< 1.0			
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10			
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0			
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0			
Dibromochloromethane	U	1760	μg/l	10	< 10			
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0			
Chlorobenzene	N	1760	μg/l	1.0	< 1.0			
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(st Sam		560625			
Order No.: 2543,GL		Clie	nt Samp	le Ref.:	BHC102			
		Client Sample ID.:						
		Sample Type:						
			Date Sa		04-Jan-2018			
Determinand	Accred.	SOP	Units	LOD				
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Styrene	U	1760	μg/l	1.0	< 1.0			
Tribromomethane	U	1760	μg/l	1.0	< 1.0			
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0			
Bromobenzene	U	1760	μg/l	1.0	< 1.0			
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50			
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0			
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0			
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0			
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0			
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0			
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0			
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0			
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0			
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50			
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0			
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0			
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GL			nt Samp		BHC102	
		Client Sample ID.:			W1	
				e Type:	WATER	
			Date Sa		04-Jan-2018	
Determinand	Accred.	SOP		LOD		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	





Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GL		Client Sample Ref.:				
		Client Sample ID.:				
		Sample Type:				
	Date Sampled: 04-Jan-201					
Determinand	Accred.	Accred. SOP Units LOD				
Total Phenols	U	1920	mg/l	0.030	< 0.030	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Amended Report

Report No.:	18-00330-2		
Initial Date of Issue:	12-Jan-2018	Date of Re-Issue:	18-Jan-2018
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GL Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	08-Jan-2018
Order No.:	2543,GL	Date Instructed:	08-Jan-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	12-Jan-2018
Date Approved:	18-Jan-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543,GL			nt Samp		BHC102		
		Client Sample ID.:					
		Sample Type:					
		Date Sampled:					
Determinand	Accred.	SOP	Units	LOD			
рН	U	1010		N/A	8.4		
Ammonia (Free) as N	U	1220	mg/l	0.010	0.25		
Sulphur	N	1220	mg/l	1.0	18		
Sulphate	U	1220	mg/l	1.0	53		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	9.2		
Boron (Dissolved)	U	1450	μg/l	20	150		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	5.1		
Copper (Dissolved)	U	1450	μg/l	1.0	8.8		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	9.9		
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Selenium (Dissolved)	U	1450	μg/l	1.0	2.2		
Zinc (Dissolved)	U	1450	μg/l	1.0	24		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	27		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	210		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	440		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	150		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	820		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	820		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		



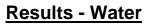
Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GL		Clie	nt Samp	le Ref.:	BHC102	
		Client Sample ID.:				
		Sample Type:				
			Date Sa	ampled:	04-Jan-2018	
Determinand	Accred.	SOP	Units	LOD		
Pyrene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	
Chrysene	U	1700	μg/l	0.10	< 0.10	
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0	
Chloromethane	U	1760	μg/l	1.0	< 1.0	
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0	
Bromomethane	U	1760	μg/l	5.0	< 5.0	
Chloroethane	U	1760	μg/l	2.0	< 2.0	
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0	
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0	
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0	
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	
Bromochloromethane	U	1760	μg/l	5.0	< 5.0	
Trichloromethane	U	1760	μg/l	1.0	< 1.0	
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0	
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0	
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0	
Benzene	U	1760	μg/l	1.0	< 1.0	
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0	
Trichloroethene	N	1760	μg/l	1.0	< 1.0	
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0	
Dibromomethane	U	1760	μg/l	10	< 10	
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0	
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10	
Toluene	U	1760	μg/l	1.0	< 1.0	
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10	
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10	
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0	
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0	
Dibromochloromethane	U	1760	μg/l	10	< 10	
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0	
Chlorobenzene	N	1760	μg/l	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0	
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	



Client: Geosphere Environmental Ltd	Chemtest Job No.: 18-00330					
Quotation No.: Q17-10179	(560625				
Order No.: 2543,GL	`		st Samp		BHC102	
Order No.: 2040,0E	Client Sample ID.:				W1	
	Sample Type:				WATER	
	Date Sampled:				04-Jan-2018	
Determinand	Accred.	SOP		LOD	04 0 411 2 010	
o-Xylene	U	1760	µg/l	1.0	< 1.0	
Styrene	Ü	1760	μg/l	1.0	< 1.0	
Tribromomethane	Ü	1760	μg/l	1.0	< 1.0	
Isopropylbenzene	Ü	1760	μg/l	1.0	1.5	
Bromobenzene	Ü	1760	μg/l	1.0	< 1.0	
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50	
N-Propylbenzene	Ü	1760	μg/l	1.0	1.4	
2-Chlorotoluene	Ü	1760	μg/l	1.0	< 1.0	
1,3,5-Trimethylbenzene	Ü	1760	μg/l	1.0	< 1.0	
4-Chlorotoluene	Ü	1760	μg/l	1.0	< 1.0	
Tert-Butylbenzene	Ü	1760	μg/l	1.0	< 1.0	
1,2,4-Trimethylbenzene	Ū	1760	μg/l	1.0	11	
Sec-Butylbenzene	Ü	1760	μg/l	1.0	< 1.0	
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0	
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0	
1,4-Dichlorobenzene	Ū	1760	μg/l	1.0	< 1.0	
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0	
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50	
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0	
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0	
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0	
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50	
Phenol	N	1790	μg/l	0.50	< 0.50	
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	
Isophorone	N	1790	μg/l	0.50	< 0.50	
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	
Naphthalene	N	1790	μg/l	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GL			nt Samp		BHC102	
		Client Sample ID.:			W1	
				e Type:	WATER	
			Date Sa		04-Jan-2018	
Determinand	Accred.	SOP		LOD		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	
Pyrene	N	1790	μg/l	0.50	< 0.50	
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	
Chrysene	N	1790	μg/l	0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	





Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.: 2543,GL		Client Sample Ref.:				
		Client Sample ID.:				
		Sample Type:				
	Date Sampled: 04-Jan-201					
Determinand	Accred.	Accred. SOP Units LOD				
Total Phenols	U	1920	mg/l	0.030	< 0.030	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

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- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

i iiiai itopoit			
Report No.:	18-00356-1		
Initial Date of Issue:	15-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	09-Jan-2018
Order No.:	2543,GI	Date Instructed:	09-Jan-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	15-Jan-2018
Date Approved:	15-Jan-2018		
Approved By:			



Client: Geosphere Environmental Ltd				ob No.:	18-00356
Quotation No.: Q17-10179	(st Sam		560719
Order No.: 2543,GI			nt Samp		BHC02
		Cli	ent Sam		W1
				е Туре:	WATER
		Date Sampled:			05-Jan-2018
Determinand	Accred.	SOP	Units	_	
рН	U	1010		N/A	6.9
Ammonia (Free) as N	U	1220	mg/l	0.010	< 0.010
Sulphur	N	1220	mg/l	1.0	22
Sulphate	U	1220	mg/l	1.0	65
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.1
Boron (Dissolved)	U	1450	μg/l	20	110
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	6.0
Copper (Dissolved)	U	1450	μg/l	1.0	1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	3.4
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	2.5
Zinc (Dissolved)	U	1450	μg/l	1.0	12
Chromium (Hexavalent)	U	1490	μg/l	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo		18-00356
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	560719
Order No.: 2543,GI			nt Samp		BHC02
		Cli	ent Sam	ple ID.:	W1
			Sampl	е Туре:	WATER
			Date Sa	ampled:	05-Jan-2018
Determinand	Accred.	SOP	Units	LOD	
Pyrene	U	1700	μg/l	0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0



Client: Geosphere Environmental Ltd		Chei	ntest Jo	h No ·	18-00356
Quotation No.: Q17-10179	(st Sam		560719
Order No.: 2543,GI	`		nt Samp		BHC02
01d01110 2040;01			ent Sam		W1
		- Cili		e Type:	WATER
			Date Sa		05-Jan-2018
Determinand	Accred.	SOP		LOD	00 0411 2010
o-Xylene	U	1760	µg/l	1.0	< 1.0
Styrene	Ū	1760	μg/l	1.0	< 1.0
Tribromomethane	Ū	1760	μg/l	1.0	< 1.0
Isopropylbenzene	Ū	1760	μg/l	1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0
4-Chlorotoluene	Ü	1760	μg/l	1.0	< 1.0
Tert-Butylbenzene	Ü	1760	μg/l	1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd Chemtest Job No.: 18-00356					
Quotation No.: Q17-10179	(st Sam		560719
Order No.: 2543,GI	<u> </u>		nt Samp		BHC02
C1001 140 2545,01			ent Sam		W1
		0		e Type:	WATER
			Date Sa		05-Jan-2018
Determinand	Accred.	SOP	Units	LOD	00 0011 2010
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50





Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-00356
Quotation No.: Q17-10179		Chemtest Sample ID.:			
Order No.: 2543,GI		Client Sample Ref.:			BHC02
		Client Sample ID.:			W1
		Sample Type:			WATER
		Date Sampled:		05-Jan-2018	
Determinand	Accred. SOP Units LOD				
Total Phenols	U	1920	mg/l	0.030	< 0.030



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL

Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report			
Report No.:	18-00959-1		
Initial Date of Issue:	23-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	15-Jan-2018
Order No.:	2543,GI	Date Instructed:	15-Jan-2018
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	23-Jan-2018
Date Approved:	23-Jan-2018		
Approved By:			

Martin Dyer, Laboratory Manager



Results - 2 Stage WAC

Project: 2543,GI Lake Lothing

Project: 2543,Gl Lake Lothing									
Chemtest Job No:	18-00959						Landfill V	Vaste Acceptano	ce Criteria
Chemtest Sample ID:	563299							Limits	
Sample Ref:	TPC23A							Stable, Non-	
Sample ID:	J1							reactive	Hazardous
Top Depth(m):	1.1						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	11-Jan-2018							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			6.1	3	5	6
Loss On Ignition	2610	U	%			4.3			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			120	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				11.0		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.29		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L	/S 10 l/kg
Arsenic	1450	U	0.0033	0.0089	< 0.050	0.080	0.5	2	25
Barium	1450	U	0.019	0.012	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0036	0.0035	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0069	0.012	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.037	0.016	0.073	0.19	0.5	10	30
Nickel	1450	U	< 0.0010	0.0010	< 0.050	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	0.0028	< 0.010	0.024	0.5	10	50
Antimony	1450	U	0.0090	0.013	0.018	0.12	0.06	0.7	5
Selenium	1450	U	0.0015	0.0015	< 0.010	0.015	0.1	0.5	7
Zinc	1450	U	0.0044	0.011	< 0.50	< 0.50	4	50	200
Chloride	1220	U	27	5.8	54	92	800	15000	25000
Fluoride	1220	U	1.3	0.61	2.6	7.2	10	150	500
Sulphate	1220	U	110	25	210	380	1000	20000	50000
Total Dissolved Solids	1020	N	230	67	460	930	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	12	8.2	< 50	88	500	800	1000

Solid Information			
Dry mass of test portion/kg	0.175		
Moisture (%)	11		

Leachate Test Information				
Leachant volume 1st extract/l	0.328			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.278			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

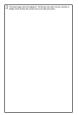
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-01626-1		
Initial Date of Issue:	26-Jan-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 91 Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	19-Jan-2018
Order No.:		Date Instructed:	22-Jan-2018
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	26-Jan-2018
Date Approved:	26-Jan-2018		
Approved By:			



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-01626	18-01626
Quotation No.: Q17-10179	(st Sam		566454	566457	566472
Order No.:			nt Samp		BHC15	BHC15	BHC22
		Cli	ent Sam		J7	J10	J4
				е Туре:	SOIL	SOIL	SOIL
			Top De		3.7	6.7	2.0
			17-Jan-2018	17-Jan-2018	17-Jan-2018		
Determinand	Accred.	SOP	Units				
Moisture	N	2030	%	0.020	12	12	16
рН	U	2010		N/A	8.7	8.3	9.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40	0.86
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	0.13
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Ammoniacal Nitrogen	U	2425	mg/kg	0.50	< 0.50	< 0.50	0.73
Sulphate (Total)	U	2430	mg/kg	100	< 100	< 100	3500
Arsenic	U	2450	mg/kg	1.0	2.5	3.3	18
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	4.3	6.2	25
Copper	U	2450	mg/kg	0.50	2.4	2.6	19
Mercury	U	2450	mg/kg	0.10	0.16	< 0.10	0.11
Nickel	U	2450	mg/kg	0.50	5.1	4.2	30
Lead	U	2450	mg/kg	0.50	2.9	2.0	12
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20	0.80
Zinc	U	2450	mg/kg	0.50	9.6	8.8	38
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40	0.62
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10



Crient Sample Ref. BHC15 BHC15 BHC15 BHC15 BHC15 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J7 J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. J10 Sample ID. Sample ID. J10 Sample ID. Sample ID. J10 Sample ID. Sample	Client: Geosphere Environmental Ltd			mtest Jo		18-01626	18-01626	18-01626
Client Sample Type: SOIL SOIL SOIL Soil Soil Soil Soil Top Depth (m): 3,7 6,7 2 Determinand Accred. SOP Units LOD Soil Soil Soil Soil Soil Top Depth (m): 3,7 6,7 2 Date Samplect 77-Jan-2018 17-Jan-2018 17-Jan								566472
Sample Type: SOIL SOIL SOIL Soil Top Depth (m): 3,7 6,7 2 Date Sampled: 17-Jan-2018 17-Jan	Order No.:							BHC22
Top Depth (m): 3.7 6.7 2.20 Determinand Accred. SOP Units LOD			Cli			J7	J10	J4
Determinand Accred SOP Units LOD						SOIL	SOIL	SOIL
Determinand								2.0
Phenanthrene				Date Sa	ampled:	17-Jan-2018	17-Jan-2018	17-Jan-2018
Anthracene	Determinand	Accred.	SOP	Units	LOD			
Fluoranthene	Phenanthrene		2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene	Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene U 2700 mg/kg 0.10 < 0.10 < 0.10 < 0.10 Chysene U 2700 mg/kg 0.10 < 0.10	Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene U 2700 mg/kg 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene U 2700 mg/kg 0.10 < 0.10 < 0.10 Benzo[k]fluoranthene U 2700 mg/kg 0.10 < 0.10	Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzok fituoranthene U 2700 mg/kg 0.10 < 0.10 < 0.10 Benzo(a)a/pyrene U 2700 mg/kg 0.10 < 0.10	Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo a pyrene	Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene U 2700 mg/kg 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0					0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene U 2700 mg/kg 0.10 < 0.10 < 0.10 Total Of 16 PAH's U 2700 mg/kg 2.0 < 2.0		U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's U 2700 mg/kg 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \							< 0.10
Dichlorodifluoromethane N 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 2.0 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20 < 20		U	2700					< 2.0
Chloromethane U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0				J				< 1.0
Vinyl Chloride U 2760 μg/kg 1.0 < 1.0 < 1.0 < 2 Bromomethane U 2760 μg/kg 20 < 20								< 1.0
Bromomethane								< 1.0
Chloroethane N 2760 µg/kg 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 <t< td=""><td>· ·</td><td></td><td></td><td></td><td></td><td></td><td></td><td>< 20</td></t<>	· ·							< 20
Trichlorofluoromethane U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.								< 2.0
1,1-Dichloroethene U 2760 µg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0								< 1.0
Trans 1,2-Dichloroethene U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 < 2.1.0 <		Ü						< 1.0
1,1-Dichloroethane U 2760 µg/kg 1.0 < 1.0	,							< 1.0
cis 1,2-Dichloroethene U 2760 µg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0	,							< 1.0
Bromochloromethane N 2760 µg/kg 5.0 < 5.0 < 5.0 Trichloromethane U 2760 µg/kg 1.0 < 1.0	,							< 1.0
Trichloromethane U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0	,	_						< 5.0
1,1,1-Trichloroethane U 2760 µg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0								< 1.0
Tetrachloromethane U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>< 1.0</td>								< 1.0
1,1-Dichloropropene N 2760 µg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0	, ,							< 1.0
Benzene U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 <								< 1.0
1,2-Dichloroethane U 2760 µg/kg 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0	·							< 1.0
Trichloroethene U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0								< 2.0
1,2-Dichloropropane U 2760 μg/kg 1.0 < 1.0	,							< 1.0
Dibromomethane U 2760 μg/kg 1.0 < 1.0 < 1.0 < Bromodichloromethane U 2760 μg/kg 5.0 < 5.0								< 1.0
Bromodichloromethane U 2760 μg/kg 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 5.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>< 1.0</td>								< 1.0
cis-1,3-Dichloropropene N 2760 μg/kg 10 < 10 < 10 < 10 < 10 < 10 < 10 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 1.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0 < 2.0								< 5.0
Toluene U 2760 μg/kg 1.0 < 1.0 < 1.0 < Trans-1,3-Dichloropropene N 2760 μg/kg 10 < 10								< 10
$ \begin{array}{llllllllllllllllllllllllllllllllllll$					_			< 1.0
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$								< 1.0
Tetrachloroethene U 2760 μg/kg 1.0 < 1.0 < 1.0 < 1,3-Dichloropropane N 2760 μg/kg 2.0 < 2.0 < 2.0 <								< 10
1,3-Dichloropropane N 2760 µg/kg 2.0 < 2.0 < 2.0 <								< 1.0
Dibromochioromethane N 2760 µg/kg TU < TU < TU < TU <								< 2.0
								< 10 < 5.0



Client: Geosphere Environmental Ltd			mtest Jo		18-01626	18-01626	18-01626
Quotation No.: Q17-10179	(st Sam		566454	566457	566472
Order No.:			nt Samp		BHC15	BHC15	BHC22
		Cli	ent Sam		J7	J10	J4
				e Type:	SOIL	SOIL	SOIL
			Top De		3.7	6.7	2.0
			17-Jan-2018	17-Jan-2018	17-Jan-2018		
Determinand	Accred.	SOP	Units	LOD			
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-01626	18-01626	18-01626
Quotation No.: Q17-10179	(st Sam		566454	566457	566472
Order No.:			nt Samp		BHC15	BHC15	BHC22
		Cli	ent Sam		J7	J10	J4
				e Type:	SOIL	SOIL	SOIL
			Top Dep		3.7	6.7	2.0
			Date Sa	ampled:	17-Jan-2018	17-Jan-2018	17-Jan-2018
Determinand	Accred.	SOP	Units	LOD			
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluorene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Carbazole	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N N	2790	mg/kg mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg mg/kg	0.50	< 0.50	< 0.50	< 0.50



Results - Soil

Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-01626	18-01626	18-01626
Quotation No.: Q17-10179		Chemte	est Sam	ple ID.:	566454	566457	566472
Order No.:		Clie	nt Samp	le Ref.:	BHC15	BHC15	BHC22
		Cli	ent Sam	ple ID.:	J7	J10	J4
			Sampl	е Туре:	SOIL	SOIL	SOIL
			Top Dep	oth (m):	3.7	6.7	2.0
		Date Sampled:				17-Jan-2018	17-Jan-2018
Determinand	Accred.	SOP	Units	LOD			
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

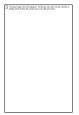
Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-02499-1		
Initial Date of Issue:	06-Feb-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	29-Jan-2018
Order No.:	2543, GI	Date Instructed:	31-Jan-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	06-Feb-2018
Date Approved:	06-Feb-2018		
Approved By:			



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179	(st Sam		570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6 SOIL	J9
		Sample Type:				SOIL
			Top De	. ,	2.50	5.30
			Date Sa		23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP				
Moisture	N	2030	%	0.020	20	14
рН	U	2010		N/A	6.0	
Boron (Hot Water Soluble)	U		mg/kg	0.40	< 0.40	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.021	
Cyanide (Free)	U		mg/kg	0.50	< 0.50	
Cyanide (Total)	U		mg/kg	0.50	< 0.50	
Ammonium (Extractable)	U	2425		0.50	3.0	
Sulphate (Total)	U	2430	%	0.010	0.088	
Arsenic	U		mg/kg	1.0	18	
Cadmium	U	2450	0	0.10	0.21	
Chromium	U	2450	mg/kg	1.0	26	
Copper	U	2450	mg/kg	0.50	20	
Mercury	U	2450	mg/kg	0.10	0.31	
Nickel	U	2450	mg/kg	0.50	33	
Lead	U	2450) י	0.50	22	
Selenium	U	2450		0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	46	
Chromium (Hexavalent)	N	2490	0	0.50	< 0.50	
Organic Matter	U	2625	%	0.40	0.76	
Aliphatic TPH >C5-C6	N	2680) י	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	0	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680		10.0	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U		mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700		0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6	J9
		Sample Type: Top Depth (m):		SOIL	SOIL	
				2.50	5.30	
			Date Sa	ampled:	23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP	Units	LOD		
Phenanthrene	U	2700	mg/kg	0.10	0.51	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	1.5	< 0.10
Pyrene	U	2700	mg/kg	0.10	1.5	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	0.90	< 0.10
Chrysene	U	2700	mg/kg	0.10	0.98	< 0.10
Benzo[b]fluoranthene	U	2700		0.10	1.0	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	0.57	< 0.10
Benzo[a]pyrene	U	2700		0.10	0.85	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	0.40	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	0.51	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	8.7	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	Ü	2760	µg/kg	1.0	< 1.0	< 1.0
Bromomethane	Ü	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	Ü	2760		1.0	< 1.0	< 1.0
1.1-Dichloroethane	Ü	2760		1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760		1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	Ü	2760		1.0	< 1.0	< 1.0
Tetrachloromethane	Ü	2760	µg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	Ü	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	Ü	2760		1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760		1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N		μg/kg	10	< 10	< 1.0
1,1,2-Trichloroethane	U	2760		10	< 10	< 10
Tetrachloroethene	Ü	2760		1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg μg/kg	10	< 10	< 10
1.2-Dibromoethane	U	2760	μg/kg μg/kg	5.0	< 5.0	< 5.0



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179			est Sam		570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6 SOIL	J9
		Sample Type:				SOIL
			Top Dep		2.50	5.30
			Date Sa		23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP				
Chlorobenzene	U	2760		1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	< 2.0
Ethylbenzene	U	2760		1.0	< 1.0	< 1.0
m & p-Xylene	U	2760		1.0	< 1.0	< 1.0
o-Xylene	U	2760		1.0	< 1.0	< 1.0
Styrene	U	2760		1.0	< 1.0	< 1.0
Tribromomethane	N	2760		1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760		1.0	< 1.0	< 1.0
Bromobenzene	U	2760		1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760		50	< 50	< 50
N-Propylbenzene	N	2760		1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760		1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760		1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760		1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	100	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760		1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760		50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760		1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760		1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760		2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	5	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790		0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790		0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	< 0.50	< 0.50
Hexachloroethane	N	2790		0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790		0.50	< 0.50	< 0.50
4-Methylphenol	U	2790		0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790		0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-02499	18-02499
Quotation No.: Q17-10179			st Sam		570546	570549
Order No.: 2543, GI			nt Samp		BHC17	BHC17
		Cli	ent Sam		J6	J9
		Sample Type:		SOIL	SOIL	
			Top De	. ,	2.50	5.30
			Date Sa		23-Jan-2018	23-Jan-2018
Determinand	Accred.	SOP				
2,4-Dimethylphenol	N	2790	0	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U		mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U		mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U		mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790		0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790		0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790		0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790		0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50
Dibenzofuran	U		mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790		0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790		0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790		0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50





Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-02499	18-02499
Quotation No.: Q17-10179	(Chemte	st Sam	570546	570549	
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC17	BHC17
		Cli	ent Sam	J6	J9	
			Sampl	SOIL	SOIL	
			Top Dep	2.50	5.30	
			Date Sa	23-Jan-2018	23-Jan-2018	
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	GC-MŚ	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

i illai Neport			
Report No.:	18-02644-1		
Initial Date of Issue:	08-Feb-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	Lake Lothing, Lowestoft 2543 GI		
Quotation No.:	Q17-10179	Date Received:	30-Jan-2018
Order No.:		Date Instructed:	01-Feb-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	07-Feb-2018
Date Approved:	08-Feb-2018		
Approved By:			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.:		Clie	nt Samp	le Ref.: e Type:	BHC18			
		SOIL						
			Top De		0.1			
	Date Samp				26-Jan-2018			
Determinand	Accred.	SOP	Units					
рН	U	1010		N/A	8.7			
Ammonia (Free) as N	U	1220	mg/l	0.050	0.14			
Sulphate	U	1220	mg/l	1.0	15			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.7			
Boron (Dissolved)	U	1450	μg/l	20	< 20			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Copper (Dissolved)	U	1450	μg/l	1.0	1.2			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Lead (Dissolved)	U	1450	μg/l	1.0	1.8			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	3.0			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(st Sam		571137			
Order No.:		Clie	nt Samp	le Ref.:	BHC18			
			Sampl	е Туре:	SOIL			
			Top Dep		0.1			
		Date Sampled:						
Determinand	Accred.	SOP	Units	LOD				
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
Toluene	U	1760	μg/l	1.0	< 1.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			





Client: Geosphere Environmental Ltd		18-02644			
Quotation No.: Q17-10179	(ple ID.:	571137		
Order No.:		Clier	nt Samp	le Ref.:	BHC18
			Sampl	е Туре:	SOIL
			Top De	oth (m):	0.1
			Date Sa	ampled:	26-Jan-2018
Determinand	Accred.				
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd Chemtest Job No.:								
Client: Geosphere Environmental Ltd		ple ID.:	18-02644 571137					
Quotation No.: Q17-10179 Order No.:	<u> </u>		nt Samp					
Order No.:		Cilei			BHC18			
				e Type:	SOIL			
			Top Dep		0.1			
			Date Sa		26-Jan-2018			
				os Lab:	COVENTRY			
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-			
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected			
Moisture	N	2030	%	0.020	6.8			
pH	U	2010		N/A	8.4			
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.91			
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010			
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50			
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50			
Ammonium (Extractable)	U	2425	mg/kg	0.50	2.0			
Sulphate (Total)	U	2430	%	0.010	0.057			
Arsenic	U	2450	mg/kg	1.0	12			
Cadmium	Ü	2450	mg/kg	0.10	0.12			
Chromium	U	2450	mg/kg	1.0	14			
Copper	Ü	2450	mg/kg	0.50	36			
Mercury	Ü	2450	mg/kg	0.10	0.80			
Nickel	Ü	2450	mg/kg	0.50	18			
Lead	Ü	2450	mg/kg	0.50	52			
Selenium	Ü	2450	mg/kg	0.20	0.25			
Zinc	Ü	2450	mg/kg	0.50	83			
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50			
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C10-C12	Ü	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C12-C16	Ü	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C16-C21	Ü	2680	mg/kg	1.0	< 1.0			
Aliphatic TPH >C21-C35	Ü	2680	mg/kg	1.0	12			
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0			
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	12			
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C8-C10	Ü	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C10-C12	Ü	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C12-C16	Ü	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C16-C21	Ü	2680	mg/kg	1.0	< 1.0			
Aromatic TPH >C21-C35	Ü	2680	mg/kg	1.0	24			
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0			
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	24			
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	36			
Naphthalene	U	2700	mg/kg	0.10	0.44			
4			mg/kg	5.10	J. TT			



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(est Sam		571137			
Order No.:		Clie	nt Samp		BHC18			
				e Type:	SOIL			
			Top Dep		0.1			
			Date Sa	ampled: os Lab:	26-Jan-2018			
		COVENTRY						
Determinand	Accred.	SOP						
Acenaphthene	U	1	mg/kg	0.10	0.57			
Fluorene	U		mg/kg	0.10	0.40			
Phenanthrene	U		mg/kg	0.10	4.4			
Anthracene	U		mg/kg	0.10	2.2			
Fluoranthene	U		mg/kg	0.10	15			
Pyrene	U		mg/kg	0.10	14			
Benzo[a]anthracene	U	+	mg/kg	0.10	7.5			
Chrysene	U		mg/kg	0.10	6.7			
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	9.2			
Benzo[k]fluoranthene	U		mg/kg	0.10	3.8			
Benzo[a]pyrene	U	2700	0 0	0.10	7.3			
Indeno(1,2,3-c,d)Pyrene	U	2700	0 0	0.10	4.8			
Dibenz(a,h)Anthracene	U	2700		0.10	1.3			
Benzo[g,h,i]perylene	U	2700		0.10	5.1			
Total Of 16 PAH's	U	2700	0	2.0	84			
Dichlorodifluoromethane	N	2760		1.0	< 1.0			
Chloromethane	U	2760		1.0	< 1.0			
Vinyl Chloride	U	2760		1.0	< 1.0			
Bromomethane	U	2760		20	< 20			
Chloroethane	N	2760)	2.0	< 2.0			
Trichlorofluoromethane	U	2760		1.0	< 1.0			
1,1-Dichloroethene	U	2760		1.0	< 1.0			
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0			
1,1-Dichloroethane	U	2760		1.0	< 1.0			
cis 1,2-Dichloroethene	U	2760		1.0	< 1.0			
Bromochloromethane	N	2760		5.0	< 5.0			
Trichloromethane	U	2760		1.0	< 1.0			
1,1,1-Trichloroethane	U	2760		1.0	< 1.0			
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0			
1,1-Dichloropropene	N	2760		1.0	< 1.0			
Benzene	U	2760		1.0	< 1.0			
1,2-Dichloroethane	U	2760		2.0	< 2.0			
Trichloroethene	U	2760		1.0	< 1.0			
1,2-Dichloropropane	U	2760		1.0	< 1.0			
Dibromomethane	U	2760		1.0	< 1.0			
Bromodichloromethane	U	2760		5.0	< 5.0			
cis-1,3-Dichloropropene	N	2760)	10	< 10			
Toluene	U	2760		1.0	< 1.0			
Trans-1,3-Dichloropropene	N	2760		10	< 10			
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10			
Tetrachloroethene	U	2760		1.0	< 1.0			
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0			



Client: Geosphere Environmental Ltd		ob No.:			
Quotation No.: Q17-10179			st Sam		571137
Order No.:		Clie	nt Samp	le Ref.:	BHC18
		e Type:	SOIL		
			Top Dep	oth (m):	0.1
			Date Sa	ampled:	26-Jan-2018
			Asbest	os Lab:	COVENTRY
Determinand	Accred.	SOP	Units	LOD	
Dibromochloromethane	N	2760	μg/kg	10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0
Chlorobenzene	U	2760		1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0
Ethylbenzene	U	2760		1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0
o-Xylene	U	2760		1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0
N-Nitrosodimethylamine	Ü	2790		0.50	< 0.50
Phenol	U	2790)	0.50	< 0.50
2-Chlorophenol	Ü	2790	mg/kg	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	Ü	2790	mg/kg	0.50	< 0.50
1,3-Dichlorobenzene	Ü	2790	mg/kg	0.50	< 0.50
1,4-Dichlorobenzene	N	2790		0.50	< 0.50
1,2-Dichlorobenzene	Ü	2790	mg/kg	0.50	< 0.50
2-Methylphenol	U	2790		0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	Ü	2790	0	0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50
Nitrobenzene	U		mg/kg	0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.:		Clie	nt Samp		BHC18			
				e Type:	SOIL			
			Top Dep		0.1			
			Date Sa		26-Jan-2018			
			Asbest		COVENTRY			
Determinand	Accred.	SOP						
Isophorone	U	_	mg/kg	0.50	< 0.50			
2-Nitrophenol	N	2790	,	0.50	< 0.50			
2,4-Dimethylphenol	N	2790		0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50			
2,4-Dichlorophenol	U	2790)	0.50	< 0.50			
1,2,4-Trichlorobenzene	U	2790	5	0.50	< 0.50			
Naphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Chloroaniline	N	2790		0.50	< 0.50			
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50			
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50			
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50			
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50			
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50			
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50			
2-Chloronaphthalene	U	2790		0.50	< 0.50			
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50			
Acenaphthylene	U	2790		0.50	< 0.50			
Dimethylphthalate	U	2790		0.50	< 0.50			
2,6-Dinitrotoluene	U	2790		0.50	< 0.50			
Acenaphthene	U	2790	mg/kg	0.50	< 0.50			
3-Nitroaniline	N		mg/kg	0.50	< 0.50			
Dibenzofuran	U	1	mg/kg	0.50	< 0.50			
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50			
2,4-Dinitrotoluene	U	2790		0.50	< 0.50			
Fluorene	U	2790		0.50	< 0.50			
Diethyl Phthalate	U	2790		0.50	< 0.50			
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50			
Azobenzene	U	2790		0.50	< 0.50			
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50			
Hexachlorobenzene	U	2790)	0.50	< 0.50			
Pentachlorophenol	N	2790		0.50	< 0.50			
Phenanthrene	U	2790		0.50	< 0.50			
Anthracene	U	2790		0.50	< 0.50			
Carbazole	U	2790	mg/kg	0.50	< 0.50			
Di-N-Butyl Phthalate	U		mg/kg	0.50	< 0.50			
Fluoranthene	U		mg/kg	0.50	1.1			
Pyrene	U	2790		0.50	1.0			
Butylbenzyl Phthalate	U	2790		0.50	< 0.50			
Benzo[a]anthracene	Ü	2790)	0.50	0.69			
			mg/kg					



Project: Lake Lotning, Lowestoft 2543 Gi						
Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-02644	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.:				
				е Туре:	SOIL	
			Top Dep	oth (m):	0.1	
			Date Sa	ampled:	26-Jan-2018	
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	1.1	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	0.77	
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	0.57	
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- I/S Insufficient Sample
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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Amended Report

Report No.: 18-02840-2

Initial Date of Issue: 12-Feb-2018 Date of Re-Issue: 15-Feb-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Project 2543 Gl Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 01-Feb-2018

Order No.: Date Instructed: 01-Feb-2018

No. of Samples: 1

Turnaround (Wkdays): 7 Results Due: 09-Feb-2018

Date Approved: 12-Feb-2018

Approved By:					
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Details: Robert Monk, Technical Manager



Results - 2 Stage WAC

Project: 2543 GI Lake Lothing, Lowestoft

Project: 2543 Gi Lake Lotning, Lowesto									
Chemtest Job No:	18-02840						Landfill V	Vaste Acceptano	e Criteria
Chemtest Sample ID:	572076							Limits	
Sample Ref:	BHC18							Stable, Non-	
Sample ID:	J1							reactive	Hazardous
Top Depth(m):	0.1						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:	26-Jan-2018							hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			2.2	3	5	6
Loss On Ignition	2610	U	%			3.5			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			26	500		
Total (Of 17) PAH's	2700	N	mg/kg			63	100		
pH	2010	U				8.9		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.016		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L/	S 10 l/kg
Arsenic	1450	U	< 0.0010	0.0041	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0023	0.018	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.0010	< 0.050	< 0.050	0.5	10	70
Copper	1450	U	0.0026	0.0084	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0017	0.0021	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	0.0079	< 0.050	0.066	0.4	10	40
Lead	1450	U	< 0.0010	0.0098	< 0.010	0.082	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	0.021	< 0.50	< 0.50	4	50	200
Chloride	1220	U	1.0	4.6	< 10	40	800	15000	25000
Fluoride	1220	U	1.3	0.39	2.6	5.4	10	150	500
Sulphate	1220	U	5.5	21	11	180	1000	20000	50000
Total Dissolved Solids	1020	N	50	23	100	270	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	15	14	< 50	140	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	9.3				

Leachate Test Information					
Leachant volume 1st extract/l	0.332				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.289				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

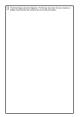
Sample Retention and Disposal

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All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.:	18-02978-1		
Initial Date of Issue:	12-Feb-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing, Lowestoft		
Quotation No.:		Date Received:	01-Feb-2018
Order No.:	2543 GI	Date Instructed:	01-Feb-2018
No. of Samples:	1		
Turnaround (Wkdays):	7	Results Due:	09-Feb-2018
Date Approved:	12-Feb-2018		
Approved By:			

Robert Monk, Technical Manager



Results - 2 Stage WAC

Project: 2543,GI Lake Lothing, Lowestoft

Project: 2543,Gl Lake Lothing, Lowes									
Chemtest Job No:	18-02978	<u> </u>	<u> </u>		<u> </u>		Landfill V	Vaste Acceptano	ce Criteria
Chemtest Sample ID:	572715							Limits	
Sample Ref:	BHC17							Stable, Non-	
Sample ID:								reactive	Hazardous
Top Depth(m):	2.50						Inert Waste	hazardous	Waste
Bottom Depth(m):							Landfill	waste in non-	Landfill
Sampling Date:								hazardous	
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			[A] 0.23	3	5	6
Loss On Ignition	2610	U	%			3.6			10
Total BTEX	2760	U	mg/kg			[A] < 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			[A] < 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				9.1		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.041		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L	/S 10 l/kg
Arsenic	1450	U	0.0017	0.0041	< 0.050	< 0.050	0.5	2	25
Barium	1450	U	0.0091	0.032	< 0.50	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.00010	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.0089	0.028	< 0.050	0.25	0.5	10	70
Copper	1450	U	0.0026	0.0061	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0041	0.0027	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.0036	0.014	< 0.050	0.12	0.4	10	40
Lead	1450	U	0.0019	0.0058	< 0.010	0.051	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.0020	0.0013	< 0.010	0.014	0.1	0.5	7
Zinc	1450	U	0.012	0.025	< 0.50	< 0.50	4	50	200
Chloride	1220	U	< 1.0	1.5	< 10	12	800	15000	25000
Fluoride	1220	U	0.12	0.29	< 1.0	2.6	10	150	500
Sulphate	1220	U	23	21	45	210	1000	20000	50000
Total Dissolved Solids	1020	N	43	55	84	530	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	27	14	53	160	500	800	1000

Solid Information					
Dry mass of test portion/kg	0.175				
Moisture (%)	19				

Leachate Test Information					
Leachant volume 1st extract/l	0.309				
Leachant volume 2nd extract/l	1.400				
Eluant recovered from 1st extract/l	0.308				

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
572715	BHC17			Α	Amber Glass 250ml
572715	BHC17			Α	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Initial Date of Issue: 19-Feb-2018 Client Geosphere Environmental Ltd Client Address: Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ Contact(s): Stephen Gilchrist Project 2543 91 LAKE LOTHING, LOWESTOFT Quotation No.: Q17-10179 Date Received: 07-Feb-2018 Order No.: Date Instructed: 09-Feb-2018 Date Approved: 16-Feb-2018				
Client Address: Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ Contact(s): Stephen Gilchrist Project 2543 91 LAKE LOTHING, LOWESTOFT Quotation No.: Q17-10179 Date Received: 07-Feb-2018 Order No.: Date Instructed: 09-Feb-2018 No. of Samples: 2 Turnaround (Wkdays): 5 Results Due: 15-Feb-2018	Report No.:	18-03574-1		
Client Address: Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ Contact(s): Stephen Gilchrist Project 2543 91 LAKE LOTHING, LOWESTOFT Quotation No.: Q17-10179 Date Received: 07-Feb-2018 No. of Samples: 2 Turnaround (Wkdays): 5 Results Due: 15-Feb-2018	Initial Date of Issue:	19-Feb-2018		
Ipswich Road Brightwell Suffolk IP10 0BJ	Client	Geosphere Environmental Ltd		
Project 2543 91 LAKE LOTHING, LOWESTOFT Quotation No.: Q17-10179 Date Received: 07-Feb-2018 Order No.: Date Instructed: 09-Feb-2018 No. of Samples: 2 Turnaround (Wkdays): 5 Results Due: 15-Feb-2018 Date Approved: 16-Feb-2018	Client Address:	Ipswich Road Brightwell Suffolk		
LOWESTOFT Quotation No.: Q17-10179 Date Received: 07-Feb-2018 Order No.: Date Instructed: 09-Feb-2018 No. of Samples: 2 Turnaround (Wkdays): 5 Results Due: 15-Feb-2018 Date Approved: 16-Feb-2018	Contact(s):	Stephen Gilchrist		
Order No.: No. of Samples: Turnaround (Wkdays): Date Instructed: Results Due: 15-Feb-2018	Project			
No. of Samples: 2 Turnaround (Wkdays): 5 Results Due: 15-Feb-2018 Date Approved: 16-Feb-2018	Quotation No.:	Q17-10179	Date Received:	07-Feb-2018
Turnaround (Wkdays): 5 Results Due: 15-Feb-2018 Date Approved: 16-Feb-2018	Order No.:		Date Instructed:	09-Feb-2018
Date Approved: 16-Feb-2018	No. of Samples:	2		
••	Turnaround (Wkdays):	5	Results Due:	15-Feb-2018
Approved By:	Date Approved:	16-Feb-2018		
	Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.:		Client Sample Ref.:					
		Client Sample ID.:					
				e Type:	SOIL		
			Top De		3.00		
				ampled:	05-Feb-2018		
Determinand	Accred.	SOP	Units				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	310		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	310		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	7.9		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	7.9		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	320		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	575449	
Order No.:		Clie	nt Samp	le Ref.:	BHC19	
		Cli	ent Sam	ple ID.:	J6	
				е Туре:	SOIL	
			Top De	oth (m):	3.00	
			Date Sa	ampled:	05-Feb-2018	
Determinand	Accred.	SOP	Units	LOD		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	
Isophorone	N	1790	μg/l	0.50	< 0.50	
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	
Naphthalene	N	1790	μg/l	0.50	< 0.50	
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Acenaphthene	N	1790	μg/l	0.50	< 0.50	
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	
Fluorene	N	1790	μg/l	0.50	< 0.50	
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	
Azobenzene	N	1790	μg/l	0.50	< 0.50	
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	
Phenanthrene	N	1790	μg/l	0.50	< 0.50	
Anthracene	N	1790	μg/l	0.50	< 0.50	
Carbazole	N	1790	μg/l	0.50	< 0.50	
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	
Fluoranthene	N	1790	μg/l	0.50	< 0.50	



Results - Leachate

TIOCOL 2545 51 LAKE LOTTING, LOWLOTOL I							
Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	575449		
Order No.:			nt Samp		BHC19		
		Cli	ent Sam	ple ID.:	J6		
			Sampl	е Туре:	SOIL		
			Top De	oth (m):	3.00		
			Date Sa	ampled:	05-Feb-2018		
Determinand	Accred.	SOP	Units	LOD			
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N 1790 μg/l 0.50				< 0.50		
Dibenz(a,h)Anthracene	N	< 0.50					
Benzo[g,h,i]perylene	N	< 0.50					
Total Phenols	U	1920	mg/l	0.030	< 0.030		



Client: Geosphere Environmental Ltd				ob No.:	18-03574	18-03574
Quotation No.: Q17-10179	(st Sam		575449	575450
Order No.:			nt Samp		BHC19	BHC19
		Cli	ent Sam		J6	J7
				e Type:	SOIL	SOIL
			Top De		3.00	4.00
			Date Sa		05-Feb-2018	05-Feb-2018
Determinand	Accred.		Units			
Moisture	N	2030	%	0.020	17	15
Aliphatic TPH >C5-C6	N		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C6-C8	N		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C8-C10	U		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C10-C12	U		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	50	33
Aliphatic TPH >C16-C21	U	2680	mg/kg		< 1.0	< 1.0
Aliphatic TPH >C21-C35	U		mg/kg		< 1.0	< 1.0
Aliphatic TPH >C35-C44	N		mg/kg		< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N		mg/kg	5.0	50	33
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg		< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680			< 5.0	< 5.0
Total Petroleum Hydrocarbons	N		mg/kg		50	34
Naphthalene	U		mg/kg		< 0.10	< 0.10
Acenaphthylene	U		mg/kg		< 0.10	< 0.10
Acenaphthene	U		mg/kg	0.10	< 0.10	< 0.10
Fluorene	U		mg/kg		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Pyrene	U	2700	mg/kg		< 0.10	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg		< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg		< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760		2.0	< 2.0	< 2.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-03574
Quotation No.: Q17-10179		Chemtest Sample ID.:			575449	575450
Order No.:			nt Samp		BHC19	BHC19
		Client Sample ID.:			J6	J7
				е Туре:	SOIL	SOIL
			Top De		3.00	4.00
			Date Sa		05-Feb-2018	05-Feb-2018
Determinand	Accred.	SOP		LOD		
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760		1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760		1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760		1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760		1.0	< 1.0	< 1.0
Dibromomethane	U	2760		1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760		5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760		1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760		1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	U	2760		1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	< 2.0
Ethylbenzene	U	2760		1.0	< 1.0	< 1.0
m & p-Xylene	U	2760		1.0	< 1.0	< 1.0
o-Xylene	U	2760		1.0	< 1.0	< 1.0
Styrene	U	2760		1.0	< 1.0	< 1.0
Tribromomethane	N	2760		1.0	2.5	< 1.0
Isopropylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	Ü	2760		1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760		1.0	< 1.0	< 1.0
2-Chlorotoluene	Ü	2760	1.0.0	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1.3-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-03574
Quotation No.: Q17-10179	(st Sam		575449	575450
Order No.:		Client Sample Ref.:			BHC19	BHC19
		Cli	ent Sam		J6	J7
				e Type:	SOIL	SOIL
			Top Dep		3.00	4.00
			Date Sa		05-Feb-2018	05-Feb-2018
Determinand	Accred.		Units			
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760		1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760		1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790		0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N		mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790		0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U		mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	_	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U		mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	0	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-03574
Quotation No.: Q17-10179			est Sam		575449	575450
Order No.:			nt Samp		BHC19	BHC19
		Cli	ent Sam		J6	J7
				e Type:	SOIL	SOIL
			Top De		3.00	4.00
				ampled:	05-Feb-2018	05-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790		0.50	< 0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790		0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg		< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790		0.50	< 0.50	< 0.50
Phenanthrene	U	2790		0.50	< 0.50	< 0.50
Anthracene	U	2790		0.50	< 0.50	< 0.50
Carbazole	U	2790		0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790		0.50	< 0.50	< 0.50
Fluoranthene	U	2790		0.50	< 0.50	< 0.50
Pyrene	U	2790		0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790			< 0.50	< 0.50
Chrysene	U	2790			< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	0	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790		0.50	< 0.50	< 0.50
Benzo[a]pyrene	Ü	2790		0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	Ü	2790	3 3	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790		0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790			< 0.50	< 0.50
PCB 28	Ü	2815			< 0.010	
PCB 81	N	2815				< 0.010
PCB 52	Ü	2815			< 0.010	
PCB 77	N	2815				< 0.010
PCB 105	N	2815				< 0.010
PCB 90+101	Ü	2815			< 0.010	
PCB 114	N	2815		0.010		< 0.010
PCB 118	Ü	2815			< 0.010	
PCB 118	N	2815				< 0.010
PCB 153	Ü	2815			< 0.010	
PCB 123	N	2815				< 0.010
PCB 138	Ü	2815			< 0.010	1 0.0.0





Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-03574	18-03574
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	575449	575450
Order No.:		Clie	nt Samp	le Ref.:	BHC19	BHC19
		Cli	ent Sam	ple ID.:	J6	J7
				е Туре:	SOIL	SOIL
			Top Dep	oth (m):	3.00	4.00
			Date Sa	ampled:	05-Feb-2018	05-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
PCB 126	N	2815	mg/kg	0.010		< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Details:

Report No.:	18-05699-1		
Initial Date of Issue:	05-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist Joe Glenwright		
Project	2543,91 LAKE LOTHING		
Quotation No.:	Q17-10179	Date Received:	27-Feb-2018
Order No.:	2543,91	Date Instructed:	27-Feb-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	05-Mar-2018
Date Approved:	05-Mar-2018		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp		BHC20	BHC24
		Cli	ent Sam	•	J7	J6
				e Type:	SOIL	SOIL
			Top De		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Moisture	N	2030	%	0.020	9.5	11
pH	U	2010		N/A	10.4	8.5
Boron (Hot Water Soluble)	U		mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.034	< 0.010
Cyanide (Free)	U		mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U		mg/kg		< 0.50	< 0.50
Ammoniacal Nitrogen	U		mg/kg	0.50	3.9	1.2
Sulphate (Total)	U		mg/kg	100	150	< 100
Arsenic	U	2450	mg/kg	1.0	3.6	1.5
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	10	3.4
Copper	U	2450	mg/kg	0.50	3.9	1.3
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	6.1	1.5
Lead	U	2450	mg/kg	0.50	5.5	4.4
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	12	4.2
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	< 0.40	< 0.40
Aliphatic TPH >C5-C6	N		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg		< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg		< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam	J7	J6	
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Phenanthrene	U		mg/kg		< 0.10	< 0.10
Anthracene	U		mg/kg		< 0.10	< 0.10
Fluoranthene	U		mg/kg		< 0.10	< 0.10
Pyrene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U		mg/kg	0.10	< 0.10	< 0.10
Chrysene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760		5.0	< 5.0	< 5.0



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg		< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:			585039	585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam		J7	J6
				e Type:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U		mg/kg		< 0.50	< 0.50
2,4-Dichlorophenol	U		mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U		mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U		mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N		mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U		mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U		mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N		mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U		mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U		mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U		mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179	(est Sam	585039	585049	
Order No.: 2543,91			nt Samp		BHC20	BHC24
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top De		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 52	U	2815	mg/kg	0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 90+101	U	2815	mg/kg	0.010		< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	U	2815	mg/kg	0.010		< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 153	U	2815	mg/kg	0.010		< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 138	U	2815	mg/kg	0.010		< 0.010
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 180	U	2815	mg/kg	0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Details:

Report No.:	18-05699-1		
Initial Date of Issue:	05-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist Joe Glenwright		
Project	2543,91 LAKE LOTHING		
Quotation No.:	Q17-10179	Date Received:	27-Feb-2018
Order No.:	2543,91	Date Instructed:	27-Feb-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	05-Mar-2018
Date Approved:	05-Mar-2018		
Approved By:			

Martin Dyer, Laboratory Manager



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp		BHC20	BHC24
		Cli	ent Sam	•	J7	J6
				e Type:	SOIL	SOIL
			Top De		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Moisture	N	2030	%	0.020	9.5	11
pH	U	2010		N/A	10.4	8.5
Boron (Hot Water Soluble)	U		mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.034	< 0.010
Cyanide (Free)	U		mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U		mg/kg		< 0.50	< 0.50
Ammoniacal Nitrogen	U		mg/kg	0.50	3.9	1.2
Sulphate (Total)	U		mg/kg	100	150	< 100
Arsenic	U	2450	mg/kg	1.0	3.6	1.5
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U	2450	mg/kg	1.0	10	3.4
Copper	U	2450	mg/kg	0.50	3.9	1.3
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	6.1	1.5
Lead	U	2450	mg/kg	0.50	5.5	4.4
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	12	4.2
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	< 0.40	< 0.40
Aliphatic TPH >C5-C6	N		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg		< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg		< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179	(Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam	J7	J6	
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Phenanthrene	U		mg/kg		< 0.10	< 0.10
Anthracene	U		mg/kg		< 0.10	< 0.10
Fluoranthene	U		mg/kg		< 0.10	< 0.10
Pyrene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U		mg/kg	0.10	< 0.10	< 0.10
Chrysene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760		5.0	< 5.0	< 5.0



Client: Geosphere Environmental Ltd			mtest Jo	18-05699 585039	18-05699	
Quotation No.: Q17-10179		Chemtest Sample ID.:				585049
Order No.: 2543,91			nt Samp	BHC20	BHC24	
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg		< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179	•		est Sam	585039	585049	
Order No.: 2543,91		Client Sample Ref.: Client Sample ID.:			BHC20	BHC24
					J7	J6
				e Type:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units			
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U		mg/kg		< 0.50	< 0.50
2,4-Dichlorophenol	U		mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U		mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U		mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N		mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U		mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U		mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N		mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U		mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U		mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U		mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	18-05699	18-05699	
Quotation No.: Q17-10179			st Sam	585039	585049	
Order No.: 2543,91			nt Samp		BHC20	BHC24
		Cli	ent Sam		J7	J6
				е Туре:	SOIL	SOIL
			Top Dep		4.7	2.5
			Date Sa		22-Feb-2018	22-Feb-2018
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
PCB 28	U	2815	mg/kg	0.010		< 0.010
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 52	U	2815	mg/kg	0.010		< 0.010
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 90+101	U	2815	mg/kg	0.010		< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	U	2815	mg/kg	0.010		< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 153	U	2815	mg/kg	0.010		< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 138	U	2815	mg/kg	0.010		< 0.010
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 180	U	2815	mg/kg	0.010		< 0.010
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815	mg/kg	0.010	< 0.010	
PCB 167	N	2815	mg/kg	0.010	< 0.010	
PCB 169	N	2815	mg/kg	0.010	< 0.010	
PCB 189	N	2815	mg/kg	0.010	< 0.010	
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	18-06475-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist Lianne Fountain		
Project	2543 GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	08-Mar-2018
Order No.:		Date Instructed:	04-Apr-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	10-Apr-2018
Date Approved:	11-Apr-2018		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Job No.:	18-06475					
Quotation No.: Q17-10179		Chemt	est San	nple ID.:	588382			
Order No.:		Client Sample Ref.: Client Sample ID.:						
		BHC26 J2						
		Sample Type:						
				epth (m):	0.7			
			Date S	Sampled:	26-Feb-2018			
Determinand	Accred.	SOP	Units	LOD				
pH	U	1010		N/A	7.6			
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050			
Sulphate	U	1220	mg/l	1.0	9.9			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.9			
Boron (Dissolved)	U	1450	μg/l	20	41			
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080			
Chromium (Dissolved)	U	1450	μg/l	1.0	1.2			
Copper (Dissolved)	U	1450	μg/l	1.0	4.6			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	1.1			
Lead (Dissolved)	U	1450	μg/l	1.0	3.7			
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Zinc (Dissolved)	U	1450	μg/l	1.0	3.4			
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			



Results - Leachate

Project. 2545 Gi Lake Lottling					18-06475			
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.:		Cli	ent Sam	ple Ref.:	BHC26			
		С	lient Sai	mple ID.:	J2			
			Samp	ole Type:	SOIL			
			Top Do	epth (m):	0.7			
			Date S	Sampled:	26-Feb-2018			
Determinand	Accred.	SOP	Units	LOD				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	[B] < 1.0			
Toluene	U	1760	μg/l	1.0	[B] < 1.0			
Ethylbenzene	U							
m & p-Xylene	U							
o-Xylene	U	[B] < 1.0						
Methyl Tert-Butyl Ether	N	1760	μg/l mg/l	0.0010	[B] < 0.0010			
Total Phenols	U	1920	mg/l	0.030	< 0.030			



Client: Geosphere Environmental Ltd			mtest Jo	18-06475	18-06475	
Quotation No.: Q17-10179			st Sam	588382	588384	
Order No.:		Client Sample Ref.:				BHC26
		Cli	ent Sam		J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	8.7	16
pH	U	2010		N/A	[B] 8.8	[B] 4.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.71	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.016	0.020
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	[B] 2.3	[B] 2.2
Sulphate (Total)	U	2430	%	0.010	[B] 0.026	[B] 0.033
Arsenic	U	2450	mg/kg	1.0	4.7	25
Cadmium	U	2450	mg/kg	0.10	0.22	< 0.10
Chromium	U	2450	mg/kg	1.0	6.8	29
Copper	U	2450	mg/kg	0.50	9.0	12
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	7.3	16
Lead	U	2450	mg/kg	0.50	19	11
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	27	54
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		[B] 0.47
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06475	18-06475	
Quotation No.: Q17-10179	(est Sam		588382	588384
Order No.:		Client Sample Ref.:			BHC26	BHC26
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthylene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthene	U		mg/kg		[B] < 0.10	[B] < 0.10
Fluorene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Phenanthrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Anthracene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Fluoranthene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Chrysene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	[B] < 2.0	[B] < 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179			est Sam	588382	588384	
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top De	oth (m):	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg		[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			ntest Jo		18-06475	18-06475
Quotation No.: Q17-10179	(st Sam	588382	588384	
Order No.:		Client Sample Ref.:				BHC26
		Cli	ent Sam	ple ID.:	J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa	ampled:	26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	Ü	2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	0	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790		0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
• •	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U		mg/kg mg/kg		• •	
Acenaphthene	N N	2790 2790		0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	U			0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran		2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	_	0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790		0.50	[B] < 0.50	[B] < 0.50
Fluorene Diathyl Dhth slate	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-06475	18-06475
Quotation No.: Q17-10179		Chemte	st Sam	588382	588384	
Order No.:		Clie	nt Samp	le Ref.:	BHC26	BHC26
		Cli	ent Sam		J2	J4
			Sampl	е Туре:	SOIL	SOIL
			Top Dep		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 28	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 52	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 90+101	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 118	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 153	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 138	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 180	U	2815	mg/kg	0.010	[B] < 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	[B] < 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588382	BHC26	J2	26-Feb-2018	В	Amber Glass 250ml
588382	BHC26	J2	26-Feb-2018	В	Plastic Tub 500g
588384	BHC26	J4	26-Feb-2018	В	Amber Glass 250ml
588384	BHC26	J4	26-Feb-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	18-06475-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist Lianne Fountain		
Project	2543 GI Lake Lothing		
Quotation No.:	Q17-10179	Date Received:	08-Mar-2018
Order No.:		Date Instructed:	04-Apr-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	10-Apr-2018
Date Approved:	11-Apr-2018		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Che	emtest .	Job No.:	18-06475
Quotation No.: Q17-10179		Chemt	est San	nple ID.:	588382
Order No.:		Clie	ent Sam	ple Ref.:	BHC26
		С		mple ID.:	J2
				ole Type:	SOIL
				epth (m):	0.7
			Date S	Sampled:	26-Feb-2018
Determinand	Accred.	SOP	Units	LOD	
pH	U	1010		N/A	7.6
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050
Sulphate	U	1220	mg/l	1.0	9.9
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.9
Boron (Dissolved)	U	1450	μg/l	20	41
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	1.2
Copper (Dissolved)	U	1450	μg/l	1.0	4.6
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	1.1
Lead (Dissolved)	U	1450	μg/l	1.0	3.7
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	3.4
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Results - Leachate

Project. 2545 Gi Lake Lottling						
Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06475	
Quotation No.: Q17-10179		Chemtest Sample ID.:				
Order No.:		Cli	ent Sam	ple Ref.:	BHC26	
		С	lient Sai	mple ID.:	J2	
			Samp	ole Type:	SOIL	
			Top Do	epth (m):	0.7	
			Date S	Sampled:	26-Feb-2018	
Determinand	Accred.	SOP	Units	LOD		
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	
Chrysene	U	1700	μg/l	0.10	< 0.10	
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	
Benzene	U	1760	μg/l	1.0	[B] < 1.0	
Toluene	U	1760	μg/l	1.0	[B] < 1.0	
Ethylbenzene	U	1760	μg/l	1.0	[B] < 1.0	
m & p-Xylene	U	1760	μg/l	1.0	[B] < 1.0	
o-Xylene	U	1760	μg/l	1.0	[B] < 1.0	
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	[B] < 0.0010	
Total Phenols	U	1920	mg/l	0.030	< 0.030	



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179			st Sam		588382	588384
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam		J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	8.7	16
pH	U	2010		N/A	[B] 8.8	[B] 4.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.71	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.016	0.020
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	[B] 2.3	[B] 2.2
Sulphate (Total)	U	2430	%	0.010	[B] 0.026	[B] 0.033
Arsenic	U	2450	mg/kg	1.0	4.7	25
Cadmium	U	2450	mg/kg	0.10	0.22	< 0.10
Chromium	U	2450	mg/kg	1.0	6.8	29
Copper	U	2450	mg/kg	0.50	9.0	12
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	7.3	16
Lead	U	2450	mg/kg	0.50	19	11
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	27	54
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		[B] 0.47
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179	(est Sam		588382	588384
Order No.:			nt Samp		BHC26 J2	BHC26
		Client Sample ID.:				J4
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthylene	U		mg/kg		[B] < 0.10	[B] < 0.10
Acenaphthene	U		mg/kg		[B] < 0.10	[B] < 0.10
Fluorene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Phenanthrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Anthracene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Fluoranthene	U		mg/kg	0.10	[B] < 0.10	[B] < 0.10
Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Chrysene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	[B] < 0.10	[B] < 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	[B] < 2.0	[B] < 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179		Chemtest Sample ID.:			588382	588384
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam		J2	J4
				e Type:	SOIL	SOIL
			Top De	oth (m):	0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg		[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg		[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-06475	18-06475
Quotation No.: Q17-10179	(st Sam		588382	588384
Order No.:			nt Samp		BHC26	BHC26
		Cli	ent Sam	ple ID.:	J2	J4
			Sampl	e Type:	SOIL	SOIL
			Top De		0.7	2.3
			Date Sa	ampled:	26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	Ü	2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	0	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790		0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
• •	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U		mg/kg mg/kg		• •	
Acenaphthene	N N	2790 2790		0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	U			0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran		2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790		0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790		0.50	[B] < 0.50	[B] < 0.50
Fluorene Diathyl Dhth slate	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	0	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06475	18-06475
Quotation No.: Q17-10179		Chemte	st Sam	ple ID.:	588382	588384
Order No.:		Clie	nt Samp	le Ref.:	BHC26	BHC26
		Cli	ent Sam		J2	J4
			Sampl	е Туре:	SOIL	SOIL
			Top Dep		0.7	2.3
			Date Sa		26-Feb-2018	26-Feb-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 28	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 52	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 90+101	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 118	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 153	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 138	U	2815	mg/kg	0.010	[B] < 0.010	
PCB 180	U	2815	mg/kg	0.010	[B] < 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	[B] < 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588382	BHC26	J2	26-Feb-2018	В	Amber Glass 250ml
588382	BHC26	J2	26-Feb-2018	В	Plastic Tub 500g
588384	BHC26	J4	26-Feb-2018	В	Amber Glass 250ml
588384	BHC26	J4	26-Feb-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 18	3-06487-1
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Initial Date of Issue: 17-Apr-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Lianne Fountain

Project 2543 GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 08-Mar-2018

Order No.: Date Instructed: 27-Mar-2018

No. of Samples: 2

Turnaround (Wkdays): 9 Results Due: 10-Apr-2018

Date Approved: 11-Apr-2018 Subcon Results Due: 10-Apr-2018

Approved By:

Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		18-06487							
Quotation No.: Q17-10179		588453							
Order No.:		Client Sample Ref.: Client Sample ID.:							
		J2							
		SOIL							
		0.8							
			Date S	Sampled:	05-Mar-2018				
Determinand	Accred.	SOP	Units	LOD					
рН	U	1010		N/A	7.1				
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050				
Sulphate	U	1220	mg/l	1.0	6.4				
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050				
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050				
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.1				
Boron (Dissolved)	U	1450	μg/l	20	25				
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080				
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Copper (Dissolved)	U	1450	μg/l	1.0	1.6				
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50				
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Lead (Dissolved)	U	1450	μg/l	1.0	1.8				
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0				
Zinc (Dissolved)	U	1450	μg/l	1.0	2.8				
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20				
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10				
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10				
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10				
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10				
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10				
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10				
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10				
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10				
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0				
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10				
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10				
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10				
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10				
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10				
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10				
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10				
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0				
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10				
Naphthalene	U	1700	μg/l	0.10	< 0.10				
Acenaphthylene	U	1700	μg/l	0.10	< 0.10				
Acenaphthene	U	1700	μg/l	0.10	< 0.10				
Fluorene	U	1700	μg/l	0.10	< 0.10				
Phenanthrene	U	1700	μg/l	0.10	< 0.10				
Anthracene	U	1700	μg/l	0.10	< 0.10				
Fluoranthene	U	1700	μg/l	0.10	< 0.10				
Pyrene	U	1700	μg/l	0.10	< 0.10				



Results - Leachate

Project. 2545 Gi Lake Lottling					18-06487				
Client: Geosphere Environmental Ltd		Chemtest Job No.:							
Quotation No.: Q17-10179		Chemtest Sample ID.:							
Order No.:		Clie	ent Sam	ple Ref.:	BHC23				
		J2							
			Samp	ole Type:	SOIL				
			Top Do	epth (m):	0.8				
			Date S	Sampled:	05-Mar-2018				
Determinand	Accred.	SOP	Units	LOD					
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10				
Chrysene	U	1700	μg/l	0.10	< 0.10				
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10				
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10				
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10				
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10				
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10				
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0				
Benzene	U	1760	μg/l	1.0	[B] < 1.0				
Toluene	U	1760	μg/l	1.0	[B] < 1.0				
Ethylbenzene	U	1760	μg/l	1.0	[B] < 1.0				
m & p-Xylene	U	1760	μg/l	1.0	[B] < 1.0				
o-Xylene	U	1760	μg/l	1.0	[B] < 1.0				
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	[B] < 0.0010				
Total Phenols	U	1920	mg/l	0.030	< 0.030				



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-06487
Quotation No.: Q17-10179	(st Sam	588453	588456	
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam	J2	J5	
			Sampl	SOIL	SOIL	
			Top De	` /	0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	5.9	14
PΗ	U	2010		N/A	7.3	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg		[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg		[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425			1.4	0.68
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	3.3	1.3
Cadmium	U		mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	4.0	2.3
Copper	U	2450	mg/kg		1.0	0.63
Mercury	U	2450	mg/kg		< 0.10	< 0.10
Nickel	U	2450	mg/kg		3.2	1.9
Lead	U	2450	mg/kg		3.8	1.9
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	1	mg/kg		6.7	3.9
Chromium (Hexavalent)	N	2490	mg/kg		< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N		mg/kg		[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U		mg/kg		[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U		mg/kg		[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg		[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg		[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680			[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	Ü	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N		mg/kg		[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg		[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N		mg/kg		[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo		18-06487	
Quotation No.: Q17-10179	(est Sam	588453	588456	
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam	J2	J5	
			Sampl	SOIL	SOIL	
			Top Dep	0.8	3.0	
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.52	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.42	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179			est Sam	588453	588456	
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam	J2	J5	
			Sampl	SOIL	SOIL	
			Top De	0.8	3.0	
	Date Sampled:				05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	µg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Phenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U		mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
			i iiiu/NU	0.00		



Client: Geosphere Environmental Ltd	Chemtest Job No.:			18-06487	18-06487	
Quotation No.: Q17-10179	(st Sam		588453	588456
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam	J2 SOIL	J5 SOIL	
			Sampl			
			Top Dep	. ,	0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	ט	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Fluorene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(est Sam	588453	588456	
Order No.:		Client Sample Ref.:				BHC23
		Cli	ent Sam		J2	J5
				e Type:	SOIL	SOIL
			Top Dep		0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	0 0	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790		0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010	
PCB 157	N	2815			< 0.010	
PCB 167	N	2815			< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815			< 0.010	
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12	
Total Phenols	U	2920		0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588453	BHC23	J2	05-Mar-2018	В	Amber Glass 250ml
588453	BHC23	J2	05-Mar-2018	В	Plastic Tub 500g
588456	BHC23	J5	05-Mar-2018	В	Amber Glass 250ml
588456	BHC23	J5	05-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 18	3-06487-1
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Initial Date of Issue: 17-Apr-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Stephen Gilchrist

Lianne Fountain

Project 2543 GI Lake Lothing

Quotation No.: Q17-10179 Date Received: 08-Mar-2018

Order No.: Date Instructed: 27-Mar-2018

No. of Samples: 2

Turnaround (Wkdays): 9 Results Due: 10-Apr-2018

Date Approved: 11-Apr-2018 Subcon Results Due: 10-Apr-2018

Approved By:

Details: Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		18-06487					
Quotation No.: Q17-10179		588453 BHC23					
Order No.:		Client Sample Ref.:					
		С		mple ID.:	J2		
				ole Type:	SOIL		
				epth (m):	8.0		
				Sampled:	05-Mar-2018		
Determinand	Accred.	SOP	Units				
рН	U	1010		N/A	7.1		
Ammonia (Free) as N	U	1220		0.050	< 0.050		
Sulphate	U	1220	mg/l	1.0	6.4		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	1.1		
Boron (Dissolved)	U	1450	μg/l	20	25		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Copper (Dissolved)	U	1450	μg/l	1.0	1.6		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Lead (Dissolved)	U	1450	μg/l	1.0	1.8		
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Zinc (Dissolved)	U	1450	μg/l	1.0	2.8		
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	[B] < 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	[B] < 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	[B] < 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	[B] < 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	[B] < 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		



Results - Leachate

Project. 2545 Gi Lake Lottling					18-06487			
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179		Chemtest Sample ID.:						
Order No.:		Clie	ent Sam	ple Ref.:	BHC23			
		С	lient Saı	mple ID.:	J2			
			Samp	ole Type:	SOIL			
			Top Do	epth (m):	0.8			
			Date S	Sampled:	05-Mar-2018			
Determinand	Accred.	SOP	Units	LOD				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Benzene	U	1760	μg/l	1.0	[B] < 1.0			
Toluene	U	1760	μg/l	1.0	[B] < 1.0			
Ethylbenzene	U	1760	μg/l	1.0	[B] < 1.0			
m & p-Xylene	U	1760	μg/l	1.0	[B] < 1.0			
o-Xylene	U	1760	μg/l	1.0	[B] < 1.0			
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	[B] < 0.0010			
Total Phenols	U	1920	mg/l	0.030	< 0.030			



Client: Geosphere Environmental Ltd			mtest J		18-06487	
Quotation No.: Q17-10179			est Sam		588453	588456
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam		J2	J5
			Sampl	e Type:	SOIL	SOIL
			Top De	. ,	0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	5.9	14
рН	U	2010		N/A	7.3	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	< 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	1.4	0.68
Sulphate (Total)	U	2430	%	0.010	< 0.010	< 0.010
Arsenic	U	2450	mg/kg	1.0	3.3	1.3
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	4.0	2.3
Copper	U	2450	mg/kg	0.50	1.0	0.63
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg		3.2	1.9
Lead	U	2450	mg/kg	0.50	3.8	1.9
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	6.7	3.9
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		< 0.40
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680		1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg		[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(est Sam		588453	588456
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam		J2	J5
			Sampl	e Type:	SOIL	SOIL
			Top De	. ,	0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U		mg/kg		< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U		mg/kg		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.52	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.42	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(st Sam		588453	588456
Order No.:		Client Sample Ref.:			BHC23	BHC23
		Cli	ent Sam		J2	J5
				e Type:	SOIL	SOIL
			Top De		0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	Ü	2790		0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chlorophenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	Ü		mg/kg		[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	Ü	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
L Montyphonor	U	2790		0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(st Sam		588453	588456
Order No.:		Client Sample Ref.:			BHC23	BHC23
		Client Sample ID.:		J2	J5	
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.8	3.0
			Date Sa		05-Mar-2018	05-Mar-2018
			_	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	0 0	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Fluorene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd			mtest Jo	18-06487	18-06487	
Quotation No.: Q17-10179	(est Sam		588453	588456
Order No.:			nt Samp		BHC23	BHC23
		Cli	ent Sam		J2	J5
			Sampl	e Type:	SOIL	SOIL
			Top Dep		0.8	3.0
			Date Sa	ampled:	05-Mar-2018	05-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 81	N	2815	mg/kg	0.010	< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010	
PCB 105	N	2815	mg/kg	0.010	< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010	
PCB 126	N	2815			< 0.010	
PCB 156	N	2815			< 0.010	
PCB 157	N	2815			< 0.010	
PCB 167	N	2815			< 0.010	
PCB 169	N	2815			< 0.010	
PCB 189	N	2815			< 0.010	
Total PCBs (12 Congeners)	N	2815		0.12	< 0.12	
Total Phenols	U	2920		0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
588453	BHC23	J2	05-Mar-2018	В	Amber Glass 250ml
588453	BHC23	J2	05-Mar-2018	В	Plastic Tub 500g
588456	BHC23	J5	05-Mar-2018	В	Amber Glass 250ml
588456	BHC23	J5	05-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma mass spectrometry (ICP-MS).
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
		Aliphatics: >C5-C6, >C6-C8,>C8-C10,	



SOP	Title	Parameters included	Method summary
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd. Depot Road Newmarket CB8 0AL

Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Details:

Report No.:	18-06961-1		
Initial Date of Issue:	03-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	254JGI Lake Lothing, L34		
Quotation No.:	Q17-10179	Date Received:	13-Mar-2018
Order No.:		Date Instructed:	27-Mar-2018
No. of Samples:	2		
Turnaround (Wkdays):	4	Results Due:	03-Apr-2018
Date Approved:	03-Apr-2018		
Approved By:			

Robert Monk, Technical Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-06961
Quotation No.: Q17-10179		Chemtest Sample ID.:			590907	590914
Order No.:			nt Samp		BHC32	BHC32
		Cli	ent Sam		J2	J8
			Sampl	e Type:	SOIL	SOIL
			Top De	. ,	0.6	4.5
			Date Sa	ampled:	07-Mar-2018	08-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	12	16
рН	U	2010		N/A	8.9	8.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	0.55	1.1
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.056
Cyanide (Free)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.75	13
Sulphate (Total)	U	2430	%	0.010	< 0.010	0.34
Arsenic	U	2450	mg/kg	1.0	7.9	9.8
Cadmium	U		mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	10	8.9
Copper	U	2450	mg/kg	0.50	43	4.6
Mercury	U	2450	mg/kg	0.10	0.19	< 0.10
Nickel	U	2450	mg/kg		12	8.9
Lead	U	2450	mg/kg	0.50	22	8.4
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	32	18
Chromium (Hexavalent)	N		mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		0.90
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C6-C8	N		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C10-C12	U		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C16-C21	U	2680		1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C21-C35	Ü	2680	mg/kg	1.0	[B] < 1.0	[B] < 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	[B] < 1.0	[B] < 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[B] < 5.0	[B] < 5.0
Total Petroleum Hydrocarbons	N		mg/kg		[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-06961
Quotation No.: Q17-10179		Chemtest Sample ID.:			590907	590914
Order No.:		Client Sample Ref.:			BHC32	BHC32
		Cli	ent Sam	ple ID.:	J2	J8
			Sampl	e Type:	SOIL	SOIL
			Top Dep		0.6	4.5
			Date Sa	ampled:	07-Mar-2018	08-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	0.12	< 0.10
Pyrene	U	2700	mg/kg	0.10	0.15	< 0.10
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Chloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromomethane	U	2760	μg/kg	20	[B] < 20	[B] < 20
Chloroethane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromochloromethane	N	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Trichloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1-Trichloroethane	Ü	2760	µg/kg	1.0	[B] < 1.0	[B] < 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Benzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Trichloroethene	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichloropropane	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Dibromomethane	Ü	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromodichloromethane	Ü	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
cis-1,3-Dichloropropene	N	2760	µg/kg	10	[B] < 10	[B] < 10
Toluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	[B] < 10	[B] < 10



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06961	18-06961
Quotation No.: Q17-10179	(Chemtest Sample ID.:			590907	590914
Order No.:		Client Sample Ref.:			BHC32	BHC32
		Cli	ent Sam		J2	J8
				e Type:	SOIL	SOIL
			Top Dep		0.6	4.5
			Date Sa		07-Mar-2018	08-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	2760	μg/kg	10	[B] < 10	[B] < 10
Tetrachloroethene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Dibromochloromethane	N	2760	μg/kg	10	[B] < 10	[B] < 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	[B] < 5.0	[B] < 5.0
Chlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Ethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
m & p-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
o-Xylene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Styrene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tribromomethane	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Bromobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
N-Propylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	[B] < 50	[B] < 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	[B] < 2.0	[B] < 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	[B] < 1.0	[B] < 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-06961	18-06961
Quotation No.: Q17-10179	(Chemtest Sample ID.:			590907	590914
Order No.:			nt Samp		BHC32	BHC32
		Cli	ent Sam		J2	J8
				e Type:	SOIL	SOIL
			Top Dep	. ,	0.6	4.5
			Date Sa		07-Mar-2018	08-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Hexachloroethane	N	2790	0 0	0.50	[B] < 0.50	[B] < 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Methylphenol	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Nitrobenzene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Isophorone	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitrophenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Naphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4,5-Trichlorophenol	U	2790		0.50	[B] < 0.50	[B] < 0.50
2-Chloronaphthalene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthylene	U		mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Acenaphthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenzofuran	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Fluorene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Azobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Phenanthrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Carbazole	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:				18-06961
Quotation No.: Q17-10179		Chemte	est Sam	ple ID.:	590907	590914
Order No.:			nt Samp		BHC32	BHC32
		Cli	ent Sam	ple ID.:	J2	J8
				е Туре:	SOIL	SOIL
			Top De		0.6	4.5
			Date Sa		07-Mar-2018	08-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Chrysene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	[B] < 0.50	[B] < 0.50
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 138	U	2815	mg/kg		< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10	< 0.10
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
590907	BHC32	J2	07-Mar-2018	В	Amber Glass 250ml
590907	BHC32	J2	07-Mar-2018	В	Plastic Tub 500g
590914	BHC32	J8	08-Mar-2018	В	Amber Glass 250ml
590914	BHC32	J8	08-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Details:



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	18-07089-1		
Initial Date of Issue:	21-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Joe Glenwright Stephen Gilchrist		
Project	2543,GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	14-Mar-2018
Order No.:	2543,GI	Date Instructed:	14-Mar-2018
No. of Samples:	2		
Turnaround (Wkdays):	5	Results Due:	20-Mar-2018
Date Approved:	21-Mar-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chei	ntest Jo	ob No.:	18-07089		
Quotation No.: Q17-10179		Chemtest Sample ID.:					
Order No.: 2543,GI			nt Samp		591585 BHC08		
, ,		Client Sample ID.:					
				e Type:	SOIL		
			Top Dei		2.6		
			Date Sa	ampled:	09-Mar-2018		
Determinand	Accred.	SOP	Units	LOD			
pH	U	1010		N/A	9.7		
Ammonia (Free) as N	U	1220	mg/l	0.050	0.85		
Sulphate	U	1220	mg/l	1.0	13		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	5.8		
Boron (Dissolved)	U	1450	μg/l	20	30		
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.21		
Chromium (Dissolved)	U	1450	μg/l	1.0	52		
Copper (Dissolved)	U	1450	μg/l	1.0	22		
Mercury (Dissolved)	U	1450	μg/l	0.50	0.53		
Nickel (Dissolved)	U	1450	μg/l	1.0	65		
Lead (Dissolved)	U	1450	μg/l	1.0	19		
Selenium (Dissolved)	U	1450	μg/l	1.0	7.8		
Zinc (Dissolved)	U	1450	μg/l	1.0	190		
Chromium (Hexavalent)	U	1490	μg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		
Fluorene	U	1700	μg/l	0.10	< 0.10		
Phenanthrene	U	1700	μg/l	0.10	< 0.10		
Anthracene	U	1700	μg/l	0.10	< 0.10		
Fluoranthene	U	1700	μg/l	0.10	< 0.10		
Pyrene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.: 2543,GI			nt Samp		BHC08 J4		
		Client Sample ID.:					
				е Туре:	SOIL		
			Top De		2.6		
			Date Sa		09-Mar-2018		
Determinand	Accred.	SOP	Units				
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
Toluene	U	1760	μg/l	1.0	< 1.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	U	1760	μg/l	1.0	< 1.0		
o-Xylene	U	1760	μg/l	1.0	< 1.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		
Hexachloroethane	N	1790	μg/l	0.50	< 0.50		
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50		
4-Methylphenol	N	1790	μg/l	0.50	< 0.50		
Nitrobenzene	N	1790	μg/l	0.50	< 0.50		
Isophorone	N	1790	μg/l	0.50	< 0.50		
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50		
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50		
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50		
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50		
Naphthalene	N	1790	μg/l	0.50	< 0.50		
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50		
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50		
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50		
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50		
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50		
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50		
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		18-07089			
Quotation No.: Q17-10179	(ple ID.:	591585		
Order No.: 2543,GI		BHC08			
,		J4			
		SOIL			
			Top Dep	e Type: oth (m):	2.6
			Date Sa	ampled:	09-Mar-2018
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest Jo			18-07089
Quotation No.: Q17-10179	(st Sam		591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08 J4	BHC08
		Client Sample ID.:				J5
		Sample Type:				SOIL
			Top De	. ,	2.6	3.7
			Date Sa	ampled:	09-Mar-2018	09-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
Moisture	N	2030	%	0.020	17	27
рН	U	2010		N/A	10.1	8.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	1.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	0.18
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	0.91	29
Sulphate (Total)	U	2430	%	0.010	0.15	1.2
Arsenic	U	2450	mg/kg	1.0	4.8	15
Cadmium	U	2450	mg/kg	0.10	< 0.10	< 0.10
Chromium	U		mg/kg	1.0	9.0	22
Copper	U	2450	mg/kg	0.50	9.5	11
Mercury	U	2450	mg/kg	0.10	0.11	< 0.10
Nickel	U		mg/kg		14	22
Lead	U	2450	mg/kg	0.50	28	41
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20
Zinc	U	2450	mg/kg	0.50	34	49
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		1.6
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U		mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U		mg/kg		< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N		mg/kg	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N		mg/kg	10.0	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-07089	18-07089
Quotation No.: Q17-10179	- (est Sam		591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08	BHC08
		Client Sample ID.:			J4	J5
		Sample Type:		SOIL	SOIL	
			Top Dep	. ,	2.6	3.7
			Date Sa		09-Mar-2018	09-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
Naphthalene	U		mg/kg		< 0.10	< 0.10
Acenaphthylene	U		mg/kg		< 0.10	< 0.10
Acenaphthene	U		mg/kg		< 0.10	< 0.10
Fluorene	U		mg/kg		< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Anthracene	U		mg/kg	0.10	< 0.10	< 0.10
Fluoranthene	U		mg/kg	0.10	< 0.10	1.2
Pyrene	U	2700	mg/kg	0.10	< 0.10	1.2
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	2.4
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Chloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromomethane	U	2760	μg/kg	20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10



Client: Geosphere Environmental Ltd			mtest Jo		18-07089	18-07089
Quotation No.: Q17-10179			st Sam		591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08	BHC08
		Client Sample ID.:			J4	J5
		Sample Type:		SOIL	SOIL	
			Top Dep		2.6	3.7
			Date Sa		09-Mar-2018	09-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units			
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10
Tetrachloroethene	U	2760		1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Bromobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Chlorotoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylphenol	U	2790	mg/kg		< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-07089 591585	18-07089
Quotation No.: Q17-10179	- (Chemtest Sample ID.:				591586
Order No.: 2543,GI			nt Samp		BHC08	BHC08
		Client Sample ID.:		J4	J5	
				е Туре:	SOIL	SOIL
		Top Depth (m):		2.6	3.7	
			Date Sa		09-Mar-2018	09-Mar-2018
				os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	_		
Hexachloroethane	N		mg/kg		< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U		mg/kg	0.50	< 0.50	< 0.50
4-Methylphenol	U		mg/kg	0.50	< 0.50	< 0.50
Nitrobenzene	U		mg/kg	0.50	< 0.50	< 0.50
Isophorone	U		mg/kg	0.50	< 0.50	< 0.50
2-Nitrophenol	N		mg/kg	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N		mg/kg	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U		mg/kg	0.50	< 0.50	< 0.50
2-Chloronaphthalene	U		mg/kg	0.50	< 0.50	< 0.50
2-Nitroaniline	U		mg/kg	0.50	< 0.50	< 0.50
Acenaphthylene	U		mg/kg	0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	1.5
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Carbazole	U	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chemtest Job No.:			18-07089	18-07089
Quotation No.: Q17-10179	(Chemtest Sample ID.:			591585	591586
Order No.: 2543,GI		Client Sample Ref.:			BHC08	BHC08
		Client Sample ID.:		J4	J5	
			Sampl	е Туре:	SOIL	SOIL
			Top Dep	oth (m):	2.6	3.7
			Date Sa		09-Mar-2018	09-Mar-2018
			Asbest	os Lab:	COVENTRY	
Determinand	Accred.	SOP	Units	LOD		
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50
PCB 81	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 77	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 114	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 118	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 123	N	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 126	N	2815	mg/kg		< 0.010	< 0.010
PCB 156	N	2815	mg/kg		< 0.010	< 0.010
PCB 157	N	2815	mg/kg		< 0.010	< 0.010
PCB 167	N	2815	mg/kg		< 0.010	< 0.010
PCB 169	N	2815	mg/kg		< 0.010	< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010	< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12	< 0.12
Total Phenols	U	2920		0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

22-Mar-2018

Final Report

Report No.:	18-07130-1		
Initial Date of Issue:	22-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Joe Glenwright Stephen Gilchrist		
Project	2543,GI Lake Lothing, Lowestoft		
Quotation No.:	Q17-10179	Date Received:	14-Mar-2018
Order No.:	2543,GI	Date Instructed:	14-Mar-2018
No. of Samples:	1		

Results Due:

Date Approved: 22-Mar-2018

Turnaround (Wkdays):

Approved By:		
Details:	Glynn Harvey, Laboratory Manager	



Results - 2 Stage WAC

Project: 2543,GI Lake Lothing, Lowestoft

Project: 2543,GI Lake Lothing, Lo Chemtest Job No:	18-07130						Landfill V	Vaste Acceptano	e Criteria
Chemtest Sample ID:	591820							Limits	
Sample Ref:	BHC08							Stable, Non-	
Sample ID:	J4							reactive	Hazardous
Top Depth(m):	2.6						Inert Waste	hazardous	Waste
Bottom Depth(m):	2.0						Landfill	waste in non-	Landfill
Sampling Date:	09-Mar-2018						Lanaiiii	hazardous	Lanam
Determinand	SOP	Accred.	Units					Landfill	
Total Organic Carbon	2625	U	%			< 0.20	3	5	6
Loss On Ignition	2610	U	%			1.5			10
Total BTEX	2760	U	mg/kg			< 0.010	6		
Total PCBs (7 Congeners)	2815	U	mg/kg			< 0.10	1		
TPH Total WAC (Mineral Oil)	2670	U	mg/kg			< 10	500		
Total (Of 17) PAH's	2700	N	mg/kg			< 2.0	100		
pH	2010	U				10.1		>6	
Acid Neutralisation Capacity	2015	N	mol/kg			0.054		To evaluate	To evaluate
Eluate Analysis			2:1	8:1	2:1	Cumulative	Limit values	for compliance	leaching test
			mg/l	mg/l	mg/kg	mg/kg 10:1	using B	S EN 12457 at L	S 10 l/kg
Arsenic	1450	U	0.014	0.018	< 0.050	0.17	0.5	2	25
Barium	1450	U	0.045	0.076	< 0.50	0.71	20	100	300
Cadmium	1450	U	0.00014	0.00016	< 0.010	< 0.010	0.04	1	5
Chromium	1450	U	0.050	0.082	0.098	0.77	0.5	10	70
Copper	1450	U	0.015	0.023	< 0.050	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.00050	< 0.0010	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0037	0.0035	< 0.050	< 0.050	0.5	10	30
Nickel	1450	U	0.024	0.036	< 0.050	0.34	0.4	10	40
Lead	1450	U	0.023	0.041	0.045	0.38	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.0010	< 0.010	< 0.010	0.06	0.7	5
Selenium	1450	U	0.020	0.015	0.039	0.16	0.1	0.5	7
Zinc	1450	U	0.076	0.11	< 0.50	1.0	4	50	200
Chloride	1220	U	2.3	3.5	< 10	33	800	15000	25000
Fluoride	1220	U	0.36	0.30	< 1.0	3.1	10	150	500
Sulphate	1220	U	32	29	63	290	1000	20000	50000
Total Dissolved Solids	1020	N	230	210	450	2100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	J	17	16	< 50	160	500	800	1000

Solid Information				
Dry mass of test portion/kg	0.175			
Moisture (%)	19			

Leachate Test Information				
Leachant volume 1st extract/l	0.310			
Leachant volume 2nd extract/l	1.400			
Eluant recovered from 1st extract/l	0.265			

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.



SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS



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- I/S Insufficient Sample
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- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

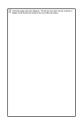
- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
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CB8 0AL

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Final Report

Report No.:	18-07811-1		
Initial Date of Issue:	28-Mar-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Lothing, L20		
Quotation No.:	Q17-10179	Date Received:	21-Mar-2018
Order No.:	2543,GI	Date Instructed:	22-Mar-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	28-Mar-2018
Date Approved:	28-Mar-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(st Sam		595263	
Order No.: 2543,GI			nt Samp		BHC05	
		Cli	ent Sam		J6	
				e Type:	SOIL	
			Top Dep		2.5	
			Date Sa		19-Mar-2018	
Determinand	Accred.		Units			
Moisture	N	2030	%	0.020	30	
pH	U	2010		N/A	9.0	
Boron (Hot Water Soluble)	U	2120	,	0.40	3.1	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.073	
Cyanide (Free)	U		mg/kg	0.50	< 0.50	
Cyanide (Total)	U		mg/kg	0.50	< 0.50	
Ammonium (Extractable)	U	2425		0.50	150	
Sulphate (Total)	U	2430		0.010	1.2	
Arsenic	U		mg/kg	1.0	22	
Cadmium	U	2450)	0.10	< 0.10	
Chromium	U	2450		1.0	28	
Copper	U	2450		0.50	13	
Mercury	U	2450	J	0.10	< 0.10	
Nickel	U	2450)	0.50	26	
Lead	U	2450)	0.50	31	
Selenium	U	2450	ט	0.20	< 0.20	
Zinc	U	2450	,	0.50	64	
Chromium (Hexavalent)	N	2490	J	0.50	< 0.50	
Organic Matter	U	2625	%	0.40	1.9	
Aliphatic TPH >C5-C6	N	2680)	1.0	< 1.0	
Aliphatic TPH >C6-C8	N		mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	+	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U		mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U		mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680		1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	,	1.0	< 1.0	
Aliphatic TPH >C35-C44	N N	2680		1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680)	5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680)	1.0	< 1.0	
Aromatic TPH >C7-C8	N 	2680	,	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	ט	1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680		1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680		1.0	< 1.0	
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	
Aromatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	
Total Aromatic Hydrocarbons	N		mg/kg	5.0	< 5.0	
Total Petroleum Hydrocarbons	N		mg/kg	10.0	< 10	
Naphthalene	U	_	mg/kg	0.10	< 0.10	
Acenaphthylene	U	2700)	0.10	< 0.10	
Acenaphthene	U		mg/kg	0.10	< 0.10	
Fluorene	U	2/00	mg/kg	0.10	< 0.10	



Client: Geosphere Environmental Ltd		ob No.:	18-07811		
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	595263
Order No.: 2543,GI		Clie	nt Samp	le Ref.:	BHC05
,			ent Sam		J6
				e Type:	SOIL
			Top Der		2.5
			Date Sa		19-Mar-2018
Determinand	Accred.	SOP			
Phenanthrene	U	2700	mg/kg	0.10	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10
Fluoranthene	U	2700	mg/kg	0.10	< 0.10
Pyrene	U	2700		0.10	< 0.10
Benzo[a]anthracene	U	2700		0.10	< 0.10
Chrysene	U	2700		0.10	< 0.10
Benzo[b]fluoranthene	U	2700		0.10	< 0.10
Benzo[k]fluoranthene	U	2700		0.10	< 0.10
Benzo[a]pyrene	U	2700)	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700		0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700		0.10	< 0.10
Benzo[g,h,i]perylene	U	2700		0.10	< 0.10
Total Of 16 PAH's	U	2700		2.0	< 2.0
Dichlorodifluoromethane	N	2760	J	1.0	< 1.0
Chloromethane	U	2760		1.0	< 1.0
Vinyl Chloride	U	2760		1.0	< 1.0
Bromomethane	U	2760		20	< 20
Chloroethane	N	2760		2.0	< 2.0
Trichlorofluoromethane	U	2760		1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloroethane	U	2760		1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0
1,2-Dichloropropane	U	2760		1.0	< 1.0
Dibromomethane	U	2760		1.0	< 1.0
Bromodichloromethane	U	2760		5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10
Toluene	U	2760		1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760		10	< 10
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0
1,3-Dichloropropane	N	2760		2.0	< 2.0
Dibromochloromethane	N	2760		10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0



Client: Geosphere Environmental Ltd		Chemtest Job No.					
Quotation No.: Q17-10179	(st Sam		595263		
Order No.: 2543,GI			nt Samp		BHC05		
		Cli	ent Sam		J6		
				e Type:	SOIL		
			Top Dep		2.5		
			Date Sa		19-Mar-2018		
Determinand	Accred.	SOP		LOD			
Chlorobenzene	U	2760)	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0		
Ethylbenzene	U	2760	י	1.0	< 1.0		
m & p-Xylene	U	2760		1.0	< 1.0		
o-Xylene	U	2760	100	1.0	< 1.0		
Styrene	U	2760		1.0	< 1.0		
Tribromomethane	N	2760		1.0	< 1.0		
Isopropylbenzene	U	2760		1.0	< 1.0		
Bromobenzene	U	2760		1.0	< 1.0		
1,2,3-Trichloropropane	N	2760		50	< 50		
N-Propylbenzene	N	2760		1.0	< 1.0		
2-Chlorotoluene	U	2760		1.0	< 1.0		
1,3,5-Trimethylbenzene	U	2760		1.0	< 1.0		
4-Chlorotoluene	N	2760)	1.0	< 1.0		
Tert-Butylbenzene	N	2760		1.0	< 1.0		
1,2,4-Trimethylbenzene	U	2760	י	1.0	< 1.0		
Sec-Butylbenzene	N	2760		1.0	< 1.0		
1,3-Dichlorobenzene	U	2760		1.0	< 1.0		
4-Isopropyltoluene	N	2760		1.0	< 1.0		
1,4-Dichlorobenzene	U	2760)	1.0	< 1.0		
N-Butylbenzene	N	2760		1.0	< 1.0		
1,2-Dichlorobenzene	U	2760)	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	N	2760		50	< 50		
1,2,4-Trichlorobenzene	U	2760		1.0	< 1.0		
Hexachlorobutadiene	N	2760	5	1.0	< 1.0		
1,2,3-Trichlorobenzene	N	2760		2.0	< 2.0		
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0		
N-Nitrosodimethylamine	U	2790)	0.50	< 0.50		
Phenol	U	2790)	0.50	< 0.50		
2-Chlorophenol	U	2790		0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	U	2790	ט	0.50	< 0.50		
1,3-Dichlorobenzene	U	2790	5	0.50	< 0.50		
1,4-Dichlorobenzene	N	2790	5	0.50	< 0.50		
1,2-Dichlorobenzene	U	2790)	0.50	< 0.50		
2-Methylphenol	U	2790)	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	< 0.50		
Hexachloroethane	N	2790		0.50	< 0.50		
N-Nitrosodi-n-propylamine	U	2790		0.50	< 0.50		
4-Methylphenol	U	2790)	0.50	< 0.50		
Nitrobenzene	U	2790	,	0.50	< 0.50		
Isophorone	U	2790		0.50	< 0.50		
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50		



Client: Geosphere Environmental Ltd		ob No.:	18-07811		
Quotation No.: Q17-10179	(st Sam		595263
Order No.: 2543,GI			nt Samp		BHC05
		Cli	ent Sam		J6
				e Type:	SOIL
			Top Dep		2.5
			Date Sa		19-Mar-2018
Determinand	Accred.	SOP		LOD	
2,4-Dimethylphenol	N	2790)	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50
2,4-Dichlorophenol	U	2790	0 0	0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	J	0.50	< 0.50
Naphthalene	U	2790	0	0.50	< 0.50
4-Chloroaniline	N	2790		0.50	< 0.50
Hexachlorobutadiene	U	2790	9	0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	0	0.50	< 0.50
2-Methylnaphthalene	U	2790	0	0.50	< 0.50
4-Nitrophenol	N	2790		0.50	< 0.50
Hexachlorocyclopentadiene	N	2790		0.50	< 0.50
2,4,6-Trichlorophenol	U	2790		0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	0	0.50	< 0.50
2-Chloronaphthalene	U	2790)	0.50	< 0.50
2-Nitroaniline	U	2790		0.50	< 0.50
Acenaphthylene	U	2790	0 0	0.50	< 0.50
Dimethylphthalate	U	2790		0.50	< 0.50
2,6-Dinitrotoluene	U	2790		0.50	< 0.50
Acenaphthene	U	2790	0	0.50	< 0.50
3-Nitroaniline	N	2790)	0.50	< 0.50
Dibenzofuran	U	2790		0.50	< 0.50
4-Chlorophenylphenylether	U	2790	0 0	0.50	< 0.50
2,4-Dinitrotoluene	U	2790		0.50	< 0.50
Fluorene	U	2790		0.50	< 0.50
Diethyl Phthalate	U	2790		0.50	< 0.50
4-Nitroaniline	U	2790	0 0	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50
Azobenzene	U	2790	0	0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790)	0.50	< 0.50
Hexachlorobenzene	U	2790		0.50	< 0.50
Pentachlorophenol	N	2790		0.50	< 0.50
Phenanthrene	U	2790	3. 3	0.50	< 0.50
Anthracene	U	2790	0	0.50	< 0.50
Carbazole	U	2790	0	0.50	< 0.50
Di-N-Butyl Phthalate	U	2790	0 0	0.50	< 0.50
Fluoranthene	U	2790		0.50	< 0.50
Pyrene	U	2790		0.50	< 0.50
Butylbenzyl Phthalate	U	2790		0.50	< 0.50
Benzo[a]anthracene	U	2790	0	0.50	< 0.50
Chrysene	U	2790		0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50





Client: Geosphere Environmental Ltd		Che	mtest Jo	b No.:	18-07811	
Quotation No.: Q17-10179	(Chemte	ole ID.:	595263		
Order No.: 2543,GI		Clie	nt Samp	le Ref.:	BHC05	
		Cli	ent Sam	ple ID.:	J6	
			Sample	e Type:	SOIL	
		Top Depth (m):				
		Date Sampled:				
Determinand	Accred.	SOP	Units	LOD		
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	
Indeno(1,2,3-c,d)Pyrene	U	U 2790 mg/kg 0.50				
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

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Report No.:	18-09432-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543,GI Lake Loathing, L20		
Quotation No.:	Q17-10179	Date Received:	06-Apr-2018
Order No.:	2543,GI	Date Instructed:	09-Apr-2018
No. of Samples:	3		
Turnaround (Wkdays):	5	Results Due:	13-Apr-2018
Date Approved:	16-Apr-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd				Job No.:	18-09432
Quotation No.: Q17-10179				nple ID.:	602978
Order No.: 2543,GI				ple Ref.:	BHC06B
		С		mple ID.:	J1
				ole Type:	SOIL
				epth (m):	0.45
				Sampled:	29-Mar-2018
Determinand	Accred.	SOP	Units		
pH	U	1010		N/A	8.7
Ammonia (Free) as N	U	1220	mg/l	0.050	0.16
Sulphate	U	1220	mg/l	1.0	13
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	2.0
Boron (Dissolved)	U	1450	μg/l	20	36
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	3.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	1.2
Lead (Dissolved)	U	1450	μg/l	1.0	1.2
Selenium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	2.3
Chromium (Hexavalent)	U	1490	μg/l	20	[B] < 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10



Client: Geosphere Environmental Ltd				Job No.:	18-09432
Quotation No.: Q17-10179				nple ID.:	602978
Order No.: 2543,GI				ple Ref.:	BHC06B
		С		mple ID.:	J1
				ole Type:	SOIL
				epth (m):	0.45
				Sampled:	29-Mar-2018
Determinand	Accred.	SOP	Units	LOD	
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	mg/l	0.0010	< 0.0010
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	µg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	µg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	µg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Client: Geosphere Environmental Ltd		Che	emtest .	Job No.:	18-09432
Quotation No.: Q17-10179				nple ID.:	602978
Order No.: 2543,GI		ple Ref.:	BHC06B		
0.40. 110.1 20 10,01		J1			
				nple ID.: ole Type:	SOIL
				epth (m):	0.45
				Sampled:	29-Mar-2018
Determinand	Accred.	SOP	Units	LOD	
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030



Client: Geosphere Environmental Ltd			mtest Jo		18-09432	18-09432	18-09432
Quotation No.: Q17-10179	(st Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
	Client Sample ID.:			J1	J4	J1	
	Sample Type:			SOIL	SOIL	SOIL	
			Top De		0.45	2.60	0.20
			Date Sa		29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-		-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected
Moisture	N	2030	%	0.020	10	32	9.4
Hq	U	2010		N/A	8.1	9.2	10.0
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.0	2.5	1.9
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.068	0.12	0.55
Cyanide (Free)	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300		0.50	< 0.50	< 0.50	< 0.50
Ammonium (Extractable)	U	2425	mg/kg	0.50	17	92	7.1
Sulphate (Total)	U	2430	%	0.010	0.089	0.80	0.36
Arsenic	U	2450	mg/kg	1.0	11	27	25
Cadmium	U	2450		0.10	< 0.10	< 0.10	2.4
Chromium	U	2450		1.0	11	34	50
Copper	U	2450		0.50	35	18	270
Mercury	U	2450		0.10	0.24	< 0.10	0.43
Nickel	U	2450		0.50	14	33	50
Lead	U	2450		0.50	67	49	280
Selenium	U	2450		0.20	< 0.20	< 0.20	< 0.20
Zinc	U		mg/kg	0.50	51	76	590
Chromium (Hexavalent)	N	2490		0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40		1.7	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680		1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U	2680		1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680		1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	9.8
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	< 1.0	27
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	2.7
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	39
Total Petroleum Hydrocarbons	N	2680			< 10	< 10	39



Client: Geosphere Environmental Ltd			mtest Jo		18-09432	18-09432	18-09432
Quotation No.: Q17-10179	(est Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
		Cli	ent Sam		J1	J4	J1
				e Type:	SOIL	SOIL	SOIL
		Top Depth (m):		0.45	2.60	0.20	
			Date Sa		29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Naphthalene	U	2700		0.10	< 0.10	< 0.10	0.21
Acenaphthylene	U	2700	0	0.10	< 0.10	< 0.10	0.42
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.24
Fluorene	U	2700	0	0.10	< 0.10	< 0.10	0.25
Phenanthrene	U	2700	0 0	0.10	< 0.10	< 0.10	2.3
Anthracene	U	2700	0 0	0.10	< 0.10	< 0.10	1.2
Fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	5.1
Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	6.1
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.8
Chrysene	U	2700		0.10	< 0.10	< 0.10	3.5
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	3.9
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.8
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	3.1
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.2
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	1.2
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.1
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	< 2.0	36
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	2760		1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	2760		20	< 20	< 20	< 20
Chloroethane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10
Toluene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10



Quotation No.: Q17-10179 Order No.: 2543,GI		Clie	est Sam nt Samp		602978	602981	602993
Order No.: 2543,GI			nt Samp	lo Dof ·	DLICOOD		
		Cli	Client Sample Ref.:		BHC06B	BHC06B	BHC10
			ent Sam		J1	J4	J1
		Sample Type:			SOIL	SOIL	SOIL
			Top Dep		0.45	2.60	0.20
			Date Sa		29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N	2760	μg/kg	10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
N-Propylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	Ň	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N	2760	μg/kg	50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	U	2790	0 0	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene 1,2-Dichlorobenzene	U	2790		0.50	< 0.50		
·	U	2790	mg/kg			< 0.50	< 0.50
2-Methylphenol Bis(2-Chloroisopropyl)Ether	U	2790	mg/kg mg/kg	0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50



Client: Geosphere Environmental Ltd			mtest Jo		18-09432	18-09432	18-09432
Quotation No.: Q17-10179	(est Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
		Cli	ent Sam		J1	J4	J1
		Sample Type			SOIL	SOIL	SOIL
			Top De		0.45	2.60	0.20
			Date Sa	ampled:	29-Mar-2018	03-Apr-2018	03-Apr-2018
			Asbest	os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Isophorone	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790		0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.70
Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.58
Carbazole	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	Ü	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest J			18-09432	18-09432
Quotation No.: Q17-10179	(st Sam		602978	602981	602993
Order No.: 2543,GI			nt Samp		BHC06B	BHC06B	BHC10
		Client Sample ID.:			J1	J4	J1
				e Type:	SOIL	SOIL	SOIL
			Top De		0.45	2.60	0.20
			Date Sa		29-Mar-2018	03-Apr-2018	03-Apr-2018
				os Lab:	COVENTRY		COVENTRY
Determinand	Accred.	SOP	Units	LOD			
Fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.5
Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.8
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	2.2
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	2.3
Bis(2-Ethylhexyl)Phthalate	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	4.4
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	1.9
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.3
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.6
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50	< 0.50	1.1
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	3.5
PCB 28	U	2815	mg/kg	0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 52	U	2815	mg/kg	0.010		< 0.010	
PCB 77	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 105	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 90+101	U	2815	mg/kg	0.010		< 0.010	
PCB 114	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 118	U	2815	mg/kg	0.010		< 0.010	
PCB 118	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 153	U	2815	mg/kg	0.010		< 0.010	
PCB 123	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 138	U	2815	mg/kg	0.010		< 0.010	
PCB 126	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 180	U	2815	mg/kg	0.010		< 0.010	
PCB 156	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 157	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 167	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 169	N	2815	mg/kg	0.010	< 0.010		< 0.010
PCB 189	N	2815	mg/kg	0.010	< 0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12	< 0.12		< 0.12
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10		< 0.10	-
Total Phenols	Ü	2920		0.30	< 0.30	< 0.30	< 0.30



Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
602978	BHC06B	J1	29-Mar-2018	В	Amber Glass 250ml
602978	BHC06B	J1	29-Mar-2018	В	Plastic Tub 500g



SOP	Title	Parameters included	Method summary	
1010	pH Value of Waters	рН	pH Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	, , ,	
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection	
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection	
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.	
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	рН	pH Meter	
	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.:	18-09752-1		
Initial Date of Issue:	17-Apr-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543 GI Lake Loathing		
Quotation No.:	Q17-10179	Date Received:	10-Apr-2018
Order No.:		Date Instructed:	10-Apr-2018
No. of Samples:	1		
Turnaround (Wkdays):	5	Results Due:	16-Apr-2018
Date Approved:	17-Apr-2018		
Approved By:			

Glynn Harvey, Laboratory Manager



Client: Geosphere Environmental Ltd	Chemtest Job No.:				18-09752	
Quotation No.: Q17-10179	(ple ID.:	604511 BHC10			
Order No.:		Client Sample Ref.: Client Sample ID.:				
		J11				
	Sample Type:				SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.	SOP		LOD		
Moisture	N	2030	%	0.020	24	
рН	U	2010		N/A	9.3	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.6	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.099	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	
Ammonium (Extractable)	U	2425	mg/kg	0.50	27	
Sulphate (Total)	U	2430	%	0.010	0.31	
Arsenic	U	2450	mg/kg	1.0	5.8	
Cadmium	U	2450	mg/kg	0.10	< 0.10	
Chromium	U	2450	mg/kg	1.0	8.2	
Copper	U	2450		0.50	3.9	
Mercury	U	2450	mg/kg	0.10	< 0.10	
Nickel	U	2450	mg/kg	0.50	8.0	
Lead	U	2450	mg/kg	0.50	9.8	
Selenium	U	2450	mg/kg	0.20	< 0.20	
Zinc	U	2450	mg/kg	0.50	18	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Organic Matter	U	2625	%	0.40	< 0.40	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680		1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C21-C35	U	2680		1.0	< 1.0	
Aromatic TPH >C35-C44	N	2680		1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680		5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680		10.0	< 10	
Naphthalene	U	2700		0.10	< 0.10	
Acenaphthylene	U	2700)	0.10	< 0.10	
Acenaphthene	Ü	2700		0.10	< 0.10	
Fluorene	U	2700		0.10	< 0.10	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.:				
	Client Sample ID.:			J11		
		Sample Type:			SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.		Units	LOD		
Phenanthrene	U	_	mg/kg	0.10	< 0.10	
Anthracene	U		mg/kg	0.10	< 0.10	
Fluoranthene	U		mg/kg	0.10	< 0.10	
Pyrene	U	2700)	0.10	< 0.10	
Benzo[a]anthracene	U	2700)	0.10	< 0.10	
Chrysene	U	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	U		mg/kg	0.10	< 0.10	
Benzo[a]pyrene	U		mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	
Dichlorodifluoromethane	N	2760	μg/kg	1.0	< 1.0	
Chloromethane	U	2760	μg/kg	1.0	< 1.0	
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	
Bromomethane	U	2760	μg/kg	20	< 20	
Chloroethane	N	2760		2.0	< 2.0	
Trichlorofluoromethane	U	2760		1.0	< 1.0	
1,1-Dichloroethene	U	2760		1.0	< 1.0	
Trans 1,2-Dichloroethene	U	2760		1.0	< 1.0	
1,1-Dichloroethane	U	2760		1.0	< 1.0	
cis 1,2-Dichloroethene	U	2760		1.0	< 1.0	
Bromochloromethane	N	2760		5.0	< 5.0	
Trichloromethane	U	2760		1.0	< 1.0	
1,1,1-Trichloroethane	U	2760		1.0	< 1.0	
Tetrachloromethane	U	2760		1.0	< 1.0	
1,1-Dichloropropene	N	2760		1.0	< 1.0	
Benzene	U	2760		1.0	< 1.0	
1,2-Dichloroethane	U	2760)	2.0	< 2.0	
Trichloroethene	Ü	2760		1.0	< 1.0	
1,2-Dichloropropane	Ü	2760		1.0	< 1.0	
Dibromomethane	Ü	2760		1.0	< 1.0	
Bromodichloromethane	Ü	2760		5.0	< 5.0	
cis-1,3-Dichloropropene	N	2760		10	< 10	
Toluene	Ü	2760		1.0	< 1.0	
Trans-1,3-Dichloropropene	N	2760		10	< 10	
1,1,2-Trichloroethane	Ü	2760		10	< 10	
Tetrachloroethene	Ü	2760		1.0	< 1.0	
1,3-Dichloropropane	N	2760)	2.0	< 2.0	
1,0 Distillotopropario		_				
Dibromochloromethane	N	2760	μg/kg	10	< 10	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.:				
		Client Sample ID.: Sample Type:			J11	
					SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.	SOP				
Chlorobenzene	U	2760)	1.0	< 1.0	
1,1,1,2-Tetrachloroethane	U	2760		2.0	< 2.0	
Ethylbenzene	U	2760		1.0	< 1.0	
m & p-Xylene	U	2760)	1.0	< 1.0	
o-Xylene	U	2760		1.0	< 1.0	
Styrene	U	2760)	1.0	< 1.0	
Tribromomethane	N	2760		1.0	< 1.0	
Isopropylbenzene	U	2760		1.0	< 1.0	
Bromobenzene	U	2760		1.0	< 1.0	
1,2,3-Trichloropropane	N	2760		50	< 50	
N-Propylbenzene	N	2760		1.0	< 1.0	
2-Chlorotoluene	U	2760		1.0	< 1.0	
1,3,5-Trimethylbenzene	U	2760		1.0	< 1.0	
4-Chlorotoluene	N	2760		1.0	< 1.0	
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	
1,2,4-Trimethylbenzene	U	2760)	1.0	< 1.0	
Sec-Butylbenzene	N	2760		1.0	< 1.0	
1,3-Dichlorobenzene	U	2760		1.0	< 1.0	
4-Isopropyltoluene	N	2760		1.0	< 1.0	
1,4-Dichlorobenzene	U	2760		1.0	< 1.0	
N-Butylbenzene	N	2760		1.0	< 1.0	
1,2-Dichlorobenzene	U	2760)	1.0	< 1.0	
1,2-Dibromo-3-Chloropropane	N	2760)	50	< 50	
1,2,4-Trichlorobenzene	U	2760)	1.0	< 1.0	
Hexachlorobutadiene	N	2760		1.0	< 1.0	
1,2,3-Trichlorobenzene	N	2760		2.0	< 2.0	
Methyl Tert-Butyl Ether	U	2760		1.0	< 1.0	
N-Nitrosodimethylamine	U	2790	mg/kg	0.50	< 0.50	
Phenol	U	2790		0.50	< 0.50	
2-Chlorophenol	U	2790		0.50	< 0.50	
Bis-(2-Chloroethyl)Ether	U	2790	mg/kg	0.50	< 0.50	
1,3-Dichlorobenzene	U	2790	mg/kg	0.50	< 0.50	
1,4-Dichlorobenzene	N	2790		0.50	< 0.50	
1,2-Dichlorobenzene	U	2790		0.50	< 0.50	
2-Methylphenol	U	2790		0.50	< 0.50	
Bis(2-Chloroisopropyl)Ether	U	2790		0.50	< 0.50	
Hexachloroethane	N	2790		0.50	< 0.50	
N-Nitrosodi-n-propylamine	U	2790		0.50	< 0.50	
4-Methylphenol	U	2790		0.50	< 0.50	
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	
Isophorone	U	2790		0.50	< 0.50	
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	



Client: Geosphere Environmental Ltd		Chemtest Job No.:				
Quotation No.: Q17-10179	(Chemtest Sample ID.:				
Order No.:		Client Sample Ref.:				
		Client Sample ID.:				
		Sample Type:			SOIL	
			Top Dep		6.50	
			Date Sa		05-Apr-2018	
Determinand	Accred.	SOP		LOD		
2,4-Dimethylphenol	N	2790		0.50	< 0.50	
Bis(2-Chloroethoxy)Methane	U	2790		0.50	< 0.50	
2,4-Dichlorophenol	U	2790		0.50	< 0.50	
1,2,4-Trichlorobenzene	U	2790		0.50	< 0.50	
Naphthalene	U	2790)	0.50	< 0.50	
4-Chloroaniline	N	2790	9	0.50	< 0.50	
Hexachlorobutadiene	U	2790		0.50	< 0.50	
4-Chloro-3-Methylphenol	U	2790)	0.50	< 0.50	
2-Methylnaphthalene	U	2790		0.50	< 0.50	
4-Nitrophenol	N	2790	0	0.50	< 0.50	
Hexachlorocyclopentadiene	N	2790	0 0	0.50	< 0.50	
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	
2,4,5-Trichlorophenol	U	2790	0	0.50	< 0.50	
2-Chloronaphthalene	U	2790	0	0.50	< 0.50	
2-Nitroaniline	U	2790		0.50	< 0.50	
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	
Dimethylphthalate	U	2790		0.50	< 0.50	
2,6-Dinitrotoluene	U	2790		0.50	< 0.50	
Acenaphthene	U	2790	0	0.50	< 0.50	
3-Nitroaniline	N	2790)	0.50	< 0.50	
Dibenzofuran	U	2790		0.50	< 0.50	
4-Chlorophenylphenylether	U	2790		0.50	< 0.50	
2,4-Dinitrotoluene	U	2790)	0.50	< 0.50	
Fluorene	U	2790	0	0.50	< 0.50	
Diethyl Phthalate	U	2790		0.50	< 0.50	
4-Nitroaniline	U	2790		0.50	< 0.50	
2-Methyl-4,6-Dinitrophenol	N	2790		0.50	< 0.50	
Azobenzene	U	2790	0	0.50	< 0.50	
4-Bromophenylphenyl Ether	U	2790		0.50	< 0.50	
Hexachlorobenzene	U	2790		0.50	< 0.50	
Pentachlorophenol	N	2790		0.50	< 0.50	
Phenanthrene	U	2790		0.50	< 0.50	
Anthracene	U	2790)	0.50	< 0.50	
Carbazole	U	2790		0.50	< 0.50	
Di-N-Butyl Phthalate	U	2790	9	0.50	< 0.50	
Fluoranthene	U	2790	0 0	0.50	< 0.50	
Pyrene	U	2790	0	0.50	< 0.50	
Butylbenzyl Phthalate	U	2790		0.50	< 0.50	
Benzo[a]anthracene	U	2790		0.50	< 0.50	
Chrysene	U	2790		0.50	< 0.50	
Bis(2-Ethylhexyl)Phthalate	N	2790		0.50	< 0.50	
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	



1 Toject. 2545 Gi Lake Loatining							
Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(Chemtest Sample ID.:					
Order No.:		Client Sample Ref.:					
		Cli	ent Sam	ple ID.:	J11		
			Sampl	е Туре:	SOIL		
			Top De	oth (m):	6.50		
			Date Sa	ampled:	05-Apr-2018		
Determinand	Accred.	SOP	Units	LOD			
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[k]fluoranthene	U	2790	mg/kg	0.50	< 0.50		
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50		
Dibenz(a,h)Anthracene	U	2790	mg/kg	0.50	< 0.50		
Benzo[g,h,i]perylene	U	2790 mg/kg 0.50			< 0.50		
PCB 28	U	2815	mg/kg	0.010	< 0.010		
PCB 52	U	2815	mg/kg	0.010	< 0.010		
PCB 90+101	U	2815	mg/kg	0.010	< 0.010		
PCB 118	U	2815	mg/kg	0.010	< 0.010		
PCB 153	U	2815	mg/kg	0.010	< 0.010		
PCB 138	U	2815	mg/kg	0.010	< 0.010		
PCB 180	U	2815	mg/kg	0.010	< 0.010		
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	< 0.10		
Total Phenols	U	2920	mg/kg	0.30	< 0.30		



SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

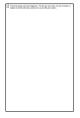
- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage





Chemtest Ltd. **Depot Road** Newmarket CB8 0AL

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report			
Report No.:	18-11312-1		
Initial Date of Issue:	03-May-2018		
Client	Geosphere Environmental Ltd		
Client Address:	Brightwell Barns Ipswich Road Brightwell Suffolk IP10 0BJ		
Contact(s):	Stephen Gilchrist		
Project	2543, GI Lake Loathing		
Quotation No.:	Q17-10179	Date Received:	25-Apr-2018
Order No.:	2543, GI	Date Instructed:	26-Apr-2018
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	02-May-2018
Date Approved:	03-May-2018		
Approved By:			

Martin Dyer, Laboratory Manager



Results - Leachate

Client: Geosphere Environmental Ltd	Chemtest Job No.:				18-11312
Quotation No.: Q17-10179	Che	Chemtest Sample ID.:			
Order No.: 2543, GI		Client	Sampl	e Ref.:	BHC01
		Client Sample ID.:			
		Sample Type:			SOIL
		Top Depth (m):			
					19-Apr-2018
Determinand	Accred.	SOP	Units	LOD	
рН	U	1010		N/A	8.6
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050
Sulphate	U	1220	mg/l	1.0	< 1.0
Cyanide (Total)	U	1300		0.050	< 0.050
Cyanide (Free)	U	1300		0.050	< 0.050
Arsenic (Dissolved)	U	1450	_	1.0	< 1.0
Boron (Dissolved)	U	1450		20	< 20
Cadmium (Dissolved)	U	1450		0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	< 1.0
Copper (Dissolved)	U	1450	μg/l	1.0	< 1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	< 1.0
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0
Selenium (Dissolved)	U	1450		1.0	< 1.0
Zinc (Dissolved)	U	1450	μg/l	1.0	1.1
Chromium (Hexavalent)	U	1490	٥	20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C7-C8	N	1675		0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C12-C16	N	1675		0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10
Naphthalene	U	1700		0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10
Acenaphthene	U	1700		0.10	< 0.10
Fluorene	U	1700		0.10	< 0.10
Phenanthrene	U	1700		0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10
Pyrene	U	1700		0.10	< 0.10
		_	_	_	



Results - Leachate

Client: Geosphere Environmental Ltd					
Quotation No.: Q17-10179				le ID.:	612825
Order No.: 2543, GI		Client	Sampl	e Ref.:	BHC01
				ole ID.:	J1
		ξ	Sample	Type:	SOIL
				th (m):	0.30
		mpled:	19-Apr-2018		
Determinand	Accred.	SOP	Units	LOD	
Benzo[a]anthracene	U	1700		0.10	< 0.10
Chrysene	U	1700		0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10
Benzo[k]fluoranthene	U	1700	١	0.10	< 0.10
Benzo[a]pyrene	U	1700		0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10
Benzo[g,h,i]perylene	U	1700		0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0
Benzene	U	1760	μg/l	1.0	< 1.0
Toluene	U	1760	μg/l	1.0	< 1.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0
Phenol	N	1790	μg/l	0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50
Nitrobenzene	N	1790	μg/l	0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50



Results - Leachate

Client: Geosphere Environmental Ltd		b No.:	18-11312				
Quotation No.: Q17-10179	Che	mtest	Samp	le ID.:	612825		
Order No.: 2543, GI		Client S	Sample	e Ref.:	BHC01		
		Client Sample ID.:					
		Type:	SOIL				
		To	p Dep	th (m):	0.30		
		Da	ite Sai	mpled:	19-Apr-2018		
Determinand	Accred.	SOP	Units	LOD			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Acenaphthylene	N	1790	μg/l	0.50	< 0.50		
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50		
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Acenaphthene	N	1790	μg/l	0.50	< 0.50		
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
Dibenzofuran	N	1790	μg/l	0.50	< 0.50		
4-Chlorophenylphenylether	N	1790		0.50	< 0.50		
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50		
Fluorene	N	1790	μg/l	0.50	< 0.50		
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50		
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50		
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50		
Azobenzene	N	1790	μg/l	0.50	< 0.50		
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50		
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50		
Phenanthrene	N	1790	μg/l	0.50	< 0.50		
Anthracene	N	1790	μg/l	0.50	< 0.50		
Carbazole	N	1790	μg/l	0.50	< 0.50		
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Fluoranthene	N	1790	μg/l	0.50	< 0.50		
Pyrene	N	1790	μg/l	0.50	< 0.50		
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50		
Chrysene	N	1790	μg/l	0.50	< 0.50		
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50		
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50		
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50		
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50		
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50		
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50		
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50		
Total Phenols	U	1920	mg/l	0.030	< 0.030		



Client: Geosphere Environmental Ltd			itest Jo			18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch		t Samp		612825	612828	612839	612841
Order No.: 2543, GI			t Sampl		BHC01	BHC01	TPC09	TPC09
		Client Sample ID.:		J1	J4	J1	J3	
			Sample		SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
					19-Apr-2018	19-Apr-2018	23-Apr-2018	23-Apr-2018
			Asbesto	s Lab:	COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	1		1	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	4.2	15	12	19
На	Ü	2010		N/A	8.6	8.7	8.4	8.5
Boron (Hot Water Soluble)	Ü		mg/kg		< 0.40	< 0.40	0.71	2.8
Sulphate (2:1 Water Soluble) as SO4	Ü	2120		0.010		< 0.010	0.016	0.16
Cyanide (Free)	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Cyanide (Total)	Ü		mg/kg		< 0.50	< 0.50	4.9	< 0.50
Ammonium (Extractable)	Ü		mg/kg		1.2	< 0.50	1.6	53
Sulphate (Total)	Ü	2430		0.010	0.018	< 0.010	0.16	1.1
Arsenic	Ü		mg/kg	1.0	4.5	2.0	24	25
Cadmium	Ü		mg/kg		< 0.10	< 0.10	0.19	< 0.10
Chromium	Ü	2450	mg/kg	1.0	6.6	3.4	10	26
Copper	Ü		mg/kg		9.8	1.8	810	22
Mercury	Ü		mg/kg		< 0.10	< 0.10	1.3	< 0.10
Nickel	Ü		mg/kg		7.7	3.0	25	27
Lead	Ü		mg/kg		19	4.3	340	45
Selenium	Ü		mg/kg		0.23	0.20	1.3	0.56
Zinc	Ü		mg/kg		23	9.4	150	68
Chromium (Hexavalent)	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	Ü	2625		0.40	1 0.00	< 0.40	1 0.00	1 0.00
Aliphatic TPH >C5-C6	N		mg/kg		< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	1	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	-	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	Ü		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	Ü		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	Ü		mg/kg	1.0	< 1.0	< 1.0	5.3	< 1.0
Aliphatic TPH >C21-C35	Ü		mg/kg	1.0	< 1.0	< 1.0	58	< 1.0
Aliphatic TPH >C35-C44	N		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N		mg/kg	5.0	< 5.0	< 5.0	64	< 5.0
Aromatic TPH >C5-C7	N		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N		mg/kg		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U		mg/kg		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	Ü		mg/kg		< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	U		mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C10 Aromatic TPH >C16-C21	U		mg/kg		< 1.0	< 1.0	1.3	< 1.0
Aromatic TPH >C16-C21 Aromatic TPH >C21-C35	U		mg/kg	1.0	< 1.0	< 1.0	190	< 1.0
Aromatic TPH >C21-C35 Aromatic TPH >C35-C44	N			1.0	< 1.0		< 1.0	< 1.0
	N N		mg/kg			< 1.0		
Total Aromatic Hydrocarbons			mg/kg		< 5.0	< 5.0	190	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	250	< 10



Client: Geosphere Environmental Ltd	Ltd Chemtest Job No.		b No.:	18-11312	18-11312	18-11312	18-11312	
Quotation No.: Q17-10179	Ch	emtes	t Samp	le ID.:	612825	612828	612839	612841
Order No.: 2543, GI		Client	t Sampl	e Ref.:	BHC01	BHC01	TPC09	TPC09
			nt Samp		J1	J4	J1	J3
			Sample	Type:	SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
			Date Sai	npled:	19-Apr-2018	19-Apr-2018		
			Asbesto		COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Naphthalene	U	2700	mg/kg	0.10	< 0.10	< 0.10	2.9	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.29	< 0.10
Acenaphthene	U		mg/kg		< 0.10	< 0.10	0.25	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.66	< 0.10
Phenanthrene	U		mg/kg		< 0.10	< 0.10	1.6	< 0.10
Anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.30	< 0.10
Fluoranthene	U		mg/kg		1.0	< 0.10	1.2	0.75
Pyrene	U		mg/kg		0.82	< 0.10	1.4	0.51
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.60	< 0.10
Chrysene	U		mg/kg		< 0.10	< 0.10	0.94	< 0.10
Benzo[b]fluoranthene	U		mg/kg		< 0.10	< 0.10	0.64	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.43	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	0.56	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U		mg/kg		< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U		mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U		mg/kg	2.0	< 2.0	< 2.0	12	< 2.0
Dichlorodifluoromethane	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U		μg/kg	20	< 20	< 20	< 20	< 20
Chloroethane	N		μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	N		μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U		μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromodichloromethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10
Toluene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	2760	μg/kg	10	< 10	< 10	< 10	< 10



Client: Geosphere Environmental Ltd			test Jo		18-11312	18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch		t Samp		612825	612828	612839	612841
Order No.: 2543, GI			t Sampl		BHC01	BHC01	TPC09	TPC09
			nt Samp		J1	J4	J1	J3
			Sample		SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
					19-Apr-2018	19-Apr-2018		
			Asbesto		COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.			LOD				
1,1,2-Trichloroethane	U	2760	μg/kg	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	N		μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	N		μg/kg	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane	U	2760	μg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	2760	μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	2760	μg/kg	50	< 50	< 50	< 50	< 50
N-Propylbenzene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	N		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	N		μg/kg	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U		μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	N	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	N		μg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	Ü	2760	μg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Phenol	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	Ü		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	Ü	_	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol	Ü	_	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	Ü		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd		Chem	test Jo	b No.:	18-11312	18-11312	18-11312	18-11312
Quotation No.: Q17-10179	Ch	emtes	t Samp	le ID.:	612825	612828	612839	612841
Order No.: 2543, GI		Client	t Sampl	e Ref.:	BHC01	BHC01	TPC09	TPC09
			nt Samp		J1	J4	J1	J3
			Sample	Type:	SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
			Date Sai	mpled:	19-Apr-2018	19-Apr-2018		23-Apr-2018
			Asbesto		COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	U		mg/kg		< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether					< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	U	2790	mg/kg	0.50	< 0.50	₹ 0.00		
Pentachlorophenol	U				< 0.50	< 0.50	< 0.50	< 0.50
i entaciliorophenoi	_	2790	mg/kg	0.50				
Phenanthrene	U	2790 2790	mg/kg mg/kg	0.50 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50
·	U N	2790 2790 2790	mg/kg mg/kg mg/kg	0.50 0.50 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50
Phenanthrene	U N U	2790 2790 2790 2790	mg/kg mg/kg	0.50 0.50 0.50 0.50	< 0.50 < 0.50 1.0	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 0.87	< 0.50 < 0.50 < 0.50



Client: Geosphere Environmental Ltd			18-11312	18-11312	18-11312	18-11312		
Quotation No.: Q17-10179	Ch		t Samp		612825	612828	612839	612841
Order No.: 2543, GI		Client	Sample	e Ref.:	BHC01	BHC01	TPC09	TPC09
		Clie	nt Samp	le ID.:	J1	J4	J1	J3
			Sample	Type:	SOIL	SOIL	SOIL	SOIL
			op Dep		0.30	1.70	0.20	1.50
			ate Sa	mpled:	19-Apr-2018	19-Apr-2018	23-Apr-2018	23-Apr-2018
		,	Asbesto	s Lab:	COVENTRY		COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD				
Fluoranthene	U	2790	mg/kg	0.50	1.2	< 0.50	1.5	< 0.50
Pyrene	U		mg/kg		0.83	< 0.50	1.2	< 0.50
Butylbenzyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene	U	2790	mg/kg	0.50	0.64	< 0.50	0.77	< 0.50
Chrysene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.98	< 0.50
Bis(2-Ethylhexyl)Phthalate	N		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	U	2790	mg/kg	0.50	0.69	< 0.50	1.2	< 0.50
Benzo[k]fluoranthene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.71	< 0.50
Indeno(1,2,3-c,d)Pyrene	U	2790	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	U		mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	U	2790	mg/kg	0.50	< 0.50	< 0.50	0.59	< 0.50
PCB 28	U		mg/kg		< 0.010		< 0.010	
PCB 81	N	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 52	U		mg/kg		< 0.010		< 0.010	
PCB 77	N	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 105	N	2815	mg/kg	0.010		< 0.010		< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010		< 0.010	
PCB 114	N		mg/kg			< 0.010		< 0.010
PCB 118	U		mg/kg		< 0.010		< 0.010	
PCB 118	N		mg/kg			< 0.010		< 0.010
PCB 153	U		mg/kg		< 0.010		< 0.010	
PCB 123	N		mg/kg			< 0.010		< 0.010
PCB 138	U		mg/kg		< 0.010		< 0.010	
PCB 126	N		mg/kg			< 0.010		< 0.010
PCB 180	U		mg/kg		< 0.010		< 0.010	
PCB 156	N		mg/kg			< 0.010		< 0.010
PCB 157	N		mg/kg			< 0.010		< 0.010
PCB 167	N		mg/kg			< 0.010		< 0.010
PCB 169	N		mg/kg			< 0.010		< 0.010
PCB 189	N		mg/kg			< 0.010		< 0.010
Total PCBs (12 Congeners)	N	2815	mg/kg	0.12		< 0.12		< 0.12
Total PCBs (7 Congeners)	N			0.10	< 0.10		< 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	, , , ,
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	рН	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2425	Extractable Ammonium in soils	Ammonium	Extraction with potassium chloride solution / analysis by 'Aquakem 600' Discrete Analyser using sodium salicylate and sodium dichloroisocyanurate.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.



SOP	Title	Parameters included	Method summary
2680	TPH A/A Split	Aliphatics: >C5-C6, >C6-C8,>C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21- C35, >C35- C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS
2810	Polychlorinated Biphenyls (PCB) as Aroclors in Soils by GC-ECD	Polychlorinated Biphenyls expressed as an Aroclor (normally reported as *Aroclor 1242)	Extraction of a soil sample, as received, into hexane/acetone (50:50) followed by gas chromatography (GC) using mass spectrometric (MS) detection for identification of polychlorinated biphenyls and electron capture detection (ECD) for quanitation if present.
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1- Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.



Key

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- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: <u>customerservices@chemtest.co.uk</u>



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 18-13032-1

Initial Date of Issue: 22-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543,GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 10-May-2018

Order No.: 2543,GI Date Instructed: 16-May-2018

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 22-May-2018

Approved By:



Client: Geosphere Environmental Ltd		Chemtest Job No.:					
Quotation No.: Q17-10179	(st Sam		620297		
Order No.: 2543,GI			nt Samp		BHC07		
		Client Sample ID.:					
		Sample Type:					
			Top Dep	oth (m):	1.70		
			Date Sa	ampled:	09-May-2018		
Determinand	Accred.	SOP	Units	LOD			
рН	U	1010		N/A	8.2		
Ammonia (Free) as N	U	1220	mg/l	0.050	0.39		
Sulphate	U	1220	mg/l	1.0	33		
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050		
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050		
Arsenic (Dissolved)	U	1450	μg/l	1.0	5.1		
Boron (Dissolved)	U	1450	μg/l	20	270		
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080		
Chromium (Dissolved)	U	1450	μg/l	1.0	9.7		
Copper (Dissolved)	U	1450	μg/l	1.0	1.5		
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50		
Nickel (Dissolved)	U	1450	μg/l	1.0	1.9		
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0		
Selenium (Dissolved)	U	1450	μg/l	1.0	7.8		
Zinc (Dissolved)	U	1450	μg/l	1.0	7.0		
Chromium (Hexavalent)	Ü	1490	µg/l	20	< 20		
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10		
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10		
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0		
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10		
Naphthalene	U	1700	μg/l	0.10	< 0.10		
Acenaphthylene	U	1700	μg/l	0.10	< 0.10		
Acenaphthene	U	1700	μg/l	0.10	< 0.10		



Client: Geosphere Environmental Ltd		Cher	mtest Jo	oh No ·	18-13032		
Quotation No.: Q17-10179	(st Sam		620297		
Order No.: 2543,GI	`		nt Samp		BHC07		
Order 110 2545,01		Client Sample ID.					
		Sample Type					
	1		Top Der		WATER 1.70		
			Date Sa	, ,	09-May-2018		
Determinand	Accred.	SOP		LOD	09-10lay-2016		
Phenanthrene	U Accrea.	1700		0.10	< 0.10		
Anthracene	U	1700	μg/l μg/l	0.10	< 0.10		
Fluoranthene	U	1700		0.10	< 0.10		
	U	1700	μg/l	0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]anthracene			μg/l		< 0.10		
Chrysene	U	1700	μg/l	0.10	< 0.10		
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10		
Benzo[a]pyrene	_	1700	μg/l	0.10	< 0.10		
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10		
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10		
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10		
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0		
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0		
Chloromethane	U	1760	μg/l	1.0	< 1.0		
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0		
Bromomethane	U	1760	μg/l	5.0	< 5.0		
Chloroethane	U	1760	μg/l	2.0	< 2.0		
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0		
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0		
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0		
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0		
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0		
Bromochloromethane	U	1760	μg/l	5.0	< 5.0		
Trichloromethane	U	1760	μg/l	1.0	< 1.0		
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0		
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0		
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0		
Benzene	U	1760	μg/l	1.0	< 1.0		
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0		
Trichloroethene	N	1760	μg/l	1.0	< 1.0		
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0		
Dibromomethane	U	1760	μg/l	10	< 10		
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0		
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10		
Toluene	U	1760	μg/l	1.0	< 1.0		
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10		
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10		
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0		



Client: Geosphere Environmental Ltd		Chei	mtest Jo	ob No.:	18-13032		
Quotation No.: Q17-10179			st Sam		620297		
Order No.: 2543,GI	- 		nt Samp		BHC07		
			ent Sam		W1		
			e Type:	WATER			
		Top Depth (m)					
			Date Sa		1.70 09-May-2018		
Determinand	Accred.	SOP	Units		56 may 2616		
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0		
Dibromochloromethane	Ü	1760	μg/l	10	< 10		
1,2-Dibromoethane	U	1760	µg/l	5.0	< 5.0		
Chlorobenzene	N	1760	μg/l	1.0	< 1.0		
1,1,1,2-Tetrachloroethane	U	1760	µg/l	2.0	< 2.0		
Ethylbenzene	U	1760	μg/l	1.0	< 1.0		
m & p-Xylene	Ü	1760	μg/l	1.0	< 1.0		
o-Xylene	Ü	1760	µg/l	1.0	< 1.0		
Styrene	U	1760	μg/l	1.0	< 1.0		
Tribromomethane	U	1760	μg/l	1.0	< 1.0		
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0		
Bromobenzene	U	1760	µg/l	1.0	< 1.0		
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50		
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0		
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0		
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0		
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0		
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0		
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0		
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0		
1,3-Dichlorobenzene	N	1760	µg/l	1.0	< 1.0		
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0		
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0		
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0		
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0		
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50		
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0		
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0		
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0		
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	5.2		
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50		
Phenol	N	1790	μg/l	0.50	< 0.50		
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50		
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50		
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50		
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50		
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50		



Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(st Sam		620297			
Order No.: 2543,GI			nt Samp		BHC07 W1			
		Client Sample ID.: Sample Type:						
			Top Dep	oth (m):	1.70			
			Date Sa		09-May-2018			
Determinand	Accred.	SOP	Units	LOD				
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			



Olivet Occasion Fredrick and all tele	18-13032							
Client: Geosphere Environmental Ltd		Chemtest Job No.:						
Quotation No.: Q17-10179	(Chemtest Sample ID.:						
Order No.: 2543,GI			nt Samp		BHC07			
		Cli	ent Sam	ple ID.:	W1			
			Sampl	е Туре:	WATER			
			Top Dep	oth (m):	1.70			
			Date Sa	ampled:	09-May-2018			
Determinand	Accred.	SOP	Units	LOD				
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50			
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50			
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
Total Phenols	U	1920	mg/l	0.030	< 0.030			



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

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- M MCERTS and UKAS accredited
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- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

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Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

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Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

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All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.co.uk

Final Report

Report No.: 18-13180-1

Initial Date of Issue: 22-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543 GI Lake Loathing

Quotation No.: Q17-10179 Date Received: 11-May-2018

Order No.: Date Instructed: 16-May-2018

No. of Samples: 2

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 22-May-2018

Approved By:



Client: Geosphere Environmental Ltd			mtest J	18-13180	18-13180	
Quotation No.: Q17-10179			st Sam	621138	621139	
Order No.:		Client Sample Ref.:				BHC24
				е Туре:	WATER	WATER
			Top De	oth (m):	2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	8.6	12.4
Ammonia (Free) as N	U	1220	mg/l	0.050	0.15	1.1
Sulphate	U	1220	mg/l	1.0	120	38
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	17	2.9
Boron (Dissolved)	U	1450	μg/l	20	210	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	12	2.4
Copper (Dissolved)	U	1450	μg/l	1.0	3.1	37
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	3.3	77
Lead (Dissolved)	U	1450	μg/l	1.0	1.1	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	4.8	9.4
Zinc (Dissolved)	U	1450	μg/l	1.0	9.0	3.4
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	62	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	62	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	30	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	30	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	92	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest J	18-13180	18-13180	
Quotation No.: Q17-10179	(st Sam	621138	621139	
Order No.:		Client Sample Ref.:				BHC24
				е Туре:	WATER	WATER
			Top De		2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10	< 10
Tetrachloroethene	Ü	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10	< 10



Client: Geosphere Environmental Ltd		Che	mtest J	18-13180	18-13180	
Quotation No.: Q17-10179			st Sam	621138	621139	
Order No.:		Client Sample Ref.:				BHC24
				e Type:	WATER	WATER
			Top De	oth (m):	2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units	LOD		
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
Styrene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tribromomethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	μg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50



Client: Geosphere Environmental Ltd			mtest J	18-13180	18-13180	
Quotation No.: Q17-10179			st Sam	621138	621139	
Order No.:		Clie	nt Samp	BHC27	BHC24	
				e Type:	WATER	WATER
			Top De _l		2.00	1.43
			Date Sa	ampled:	11-May-2018	11-May-2018
Determinand	Accred.	SOP	Units			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Isophorone	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Naphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluorene	N	1790	μg/l	0.50	< 0.50	< 0.50
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50



Results - Water

FTOJECT. 2545 GI Lake Loathing										
Client: Geosphere Environmental Ltd		Che	mtest J	18-13180	18-13180					
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	621138	621139				
Order No.:		Clie	nt Samp	le Ref.:	BHC27	BHC24				
			Sampl	е Туре:	WATER	WATER				
			Top De _l	oth (m):	2.00	1.43				
			Date Sa	ampled:	11-May-2018	11-May-2018				
Determinand	Accred.	SOP	Units	LOD						
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50				
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50				
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50				
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50				
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50				
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50				
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50				
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50				
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50				
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50				
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50				
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030				



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Tel: 01638 606070 Email: info@chemtest.co.uk

Final Report

Report No.: 18-13183-1

Initial Date of Issue: 22-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543 GI Lake Loathing

Quotation No.: Q17-10179 Date Received: 11-May-2018

Order No.: Date Instructed: 16-May-2018

No. of Samples: 1

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 22-May-2018

Approved By:



Project: 2543 GI Lake Loathing								
Client: Geosphere Environmental Ltd		ob No.:	18-13183					
Quotation No.: Q17-10179	(ple ID.: le Ref.:	621158					
Order No.:		BHC09						
		е Туре:	WATER					
			Top De	, ,	4.84			
		Bot	tom Dep	, ,	10.70			
			Date Sa		10-May-2018			
Determinand	Accred.	SOP	Units					
рН	U	1010		N/A	11.7			
Ammonia (Free) as N	U	1220	mg/l	0.050	1.1			
Sulphate	U	1220	mg/l	1.0	160			
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050			
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050			
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.8			
Boron (Dissolved)	U	1450	μg/l	20	34			
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.082			
Chromium (Dissolved)	U	1450	μg/l	1.0	19			
Copper (Dissolved)	U	1450	μg/l	1.0	4.8			
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50			
Nickel (Dissolved)	U	1450	μg/l	1.0	11			
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0			
Selenium (Dissolved)	U	1450	μg/l	1.0	9.8			
Zinc (Dissolved)	U	1450	μg/l	1.0	7.6			
Chromium (Hexavalent)	U	1490	μg/l	20	< 20			
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10			
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10			
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0			
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10			
Naphthalene	U	1700	μg/l	0.10	< 0.10			
Acenaphthylene	U	1700	μg/l	0.10	< 0.10			
Acenaphthene	U	1700	μg/l	0.10	< 0.10			
Fluorene	U	1700	μg/l	0.10	< 0.10			



Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-13183								
Client: Geosphere Environmental Ltd			18-13183					
Quotation No.: Q17-10179	4 (ple ID.: le Ref.:	621158					
Order No.:		BHC09						
		WATER						
			Top Dep	, ,	4.84			
		Bot	tom Dep	, ,	10.70			
			Date Sa	_	10-May-2018			
Determinand	Accred.	SOP	Units					
Phenanthrene	U	1700	μg/l	0.10	< 0.10			
Anthracene	U	1700	μg/l	0.10	< 0.10			
Fluoranthene	U	1700	μg/l	0.10	< 0.10			
Pyrene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10			
Chrysene	U	1700	μg/l	0.10	< 0.10			
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10			
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10			
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10			
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10			
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10			
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0			
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0			
Chloromethane	U	1760	μg/l	1.0	< 1.0			
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0			
Bromomethane	U	1760	μg/l	5.0	< 5.0			
Chloroethane	U	1760	μg/l	2.0	< 2.0			
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0			
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0			
Bromochloromethane	U	1760	μg/l	5.0	< 5.0			
Trichloromethane	U	1760	μg/l	1.0	< 1.0			
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0			
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0			
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0			
Benzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0			
Trichloroethene	N	1760	μg/l	1.0	< 1.0			
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0			
Dibromomethane	U	1760	μg/l	10	< 10			
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0			
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
Toluene	U	1760	μg/l	1.0	< 1.0			
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10			
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10			
Tetrachloroethene	Ū	1760	μg/l	1.0	< 1.0			



Project: 2543 GI Lake Loathing								
Client: Geosphere Environmental Ltd		ob No.:	18-13183					
Quotation No.: Q17-10179	4 (ple ID.:	621158					
Order No.:		le Ref.:	BHC09					
		e Type:	WATER					
			Top Dep	, ,	4.84			
		Bot	tom Dep	, ,	10.70			
			Date Sa	_	10-May-2018			
Determinand	Accred.	SOP	Units					
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0			
Dibromochloromethane	U	1760	μg/l	10	< 10			
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0			
Chlorobenzene	N	1760	μg/l	1.0	< 1.0			
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0			
Ethylbenzene	U	1760	μg/l	1.0	< 1.0			
m & p-Xylene	U	1760	μg/l	1.0	< 1.0			
o-Xylene	U	1760	μg/l	1.0	< 1.0			
Styrene	U	1760	μg/l	1.0	< 1.0			
Tribromomethane	U	1760	μg/l	1.0	< 1.0			
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0			
Bromobenzene	U	1760	μg/l	1.0	< 1.0			
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50			
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0			
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0			
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0			
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0			
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0			
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0			
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0			
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0			
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0			
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50			
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0			
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0			
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0			
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0			
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50			
Phenol	N	1790	μg/l	0.50	< 0.50			
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50			
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50			
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50			
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroisopropyl)Ether	N	1790	μg/l	0.50	< 0.50			



Project: 2543 GI Lake Loathing Client: Geosphere Environmental Ltd Chemtest Job No.: 18-13183								
Client: Geosphere Environmental Ltd								
Quotation No.: Q17-10179		621158						
Order No.:		le Ref.:	BHC09					
		e Type: oth (m):	WATER					
		4.84						
		10.70						
		10-May-2018						
Determinand	Accred.	SOP	Units					
Hexachloroethane	N	1790	μg/l	0.50	< 0.50			
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50			
4-Methylphenol	N	1790	μg/l	0.50	< 0.50			
Nitrobenzene	N	1790	μg/l	0.50	< 0.50			
Isophorone	N	1790	μg/l	0.50	< 0.50			
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
2,4-Dimethylphenol	N	1790	μg/l	0.50	< 0.50			
Bis(2-Chloroethoxy)Methane	N	1790	μg/l	0.50	< 0.50			
2,4-Dichlorophenol	N	1790	μg/l	0.50	< 0.50			
1,2,4-Trichlorobenzene	N	1790	μg/l	0.50	< 0.50			
Naphthalene	N	1790	μg/l	0.50	< 0.50			
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50			
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50			
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50			
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50			
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50			
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50			
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50			
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Acenaphthylene	N	1790	μg/l	0.50	< 0.50			
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50			
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Acenaphthene	N	1790	μg/l	0.50	< 0.50			
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
Dibenzofuran	N	1790	μg/l	0.50	< 0.50			
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50			
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50			
Fluorene	N	1790	μg/l	0.50	< 0.50			
Diethyl Phthalate	N	1790	μg/l	0.50	< 0.50			
4-Nitroaniline	N	1790	μg/l	0.50	< 0.50			
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50			
Azobenzene	N	1790	μg/l	0.50	< 0.50			
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50			
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50			
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50			
Phenanthrene	N	1790	μg/l	0.50	< 0.50			
Anthracene	N	1790	μg/l	0.50	< 0.50			
Carbazole	N	1790	μg/l	0.50	< 0.50			



Froject. 2545 Gi Lake Loathing								
Client: Geosphere Environmental Ltd		18-13183						
Quotation No.: Q17-10179		621158						
Order No.:		BHC09						
		WATER						
		4.84						
	Bottom Depth (m):				10.70			
	Date Sampled:			10-May-2018				
Determinand	Accred.	SOP	Units	LOD				
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Fluoranthene	N	1790	μg/l	0.50	< 0.50			
Pyrene	N	1790	μg/l	0.50	< 0.50			
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50			
Chrysene	N	1790	μg/l	0.50	< 0.50			
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50			
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50			
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50			
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50			
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50			
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50			
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50			
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50			
Total Phenols	U	1920	mg/l	0.030	< 0.030			



SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
 - > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk





Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070

Email: info@chemtest.co.uk

Final Report

Report No.: 18-13535-1

Initial Date of Issue: 23-May-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Tom Powling

Project 2543 GI, Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 16-May-2018

Order No.: Date Instructed: 16-May-2018

No. of Samples: 4

Turnaround (Wkdays): 5 Results Due: 22-May-2018

Date Approved: 23-May-2018

Approved By:

Results - Water

Client: Geosphere Environmental Ltd	Chemtest Job No.:			18-13535	18-13535	18-13535	18-13535	
Quotation No.: Q17-10179	Chemtest Sample ID.:		623008	623009	623010	623011		
Order No.:	Client Sample Ref.: Sample Type: Top Depth (m): Date Sampled:		BHC24(D)	BHC08	BHC01	BHC14		
			WATER	WATER	WATER	WATER		
			1.92	3.20	2.58	1.91		
			14-May-2018	14-May-2018	14-May-2018	14-May-2018		
Determinand	Accred.	SOP	Units	LOD				
рН	U	1010		N/A	12.3	9.9	13.2	12.8
Ammonia (Free) as N	U	1220	mg/l	0.050	0.57	0.55	0.31	0.66
Sulphate	U	1220	mg/l	1.0	28	100	350	8.7
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	6.7	4.2	2.4	2.4
Boron (Dissolved)	U	1450	μg/l	20	< 20	64	< 20	< 20
Cadmium (Dissolved)	U	1450	μg/l	0.080	< 0.080	< 0.080	0.088	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	16	22	160	7.4
Copper (Dissolved)	U	1450	μg/l	1.0	1.9	1.6	61	23
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	8.3	16	43	19
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0	5.2	1.8
Selenium (Dissolved)	U	1450	μg/l	1.0	10	4.2	9.6	7.2
Zinc (Dissolved)	U	1450	μg/l	1.0	< 1.0	2.7	17	6.4
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20	160	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10	63	46
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0	63	46
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	< 10	63	46
Naphthalene	Ü	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	Ü	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	Ü	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	Ü	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Client: Geosphere Environmental Ltd				ob No.:		18-13535	18-13535	18-13535
Quotation No.: Q17-10179	<u> </u>		st Sam		623008	623009	623010	623011
Order No.:		Clie	nt Samp		BHC24(D)	BHC08	BHC01	BHC14
				e Type:	WATER	WATER	WATER	WATER
			Top De		1.92	3.20	2.58	1.91
				ampled:	14-May-2018	14-May-2018	14-May-2018	14-May-201
Determinand	Accred.	SOP	Units					
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane	Ü	1760	μg/l	10	< 10	< 10	< 10	< 10
Bromodichloromethane	Ü	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10	< 10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	1.0	< 10	< 10	< 10	< 1.0
1.1.2-Trichloroethane	U	1760	μg/l	10	< 10	< 10	< 10	< 10
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10	< 10	< 10	< 10

Client: Geosphere Environmental Ltd			mtest J		18-13535	18-13535	18-13535	18-13535
Quotation No.: Q17-10179	(st Sam		623008	623009	623010	623011
Order No.:		Clie	nt Samp		BHC24(D)	BHC08	BHC01	BHC14
				e Type:	WATER	WATER	WATER	WATER
			Top De		1.92	3.20	2.58	1.91
				ampled:	14-May-2018	14-May-2018	14-May-2018	14-May-201
Determinand	Accred.	SOP	Units					
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Styrene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50	< 50	< 50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50

Client: Geosphere Environmental Ltd	Chemtest Job No.:		18-13535	18-13535	18-13535	18-13535		
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	623008	623009	623010	623011
Order No.:		Clier	nt Samp		BHC24(D)	BHC08	BHC01	BHC14
			WATER	WATER	WATER	WATER		
			Top De	, ,	1.92	3.20	2.58	1.91
			Date Sa	ampled:	14-May-2018	14-May-2018	14-May-2018	14-May-2018
Determinand	Accred.	SOP	Units	LOD				
Nitrobenzene	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorocyclopentadiene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthylene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
3-Nitroaniline	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chlorophenylphenylether	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Diethyl Phthalate	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline	Ν	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Anthracene	N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole								
	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole		1790 1790	μg/l μg/l	0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Carbazole Di-N-Butyl Phthalate	N		μg/l μg/l μg/l					



Froject. 2545 GI, Lake Lottling, Lowestoit								
Client: Geosphere Environmental Ltd		Che	mtest Jo	ob No.:	18-13535	18-13535	18-13535	18-13535
Quotation No.: Q17-10179	(Chemtest Sample ID.:		623008	623009	623010	623011	
Order No.:		Clie	nt Samp	le Ref.:	BHC24(D)	BHC08	BHC01	BHC14
			Sampl	е Туре:	WATER	WATER	WATER	WATER
			Top Dep	oth (m):	1.92	3.20	2.58	1.91
		Date Sampled: 1		14-May-2018	14-May-2018	14-May-2018	14-May-2018	
Determinand	Accred.	SOP	Units	LOD				
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030	0.28	0.083



Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk



Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.co.uk

Final Report

Report No.: 18-15148-1

Initial Date of Issue: 04-Jun-2018

Client Geosphere Environmental Ltd

Client Address: Brightwell Barns

Ipswich Road Brightwell Suffolk IP10 0BJ

Contact(s): Lianne Fountain

Project 2543, GI Lake Lothing, Lowestoft

Quotation No.: Q17-10179 Date Received: 31-May-2018

Order No.: 2543, Gl **Date Instructed:** 31-May-2018

No. of Samples: 2

Turnaround (Wkdays): 3 Results Due: 04-Jun-2018

Date Approved: 04-Jun-2018

Approved By:

Details: Martin Dyer, Laboratory Manager

Client: Geosphere Environmental Ltd			ntest Jo		18-15148	18-15148
Quotation No.: Q17-10179	(st Sam		630538	630539
Order No.: 2543, GI		Clier	nt Samp	le Ref.:	BHC02	BHC07
		Clie	ent Sam		W2	W2
				e Type:	WATER	WATER
			Top Dep	1.10	1.15	
		Bot	tom Dep		1.40	1.40
			Date Sa		30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units	LOD		
рН	U	1010		N/A	7.7	8.3
Ammonia (Free) as N	U	1220	mg/l	0.050	< 0.050	0.32
Sulphate	U	1220	mg/l	1.0	110	27
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1450	μg/l	1.0	3.4	7.2
Boron (Dissolved)	U	1450	μg/l	20	140	250
Cadmium (Dissolved)	U	1450	μg/l	0.080	0.098	< 0.080
Chromium (Dissolved)	U	1450	μg/l	1.0	2.7	3.1
Copper (Dissolved)	U	1450	μg/l	1.0	3.1	< 1.0
Mercury (Dissolved)	U	1450	μg/l	0.50	< 0.50	< 0.50
Nickel (Dissolved)	U	1450	μg/l	1.0	2.4	2.7
Lead (Dissolved)	U	1450	μg/l	1.0	< 1.0	< 1.0
Selenium (Dissolved)	U	1450	μg/l	1.0	3.9	2.8
Zinc (Dissolved)	U	1450	μg/l	1.0	11	1.9
Chromium (Hexavalent)	U	1490	μg/l	20	< 20	< 20
Aliphatic TPH >C5-C6	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	μg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	μg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	μg/l	5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	μg/l	10	< 10	< 10
Naphthalene	U	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthylene	Ü	1700	μg/l	0.10	< 0.10	< 0.10
Acenaphthene	U	1700	μg/l	0.10	< 0.10	< 0.10



Client: Geosphere Environmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179			st Sam		630538	630539
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC02	BHC07
		Cli	ent Sam		W2	W2
				е Туре:	WATER	WATER
			Top Dep	1.10	1.15	
		Bot	tom Dep	oth (m):	1.40	1.40
			Date Sa	ampled:	30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units	LOD		
Fluorene	U	1700	μg/l	0.10	< 0.10	< 0.10
Phenanthrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Chrysene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	1700	μg/l	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	1700	μg/l	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	1700	μg/l	0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	1700	μg/l	2.0	< 2.0	< 2.0
Dichlorodifluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Chloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Vinyl Chloride	N	1760	μg/l	1.0	< 1.0	< 1.0
Bromomethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichlorofluoromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromochloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Trichloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Tetrachloromethane	U	1760	μg/l	1.0	< 1.0	< 1.0
1,1-Dichloropropene	U	1760	μg/l	1.0	< 1.0	< 1.0
Benzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Trichloroethene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichloropropane	U	1760	μg/l	1.0	< 1.0	< 1.0
Dibromomethane	U	1760	μg/l	10	< 10	< 10
Bromodichloromethane	U	1760	μg/l	5.0	< 5.0	< 5.0
cis-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10
Toluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene	N	1760	μg/l	10	< 10	< 10

Client: Geosphere Environmental Ltd			mtest Jo		18-15148	18-15148
Quotation No.: Q17-10179	(st Sam		630538	630539
Order No.: 2543, GI			nt Samp		BHC02	BHC07
		Cli	ent Sam		W2	W2
				e Type:	WATER	WATER
			Top Dep	1.10	1.15	
		Bot	tom Dep		1.40	1.40
			Date Sa		30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units	LOD		
1,1,2-Trichloroethane	U	1760	μg/l	10	< 10	< 10
Tetrachloroethene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichloropropane	U	1760	μg/l	2.0	< 2.0	< 2.0
Dibromochloromethane	U	1760	μg/l	10	< 10	< 10
1,2-Dibromoethane	U	1760	μg/l	5.0	< 5.0	< 5.0
Chlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane	U	1760	μg/l	2.0	< 2.0	< 2.0
Ethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	μg/l	1.0	< 1.0	< 1.0
Styrene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tribromomethane	U	1760	μg/l	1.0	< 1.0	< 1.0
Isopropylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Bromobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane	N	1760	μg/l	50	< 50	< 50
N-Propylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
2-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
4-Chlorotoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
Tert-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Sec-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene	N	1760	μg/l	1.0	< 1.0	< 1.0
4-Isopropyltoluene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,4-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
N-Butylbenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane	U	1760	μg/l	50	< 50	< 50
1,2,4-Trichlorobenzene	U	1760	μg/l	1.0	< 1.0	< 1.0
Hexachlorobutadiene	U	1760	μg/l	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene	U	1760	μg/l	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether	N	1760	μg/l	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenol	N	1790	μg/l	0.50	< 0.50	< 0.50
2-Chlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether	N	1790	μg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene	N	1790	μg/l	0.50	< 0.50	< 0.50

<u> </u>		st Sam		630538	630539
Client Sample Ref.:				BHC02	BHC07
	Cli				W2
					WATER
					1.15
	Bot				1.40
				30-May-2018	30-May-2018
		Units			
_		μg/l		< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790		0.50	< 0.50	< 0.50
N	1790		0.50	< 0.50	< 0.50
N	1790	_	0.50	< 0.50	< 0.50
N	1790		0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
N	1790		0.50	< 0.50	< 0.50
N	1790		0.50	< 0.50	< 0.50
N	1790		0.50	< 0.50	< 0.50
N	1790		0.50	< 0.50	< 0.50
N					< 0.50
N	1790		0.50	< 0.50	< 0.50
N					< 0.50
_	_				< 0.50
N					< 0.50
N					< 0.50
N	1790				< 0.50
_					< 0.50
	_				< 0.50
	_				< 0.50
					< 0.50
N	1790	μg/l	0.50	< 0.50	< 0.50
	1100	μ9/1	0.00	\ 0.00	~ 0.50
	1700		0.50	< 0.50	0.50
N N	1790 1790	μg/l μg/l	0.50 0.50	< 0.50 < 0.50	< 0.50 < 0.50
	N N N N N N N N N N N N N N N N N N N	Roted. SOP N 1790	Sample	N 1790 μg/l 0.50 N 1790 μg/l 0.50	Sample Type: WATER Top Depth (m): 1.10



Client: Geosphere Environmental Ltd		Che	mtest J	ob No.:	18-15148	18-15148
Quotation No.: Q17-10179	(Chemte	st Sam	ple ID.:	630538	630539
Order No.: 2543, GI		Clie	nt Samp	le Ref.:	BHC02	BHC07
		Cli	ent Sam	ple ID.:	W2	W2
			Sampl	е Туре:	WATER	WATER
			Top De	oth (m):	1.10	1.15
		Bot	tom De	oth (m):	1.40	1.40
			Date Sa	ampled:	30-May-2018	30-May-2018
Determinand	Accred.	SOP	Units	LOD		
Pentachlorophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Phenanthrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Carbazole	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Butyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Chrysene	N	1790	μg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene	N	1790	μg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene	N	1790	μg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene	N	1790	μg/l	0.50	< 0.50	< 0.50
4-Nitrophenol	N	1790	μg/l	0.50	< 0.50	< 0.50
Total Phenols	U	1920	mg/l	0.030	< 0.030	< 0.030



Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	рН	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	determination by inductively coupled plasma
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5-C6, >C6-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44Aromatics: >C5-C7, >C7-C8, >C8-C10, >C10-C12, >C12-C16, >C16-C21, >C21-C35, >C35-C44	Pentane extraction / GCxGC FID detection
1700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.



Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
 - < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A Date of sampling not supplied
- B Sample age exceeds stability time (sampling to extraction)
- C Sample not received in appropriate containers
- D Broken Container
- E Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to: customerservices@chemtest.co.uk

Annex D

MARINE SAMPLING FACTUAL

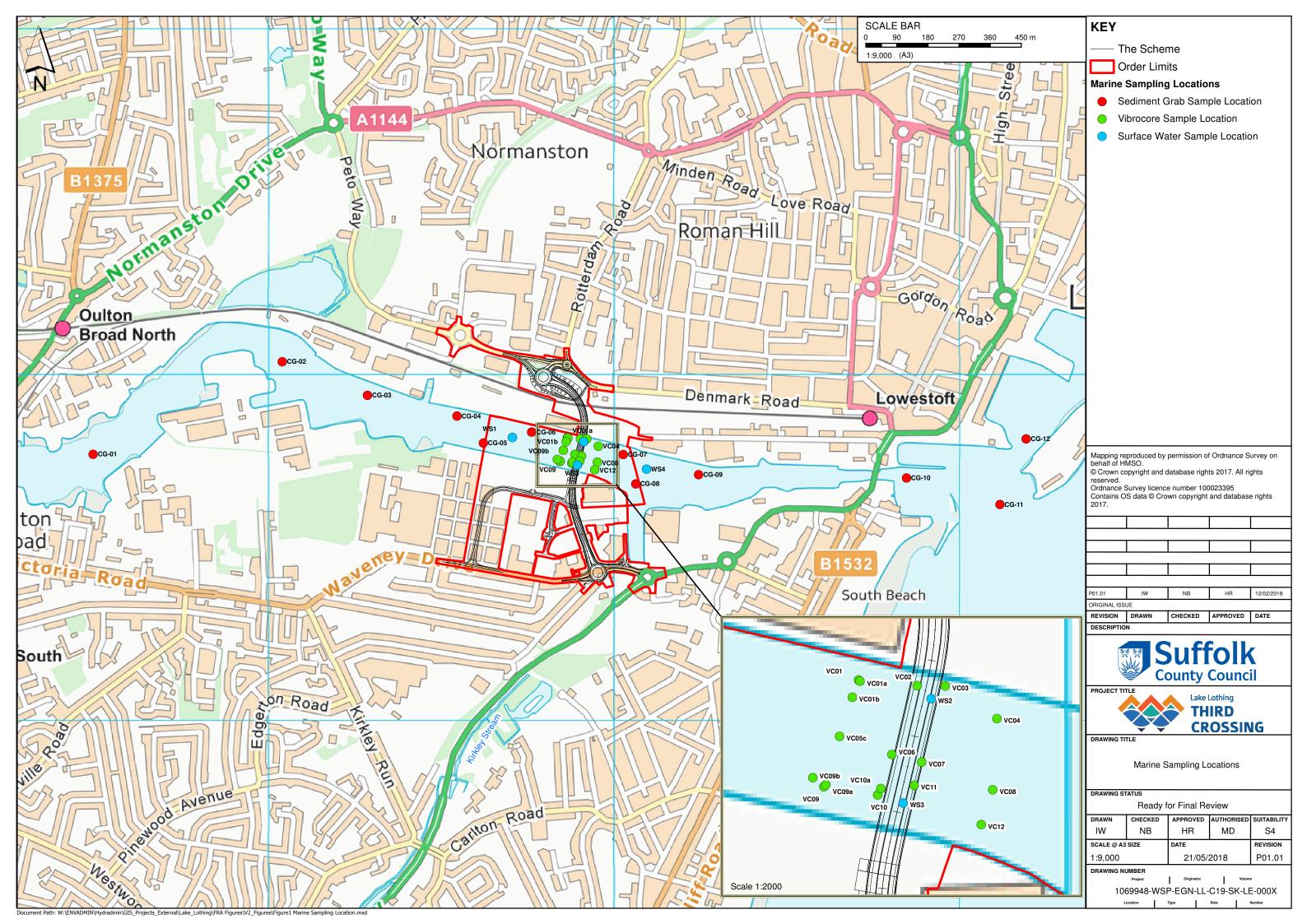


INFORMATION

Annex D.1

SAMPLING LOCATIONS





Drawn by:	DF
Date:	16/05/2018
Checked by:	DH



onesica by.							
		PROJ	ECT DETAILS	_			
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour]				
		TEST LOC	CATION DETAILS				
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	1.65	Core Number		
Easting	(m)/Northing (m):	653861.3 E - N 292806.9	Recovery(m):	1.54			
	Water Depth(m):	3.1	KP Distance (m):		VC01B		
	Sampling Date:	20/04/18	Fix Number:	fix 21	VCUIB		
Vibration Time on Seabed: 0 mins		Touchdown (local-time):	10:50:31UTC				
	Comments:	Spiking amps					

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH (m)		LES, FIELD		ID COMMENTS
	3312 230	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
ft dark grey SILT	$\times \times \times \times$					
	$\times \times \times \times$					
	$\times \times \times \times$					
	$\times \times \times$					
ht brown fine to coarse SAND	72.00 m	0.70				
			0.80-1.20m			
			0.80-1.2011			
	No. 19 Sept.		101151			
		1.54	1.24-1.54m			
		1.04				

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



checked by.	5							
		PROJ	ECT DETAILS					
Contract No:	2016-259		Project Title:					
Vessel:	MV FlatHolm							
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling					
Area:	Lowestoft Harbour		7					
		TEST LOC	ATION DETAILS					
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	4.20	Core Number			
Easting	(m)/Northing (m):	653903.0 E - N 292814.4	Recovery(m):	3.63				
	Water Depth(m):	3.2	KP Distance (m):		VC02			
	Sampling Date:	20/04/18	Fix Number:	fix 25	VCOZ			
Vibratio	n Time on Seabed:	2 mins	Touchdown (local-time):	14:44:47UTC				
	Comments:	Spiking amps, clay in base						

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH				D COMMENTS
	22.2.200	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
/ery soft to soft SILT	$\times \times \times \times$					
	$\times \times \times$					
	\times \times \times					
	$(\times \times \times)$					
	$\times \times \times \times$					
	$\times \times \times$					
	$\triangle \triangle \triangle \triangle$		0.80-1.20m			
	$\times \times \times$		0.80-1.2011			
	$\times \times \times \times$			·		
	$\times \times \times \times$					
		4.50				
ight brown fine to coarse SAND		1.50				
			1.80-2.20m			
			1.00 2.2011			
	84143481					
	17 V 11 V 12 13	2.70				
Stiff to very stiff silty CLAY						
			2.80-3.20m			
			3.20-3.63m			
		3.63				
•						
		1				

Drawn by: Date: Checked by:	19/05/2018	OFFSHORE CORE LOG					ÇMS	S-Geotech
	I		PROJI	ECT DETAIL	.S			
Contract No:				Project Title:				
	MV FlatHolm			WCD Lake	ما سمانطهما		C 0 C	`!:
	WSP (UK) Ltd Lowestoft Harbour			WSP Lake	Lotning Lo	owestort v	C & Grab S	sampling
Area:	Lowestort Harbour		TESTIOO	ATION DET	2117.			
Coor	rdinate Ref System:	British Grid (OSGB36)	IL31 LOC		enetration(m):	4.00	(Core Number
	(m)/Northing (m):	653921.0 E - N	1 292814 2		Recovery(m):			
Lusting	Water Depth(m):		. 2/2011.2		Distance (m):	5.77		14000
	Sampling Date:			***	Fix Number:	fix 24		VC03
Vibratio	on Time on Seabed:			Touchdow	n (local-time):			
	Comments:	Penetration flatline		I	, ,			
							,	
			T	SOIL DEPTH	SAMP	IES EIELF	TESTS AN	ID COMMENTS
	SOIL DESCRI	PTION	SOIL LOG	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
Soft dark grey	SILT		$\times \times \times \times$		Cumpics	test depti1	our or (it u)	Comments
			(0		
			× × × × (× × × (× × × ×		0.80-1.20m			5
Light brown sli medium below	ghtly silty fine to coars 2.70 m	e SAND becoming fine to		1.60				
					1.80-2.20m			
					2 80-3 20m			

3.39-3.79m

3.79

Drawn by:	DF					\	
Date:	16/05/2018	OFF	CLIOD	CODE LOC		ONIO Castook	
Checked by:	DH	OFFSHORE CORE LOG			CMS-Geotech		
PROJECT DETAILS							
Contract No:	2016-259			Project Title:			
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd			WSP Lake Lothing Lowestoft VC & Grab Sampling			
Area:	Lowestoft Harbour						
TEST LOCATION DETAILS							
Coor	dinate Ref System:	British Grid (OSGB36)		Penetration(m):	4.55	Core Number	
Easting	(m)/Northing (m):	653954.3 E - N 292	2793.2	Recovery(m):	4.20		

	TEST LOC	ATION DETAILS		
Coordinate Ref System:	British Grid (OSGB36)	Penetration(m):	4.55	Core Number
Easting (m)/Northing (m):	653954.3 E - N 292793.2	Recovery(m):	4.20	
Water Depth(m):	3.0	KP Distance (m):		VCO4
Sampling Date:	19/04/18	Fix Number:	fix 15	VC04
Vibration Time on Seabed:	1 mins	Touchdown (local-time):	14:55:15UTC	
Comments:	Flatline penetration			
			<u> </u>	

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH				ID COMMENTS
	JUIL LUG	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
Light grey slightly silty fine to medium SAND coursing down to nedium to coarse SAND		0.90	0.80-1.20m	test depth	Cu/Cr (kPa)	Comments
Light grey slightly clayey SILT	* * * * * * * * * * * * * * * * * * *	4.00	2.80-3.20m 3.60-4.00m			

Drawn by:	DF
Date:	16/05/2018
Checked by:	DH



onconca by:							
		PROJI	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour						
TEST LOCATION DETAILS							
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.70	Core Number		
Easting	(m)/Northing (m):	653853.1 E - N 292781.8	Recovery(m):	2.93			
	Water Depth(m):	4.4	KP Distance (m):		VC05C		
	Sampling Date:	19/04/18	Fix Number:	fix 14	VCUSC		
Vibratio	on Time on Seabed:	2 mins	Touchdown (local-time):	13:50:52UTC			
	Comments:	Loss of position					

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH	SAMP			ID COMMENTS
ack soft clayey SILT	SAVANT ACCULA	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
aun suit uldyey SIL1						
			0.80-1.20m			
	ALC: NO.					
Grey very silty fine SAND. Gravelly at base	100 × 100 ×	1.50				
oral only and oral oral oral oral oral oral oral oral						
	× × ×					
	$\mathbb{X} \setminus \mathbb{X} \cap \mathbb{Y}$					
	×		1.80-2.20m			
/ery dense light grey SILT	<u>0.8101865</u>	2.15				
ory define light grey of Et	$\times \times \times \times$					
	$\times \times \times \times$					
	$\times \times \times \times$					
	$\times \times \times$					
Brownish grey silty fine to medium SAND	XxXxXxX	2.80	2.53-2.93m			
Johnson groy only line to modular of the	(4.X-10.000)	2.93				
		, ,				
	Y					
		1				

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



onconca by:							
		PROJI	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	: WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour						
TEST LOCATION DETAILS							
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	2.76	Core Number		
Easting	(m)/Northing (m):	653886.7 E - N 292770.1	Recovery(m):	2.46			
	Water Depth(m):	3.5	KP Distance (m):		VC06		
	Sampling Date:	20/04/18	Fix Number:	fix 16	VCOB		
Vibratio	n Time on Seabed:	2 mins	Touchdown (local-time):	07:31:03UTC			
	Comments:	Penetration flatline			_		

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH	SAMP		TESTS AN	D COMMENTS
oft to very soft grey SILT	======	(m)	Samples	test depth	Cu/Cr (kPa)	Comments
on to very soft grey SIL1	$\times \times \times \times$					
	$(\times \times \times)$					
	$\times \times \times \times$					
	$\times \times \times \times$					
	\times \times \times					
			0.80-1.20m			
			0.00 1.20			
	$\times \times \times \times$					
	$(\times \times \times$	1.40				
ght brown silty medium to coarse SAND	× × ×					
	×××					
	\times	1.80				
ose very sandy fine to coarse GRAVEL						
	X X X					
		0.00				
ght brown fine to medium SAND		2.20	2.00-2.46m			
		2.46				

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



		PROJI	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour						
		TEST LOC	ATION DETAILS				
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	2.50	Core Number		
Easting	(m)/Northing (m):	653905.9 E - N 292765.3	Recovery(m):	2.00			
	Water Depth(m):	1.4	KP Distance (m):		VC07		
	Sampling Date: 20/04/18		Fix Number:	fix 27	VCO7		
Vibratio	n Time on Seabed:	2 mins	Touchdown (local-time):	16:42:05UTC			
	Comments:	Loss of position					

					4	
SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH (m)	SAMP			ID COMMENTS
Soft dark grey sandy SILT	CASARONI	(in)	Samples	test depth	Cu/Cr (kPa)	Comments
on dark grey sandy SiE1	$\times \times \times \times$					
	$\times \times \times$					
ight brown slightly silty fine to coarse SAND with occasional	$\times \times \times \times$	0.40				
ravel						
			0.80-1.20m			
			1.60-2.00m			
	FOR THE PARTY OF T	2.00				
		, ,				

Drawn by:	DF						
Date:	19/05/2018	OFFELIOR	E CORE LOG		OMO Castook		
Checked by:	DH	OFFSHUR	CMS-Geotech				
		PROJ	ECT DETAILS				
Contract No:	2016-259		Project Title:				
Vessel:	MV FlatHolm						
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling				
Area:	Lowestoft Harbour						
		TEST LOC	ATION DETAILS				
Coor	rdinate Ref System:	British Grid (OSGB36)	Penetration(m):	2.05	Core Number		
Easting	g (m)/Northing (m):	653951.6 E - N 292747.4	Recovery(m):	1.45			
Water Depth(m): 3.6		KP Distance (m):		VCOO			
Sampling Date: 20/04/18		Fix Number:	VC08				
Vibratio	on Time on Seabed:	1 mins	Touchdown (local-time):	16:04:34UTC			
Comments: Loss of position							

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH (m)) IESIS AN	D COMMENT
dark grey SILT brown slightly silty fine to medium SAND	× × × × × × × × × × × × × × × × × × ×	0.60	Samples	test depth	Cu/Cr (kPa)	Comments
		1.45	0.60-1.00m			
		1.40		Ó		
		(

Drawn by: Date:	16/05/2018	0	FFSHORI	E CODE I	100		CNAS	Coatooh
Checked by:	DH		FFSHURI	CORE	LOG		CIVIS	6-Geotech
			PROJE	CT DETAIL	S			
Contract No:	2016-259			Project Title:				
Vessel:	MV FlatHolm							
	WSP (UK) Ltd			WSP Lake	Lothing Lo	westoft V	C & Grab S	ampling
Area:	Lowestoft Harbour							
	" - 5 . 6	In (000000)	TEST LOC	ATION DET				
		British Grid (OSGB36)			enetration(m):		C	ore Number
Easting	(m)/Northing (m):	653835.9 E - N	1 292755.2			1.66		
	Water Depth(m):			КР	Distance (m):	fly 12	'	/C09B
VBlace C.	Sampling Date:			Torrelati	Fix Number:	fix 13		
vibratio	on Time on Seabed:	1 mins Loss of position		rouchdowi	n (local-time):	12:48:45UTC		
	comments:	ross or hostriou						
			ı	<u> </u>	CAMP	LC FIFIC	TECTE AN	ID COMMENTS
	SOIL DESCRI	IPTION	SOIL LOG	SOIL DEPTH (m)		test depth	Cu/Cr (kPa)	ID COMMENTS
Grevish brown	slightly sandy very cla	avev SILT		()	Samples	test depth	Cu/Cr (kPa)	Comments
Light brown clayey silty SAND			1.20	0.80-1.20m				
				1,66				

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



		PROJ	ECT DETAILS	_					
Contract No:	2016-259		Project Title:						
Vessel:	MV FlatHolm								
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling						
Area:	Lowestoft Harbour								
		TEST LOC							
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.10	Core Number				
Easting	(m)/Northing (m):	653879.7 E - N 292748.1	Recovery(m):	2.85					
	Water Depth(m):	3.8	KP Distance (m):		VC10A				
	Sampling Date:	20/04/18	Fix Number:	fix 18	VCTOA				
Vibratio	n Time on Seabed:	1 mins	Touchdown (local-time): 08:24:58UT						
	Comments:	Flatline penetration							

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



onconca by:										
		PROJ	PROJECT DETAILS							
Contract No:	2016-259		Project Title:							
Vessel:	MV FlatHolm									
Client:	WSP (UK) Ltd		WSP Lake Lothing Lowestoft VC & Grab Sampling							
Area:	Lowestoft Harbour									
		TEST LOC	CATION DETAILS							
Coor	rdinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.00	Core Number					
Easting	(m)/Northing (m):	653901.1 E - N 292750.3	2.50							
	Water Depth(m):		KP Distance (m):		VC11					
	Sampling Date:	20/04/18	Fix Number:	fix 22	VCII					
Vibratio	on Time on Seabed:	2 mins	Touchdown (local-time): 11:26:43UT							
	Comments:	Penetration flatline								

SOIL DESCRIPTION SOIL LOG (m) Samples test depth Cu/cr (kPa) Comments Very gravelly SAND. Gravel is fine to coarse Light brown fine to medium SAND 1.10 1.80-2.20m 2.50
Very gravelly SAND. Gravel is fine to coarse 1.10 1.40 1.80-2.20m 2.20-2.50m

Drawn by:	DF
Date:	19/05/2018
Checked by:	DH



		PROJ	ECT DETAILS						
Contract No:	2016-259		Project Title:						
Vessel:	MV FlatHolm								
Client:	WSP (UK) Ltd		C & Grab Sampling						
Area:	Lowestoft Harbour								
		TEST LOC	ATION DETAILS						
Coor	dinate Ref System:	British Grid (OSGB36)	Penetration(m):	3.75	Core Number				
Easting	(m)/Northing (m):	653944.2 E - N 292725.1	Recovery(m):	3.30					
Water Depth(m):			KP Distance (m):		VC12A				
	Sampling Date:	20/04/18	Fix Number: fix 23		VCIZA				
Vibratio	n Time on Seabed:	1 mins	Touchdown (local-time): 12:28:55UTC						
	Comments:	Loss of position	<u> </u>	_	_				

SOIL DESCRIPTION	SOIL LOG	SOIL DEPTH				D COMMENTS
oft dark grey slightly sandy SILT		(m)	Samples	test depth	Cu/Cr (kPa)	Comments
on dain gray stigitity satity SIL1	$\times \times \times \times$					
	$(\times \times \times$					
	$\times \times \times \times$					
	$\times \times \times$					
	$\times \times \times \times$					
	$\times \times \times$					
	$\times \times \times \times$					
	$\times \times \times \times$		0.80-1.20m			
	$\times \times \times \times$					
ght brown slightly silty fine to medium SAND	THE REPORT OF THE	1.30				
			1.80-2.20m			
			2.80-3.30m			
		3.30				
		3.30		1		
		7				
•						
		Ī			ĺ	

Annex D.2

CHEMICAL TEST DATA





Unit 7-8 Hawarden Business Park Manor Road (off Manor Lane) Hawarden Deeside CH5 3US

> Tel: (01244) 528700 Fax: (01244) 528701

email: hawardencustomerservices@alsglobal.com

Website: www.alsenvironmental.co.uk

WSP UK Limited 3rd Floor Station House Mercury Court Titheburn Street Liverpool L2 2QP

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

 Date:
 02 May 2018

 Customer:
 H_MOUCH_LIV

 Sample Delivery Group (SDG):
 180412-80

 Your Reference:
 62240712

 Location:
 Lowestoft

 Report No:
 454516

This report has been revised and directly supersedes 452622 in its entirety.

We received 12 samples on Thursday April 12, 2018 and 12 of these samples were scheduled for analysis which was completed on Wednesday May 02, 2018. 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 (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager











CERTIFICATE OF ANALYSIS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17353781	CG 01		0.00 - 0.16	09/04/2018
17353782	CG 02		0.00 - 0.16	09/04/2018
17353791	CG 03		0.00 - 0.16	09/04/2018
17353783	CG 04		0.00 - 0.16	09/04/2018
17353790	CG 05		0.00 - 0.16	09/04/2018
17353780	CG 06		0.00 - 0.16	09/04/2018
17353788	CG 08		0.00 - 0.16	09/04/2018
17353792	CG 09		0.00 - 0.16	09/04/2018
17353786	CG 10		0.00 - 0.16	10/04/2018
17353784	CG 11		0.00 - 0.16	10/04/2018
17353785	CG 12		0.00 - 0.16	10/04/2018
17353787	CG 07B		0.00 - 0.16	09/04/2018

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of $(5\pm3)^{\circ}C$.

4.4

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of $(5\pm3)^{\circ}$ C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 62240712 180412-80 Client Reference: Report Number: 454516 Location: Lowestoft Order Number: 62240712 Superseded Report: 452622 Results Legend 17353791 17353783 17353780 17353788 7353781 7353782 7353790 Lab Sample No(s) X Test No Determination Possible Customer CG 04 CG 01 CG 02 CG 03 CG 05 CG 06 CG 08 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.00-0.00 PR - Process Water 0.00-0.00-0.00-0.00 0.00 - 0.16 SA - Saline Water Depth (m) - 0.16 - 0.16 - 0.16 - 0.16 - 0.16 TE - Trade Effluent - 0.16 TS - Treated Sewage US - Untreated Sewage RE - Recreational Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 250g Amber J (ALE210) 250g Amber Jar (ALE210) 250g Amber Jar DW - Drinking Water Non-regulatory (ALE210) 1kg TUB UNL - Unspecified Liquid 1kg TUB 1kg TUB 1kg SL - Sludge Container **TUB** G - Gas OTH - Other Jar Sample Type S S S S S S S S S S S S S S S S S S S EPH CWG (Aliphatic) GC (S) All NDPs: 0 Tests: 12 X X X X Χ Χ EPH CWG (Aromatic) GC (S) All NDPs: 0 Tests: 12 Χ Χ Χ Χ Χ X GRO by GC-FID (S) All NDPs: 0 Tests: 12 Х Х Х Х Х Χ All Metals in solid samples by OES NDPs: 0 Tests: 12 X Х X Х X Х OC OP Pesticides and Triazine Herb All NDPs: 0 Tests: 12 Χ Χ Χ Χ Χ Χ Organotins on soils* All NDPs: 0 Tests: 12 Х Х Х X Χ Χ PAH by GCMS All NDPs: 0 Tests: 12 Χ Χ Χ Х Χ Χ Passing Through >63µm sieve All NDPs: 0 Tests: 12 Χ Х Х Χ Χ Х Х PCBs by GCMS All NDPs: 0 Tests: 12 X X X Χ X Χ Sample description All NDPs: 0 Tests: 11 Х X Х Х X X TPH CWG GC (S) All NDPs: 0 Tests: 12 X Χ X X X Χ

	17353788			17353792			17353786			17353784			17353785			17353787
	CG 08			CG 09			CG 10			CG 11			CG 12			CG 07B
	0.00 - 0.16			0.00 - 0.16			0.00 - 0.16			0.00 - 0.16			0.00 - 0.16			0.00 - 0.16
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)
ဟ	ဟ	တ	S	S	S	S	S	S	S	S	S	တ	တ	S	S	S
X	X		X	X		X	X		X	X		X	X		X	x
х			X			X			X			X			X	
Х			X			X			Х			Х			X	
Х			X			X			X			Х			X	
X			X			X			X			X			X	
		X			X			X			X			X		
X			X			X			X			Х			Х	
Х			Х						Х			х			х	
X			Х			X			Х			Х			Х	

>10mm





 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Sample Descriptions

Grain Sizes

very fine	<0.063mm	fine	0.063mm - 0.1mm	medium	0.1mn	n - 2mm	oarse	2mm -	10mm ve	ry coarse
Lab Sample No	o(s) Custon	ner Sample Ro	ef. Depth (m)	Co	olour	Description	I	nclusions	Inclusions	s 2
17353781		CG 01	0.00 - 0.16	Dari	k Brown	Silt Loam		None	None	
17353782		CG 02	0.00 - 0.16	E	Black	Silt Loam		None	None	
17353791		CG 03	0.00 - 0.16	(Grey	N/A		None	None	
17353783		CG 04	0.00 - 0.16	Dari	k Brown	Sandy Silt Loan	ı	Stones	Vegetation	1
17353790		CG 05	0.00 - 0.16	Dari	k Brown	Sandy Silt Loan	ı	Stones	Vegetation	ı
17353780		CG 06	0.00 - 0.16	Dari	k Brown	Silt Loam		Stones	None	
17353788		CG 08	0.00 - 0.16	Dari	k Brown	Silt Loam		None	None	
17353792		CG 09	0.00 - 0.16	Dari	k Brown	Sand		None	None	
17353786		CG 10	0.00 - 0.16	Dari	k Brown	N/A	,	Vegetation	None	
17353784		CG 11	0.00 - 0.16	Dari	k Brown	Sandy Silt Loan	י ו	Vegetation	Stones	
17353785		CG 12	0.00 - 0.16	Dari	k Brown	Silty Clay Loam	1	Stones	Vegetation	1
17353787		CG 07B	0.00 - 0.16	Dari	k 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 ocurring 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.



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Results Legend # ISO17025 accredited.		Customer Sample Ref.	CG 01		CG 02	CG 03	CG 04	CG 05	CG 06
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** frecovery of the surrogate stanccheck the efficiency of the methor results of individual compounds samples aren't corrected for the n Trigger breach confirmed 1-5&4§@ Sample deviation (see appendix) Component	d. The within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference Method	0.00 - 0.16 Soil/Solid (S) 09/04/2018 13:00:00 12/04/2018 180412-80 17353781		0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:18:00 12/04/2018 180412-80 17353782	0.00 - 0.16 Soil/Solid (S) 09/04/2018 15:30:00 12/04/2018 180412-80 17353791	0.00 - 0.16 Soil/Solid (5) 09/04/2018 15.43:00 12/04/2018 180412-80 17353783	0.00 - 0.16 Soli/Solid (S) 09/04/2018 15:55:00 12/04/2018 180412-80 17353790	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:08:00 12/04/2018 180412-80 17353780
Moisture Content Ratio (% of as	%	PM024	63		47	58	47	57	61
received sample) PCB congener 28	<3 µg/kg	TM168	<3	М	<3 M	<3	<3	<3 M	<3 M
PCB congener 52	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 101	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 118	<3 µg/kg	TM168	3.16	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 138	<3 µg/kg	TM168	3.32	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 153	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 180	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21		<21	<21	<21	<21	<21
PCB congener 81	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 77	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 123	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 114	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 105	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 126	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 167	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 156	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 157	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 169	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
PCB congener 189	<3 µg/kg	TM168	<3	М	<3 M	<3	<3 M	<3 M	<3 M
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36		<36	<36	<36	<36	<36
Arsenic	<0.6 mg/kg	TM181	19.1	М	18.4 M	19.8	19.8 M	21.2 M	24.2 M
Boron	<0.7 mg/kg	TM181	40.3	#	34.6 #	41.8	38.4 #	41.8 #	44.8 #
Cadmium	<0.02 mg/kg	g TM181	0.392	М	<0.02 M	0.297	0.313 M	<0.02 M	0.255 M
Chromium	<0.9 mg/kg	TM181	26.2	М	25.8 M	27.2	24.3 M	23.4 M	27.3 M
Copper	<1.4 mg/kg	TM181	131	М	63.4 M	35	23.6 M	21.3 M	21.3 M
Lead	<0.7 mg/kg		65.8	М	47.8 M	37.4	33.2 M	32.6 M	36.5 M
Mercury	<0.14 mg/kg	g TM181	<0.14	М	<0.14 M	<0.14	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	24.7	М	23.6 M	25.8	24.1 M	24 M	27.8 M
Selenium	<1 mg/kg	TM181	<1	#	<1 #	<1	<1 #	<1 #	<1 #
Zinc	<1.9 mg/kg	TM181	212	М	161 M	124	100 M	101 M	108 M



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Results Legend # ISO17025 accredited.		Customer Sample Ref.	CG 08		CG 09		CG 10	CG 11	CG 12	CG 07B
m mCERTS accredited. a q Aqueous / settled sample. Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate stand check the efficiency of the method results of individual compounds w samples aren't corrected for the refriger breach confirmed 1-5&+§⊚ Sample deviation (see appendix) Component	f. The vithin	Depth (m) Sample Type Date Sample Inge Date Sample Time Date Received SDG Ref Lab Sample No. AGS Reference	0.00 - 0.16 Soil/Solid (\$) 09/04/2018 16:21:00 12/04/2018 180412-80 17353788		0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:50:00 12/04/2018 180412-80 17353792		0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:10:00 12/04/2018 180412-80 17353786	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:20:00 12/04/2018 180412-80 17353784	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:33:00 12/04/2018 180412-80 17353785	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:39:00 12/04/2018 180412-80 17353787
Moisture Content Ratio (% of as received sample)	%	PM024	52		55		53	36	48	47
PCB congener 28	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 52	<3 µg/kg	TM168	<3	М	<3	M	<3	<3 M	<3 M	<3 M
PCB congener 101	<3 µg/kg	TM168	<3	М	<3	М	<3		<3 M	<3 M
PCB congener 118	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 138	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 153	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 180	<3 µg/kg	TM168	<3	М	<3	M	<3	<3 M	<3 M	<3 M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21		<21		<21	<21	<21	<21
PCB congener 81	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 77	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 123	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 114	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 105	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 126	<3 µg/kg	TM168	<3	М	<3	M	<3	<3 M	<3 M	<3 M
PCB congener 167	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 156	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 157	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
PCB congener 169	<3 µg/kg	TM168	<3	М	<3	M	<3	<3 M	<3 M	<3 M
PCB congener 189	<3 µg/kg	TM168	<3	М	<3	М	<3	<3 M	<3 M	<3 M
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36		<36		<36	<36	<36	<36
Arsenic	<0.6 mg/kg	TM181	18.6	М	20.6	М	18.7	17.5 M	19.5 M	19.6 M
Boron	<0.7 mg/kg	TM181	27.2	#	45	#	44.5	32 #	41.7 #	38.8 #
Cadmium	<0.02 mg/k	g TM181	0.311	М	0.258	М	0.236	0.294 M	<0.02 M	0.286 M
Chromium	<0.9 mg/kg	TM181	24.7	М	25.4	M	20.3	14.8 M	21.4 M	22.5 M
Copper	<1.4 mg/kg	TM181	21.7	М	18.6	М	13.9	12.7 M	14.8 M	20.7 M
Lead	<0.7 mg/kg	TM181	37.2	М	31.4	М	25.1	21.4 M	29.9 M	32.3 M
Mercury	<0.14 mg/k	g TM181	<0.14	М	<0.14	М	<0.14	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	25.3	М	25.4	М	20.7	16.5 M	22.3 M	23.7
Selenium	<1 mg/kg	TM181	<1	#	<1	#	<1	<1 #	<1 #	<1
Zinc	<1.9 mg/kg	TM181	108	М	94	М	72.5	60.4 M	85.1 M	93.9 M

454516 452622 SDG: Report Number: Superseded Report: 180412-80 Client Reference: 62240712 Lowestoft Order Number: 62240712 Location:

OC, OP Pesticides and Results Legend # ISO17025 accredited.		ustomer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
M mCERTS accredited. Aqueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	0.00 - 0.16 Soil/Solid (S)	0.00 - 0.16 Soil/Solid (S)	0.00 - 0.16 Soil/Solid (S)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	Soil/Solid (S) 09/04/2018	Soil/Solid (S) 09/04/2018	Soil/Solid (S) 09/04/2018
** % recovery of the surrogate standa check the efficiency of the method.		Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00
results of individual compounds w	ithin	Date Received SDG Ref	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80
samples aren't corrected for the re-	covery	Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component Tecnazene	LOD/Units	Method TM073	<500	<500	<500	<500	<500	<500
rechazene	<50 µg/kg	1101073	<500	<500	<500	<500	<500	<500
Hexachlorobenzene	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Trifluralin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Phorate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Quintozene (PCNB)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triallate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Disulfoton	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Aldrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Chlorothalonil	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Telodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Isodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor epoxide	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triadimefon	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Pendimethalin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-DDE	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan I	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Trans-chlordane	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
cis-Chlordane	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-DDE	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Dieldrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p'-DDD (TDE)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-DDT	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-TDE (DDD)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan II	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-DDT	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-Methoxychlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-Methoxychlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan sulphate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500

CERTIFICATE OF ANALYSIS

454516 452622 Report Number: Superseded Report: SDG: 180412-80 Client Reference: 62240712 Lowestoft Order Number: 62240712 Location:

OC, OP Pesticides and Triazine Herb										
Results Legend # ISO17025 accredited.		Customer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06		
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test.		Depth (m) Sample Type Date Sampled	0.00 - 0.16 Soil/Solid (S) 09/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018	0.00 - 0.16 Soil/Solid (S) 09/04/2018		
check the efficiency of the method	. The	Sample Time Date Received	13:00:00 12/04/2018	15:18:00 12/04/2018	15:30:00 12/04/2018	15:43:00 12/04/2018	15:55:00 12/04/2018	16:08:00 12/04/2018		
results of individual compounds w samples aren't corrected for the re		SDG Ref	180412-80 17353781	180412-80 17353782	180412-80 17353791	180412-80 17353783	180412-80 17353790	180412-80 17353780		
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	1733701	1733702	1733731	1733763	17333730	1733700		
Component Permethrin I	LOD/Unit	s Method	<500	4500	4500	<500	<500	4500		
Permeunini	<50 µg/k	g TM073	<500	<500	<500	<500	<500	<500		
Permethrin II	<50 μg/k	g TM073	<500	<500	<500	<500	<500	<500		

62240712 62240712 454516 452622 SDG: Report Number: Superseded Report: 180412-80 Client Reference: Lowestoft Order Number: Location:

OC, OP Pesticides and	Triazine H	erb						
Results Legend # ISO17025 accredited.		ustomer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B
M mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate stands check the efficiency of the method results of individual compounds w samples aren't corrected for the re (F) Trigger breach confirmed	. The ithin	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s)	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:21:00 12/04/2018 180412-80 17353788	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:50:00 12/04/2018 180412-80 17353792	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:10:00 12/04/2018 180412-80 17353786	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:20:00 12/04/2018 180412-80 17353784	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:33:00 12/04/2018 180412-80 17353785	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:39:00 12/04/2018 180412-80 17353787
1-5&+§@ Sample deviation (see appendix) Component	LOD/Units	AGS Reference Method						
Tecnazene	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Hexachlorobenzene	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Trifluralin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Phorate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Quintozene (PCNB)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triallate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Disulfoton	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Aldrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Chlorothalonil	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Telodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Isodrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Heptachlor epoxide	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Triadimefon	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Pendimethalin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-DDE	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan I	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Trans-chlordane	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
cis-Chlordane	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-DDE	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Dieldrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p'-DDD (TDE)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endrin	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-DDT	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-TDE (DDD)	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan II	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-DDT	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
o,p-Methoxychlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
p,p-Methoxychlor	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500
Endosulphan sulphate	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500

CERTIFICATE OF ANALYSIS



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

OC, OP Pesticides and Triazine Herb									
Results Legend # ISO17025 accredited.		Customer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B	
M mCERTS accredited.									
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
* Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	10/04/2018	10/04/2018	10/04/2018	09/04/2018	
** % recovery of the surrogate standa	ard to	Sample Time	16:21:00	16:50:00	14:10:00	14:20:00	14:33:00	16:39:00	
check the efficiency of the method	. The	Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	
results of individual compounds w		SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80	
samples aren't corrected for the re	covery	Lab Sample No.(s)	17353788	17353792	17353786	17353784	17353785	17353787	
(F) Trigger breach confirmed 1-5&•§@ Sample deviation (see appendix)		AGS Reference							
Component	LOD/Units	Method							
			.500	.500	.500	-500	.500	.500	
Permethrin I	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500	
Permethrin II	<50 µg/kg	TM073	<500	<500	<500	<500	<500	<500	
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CERTIFICATE OF ANALYSIS

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

ALS) Estation								
Organotins on soils*								
Results Legend # ISO17025 accredited.	Cı	ustomer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
M mCERTS accredited.								
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018
** % recovery of the surrogate standa	ard to	Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00
check the efficiency of the method	. The	Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018
results of individual compounds w samples aren't corrected for the re		SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80
(F) Trigger breach confirmed	COVERY	Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
Dibutyl Tin*	mg/kg	SUB	<0.05	<0.04	<0.05	<0.04	<0.04	<0.05
,								
T 11 1 1 T 1 4	,	OUB	2.27	0.07	2.25	2.24	2.24	0.05
Tributyl Tin*	mg/kg	SUB	0.07	0.07	<0.05	<0.04	<0.04	<0.05
Triphenyl Tin*	mg/kg	SUB	<0.14	<0.1	<0.12	<0.11	<0.11	<0.12
, ,								·
T		OUD	2.05	2.24	0.05	2.24	2.24	0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.05	<0.04	<0.05	<0.04	<0.04	<0.05
Monobutyl Tin*	mg/kg	SUB	<0.27	<0.21	<0.23	<0.22	<0.22	<0.23
			·	, . <u>.</u> .	1.2	· · · · · ·		1.=1
M 1 177 5		01.15	2.05	224	2.25	2.24	224	2.25
Monophenyl Tin*	mg/kg	SUB	<0.05	<0.04	<0.05	<0.04	<0.04	<0.05
	<u></u> _							
Diphenyl Tin*	mg/kg	SUB	<0.05	<0.04	<0.05	<0.04	<0.04	<0.05
k		""	0.00	""		""	""	5.55
	I							
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CERTIFICATE OF ANALYSIS

454516 452622 Report Number: Superseded Report: SDG: 180412-80 Client Reference: 62240712 Lowestoft Order Number: 62240712 Location:

Organotins on soils*								
# ISO17025 accredited.	Cı	ustomer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B
M mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * krecovery of the surrogate standa check the efficiency of the method. results of individual compounds with samples aren't corrected for the ref. (F) Trigger breach confirmed 1-554*§© Sample deviation (see appendix)	. The ithin	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:21:00 12/04/2018 180412-80 17353788	0.00 - 0.16 Soil/Soid (S) 09/04/2018 16:50:00 12/04/2018 180412-80 17353792	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:10:00 12/04/2018 180412-80 17353786	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14/20:00 12/04/2018 180412-80 17353784	0.00 - 0.16 Soil/Solid (S) 10/04/2018 14:33:00 12/04/2018 180412-80 17353785	0.00 - 0.16 Soil/Solid (S) 09/04/2018 16:39:00 12/04/2018 180412-80 17353787
Component	LOD/Units	Method						
Dibutyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Tributyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Triphenyl Tin*	mg/kg	SUB	<0.1	<0.11	<0.1	<0.05	<0.11	<0.1
Tetrabutyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Monobutyl Tin*	mg/kg	SUB	<0.2	<0.23	<0.21	<0.15	<0.22	<0.2
Monophenyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04
Diphenyl Tin*	mg/kg	SUB	<0.04	<0.05	<0.04	<0.02	<0.04	<0.04

454516 452622 SDG: Report Number: Superseded Report: 180412-80 Client Reference: 62240712 Lowestoft Order Number: 62240712 Location:

PAH by GCMS								
Results Legend		Customer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
# ISO17025 accredited. M mCERTS accredited.								
aq Aqueous / settled sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018
** % recovery of the surrogate stands check the efficiency of the method		Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00
results of individual compounds w	rithin	Date Received SDG Ref	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80	12/04/2018 180412-80
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	100	104	73.8	91.7	99	104
Acenaphthene-d10 % recovery**	%	TM218	90.7	96.2	70.5	91.5	98.5	95.3
Phenanthrene-d10 % recovery**	%	TM218	92.4	96	70.3	90.9	98	93.3
Chrysene-d12 % recovery**	%	TM218	108	101	126	78.4	83.4	87.6
Perylene-d12 % recovery**	%	TM218	87.6	86.2	89.6	76.4	84	75.3
Naphthalene	<9 µg/kg	TM218	188 M	398 M	291 #	37.3 M	24.7 M	46.9 M
Acenaphthylene	<12 µg/kg	TM218	<60 M	71.2	<60 #	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218	<40 M	319	430 #	45.7 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	<50 M	237	170 #	23 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218	256 M	447	355 #	82.4 M	51.7 M	90.5 M
Anthracene	<16 µg/kg	TM218	<80 M	342	<80 #	32.7 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218	541	1230	1040 #	203	107	131
Pyrene	<15 µg/kg	TM218	680 M	5590	1510 #	208 M	92.4 M	110 M
Benz(a)anthracene	<14 µg/kg	TM218	232 M	348	303 #	70.7 M	34.1 M	47 M
Chrysene	<10 µg/kg	TM218	193 M	260	261 #	61.9 M	34.7 M	52.9 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	430 M	1120	335 #	95.8 M	52.7 M	92.5 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	222 M	408	213 #	35.5 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218	229 M	643 M	244 #	60.2 M	<15 M	38.8 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<90 M	224	<90 #	34.8 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<115 M	<46 M	<115 #	<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	<120 M	268 M	<120 #	48.8 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	2970	11900	5150	1040	397	609

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

PAH by GCMS									
Results Legend # ISO17025 accredited.		Customer Sample Ref.	CG 08		CG 09	CG 10	CG 11	CG 12	CG 07B
M mCERTS accredited.									
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)			0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
tot.unfilt Total / unfiltered sample.		Sample Type			Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test. ** % recovery of the surrogate standar	ard to	Date Sampled			09/04/2018	10/04/2018	10/04/2018	10/04/2018	09/04/2018
check the efficiency of the method		Sample Time Date Received			16:50:00 12/04/2018	14:10:00 12/04/2018	14:20:00 12/04/2018	14:33:00 12/04/2018	16:39:00 12/04/2018
results of individual compounds w		SDG Ref			180412-80	180412-80	180412-80	180412-80	180412-80
samples aren't corrected for the re (F) Trigger breach confirmed	covery	Lab Sample No.(s)	47050700		17353792	17353786	17353784	17353785	17353787
1-5&+§@ Sample deviation (see appendix)		AGS Reference	4						
Component	LOD/Un								
Naphthalene-d8 % recovery**	%	TM218	93.5		94.2	100	101	88.6	89.1
Acenaphthene-d10 % recovery**	%	TM218	85.8		94.1	93.8	94.1	87.3	89.5
Phenanthrene-d10 % recovery**	%	TM218	84.2		92.9	92	91.8	85.3	86.8
Chrysene-d12 % recovery**	%	TM218	80.7		74	87.8	88.8	81	80
Perylene-d12 % recovery**	%	TM218	70.6		76.2	77.3	80.7	87.9	86.4
Naphthalene	<9 µg/	kg TM218	55.6	М	31.7 M	27.6	17.2 # M	24.3 M	<9 M
Acenaphthylene	<12 µg	/kg TM218	<12	М	<12 M	<12 ;	<12 # M	<12 M	<12 M
Acenaphthene	<8 µg/		27.1	М	<8 M		<8 # M	<8 M	<8 M
Fluorene	<10 µg		33.1	М	<10 M		<10 # M	<10 M	<10 M
Phenanthrene	<15 µg		124	М	64.7 M		67.9 # M	63.5 M	34.9 M
Anthracene	<16 µg		34.5	М	<16 M		<16 # M	<16 M	<16 M
Fluoranthene	<17 µg		205	М	79.9 M		151 # M	99.3 M	51.7 M
Pyrene	<15 µg		172	М	67.7 M		120 # M	82.6 M	44 M
Benz(a)anthracene	<14 µg		71.4	М	<14 M		79.1 # M	45.1 M	<14 M
Chrysene	<10 µg		74.2	М	30.4 M		80.8 # M	42.5 M	20.5 M
Benzo(b)fluoranthene	<15 µg		131	M	47.4 M		93.7 # M	95 M	30.6 M
Benzo(k)fluoranthene	<14 µg		50.2	M	<14 M		51.5 # M	29.3 M	<14 M
Benzo(a)pyrene Indeno(1,2,3-cd)pyrene	<15 µg		65.1 46	M	<15 M <18	50.7 38.4	64.8 # M 42.7	49.9 M 36.9	<15 M <18
Dibenzo(a,h)anthracene	<18 µg,		40 <23	M	<18 M		42.7 4 <23	36.9 M	<18 M
Benzo(g,h,i)perylene	<24 μg		69.6	М	<24 M		# M 58.7	53.3	<23 M
PAH, Total Detected USEPA 16	<118 μg		1160	М	322 M		# M 827	622	182 M
								<u> </u>	

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

(ALS)				- 11441115011				
TPH CWG (S)								
Results Legend # ISO17025 accredited.	С	ustomer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06
M mCERTS accredited.								
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018
** % recovery of the surrogate stand		Sample Time	13:00:00	15:18:00	15:30:00	15:43:00	15:55:00	16:08:00
check the efficiency of the method results of individual compounds of		Date Received	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018	12/04/2018
samples aren't corrected for the re		SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80
(F) Trigger breach confirmed		Lab Sample No.(s)	17353781	17353782	17353791	17353783	17353790	17353780
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	70	75	82	82	80	72
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	569	<44	<44	<44	<44
			M	M		М	M	M
Methyl tertiary butyl ether	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
(MTBE)	·o pg/kg	1111000	#	#	Ĭ	#	#	#
,								
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
			M	M		M	M	M
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
	- 1-33		_ M	- М	_	- M	_ м	M
E0. 0	0 "	T1 1000			_			
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
			M	M		М	M	M
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
,μ,ν	- 1-55	1	M	М		M	М	М
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
			M	M		М	M	M
sum of detected mpo xylene by	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
GC	- 1-55	1	·	-		·	_	•
	04 "	714000	0.4	0.4	0.4	0.4	24	24
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	13.5	15.1	<10	<10	<10	<10
'	100							
Alimbatica > CC CQ	<10	TM089	<10	28.4	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	110009	<10	20.4	<10	<10	\10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	54.8	<10	<10	<10	<10
·	'							
Aliabatics > C10, C10	-10	TMOOO	z10	250	<10	z10	-10	-10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	259	<10	<10	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	1070	<100	<100	2340	<100
·								
Aliphatics >C16-C21	<100 µg/kg	TM173	5270	3180	<100	3960	4990	1660
Aliphatics >C10-C21	-100 μg/kg	TIVITA	3270	3100	100	3900	4330	1000
Aliphatics >C21-C35	<100 µg/kg	TM173	22200	6180	2850	15300	20700	11100
Aliphatics >C35-C44	<100 ug/kg	TM173	3190	<100	<100	4200	2560	<100
Aliphatics > 030-044	<100 µg/kg	1101173	3130	100	100	4200	2300	100
	1							
Total Aliphatics >C12-C44	<100 µg/kg	TM173	30700	10400	2850	23500	30600	12700
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Alomatics >LOJ-LOT	×10 μg/kg	1 101009	\10	\10	\10	\10	\10	\10
	 	-						
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	37.8	<10	<10	<10	<10
	פיייפין - י		· ·	l	· · ·		''	· ·
A # . F040 F040	.40 "	71.1055	40	170	40	40	40	40
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	172	<10	<10	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	764	1130	612	<100	<100	<100
	ee.		'					
Aremetics > FO40 FO04	z400 : #	T84470	40.40	7000	0070	4400	4400	-400
Aromatics >EC16-EC21	<100 µg/kg	TM173	4340	7930	2270	4130	4480	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	23000	12400	4860	14100	18500	4600
-	1 5 9	'						
Aremetics > FOOF FOAT	z400 : #	T84470	4040	-400	4050	40000	40000	4000
Aromatics >EC35-EC44	<100 µg/kg	TM173	4040	<100	1850	10900	13600	1000
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	<100	<100	3990	4800	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	32100	21500	9580	29200	36500	5600
Total Atomatics /EU12-EU44	∼100 μg/kg	11011/3	32 100	21000	9000	29200	30300	3000
Total Aliphatics & Aromatics	<100 µg/kg	TM173	62800	32500	12400	52700	67100	18300
>C5-C44								
	+							

ALS

 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

TPH CWG (S)								
Results Legend # ISO17025 accredited.	С	ustomer Sample Ref.	CG 08	CG 09	CG 10	CG 11	CG 12	CG 07B
M mCERTS accredited.								
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test. ** % recovery of the surrogate stand	lard to	Date Sampled	09/04/2018	09/04/2018	10/04/2018	10/04/2018	10/04/2018	09/04/2018
check the efficiency of the method		Sample Time Date Received	16:21:00 12/04/2018	16:50:00 12/04/2018	14:10:00 12/04/2018	14:20:00 12/04/2018	14:33:00 12/04/2018	16:39:00 12/04/2018
results of individual compounds v	vithin	SDG Ref	180412-80	180412-80	180412-80	180412-80	180412-80	180412-80
samples aren't corrected for the re (F) Trigger breach confirmed	ecovery	Lab Sample No.(s)	17353788	17353792	17353786	17353784	17353785	17353787
1-5&+§@ Sample deviation (see appendix)		AGS Reference						
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	105	71	99	71	72	74
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44 M	<44 M	1510	<44 M	<44 M	<44 M
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5 #	<5 #	<5	<5 #	<5 #	<5 #
Benzene	<10 µg/kg	TM089	<10 M	<10 M	<10	<10 M	<10 M	<10 M
Toluene	<2 µg/kg	TM089	<2 M	<2 M	<2	<2 M	<2 M	<2 M
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6 M	<6	<6	<6 M	M <6	<6 M
o-Xylene	<3 μg/kg	TM089	<3	<3	<3	<3	M <3	<3
sum of detected mpo xylene by		TM089	-\(\frac{1}{2}\)	-0 M <9	<9	-5 M <9		M <9
GC	<9 µg/kg						-	
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	27.3	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	118	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	139	<10	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	680	<10	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	594	<100	<100	<100	994	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	2640	1260	<100	1280	3640	<100
Aliphatics >C21-C35	<100 µg/kg	TM173	7060	5680	1090	5570	16000	3000
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100	<100	3210	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	10300	6940	1090	6860	23800	3000
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	92.4	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	454	<10	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	340	301	<100	<100	758	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	1340	1570	<100	1710	3310	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	4070	6240	<100	7970	13900	3090
Aromatics >EC35-EC44	<100 µg/kg	TM173	<100	3850	<100	3880	8900	<100
Aromatics >EC40-EC44	<100 µg/kg	TM173	<100	1260	<100	649	3110	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	5750	12000	<100	13600	26900	3090
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	16000	18900	2600	20400	50700	6080
	1							





 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Table of Results - Appendix

Method No	Reference	Description
PM001		Preparation of Samples for Metals Analysis
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material
SUB		Subcontracted Test
TM008	BS 1377:Part 1977	Particle size distribution of solid samples
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) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM168	EPA Method 8082, Polychlorinated Biphenyls by Gas Chromatography	Determination of WHO12 and EC7 Polychlorinated Biphenyl Congeners by GC-MS in Soils
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
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

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS



 SDG:
 180412-80
 Client Reference:
 62240712
 Report Number:
 454516

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:
 452622

Test Completion Dates

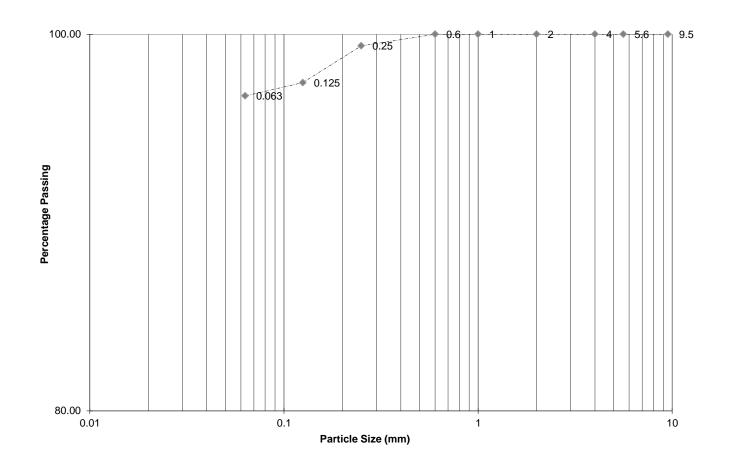
		162	t Com	pietioi	Dates	>				
Lab Sample No(s)	17353781	17353782	17353791	17353783	17353790	17353780	17353788	17353792	17353786	17353784
Customer Sample Ref.	CG 01	CG 02	CG 03	CG 04	CG 05	CG 06	CG 08	CG 09	CG 10	CG 11
AGS Ref.										
Depth	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16	0.00 - 0.16
Туре	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
EPH CWG (Aliphatic) GC (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	19-Apr-2018	17-Apr-2018
EPH CWG (Aromatic) GC (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	19-Apr-2018	17-Apr-2018
GRO by GC-FID (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018
Metals in solid samples by OES	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018
OC, OP Pesticides and Triazine Herb	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018	20-Apr-2018
Organotins on soils*	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
PAH by GCMS	19-Apr-2018	19-Apr-2018	18-Apr-2018	17-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018	17-Apr-2018	19-Apr-2018	19-Apr-2018
Passing Through >63µm sieve	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018	18-Apr-2018
PCBs by GCMS	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	18-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018
Sample description	13-Apr-2018	13-Apr-2018	13-Apr-2018	16-Apr-2018	16-Apr-2018	13-Apr-2018	13-Apr-2018	13-Apr-2018	13-Apr-2018	16-Apr-2018
TPH CWG GC (S)	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018	19-Apr-2018

	10 1 pr = 2010	10141 -010
Lab Sample No(s)	17353785	17353787
Customer Sample Ref.	CG 12	CG 07B
AGS Ref.		
Depth	0.00 - 0.16	0.00 - 0.16
Туре	Soil/Solid (S)	Soil/Solid (S)
EPH CWG (Aliphatic) GC (S)	17-Apr-2018	19-Apr-2018
EPH CWG (Aromatic) GC (S)	17-Apr-2018	19-Apr-2018
GRO by GC-FID (S)	19-Apr-2018	19-Apr-2018
Metals in solid samples by OES	18-Apr-2018	18-Apr-2018
OC, OP Pesticides and Triazine Herb	20-Apr-2018	20-Apr-2018
Organotins on soils*	02-May-2018	02-May-2018
PAH by GCMS	18-Apr-2018	17-Apr-2018
Passing Through >63µm sieve	18-Apr-2018	18-Apr-2018
PCBs by GCMS	19-Apr-2018	18-Apr-2018
Sample description	16-Apr-2018	13-Apr-2018
TPH CWG GC (S)	19-Apr-2018	19-Apr-2018

Particle Size Distribution

Particle Size (mm)	% Passing
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	100.00
600um	100.00
250um	99.38
125um	97.43
63um	96.73

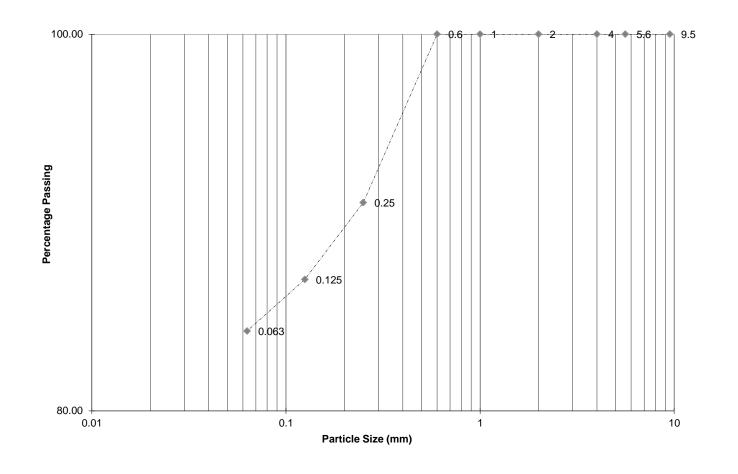
Sample Number 17360574
Client H_MOUCH_LIV
Sample ID CG 06
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	100.00
600um	100.00
250um	91.05
125um	86.97
63um	84.23

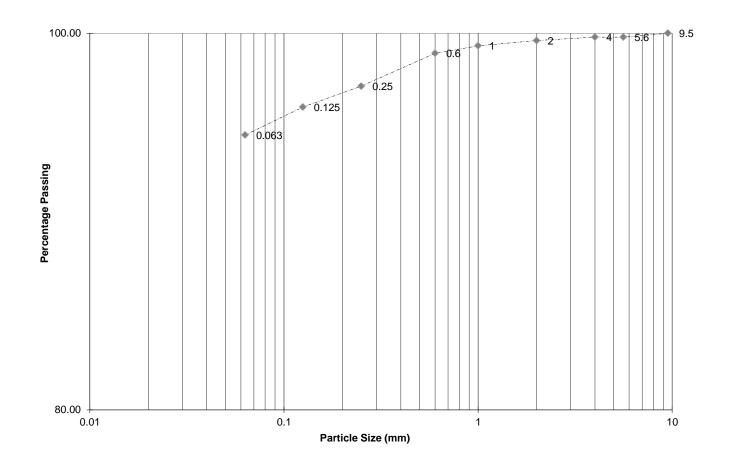
Sample Number 17360609
Client H_MOUCH_LIV
Sample ID CG07B
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	99.79
4	99.79
2	99.61
1	99.33
600um	98.93
250um	97.19
125um	96.08
63um	94.59

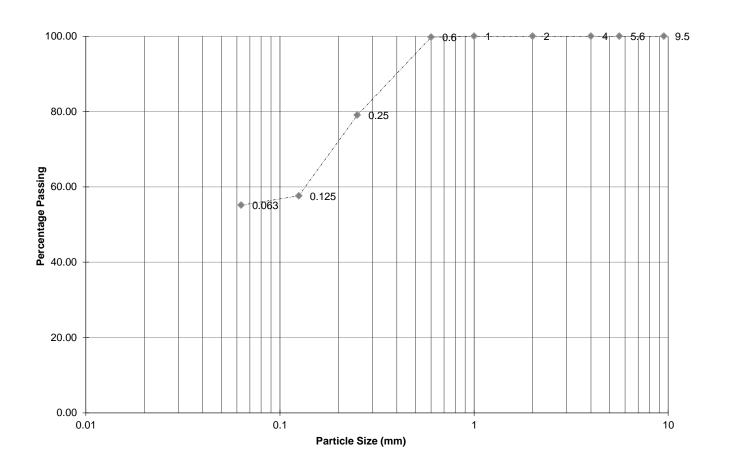
Sample Number 17360622
Client H_MOUCH_LIV
Sample ID CG 01
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	100.00
600um	99.74
250um	79.04
125um	57.61
63um	55.16

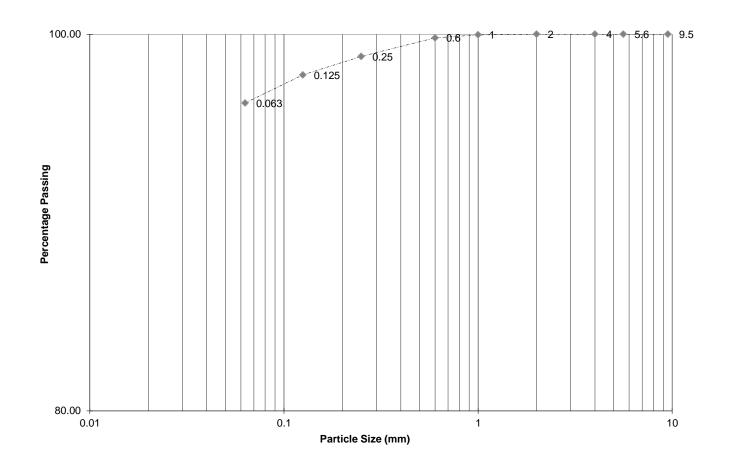
Sample Number 17360635
Client H_MOUCH_LIV
Sample ID CG 08
depth 0.00-0.16



Particle Size Distribution

Particle Size (mm)	% Passing
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	99.97
600um	99.81
250um	98.82
125um	97.84
63um	96.35

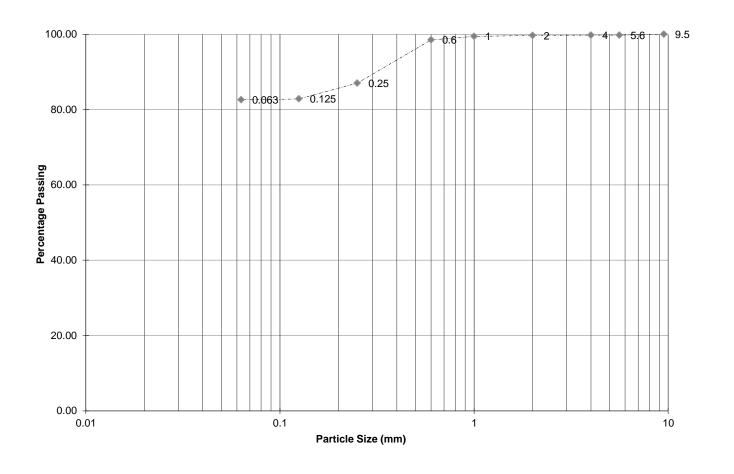
Sample Number 17361933
Client H_MOUCH_LIV
Sample ID CG 09
depth 0.00-0.16



Particle Size Distribution

Particle Size (mm)	% Passing
9.5	100.00
5.6	99.77
4	99.77
2	99.66
1	99.43
600um	98.51
250um	87.02
125um	82.83
63um	82.61

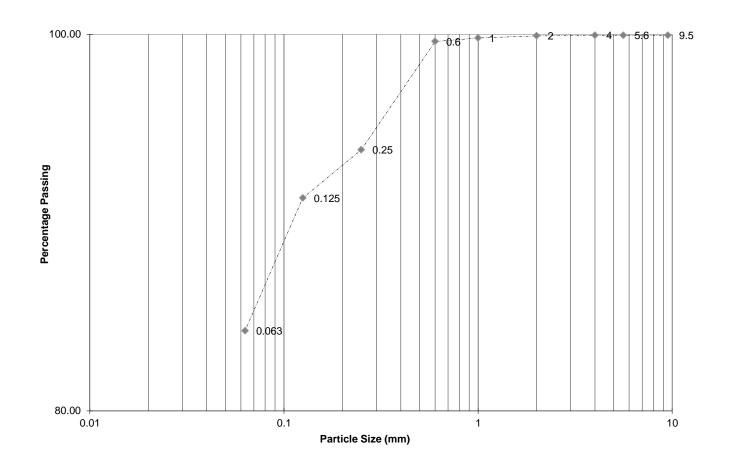
Sample Number 17361956
Client __MOUCH_LIV
Sample ID CG 03
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	99.94
5.6	99.94
4	99.94
2	99.91
1	99.80
600um	99.62
250um	93.86
125um	91.30
63um	84.25

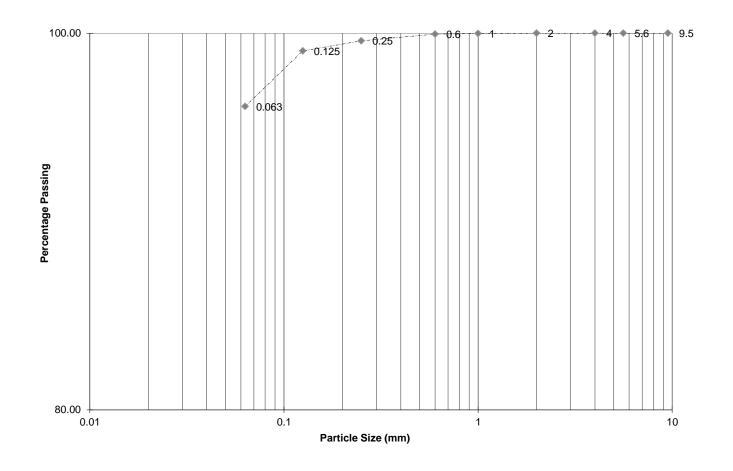
Sample Number 17361979
Client H_MOUCH_LIV
Sample ID CG10
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	99.98
600um	99.95
250um	99.60
125um	99.06
63um	96.11

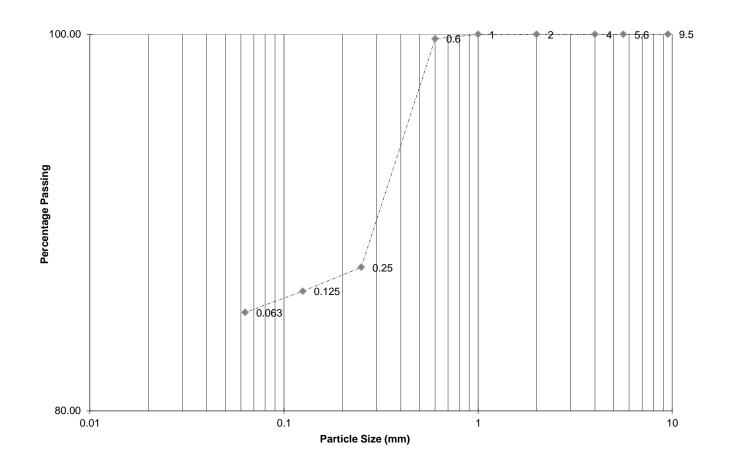
Sample Number 17362001
Client H_MOUCH_LIV
Sample ID CG 12
depth 0.00-0.16



Particle Size Distribution

Particle Size	% Passing
(mm)	
9.5	100.00
5.6	99.99
4	99.99
2	99.99
1	99.99
600um	99.75
250um	87.62
125um	86.35
63um	85.22

Sample Number 17362227
Client H_MOUCH_LIV
Sample ID CG 05
depth 0.00-0.16



Particle Size Distribution

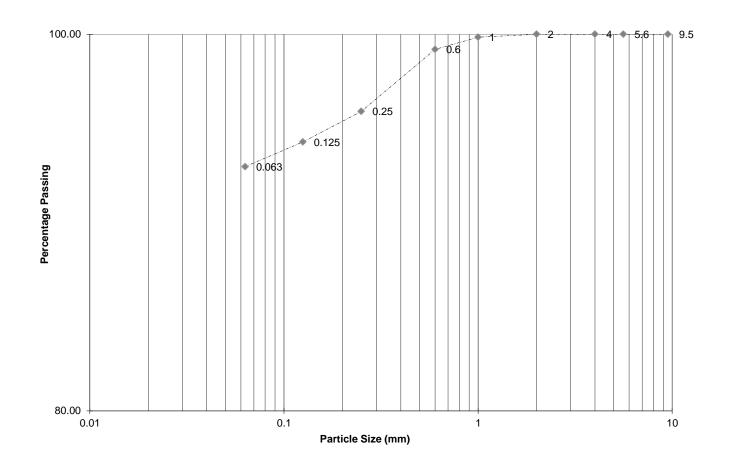
Particle Size	% Passing
(mm)	
9.5	100.00
5.6	100.00
4	100.00
2	100.00
1	99.84
600um	99.19
250um	95.90
125um	94.27
63um	92.97

Sample Number 17362288

Client H_MOUCH_LIV

Sample ID CG 04

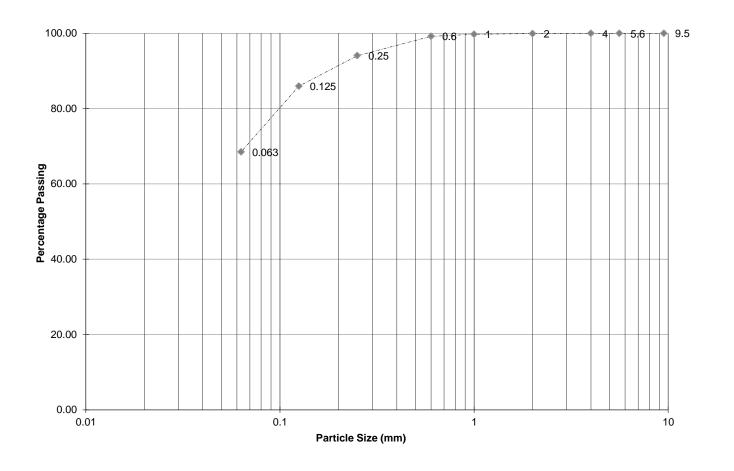
depth 0.00-0.16



Particle Size Distribution

Particle Size (mm)	% Passing
9.5	99.97
5.6	99.96
4	99.96
2	99.88
1	99.71
600um	99.17
250um	94.05
125um	85.92
63um	68.47

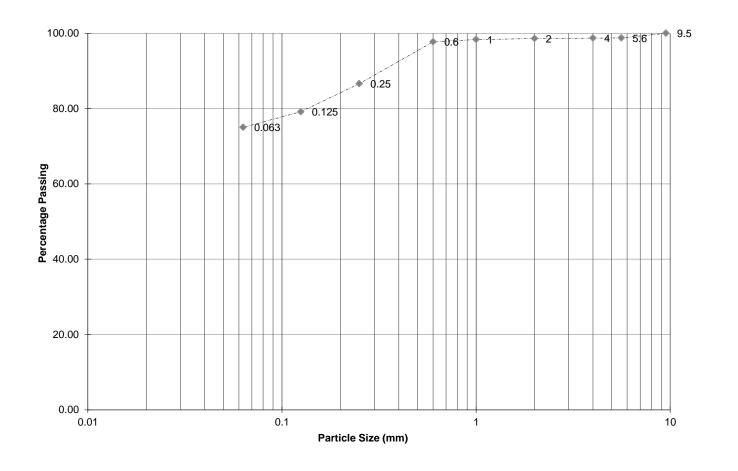
Sample Number 17362333
Client H_MOUCH_LIV
Sample ID CG 11
depth 0.00-0.16



Particle Size Distribution

Particle Size (mm)	% Passing
9.5	100.00
5.6	98.76
4	98.71
2	98.58
1	98.32
600um	97.71
250um	86.61
125um	79.14
63um	75.01

Sample Number 17362343
Client H_MOUCH_LIV
Sample ID CG 02
depth 0.00-0.16





Certificate of Analysis

Report No.: 18-71044-1

Issue No.: 1

Date of Issue 30/04/2018

Customer Details: ALS Life Sciences Limited, Unit7-8, Hawarden Business Park, Manor Road,

Hawarden, Deeside, Flintshire, CH5 3US

Customer Contact: Carrie Foster (2)

Customer Order No.: P60605

Customer Reference: 180412-80

Quotation Reference: 180222/01

Description: 12 soil samples

Date Received: 17/04/2018

Date Started: 18/04/2018

Date Completed: 27/04/2018

Test Methods: Details available on request (refer to SOP code against relevant result/s)

Notes: None

Approved By: Matthew Hickson, Laboratory Manager

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service.

Observations and interpretations are outside of the scope of UKAS accreditation.

Results reported herein relate only to the items supplied to the laboratory for testing.

RPS Mountainheath Limited, Registered in England No. 2772276, a wholly-owned subsidiary of RPS Consulting Services Ltd.

A member of the RPS Group plc. Terms and conditions apply - copy on request



Results Summary

Report No.: 18-71044-1 Customer Reference: 180412-80 Customer Order No: P60605

							1			16			id-	£	ļ	
Customer Sample No					17365761	17364778	17363809	17373080	17373020	17365780	17365739	17365757	17362186	17363180	17373246	
				Custome	r Sample ID	CG01	CG02	CG03	CG04	CG05	CG06	CG07B	CG08	CG09	CG10	CG11
				RPS	Sample No	360940	360941	360942	360943	360944	360945	360946	360947	360948	360949	360950
Sample Type					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
Sample Depth (m)					0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	0.00-0.16	
				Sa	mpling Date	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	09/04/2018	10/04/2018	10/04/2018
				Sai	mpling Time								:1			
Determinand	CAS No	Codes	SOP	Units	RL											
dry solids (at 105øC)		N	397	% w/w		36.7	48.5	42.7	45.7	46.0	43.1	49.3	49.0	43.9	48.1	59.4
dibutyltin (DBT)	1002-53-5	N	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
diphenyltin (DPT)		N.	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
monobutyltin (MBT)	78763-54-9	N	in house	mg/kg as cation DW	0.1	< 0.27	< 0.21	< 0.23	< 0.22	< 0.22	< 0.23	< 0.20	< 0.20	< 0.23	< 0.21	< 0.15
monophenyltin (MPT)		N	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
tributyltin (TBT)	56573-85-4	N	in house	mg/kg as cation DW	0.02	0.07	0.07	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02
triphenyltin (TPT)	668-34-8	N	in house	mg/kg as cation DW	0.05	< 0.14	< 0.10	< 0.12	< 0.11	< 0.11	< 0.12	< 0.10	< 0.10	< 0.11	< 0.10	< 0.05
tetrabutyltin	1461-25-2	N	in house	mg/kg as cation DW	0.02	< 0.05	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.04	< 0.05	< 0.04	< 0.02



Results Summary

Report No.: 18-71044-1 Customer Reference: 180412-80 Customer Order No: P60605

<u></u>	
Customer Sample No	17373252
Customer Sample ID	CG12
RPS Sample No	360951
Sample Type	SOIL
Sample Depth (m)	0.00-0.16
Sampling Date	10/04/2018
Sampling Time	

Determinand	CAS No	Codes	SOP	Units	RL	
dry solids (at 105øC)		N	397	% w/w		46.5
dibutyltin (DBT)	1002-53-5	N	in house	mg/kg as cation DW	0.02	< 0.04
diphenyltin (DPT)		N	in house	mg/kg as cation DW	0.02	< 0.04
monobutyltin (MBT)	78763-54-9	N	in house	mg/kg as cation DW	0.1	< 0.22
monophenyltin (MPT)		N	in house	mg/kg as cation DW	0.02	< 0.04
tributyltin (TBT)	56573-85-4	N	in house	mg/kg as cation DW	0.02	< 0.04
triphenyltin (TPT)	668-34-8	N	in house	mg/kg as cation DW	0.05	< 0.11
tetrabutyltin	1461-25-2	N	in house	mg/kg as cation DW	0.02	< 0.04



Deviating Samples

Report No.: 18-71044-1 Customer Reference: 180412-80 Customer Order No: P60605

Our policy on Deviating Samples and reference list of Holding Times applied can be supplied on request. These have been implemented in accordance with UKAS Policy on Deviating Samples (TPS63).

RPS is not responsible for the integrity of samples as received, unless RPS personnel performed the sampling, and it is possible that samples submitted may be declared to be deviating.

Where applicable the analysis method remains UKAS accredited, however results reported for a deviating sample may be invalid. The reason for a sample being declared to be deviating is indicated below.

Where no sampling date was supplied, samples have been declared to be deviating. However, if a date of sampling can be supplied, the results may be reissued with the deviating sample status removed.

Where the sample container used was unsuitable, the appropriate Holding Time was exceeded, or the sample is flagged as deviating for some other reason, re-sampling/re-submisson may be required.

RPS No.	Customer No.	Customer ID	Date Sampled	Containers Received	Deviating Sample	Reason for Sample Deviation
360940	17365761		09/04/2018	60 ml Amber Jar	No	697
360941	17364778		09/04/2018	60 ml Amber Jar	No	
360942	17363809		09/04/2018	60 ml Amber Jar	No	
360943	17373080		09/04/2018	60 ml Amber Jar	No	
360944	17373020		09/04/2018	60 ml Amber Jar	No	
360945	17365780		09/04/2018	60 ml Amber Jar	No	
360946	17365739		09/04/2018	60 ml Amber Jar	No	
360947	17365757		09/04/2018	60 ml Amber Jar	No	
360948	17362186		09/04/2018	60 ml Amber Jar	No	
360949	17363180		10/04/2018	60 ml Amber Jar	No	
360950	17373246		10/04/2018	60 ml Amber Jar	No	
360951	17373252		10/04/2018	60 ml Amber Jar	No	



Report Information

Key to Report Codes

U	UKAS Accredited
F	UKAS Flexible Scope
M	MCERTS Accredited
N	Not accredited
S	Subcontracted to approved laboratory
US	Subcontracted to approved laboratory UKAS Accredited for the test
MS	Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test
SI	Subcontracted to internal RPS Group laboratory
USI	Subcontracted to internal RPS Group laboratory UKAS Accredited for the test
MSI	Subcontracted to internal RPS Group laboratory MCERTS/UKAS Accredited for the test
I/S (in results)	Insufficient Sample
U/S (in results)	Unsuitable Sample
S/C (in results)	See Comments
time the same to the same	

ND (in results)

Not Detected

DW (in units)

Not Detected

Results are expressed on a dry weight basis

Where the dry solids value of a sample is low (<50%), reporting limits are automatically raised for all determinants analysed on an asreceived basis.

Soil Typing

Type 1	Clay - brown
Type 2	Clay - Grey/Black
Type 3	Sand
Type 4	Top Soil (Standard)
Type 5	Top Soil (High Peat)
Type 6	Made Ground (>50% Clay)
Type 7	Made Ground (>50% Sand)
Type 8	Made Ground (>50% Top Soil)
Type X	Other

Clay - Brown

Sample Retention and Disposal

Type 1

Samples will generally $\!\!\!\!\!\!\!^*$ be retained for the following times prior to disposal:

Perishables, e.g. foodstuffs 1 month (if frozen) from the issue date of this report

Waters 2 weeks from the issue date of this report
Other Liquids 1 month from the issue date of this report
Solids (including Soils) 1 month from the issue date of this report

^{*}Sample retention may be subject to agreement with the customer for particular projects



62240712 SDG: 180412-80 454516 Client Reference: Report Number: Superseded Report: 62240712 452622 Location: Lowestoft Order Number:

Appendix

General

- 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. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. 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.
- 4. 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.
- 5. 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
- 6. 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 (2005), 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.
- 7. 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.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately
- 11. Results relate only to the items tested.
- 12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected
- 13. 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%, they are generally wider for volatiles analysis, 50-150%. 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.
- 14. Product analyses Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
- Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. 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.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except 21. 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.
 - 22. 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.
 - 23. 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
 - 24. 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.

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	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials 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 (2005).

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, based on HSG 248 (2005).

Asbe stos Type	Common Name
Chrysof le	White Asbesbs
Amosite	Brown Asbestos
Cro di dolite	Blue Asbe stos
Fibrous Act nolite	-
Fib to us Anthop hyll ite	-
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.

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

> Tel: (01244) 528700 Fax: (01244) 528701

email: hawardencustomerservices@alsglobal.com Website: www.alsenvironmental.co.uk

WSP UK Limited 3rd Floor Station House Mercury Court Titheburn Street Liverpool L2 2QP

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

 Date:
 30 April 2018

 Customer:
 H_MOUCH_LIV

 Sample Delivery Group (SDG):
 180423-34

 Your Reference:
 62240712

 Location:
 Lowestoft

 Report No:
 454099

We received 4 samples on Saturday April 21, 2018 and 4 of these samples were scheduled for analysis which was completed on Monday April 30, 2018. 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 (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager









 SDG:
 180423-34
 Client Reference:
 62240712
 Report Number:
 454099

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:

Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17424916	WS01		0.00 - 0.20	19/04/2018
17424917	WS02		0.00 - 0.20	19/04/2018
17424918	WS03		0.00 - 0.20	19/04/2018
17424919	WS04		0.00 - 0.20	19/04/2018

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C.

15.0

ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to 24hrs.

Only received samples which have had analysis scheduled will be shown on the following pages.

SDG: 62240712 180423-34 Client Reference: Report Number: 454099 Location: Lowestoft Order Number: 62240712 Superseded Report: Results Legend 17424919 17424916 17424917 17424918 Lab Sample No(s) X Test No Determination Possible Customer WS03 WS01 WS02 WS04 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate PR - Process Water 0.00 0.00 - 0.20 0.00 - 0.20 0.00 - 0.20 SA - Saline Water Depth (m) TE - Trade Effluent - 0.20 TS - Treated Sewage US - Untreated Sewage (ALE208)
250ml Amber GI.
PTFE/PE (ALE219) 500ml Plastic (ALE208) 250ml Amber Gl. PTFE/PE (ALE219) RE - Recreational Water 250ml Amber GI. PTFE/PE (ALE219) HNO3 Unfiltered (ALE204) HNO3 Unfiltered (ALE204) HNO3 Unfiltered (ALE204) 250ml Amber Gl. PTFE/PE (ALE219) HNO3 Unfiltered (ALE204) H2SO4 (ALE244) H2SO4 (ALE244) H2SO4 (ALE244) H2SO4 (ALE244) 500ml Plastic (ALE208) 500ml Plastic (ALE208) DW - Drinking Water Non-regulatory 500ml Plastic Vial (ALE297) Vial (ALE297) Vial (ALE297) UNL - Unspecified Liquid SL - Sludge Container G - Gas OTH - Other WS WS WS Sample Type WS WS WS WS WS WS WS WS WS WS WS WS WS WS WS WS Alkalinity as CaCO3 All NDPs: 0 Tests: 4 X X X Ammoniacal Nitrogen All NDPs: 0 Tests: 4 Χ X Χ Χ Anions by Kone (w) All NDPs: 0 Tests: 4 Х Х Х Х Colour Test ΔII NDPs: 0 Tests: 4 Х Х Х Х Conductivity (at 20 deg.C) All NDPs: 0 Tests: 4 Х Χ X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 4 Χ Х Χ Χ EPH (DRO) (C10-C40) Aqueous (W) All NDPs: 0 Tests: 4 Χ X Х Χ GRO by GC-FID (W) All NDPs: 0 Tests: 4 X Х Χ Mercury Dissolved All NDPs: 0 Tests: 4 X X X Χ pH Value All NDPs: 0 Tests: 4 Х Х Х X Phosphate by Kone (w) All NDPs: 0 Tests: 4 Х Х Х Х Suspended Solids All NDPs: 0 Tests: 4 Х X X X Total EPH (aq) All NDPs: 0 Tests: 4 Χ X X Χ Total Metals by ICP-MS All NDPs: 0 Tests: 4 Χ Х Χ Х Total Organic and Inorganic Carbon All NDPs: 0 Tests: 4 X X X



SDG: 180423-34 Location: Lowestoft

423-34 Client Reference: estoft Order Number:

62240712 62240712 Report Number: Superseded Report: 454099

		0.10					
Results Legend # ISO17025 accredited.		Customer Sample Ref.	WS01	WS02	WS03	WS04	
M mCERTS accredited. aq Aqueous / settled sample.		D (1.)	0.00	600.05	0.00	0.00	
diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	0.00 - 0.20 Surface Water (SW)	0.00 - 0.20 Surface Water (SW)	0.00 - 0.20 Surface Water (SW)	0.00 - 0.20 Surface Water (SW)	
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	19/04/2018	19/04/2018	19/04/2018	19/04/2018	
** % recovery of the surrogate standa		Sample Time	10:15:00	10:30:00	10:50:00	11:00:00	
check the efficiency of the method. results of individual compounds wi		Date Received	21/04/2018	21/04/2018	21/04/2018	21/04/2018	
samples aren't corrected for the re-		SDG Ref	180423-34 17424916	180423-34 17424917	180423-34 17424918	180423-34 17424919	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		Lab Sample No.(s) AGS Reference	11424310	11424011	11424010	11424313	
Component	LOD/Uni						
Suspended solids, Total	<2 mg/	I TM022	42.3	36.8	40.8	34.2	
Alledinity Total on CoCO2	ر مصر ا	I TM043	135	124	# 122	# 122	
Alkalinity, Total as CaCO3	<2 mg/	1 1101043	135	124	122	122	
Organia Carban, Tatal	رم سر در ا	I TM090	<3	<3	<3	<3	
Organic Carbon, Total	<3 mg/	1 110090	\#			- 5	
Assessment Nites and All	40.0	/I TM099	<0.2	<0.2	<0.2	<0.2	
Ammoniacal Nitrogen as N	<0.2 mg	/I I I I I I I I I I I I I I I I I I I	~ 0.2	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	\0.2 #	\0.2 #	
04	-0.005	TM400					
Conductivity @ 20 deg.C	<0.005	TM120	45.8	46.7	46.3	45.1	
A1 (P CII)	mS/cm	// TN450	#	#	#	#	
Aluminium (diss.filt)	<10 µg/	/I TM152	<60	<60	<60	<60	
Annual (dies CII)	.0	J T1450	2#	2#	2#	2#	
Arsenic (diss.filt)	<0.5 µg	/I TM152	<3	<3	<3	<3	
2			2#	2#	2#	2#	
Cadmium (diss.filt)	<0.08 µg	g/l TM152	<0.48	<0.48	<0.48	<0.48	
			2#	2#	2#	2#	
Chromium (diss.filt)	<1 µg/l	I TM152	<6	<6	<6	<6	
			2#	2#	2#	2#	
Copper (diss.filt)	<0.3 µg	/I TM152	3.32	1.84	<1.8	<1.8	
			2#	2#	2#	2#	
Lead (diss.filt)	<0.2 µg	/I TM152	<1.2	<1.2	<1.2	<1.2	
			2#	2#	2#	2#	
Manganese (diss.filt)	<3 µg/l	TM152	<18	18.5	22.3	18.9	
			2#	2#	2#	2#	
Nickel (diss.filt)	<0.4 µg	/I TM152	3.13	<2.4	<2.4	3.32	
			2#	2#	2#	2#	
Zinc (diss.filt)	<1 µg/l	TM152	26.8	19.9	21.2	8.88	
			2#	2#	2#	2#	
Iron (Dis.Filt)	<0.019 m	ıg/l TM152	<0.114	<0.114	<0.114	<0.114	
		·	2#	2#	2#	2#	
Sodium (Tot. Unfilt.)	<0.047 m	ıg/l TM152	8440	8940	9050	8890	
		Ĭ	#	#	#	#	
Magnesium (Tot. Unfilt.)	<0.05 mg	g/l TM152	1130	1160	1150	1130	
,	· `	´	#	#	#	#	
Potassium (Tot. Unfilt.)	<0.2 mg	/I TM152	361	356	355	349	
,			#		#	#	
Calcium (Tot. Unfilt.)	<0.057 m	ıg/l TM152	440	450	415	461	
(5	#	#	#	#	
EPH Range >C10 - C40 (aq)	<100 µg	ı/l TM172	<100	<100	<100	<100	
	µg	, ·····/ -					
Total EPH (C6-C40) (aq)	<100 µg	ı/l TM172	<100	<100	<100	<100	
	.50 μ	, <u>-</u>					
Mercury (diss.filt)	<0.01 µg	g/l TM183	<0.01	<0.01	<0.01	<0.01	
, ,	J	_	2	2	2	2	
Phosphate (Ortho as PO4)	<0.05 mg	g/l TM184	<0.05	<0.05	<0.05	<0.05	
(*********************************		· ······•	#	#	#	#	
Sulphate	<2 mg/	I TM184	2640	2620	2610	2600	
	9/		#	#	#	#	
Chloride	<2 mg/	I TM184	18400	18500	18000	18300	
	g/		#	#	#	#	
Nitrate as NO3	<0.3 mg	/l TM184	<0.3	<0.3	<0.3	<0.3	
		,	-0.0				
pH	<1 pH Un	nits TM256	7.9	7.92	7.93	7.9	
ļ .	. i pi i Oli		7.5	7.92	7.95	7.9	
Apparent Colour	<1 mg/l	TM261	27.3	13.7	9.61	11.3	
, apparont colour	Pt/Co	TIVIZUT	21.0	10.7	9.01	11.0	
True Colour	<1 mg/l	TM261	1.38	1.95	1.49	1.51	
Trac Coloui	Pt/Co	TIVIZUT	1.00	1.00	1.70	1.01	
	1 1/00	+					
		+					
		+					



SDG: Report Number: Superseded Report: 180423-34 Client Reference: 62240712 454099 Lowestoft Order Number: 62240712 Location:

	GRO by GC-FID (W)							
Max MCERTS accredited, and Acquaint settled sample, classified sam	Results Legend	C	Sustomer Sample Ref.	WS01	WS02	WS03	WS04	
Trigger breach confirmed LoD Units Method Metho	M mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate standa check the efficiency of the method. results of individual compounds wi	. The ithin	Sample Type Date Sampled Sample Time Date Received SDG Ref	Surface Water (SW) 19/04/2018 10:15:00 21/04/2018 180423-34	Surface Water (SW) 19/04/2018 10:30:00 21/04/2018 180423-34	Surface Water (SW) 19/04/2018 10:50:00 21/04/2018 180423-34	Surface Water (SW) 19/04/2018 11:00:00 21/04/2018 180423-34	
Component LOD/Units Method IMENDATE (MTBE) Method (MTBE)	(F) Trigger breach confirmed			17424916	17424917	17424918	17424919	
MTBE MTB	Component		Method					
Toluene C C C C C C C C C	(MTBE)			1#	1#	#	#	
Ethylbenzene < 5 μg/l TM245 < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l < 5 l	Benzene	<7 µg/l	TM245					
M. p-Xylene < 8 μg/l TM245 < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l < 8 l	Toluene	<4 µg/l	TM245					
m.p-Xylene <8 µg/l TM245 <8 lbox	Ethylbenzene	<5 µg/l	TM245	<5	<5		<5	
o-Xylene <3 μg/l TM245 <3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	m,p-Xylene	<8 µg/l	TM245	<8	<8	<8	<8	
Sum of detected BTEX <28 μg/l	o-Xylene	<3 µg/l	TM245	<3	<3	<3	<3	
GRO >C5-C10	Sum of detected BTEX	<28 µg/l	TM245	<28	<28			
EPH (C6-C10) <100 μg/l TM245 <100 <100 <100 <100 <100	GRO >C5-C10	<10 µg/l	TM245	<10	<10	<10	<10	
	EPH (C6-C10)	<100 µg/l	TM245	<100	<100	<100	<100	





 SDG:
 180423-34
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Table of Results - Appendix

	Table of	Results - Appendix
Method No	Reference	Description
TM022	Method 2540D, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part120 1981;BS EN 872	Determination of total suspended solids in waters
TM043	Method 2320B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part109 1984	Determination of alkalinity in aqueous samples
TM061	Method for the Determination of EPH,Massachusetts Dept.of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
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
TM120	Method 2510B, AWWA/APHA, 20th Ed., 1999 / BS 2690: Part 9:1970	Determination of Electrical Conductivity using a Conductivity Meter
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	Analysis of Aqueous Samples by ICP-MS
TM172	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	EPH 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
TM245	By GC-FID	Determination of GRO by Headspace in waters
TM256	The measurement of Electrical Conductivity and the Laboratory determination of pH Value of Natural, Treated and Wastewaters. HMSO, 1978. ISBN 011 751428 4.	Determination of pH in Water and Leachate using the GLpH pH Meter
TM261	Colour and Turbidity of Waters, Methods for the Examination of Waters and Associated Materials, HMSO, 1981, ISBN 0 11 7519553.	Determination of True and Apparent Colour by Spectrophotometry

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Validated

CERTIFICATE OF ANALYSIS



 SDG:
 180423-34
 Client Reference:
 62240712
 Report Number:
 454099

 Location:
 Lowestoft
 Order Number:
 62240712
 Superseded Report:

Test Completion Dates

				Piotioi
Lab Sample No(s)	17424916	17424917	17424918	17424919
Customer Sample Ref.	WS01	WS02	WS03	WS04
•				
AGS Ref.				
Depth	0.00 - 0.20	0.00 - 0.20	0.00 - 0.20	0.00 - 0.20
Туре	Surface Water	Surface Water	Surface Water	Surface Water
Alkalinity as CaCO3	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Ammoniacal Nitrogen	26-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Anions by Kone (w)	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Colour Test	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Conductivity (at 20 deg.C)	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Dissolved Metals by ICP-MS	29-Apr-2018	29-Apr-2018	29-Apr-2018	29-Apr-2018
EPH (DRO) (C10-C40) Aqueous (W)	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
GRO by GC-FID (W)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Mercury Dissolved	28-Apr-2018	28-Apr-2018	28-Apr-2018	28-Apr-2018
Nitrite by Kone (w)	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
pH Value	25-Apr-2018	26-Apr-2018	25-Apr-2018	26-Apr-2018
Phosphate by Kone (w)	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Suspended Solids	24-Apr-2018	24-Apr-2018	24-Apr-2018	24-Apr-2018
Total EPH (aq)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Total Metals by ICP-MS	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Organic and Inorganic Carbon	27-Apr-2018	27-Apr-2018	24-Apr-2018	27-Apr-2018



180423-34 62240712 454099 SDG: Client Reference: Report Number: Superseded Report: 62240712 Location: Lowestoft Order Number:

Appendix

General

- 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. Samples will be run in duplicate upon request, but an additional charge may be incurred.
- 3. 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.
- 4. 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.
- 5. 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
- 6. 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 (2005), 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.
- 7. 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.
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately
- 11. Results relate only to the items tested.
- 12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected
- 13. 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%, they are generally wider for volatiles analysis, 50-150%. 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.
- 14. Product analyses Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
- Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. 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.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

- 1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except 21. 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.
 - 22. 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.
 - 23. 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
 - 24. 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.

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	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials 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 (2005).

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, based on HSG 248 (2005).

Asbe stos Type	Common Name
Chrysof le	White Asbesbs
Amosite	Brown Asbestos
Cro di dolite	Blue Asbe stos
Fibrous Act nolite	-
Fib to us Anthop hyll ite	-
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.

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.



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WSP UK Limited 3rd Floor Station House Mercury Court Titheburn Street Liverpool L2 2QP

Attention: Neil Balderstone

CERTIFICATE OF ANALYSIS

Date:22 May 2018Customer:H_MOUCH_LIVSample Delivery Group (SDG):180424-31Your Reference:62240712Location:LowestoftReport No:457244

We received 34 samples on Tuesday April 24, 2018 and 34 of these samples were scheduled for analysis which was completed on Tuesday May 22, 2018. 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 (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

Approved By:

Sonia McWhan
Operations Manager







ALS Life Sciences Limited. Registered Office: Units 7 & 8 Hawarden Business Park, Manor Road, Hawarden, Deeside, CH5 3US. Registered in England and Wales No. 4057291.

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Received Sample Overview

17431917 VC02 0.80-1.20 2004/2018 17431916 VC02 1.80-2.20 2004/2018 17431915 VC02 2.80-3.20 2004/2018 17431914 VC02 3.20-3.63 2004/2018 17431903 VC03 0.80-1.20 2004/2018 17431906 VC03 1.80-2.20 2004/2018 17431905 VC03 3.89-3.20 2004/2018 17431904 VC03 3.39-3.79 2004/2018 17431908 VC04 0.80-1.20 1904/2018 17431909 VC04 0.80-1.20 1904/2018 17431909 VC04 2.80-3.20 1904/2018 17431907 VC04 2.80-3.20 1904/2018 17431907 VC04 3.60-4.00 1904/2018 17431895 VC05 0.80-1.20 1904/2018 17431896 VC05 0.80-1.20 1904/2018 17431898 VC05 0.80-1.20 1904/2018 17431898 VC06 0.80-1.20 2004/2018 <th>Lab Sample No(s)</th> <th>Customer Sample Ref.</th> <th>AGS Ref.</th> <th>Depth (m)</th> <th>Sampled Date</th>	Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
17431916 VC02 2.80 - 3.20 20/04/2018 17431915 VC02 2.80 - 3.20 20/04/2018 17431914 VC02 3.20 - 3.63 20/04/2018 17431903 VC03 0.80 - 1.20 20/04/2018 17431906 VC03 1.80 - 2.20 20/04/2018 17431905 VC03 2.80 - 3.20 20/04/2018 17431904 VC03 3.39 - 3.79 20/04/2018 17431908 VC04 0.80 - 1.20 19/04/2018 17431909 VC04 1.80 - 2.20 19/04/2018 17431901 VC04 2.80 - 3.20 19/04/2018 17431907 VC04 3.60 - 4.00 19/04/2018 17431907 VC04 3.60 - 4.00 19/04/2018 17431885 VC05 0.80 - 1.20 19/04/2018 17431886 VC05 1.80 - 2.20 19/04/2018 17431888 VC05 2.53 - 2.93 19/04/2018 17431899 VC06 0.80 - 1.20 20/04/2018 17431900 VC06	. ,		AGO NOI.		
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17431902 VC08 0.60 - 1.00 20/04/2018 17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431883	VC07		0.80 - 1.20	
17431901 VC08 1.00 - 1.45 20/04/2018 17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431912 VC12A 1.80 - 2.20 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 0.80 - 1.20 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431882	VC07		1.60 - 2.00	20/04/2018
17431887 VC11 0.80 - 1.20 20/04/2018 17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431892 VC10A 1.80 - 2.20 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 0.80 - 1.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431902	VC08		0.60 - 1.00	20/04/2018
17431886 VC11 1.80 - 2.20 20/04/2018 17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431901	VC08		1.00 - 1.45	20/04/2018
17431889 VC11 2.20 - 2.50 20/04/2018 17431891 VC10A 0.80 - 1.20 20/04/2018 17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431887	VC11		0.80 - 1.20	20/04/2018
17431891 VC10A 0.80 - 1.20 20/04/2018 17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431886	VC11		1.80 - 2.20	20/04/2018
17431890 VC10A 1.80 - 2.20 20/04/2018 17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431889	VC11		2.20 - 2.50	20/04/2018
17431892 VC10A 2.45 - 2.85 20/04/2018 17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431891	VC10A		0.80 - 1.20	20/04/2018
17431913 VC12A 0.80 - 1.20 20/04/2018 17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431890	VC10A		1.80 - 2.20	20/04/2018
17431911 VC12A 1.80 - 2.20 20/04/2018 17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431892	VC10A		2.45 - 2.85	20/04/2018
17431912 VC12A 2.80 - 3.30 20/04/2018 17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431913	VC12A		0.80 - 1.20	20/04/2018
17431884 VC01B 0.80 - 1.20 20/04/2018 17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431911	VC12A		1.80 - 2.20	20/04/2018
17431885 VC01B 1.24 - 1.54 20/04/2018 17431893 VC09B 0.80 - 1.20 19/04/2018	17431912	VC12A		2.80 - 3.30	20/04/2018
17431893 VC09B 0.80 - 1.20 19/04/2018	17431884	VC01B		0.80 - 1.20	20/04/2018
100000	17431885	VC01B		1.24 - 1.54	20/04/2018
17431894 VC09B 1.26 - 1.66 19/04/2018	17431893	VC09B		0.80 - 1.20	19/04/2018
	17431894	VC09B		1.26 - 1.66	19/04/2018

Maximum Sample/Coolbox Temperature (°C):

ISO5667-3 Water quality - Sampling - Part3 -

During Transportation samples shall be stored in a cooling device capable of maintaining a temperature of (5±3)°C

10.3
ALS have data which show that a cool box with 4 frozen icepacks is capable of maintaining pre-chilled samples at a temperature of (5±3)°C for a period of up to

Only received samples which have had analysis scheduled will be shown on the following pages.



CERTIFICATE OF ANALYSIS Client Reference: 62240712 Order Number: 62240712 180424-31 Lowestoft SDG: Report Number: Superseded Report: 457244 Location:

Results Legend X Test	Lab Sample	No(s)			17431917			17431916			17431915			17431914			17431903			17431906	17431905
No Determination Possible					7			6			5			4			ū			ō	ű
	Custome Sample Refe				VC02			VC02			VC02			VC02			VC03			VC03	VC03
Sample Types - S - Soil/Solid UNS - Unspecified Solid GW - Ground Water SW - Surface Water	AGS Refere	ence																			
LE - Land Leachate PL - Prepared Leachate					0			_			2			ω			0			_	2
PR - Process Water SA - Saline Water TE - Trade Effluent TS - Treated Sewage US - Untreated Sewage	Depth (n	n)			0.80 - 1.20			1.80 - 2.20			2.80 - 3.20			.20 - 3.63			0.80 - 1.20			1.80 - 2.20	2.80 - 3.20
RE - Recreational Water DW - Drinking Water Non-regulatory UNL - Unspecified Liquid SL - Sludge G - Gas OTH - Other	Contain	er	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
	Sample Ty	ype	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
ANC at pH4 and ANC at pH 6	All	NDPs: 0 Tests: 34		X			X			X			X			X			X		
Anions by ion Chromatography	All	NDPs: 0 Tests: 34		Х			X			Х			Х			X			Х		
Anions by Kone (w)	All	NDPs: 0 Tests: 34	Х			X			Х			X			X			X			Х
Asbestos ID in Solid Samples	All	NDPs: 0 Tests: 34	Х			X			Х			Х			Х			Х			Х
CEN Readings	All	NDPs: 0 Tests: 34	Х			Х			Х			Х			X			Х			Х
Cyanide Comp/Free/Total/Thiocyanate	All	NDPs: 0 Tests: 34		Х			X			X			X			X			X		
Dissolved Metals by ICP-MS	All	NDPs: 0 Tests: 34	Х			X			X			Х			X			X			X
Dissolved Organic/Inorganic Carbon	All	NDPs: 0 Tests: 34	X			X			X			X			X			X			X
EPH CWG (Aliphatic) GC (S)	All	NDPs: 0 Tests: 34		X			X			X			X			X			X		
EPH CWG (Aromatic) GC (S)	All	NDPs: 0 Tests: 34		X			X			X			X			X			X		
Fluoride	All	NDPs: 0 Tests: 34	X			X			X			X			X			X			X
GRO by GC-FID (S)	All	NDPs: 0 Tests: 34			X			X			X			X			X			X	
Hexavalent Chromium (s)	All	NDPs: 0 Tests: 34		X			X			X			X			X			X		
Loss on Ignition in soils	All	NDPs: 1 Tests: 33		X			X			X			X			X			X		
Mercury Dissolved	All	NDPs: 0 Tests: 34	Х			X			X			X			X			X			X

	17431905			17431904			17431908			17431909			17431910			17431907			17431895	17431896
	VC03			VC03			VC04			VC04			VC04			VC04			VC05	VC05
	2.80 - 3.20			3.39 - 3.79			0.80 - 1.20			1.80 - 2.20			2.80 - 3.20			3.60 - 4.00			0.80 - 1.20	1.80 - 2.20
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
S	S	S	S	S	S	v	S	S	S	S	S	S	v	S	S	S	S	S	S	S
X			X			Х			X			Х			X			Х		
X			X			X			X			X			X			X		
		X			X			X			X			X			X			X
		X			X			X			X			X			Х			X
		v			X			Х			v			X			v			Х
		X			^			^			X			^			Х			^
X			X			X			X			X			X			X		
		X			X			X			X			X			X			X
		Х			Х			Х			X			X			Х			X
X			Х			X			X			X			X			X		
X			X			X			X			X			X			X		
		X			X			X			X			Х			X			X
	X			X			X			X			X			X			X	
X			X			X			X			Х			X			X		
X			X			Х			X			X			Х			X		
		X			X			X			X			X			X			X

ALS

Client Reference: 62240712 SDG: 457244 180424-31 Report Number: Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 17431906 743191 7431915 7431903 7431905 7431917 Lab Sample No(s) X Test 19 No Determination **Possible** Customer VC02 VC02 VC03 **VC03** VC03 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 2.80 0.80 0.80 -PR - Process Water .20 .80 .80 SA - Saline Water Depth (m) - 2.20 - 3.63 - 2.20 TE - Trade Effluent - 3.20 - 3.20 .20 .20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber Jar (ALE210) 250g Amber J (ALE210) 1kg TUB 250g Amber Ja (ALE210) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) Non-regulatory 1kg TUB 1kg TUB 1kg TUB Ιćg UNL - Unspecified Liquid Container TIB SL - Sludge G - Gas Jar Jar Jar OTH - Other Sample Type S S S v S S S S S S S S S S S S S v Metals in solid samples by OES All NDPs: 0 Tests: 34 X X X X X X All Mineral Oil NDPs: 0 Tests: 34 X X X X X X OC, OP Pesticides and Triazine Herb All NDPs: 0 Tests: 34 X X X X X X Organotins on soils* All NDPs: 0 Tests: 34 X X PAH by GCMS All NDPs: 0 Tests: 34 X X X X X X Passing Through >63µm sieve All NDPs: 1 Tests: 33 X X X X X X X PCBs by GCMS All NDPs: 0 Tests: 34 X X X X X X All рΗ NDPs: 0 Tests: 34 X X Х Х X X Phenols by HPLC (S) All NDPs: 0 Tests: 34 X X X X X X Phenols by HPLC (W) All NDPs: 0 Tests: 34 X X X X X X All Polybrominated Diphenyl Ethers* NDPs: 1 Tests: 33 X X X X X X All Sample description NDPs: 0 Tests: 34 X X X X X X Semi Volatile Organic Compounds ΑII NDPs: 0 Tests: 34 X X X X X X Solid Content All NDPs: 0 Tests: 34 X X X X X X Total Dissolved Solids All NDPs: 0 Tests: 34 X X X X X X X

	17431905			17431904			17431908			17431909			17431910			17431907			17431895	17431896
	VC03			VC03			VC04			VC04			VC04			VC04			VC05	VC05
	2.80 - 3.20			3.39 - 3.79			0.80 - 1.20			1.80 - 2.20			2.80 - 3.20			3.60 - 4.00			0.80 - 1.20	1.80 - 2.20
250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
S	v	v	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
X			X			X			X			Х			X			Х		
^			^			^			^			^			^			^		
X			X			X			X			X			X			X		
X			X			X			X			X			Х			X		
X			Х			X			X			Х			X			X		
X			X			X			X			Х			X			X		
		X			X			X			X			X			X			Х
																				^
X			X			X			X			X			Х			X		
X			X			X			X			X			X			X		
X			X			X			X			X			Х			X		
		Х			X			X			X			X			X			Х
X			X			X			X			X			Х			X		
V			v			v			v			Х			v			v		
X			X			X			X			X			X			X		
X			X			X			X			X			X			X		
X			X			X			X			X			Х			X		
		X			X			X			X			X			X			X

Validated

CERTIFICATE OF ANALYSIS

(ALS)

Client Reference: 62240712 SDG: 180424-31 Report Number: 457244 Order Number: 62240712 Superseded Report: Location: Lowestoft **Results Legend** 17431906 7431916 7431915 7431917 7431914 7431903 7431905 Lab Sample No(s) X Test No Determination Possible Customer VC02 VC02 VC02 VC03 VC02 VC03 VC03 **Sample Reference** Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 2.80 0.80 -3.20 0.80 2.80 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 3.20 - 3.63 TE - Trade Effluent - 3.20 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water 1kg TUB Non-regulatory Жg UNL - Unspecified Liquid Container TUB SL - Sludge G - Gas OTH - Other Jar Jar Sample Type v S S S S S S S S S S S S S S S S Total Organic Carbon All NDPs: 0 Tests: 34 X X X X X X All Total Sulphate NDPs: 0 Tests: 34 X X X X X X TPH CWG GC (S) All NDPs: 0 Tests: 34 X X X X X X VOC MS (S) All NDPs: 0 Tests: 34 X X X X X

17431905			17431904			17431908			17431909			17431910			17431907			17431895	17431896
VC03			VC03			VC04			VC04			VC04			VC04			VC05	VC05
2.80 - 3.20			3.39 - 3.79			0.80 - 1.20			1.80 - 2.20			2.80 - 3.20			3.60 - 4.00			0.80 - 1.20	1.80 - 2.20
60g VOC (ALE215) 250g Amber Jar (ALE210)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB
v v	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	v	S	S
X		X			X			X			X			X			X		
X		X			Х			X			X			Х			Х		
X		X			X			X			X			X			X		
X			X			X			X			X			X			X	

ALS

Client Reference: 62240712 SDG: Report Number: 457244 180424-31 Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431899 7431896 7431900 7431883 Lab Sample No(s) X Test 1902 No Determination **Possible** Customer VC05 VC06 **VC06 VC07** VC07 802 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.60 0.80 -0.80 - 1.202.00 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 2.46 - 1.00 TE - Trade Effluent - 2.00 .20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 250g Amber Jar (ALE210) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) 250g Amber Jar (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 1kg TUB Non-regulatory 1kg TUB 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar OTH - Other Sample Type S S S v v S S S S S S S S S S S S S ANC at pH4 and ANC at pH 6 All NDPs: 0 Tests: 34 X X X X X X X All Anions by ion Chromatography NDPs: 0 Tests: 34 X X Х X Х X X All Anions by Kone (w) NDPs: 0 Tests: 34 X X X X Χ X Asbestos ID in Solid Samples All NDPs: 0 Tests: 34 X X X **CEN Readings** All NDPs: 0 Tests: 34 X X X X X X Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 34 X X X X X X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 34 X X X X X X All Dissolved Organic/Inorganic Carbon NDPs: 0 Tests: 34 Х X Х Х X X EPH CWG (Aliphatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X X EPH CWG (Aromatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X X All Fluoride NDPs: 0 Tests: 34 X X X X X X GRO by GC-FID (S) All NDPs: 0 Tests: 34 X X X X X X Hexavalent Chromium (s) ΑII NDPs: 0 Tests: 34 X X X X X X X Loss on Ignition in soils All NDPs: 1 Tests: 33 X X X X X X X Mercury Dissolved All NDPs: 0 Tests: 34 X X X Χ X X

17431902			17431901			17431887			17431886			17431889			17431891			17431890		17431892
902			901			887			886			889			891			890		892
VC08			VC08			VC11			VC11			VC11			VC10A			VC10A		VC10A
0.60 - 1.00			1.00 - 1.45			0.80 - 1.20			1.80 - 2.20			2.20 - 2.50			0.80 - 1.20			1.80 - 2.20		2.45 - 2.85
60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
S	S	v	S	S	S		S	S	S	S	S	S	S	S	S	S	S	S	S	S
		Х			X			X			X			Х			X			Х
		Х			X			X			X			Х			X			v
		^			^			^			^			^			^			X
	X			X			X			X			X			X			X	
	X			X			X			X			X				X		X	
	X			X			X			X			X			X			X	
		X			X			X			X			X			X			X
	X			X			X			X			X			Х			X	
	X			X			X			X			X			X			X	
	^			^			^			^			^			^			^	
		Х			X			X			X			X			X			X
		X			X			X			X			X			X			X
	X			X			X			X			X			X			X	
X			X			X			X			X			X			X		
		Х			Х			Х			Х			Х			X			X
														N						
		Х			X			X			X						X			X
	X			X			X			X			X			X			X	

ALS

Client Reference: 62240712 SDG: Report Number: 457244 180424-31 Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431899 7431896 7431898 7431900 7431883 Lab Sample No(s) X Test 1902 No Determination **Possible** Customer VC05 VC06 **VC06 VC07** VC07 802 Sample Reference Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 0.60 0.80 -2.00 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 1.20 - 2.46 - 1.00 TE - Trade Effluent - 2.00 .20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 250g Amber Jar (ALE210) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 1kg TUB Non-regulatory 1kg TUB 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar OTH - Other Sample Type S S S S S S S S S S S S S S S S S S Metals in solid samples by OES All NDPs: 0 Tests: 34 X X X X X X X All Mineral Oil NDPs: 0 Tests: 34 X X X Х X X X OC, OP Pesticides and Triazine Herb All NDPs: 0 Tests: 34 X X X X X X Χ All Organotins on soils* NDPs: 0 Tests: 34 X X X PAH by GCMS All NDPs: 0 Tests: 34 X X X X X X X Passing Through >63µm sieve All NDPs: 1 Tests: 33 X X X X X X PCBs by GCMS All NDPs: 0 Tests: 34 X X X X X X X All рΗ NDPs: 0 Tests: 34 X X X X X X X Phenols by HPLC (S) All NDPs: 0 Tests: 34 Χ Χ X X X X X Phenols by HPLC (W) All NDPs: 0 Tests: 34 Χ X X X X X All Polybrominated Diphenyl Ethers* NDPs: 1 Tests: 33 X X X X X X X All Sample description NDPs: 0 Tests: 34 Χ X X X X X X Semi Volatile Organic Compounds ΑII NDPs: 0 Tests: 34 X X X X X X X Solid Content All NDPs: 0 Tests: 34 X X X X X X X Total Dissolved Solids All NDPs: 0 Tests: 34 X X X X X X

17431902			17431901			17431887			17431886			17431889			17431891			17431890		17431892
VC08			VC08			VC11			VC11			VC11			VC10A			VC10A		VC10A
0.60 - 1.00			1.00 - 1.45			0.80 - 1.20			1.80 - 2.20			2.20 - 2.50			0.80 - 1.20			1.80 - 2.20		2.45 - 2.85
60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)
S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
		X			X			Х			Х			Х			X			Х
		^			^			^			^			^			^			^
		X			X			X			X			X			X			X
		X			X			X			X			X			X			X
		Х			X			Х			Х			Х			Х			Х
		^			^			^			^			^			^			^
		X			X			X			X			Х			X			X
	X			X			X			X			N				X		X	
		X			X			X			X			X			X			X
		X			X			X			X			X			X			X
		X			X			X			X			Х			X			X
	X			X			X			X			X	N		X			X	
		X			X			X			X						X			X
		X			X			X			X			X			X			X
		X			X			X			X			X			X			X
		X			X			X			X			Х			X			X
	X			X			X			X			X			X			Х	

Validated

CERTIFICATE OF ANALYSIS

ALS	

Client Reference: 62240712 SDG: 180424-31 Report Number: 457244 Order Number: 62240712 Superseded Report: Location: Lowestoft **Results Legend** 17431899 7431896 7431900 7431883 7431902 Lab Sample No(s) X Test No Determination Possible Customer VC07 VC08 VC05 **VC06** VC06 VC07 **Sample Reference** Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 - 1.20 2.00 0.80 -0.60 - 1.00PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 2.46 - 2.00 TE - Trade Effluent 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Ja (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber Jar (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water Non-regulatory 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas OTH - Other Jar Jar Jar Jar Sample Type S S S S S S S S S S S S S S S S Total Organic Carbon All NDPs: 0 Tests: 34 X X X X X X X All Total Sulphate NDPs: 0 Tests: 34 X X X Χ X X X TPH CWG GC (S) All NDPs: 0 Tests: 34 X X X X X X X VOC MS (S) All NDPs: 0 Tests: 34 X X X X X

17431902 VI			17431901 V			17431887 VI			17431886 VI			17431889 VI			17431891 VC			17431890 VC		
VC08			VC08			VC11			VC11			VC11			VC10A			VC10A		
0.60 - 1.00			1.00 - 1.45			0.80 - 1.20			1.80 - 2.20			2.20 - 2.50			0.80 - 1.20			1.80 - 2.20		
60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	1kg TUB	(ALE210)
S	S	ν	S	S	S	v	S	S	v	S	S	v	v	S	v	ν	S	S	S	
		X			X			Х			X			X			X)
		Х			Х			Х			Х			Х			Х)
		X			X			X			X			X			X			X
Χ			X			X			Χ			X			Х			Χ		

ALS	

Client Reference: 62240712 SDG: 457244 180424-31 Report Number: Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431911 7431913 7431912 7431884 Lab Sample No(s) X Test 1893 No Determination **Possible** Customer 5 VC12A VC12A VC01B VC12A VC09B Sample Reference 10A Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 0.80 2.45 2.80 0.80 - 1 PR - Process Water .80 SA - Saline Water Depth (m) - 3.30 - 1.20 - 2.20 TE - Trade Effluent - 2.85 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) 1kg TUB Non-regulatory 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar Jar OTH - Other Sample Type S S v S S S S S S S S S S S S S S v ANC at pH4 and ANC at pH 6 All NDPs: 0 Tests: 34 X X Х X X X All Anions by ion Chromatography NDPs: 0 Tests: 34 X X X X X X Anions by Kone (w) All NDPs: 0 Tests: 34 X X X X X X Asbestos ID in Solid Samples All NDPs: 0 Tests: 34 X X X X CEN Readings All NDPs: 0 Tests: 34 X X X X X X Cyanide Comp/Free/Total/Thiocyanate All NDPs: 0 Tests: 34 X X X X X X Dissolved Metals by ICP-MS All NDPs: 0 Tests: 34 X X X X X X All Dissolved Organic/Inorganic Carbon NDPs: 0 Tests: 34 X X Х Х X X EPH CWG (Aliphatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X EPH CWG (Aromatic) GC (S) All NDPs: 0 Tests: 34 X X X X X X All Fluoride NDPs: 0 Tests: 34 X X X X X GRO by GC-FID (S) All NDPs: 0 Tests: 34 X X X X Χ X X Hexavalent Chromium (s) ΑII NDPs: 0 Tests: 34 X X X X X X Loss on Ignition in soils All NDPs: 1 Tests: 33 X X X X X X All Mercury Dissolved NDPs: 0 Tests: 34 X X X X X X

		17431894	
		VC09B	
		1.26 - 1.66	
1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
S	S	S	
	3.5		
	X		
	X		
V			
X			
X			
X			
^			
	X		
Х			
X			
	X		
	X		
X			
		X	
	X		
	X		
Х			

ALS	

Client Reference: 62240712 SDG: 457244 180424-31 Report Number: Location: Lowestoft Order Number: 62240712 Superseded Report: **Results Legend** 7431911 7431913 7431912 7431884 Lab Sample No(s) X Test 1893 No Determination **Possible** Customer 5 VC12A VC12A VC01B VC12A VC09B Sample Reference 10A Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 0.80 0.80 2.45 2.80 0.80 - 1 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 3.30 - 1.20 - 2.85 TE - Trade Effluent 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) 60g VOC (ALE215) 60g VOC (ALE215) Non-regulatory 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas Jar Jar Jar Jar Jar OTH - Other Sample Type S S S S S S S S S S S S S S S S S v Metals in solid samples by OES All NDPs: 0 Tests: 34 X X Х X X X All Mineral Oil NDPs: 0 Tests: 34 X X X X X X OC, OP Pesticides and Triazine Herb All NDPs: 0 Tests: 34 X X X X X X Organotins on soils* All NDPs: 0 Tests: 34 X X X PAH by GCMS All NDPs: 0 Tests: 34 X X X X X X Passing Through >63µm sieve All NDPs: 1 Tests: 33 X X X X X X PCBs by GCMS All NDPs: 0 Tests: 34 X X X X X X All рΗ NDPs: 0 Tests: 34 Х X Х X X X Phenols by HPLC (S) All NDPs: 0 Tests: 34 X X X X X X Phenols by HPLC (W) All NDPs: 0 Tests: 34 X X X X X X All Polybrominated Diphenyl Ethers* NDPs: 1 Tests: 33 X X X X X X All Sample description NDPs: 0 Tests: 34 X X X X X X Semi Volatile Organic Compounds ΑII NDPs: 0 Tests: 34 X X X X X X Solid Content All NDPs: 0 Tests: 34 X X X X X X Total Dissolved Solids All NDPs: 0 Tests: 34 X X X X X X

		17431894	
		VC09B	
		1.26 - 1.66	
1kg TUB	250g Amber Jar (ALE210)	60g VOC (ALE215)	
S	S	S	
	3.6		
	X		
	X		
	X		
	^		
	X		
	X		
X			
	X		
	X		
	X		
Х			
~			
	X		
	X		
	X		
	X		
Χ			1

Validated

CERTIFICATE OF ANALYSIS

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Client Reference: 62240712 SDG: 180424-31 Report Number: 457244 Order Number: 62240712 Superseded Report: Location: Lowestoft **Results Legend** 17431911 7431893 7431913 7431912 7431884 Lab Sample No(s) X Test No Determination Possible Customer VC10A VC12A VC12A VC12A VC01B VC09B **Sample Reference** Sample Types -S - Soil/Solid UNS - Unspecified Solid GW - Ground Water **AGS Reference** SW - Surface Water LE - Land Leachate PL - Prepared Leachate 2.45 0.80 2.80 0.80 - 1.20 0.80 - 1 PR - Process Water .80 - 2.20 SA - Saline Water Depth (m) - 2.85 - 3.30 TE - Trade Effluent 1.20 1.20 TS - Treated Sewage US - Untreated Sewage 60g VOC (ALE215) 250g Amber Jar (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB 60g VOC (ALE215) 250g Amber J (ALE210) 1kg TUB RE - Recreational Water DW - Drinking Water 60g VOC (ALE215) Non-regulatory 1kg TUB UNL - Unspecified Liquid Container SL - Sludge G - Gas OTH - Other Jar Jar Jar Jar Jar Sample Type S S S S S S S S S S S S S S S S Total Organic Carbon All NDPs: 0 Tests: 34 X X X X X X All Total Sulphate NDPs: 0 Tests: 34 X X Χ X X X TPH CWG GC (S) All NDPs: 0 Tests: 34 X X X X X X VOC MS (S) All NDPs: 0 Tests: 34 X X X X X X

250g Amber Jar S (ALE210)	17431894 VC09B 1.26 - 1.66 60g VOC S (ALE215)
rJar S)	S
X	
X	
X	
	X

>10mm

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

457244

Sample Descriptions

Grain Sizes

very fine <0.0	0.063 fine 0.063	3mm - 0.1mm m	edium 0.1mn	n - 2mm coar	se 2mm - 1	l0mm very o
ab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Inclusions	Inclusions 2
17431914	VC02	3.20 - 3.63	Dark Brown	Silty Clay Loam	None	None
17431915	VC02	2.80 - 3.20	Dark Brown	Sandy Clay Loam	None	None
17431916	VC02	1.80 - 2.20	Dark Brown	Silty Sand	Stones	None
17431917	VC02	0.80 - 1.20	Dark Brown	Sandy Silt Loam	Stones	None
17431903	VC03	0.80 - 1.20	Grey	N/A	None	None
17431904	VC03	3.39 - 3.79	Dark Brown	Silty Sand	Stones	None
17431905	VC03	2.80 - 3.20	Dark Brown	Silty Clay Loam	None	None
17431906	VC03	1.80 - 2.20	Dark Brown	Sand	None	None
17431907	VC04	3.60 - 4.00	Light Brown	Sand	None	None
17431908	VC04	0.80 - 1.20	Light Brown	Sand	None	None
17431909	VC04	1.80 - 2.20	Light Brown	Sand	Stones	None
17431910	VC04	2.80 - 3.20	Dark Brown	Silty Sand	Stones	None
17431895	VC05	0.80 - 1.20	Dark Brown	Loamy Sand	None	None
17431896	VC05	1.80 - 2.20	Dark Brown	Sand	None	None
17431898	VC05	2.53 - 2.93	Dark Brown	Loamy Sand	Stones	None
17431899	VC06	0.80 - 1.20	Light Brown	Silty Clay Loam	Stones	Vegetation
17431900	VC06	2.00 - 2.46	Light Brown	Silty Sand	Stones	Stones
17431882	VC07	1.60 - 2.00	Cream	Sand	None	None
17431883	VC07	0.80 - 1.20	Light Brown	Sand	None	None
17431901	VC08	1.00 - 1.45	Light Brown	Silty Sand	Stones	None
17431902	VC08	0.60 - 1.00	Grey	Sand	Stones	None
17431886	VC11	1.80 - 2.20	Cream	Sand	None	None
17431887	VC11	0.80 - 1.20	Dark Brown	Loamy Sand	None	None
17431889	VC11	2.20 - 2.50	Light Brown	Sand	Stones	None
17431890	VC10A	1.80 - 2.20	Light Brown	Loamy Sand	Stones	None
17431891	VC10A	0.80 - 1.20	Dark Brown	Loamy Sand	None	None
17431892	VC10A	2.45 - 2.85	Light Brown	Sand	None	None
17431911	VC12A	1.80 - 2.20	Grey	Sand	Stones	None
17431912	VC12A	2.80 - 3.30	Grey	Sandy Loam	Stones	None
17431913	VC12A	0.80 - 1.20	Dark Brown	Silty Clay Loam	None	Oil/Petroleum
17431884	VC01B	0.80 - 1.20	Dark Brown	Sand	None	None
17431885	VC01B	1.24 - 1.54	Dark Brown	Sand	None	None
17431893	VC09B	0.80 - 1.20	Dark Brown	Sandy Loam	Stones	None
17431894	VC09B	1.26 - 1.66	Light Brown	Silty Sand	Stones	None



Validated

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

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 ocurring 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



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC02 VC02 VC02 VC02 VC03 VC03 Results Leger ISO17025 accredited. mCERTS accredited.
Aqueous / settled sample
Dissolved / filtered sample
Total / unfiltered sample. Depth (m) 0.80 - 1.20 1.80 - 2.20 2.80 - 3.20 3.20 - 3.63 0.80 - 1.20 1.80 - 2.20 Soil/Solid (S) 20/04/2018 Soil/Solid (S) 20/04/2018 Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) tot.unfilt 20/04/2018 20/04/2018 20/04/2018 20/04/2018 Date Sample Subcontracted test. 8 recovery of the surrogate standard to Sample Time 15:43:00 15:43:00 15:43:00 15:43:00 14.28.00 14.28.00 check the efficiency of the method. The results of individual compounds within 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 Date Received 180424-31 180424-31 180/12/-31 180424-31 180424-31 180424-31 SDG Ref mples aren't corrected for the recove 17431917 17431916 17431903 17431915 17431914 17431906 (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see apper b Sample No.(s) AGS Reference LOD/Units Component Method Moisture Content Ratio (% of as 11 14 27 22 46 20 PM024 received sample) 2.2'.4.4',6-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-100)* M M Μ M M 2.2'.3.4,4',5'-hexabromodipheny SUB <0.1 <0.1 <0.1 <0.1 mg/kg < 0.1 < 0.1 I ether (BDE-138)* SUB 2,2',4,4',5,5'-hexabromodipheny mg/kg < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 I ether (BDE-153)* 2,2',4,4',5,6'-hexabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg I ether (BDE-154)* 2,4,4'-tribromodiphenyl ether SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg (BDE-28)* 2,2',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-47)* 2,3',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-66)* 2.2'.3.4.4'-pentabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-85)* 2,2',4,4',5-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-99)* TBC 89 78 80 Solids, Total <0.1% 86 73 54 <0.7 % TM018 1.04 Loss on ignition 6.24 < 0.7 5.27 11.5 6.91 Μ Μ Μ M М Sulphate, 2:1 water soluble <0.002 g/l TM019 0.0365 0.0109 0.182 0.117 0.0754 0.0147 M M Μ М M Mineral oil >C10-C40 <1 mg/kg TM061 13.2 <1 19.2 7.47 56.1 3.87 Mineral Oil Surrogate % TM061 83.5 86.7 88.1 88.3 85.6 85.2 recovery*3 <0.01 mg/kg TM062 (S) <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 Phenol M M М M M Organic Carbon, Total <0.2 % TM132 0.235 <0.2 0.78 0.552 1.37 <0.2 Μ Μ M Μ M Soil Organic Matter (SOM) <0.35 % TM132 0.405 <0.35 1.34 0.952 2.36 <0.35 # # # рΗ 1 pH Units TM133 7 32 5 77 6 73 8 62 8 08 8.5 M Μ Μ Μ <0.6 Chromium, Hexavalent < 0.6 mg/kg TM151 <0.6 <0.6 <0.6 <0.6 <0.6 # # TM153 Cvanide. Total <1 mg/kg <1 <1 <1 <1 <1 <1 M Μ М M M TM153 Cyanide, Free <1 mg/kg <1 <1 <1 <1 <1 <1 M M Μ M М PCB congener 28 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M PCB congener 52 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M М М M M PCB congener 101 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M Μ М M M PCB congener 118 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M М PCB congener 138 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M M M M M TM168 PCB congener 153 <3 <3 <3 µg/kg <3 <3 <3 <3 M М М M M TM168 <3 <3 PCB congener 180 <3 µg/kg <3 <3 <3 <3 М M M Μ M Sum of detected PCB 7 TM168 <21 µg/kg <21 <21 <21 <21 <21 <21 Congeners TM168 PCB congener 81 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ M Μ M М PCB congener 77 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M M M M PCB congener 123 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M Μ M M



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC03 VC02 VC02 VC02 VC02 VC03 ISO17025 accredited mCERTS accredited. Aqueous / settled sample Depth (m) 0.80 - 1.20 1.80 - 2.20 2.80 - 3.20 3.20 - 3.63 0.80 - 1.20 1.80 - 2.20 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Sampled 20/04/2018 20/04/2018 20/04/2018 20/04/2018 20/04/2018 20/04/2018 Sample Time 15:43:00 15:43:00 15:43:00 15:43:00 14.28.00 14.28.00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 24/04/2018 180424-31 180424-31 SDG Ref samples aren't corrected for the recover 17431917 17431916 17431915 17431914 17431903 17431906 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М М M М M PCB congener 126 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M Μ M M M PCB congener 167 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M Μ М M М TM168 PCB congener 156 <3 <3 <3 <3 <3 <3 <3 µg/kg Μ М M Μ M TM168 PCB congener 157 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ Μ Μ Μ PCB congener 169 TM168 <3 <3 <3 µg/kg <3 <3 <3 <3 M M Μ M М PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 М M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 <36 <36 Arsenic TM181 4.22 3.84 37.9 15.3 19.7 3.42 <0.6 mg/kg M M M M M TM181 4.93 <0.7 11.3 10.1 32.9 2.25 Boron <0.7 mg/kg # TM181 0.098 0.0626 0.241 0.086 Cadmium <0.02 ma/ka 0.553 1.18 М M M M M <0.9 mg/kg TM181 3.31 2.58 24.9 <0.9 22 5.45 Chromium Μ Μ Μ Μ Μ 4.19 3.22 29.3 25.6 2.9 Copper <1.4 mg/kg TM181 12 1 Μ M M Μ M Lead <0.7 mg/kg TM181 7.83 2 65 31.1 13.5 317 4 27 М M M Μ M TM181 < 0.14 Mercury <0.14 mg/kg < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 M М М M M Nickel <0.2 mg/kg TM181 4.38 3.47 35.9 21.5 23.4 3.3 Μ Μ Μ M М Selenium TM181 <1 <1 <1 <1 <1 <1 <1 mg/kg # # # # Zinc <1.9 mg/kg TM181 16 11.6 104 61.7 95.8 18.7 Μ M M Μ M TM182 0.157 0.0613 0.101 0.0986 2.02 0.0787 ANC @ pH 4 <0.03 mol/kg ANC @ pH 6 0.227 < 0.03 TM182 0.0689 < 0.03 < 0.03 < 0.03 < 0.03 mol/kg TM221 <48 356 <48 <48 mg/kg 68.8 613 656 Sulphate, Total M M Μ M M

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Results Legend	Custo	mer Sample Ref.	VC03		VC03	VC04	VC04	VC04	VC04
# ISO17025 accredited. M mCERTS accredited.	- Calon		V003		V003	VC04	VC04	VC04	VC04
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	2.80 - 3.20 Soil/Solid (S)		3.39 - 3.79 Soil/Solid (S)	0.80 - 1.20 Soil/Solid (S)	1.80 - 2.20 Soil/Solid (S)	2.80 - 3.20 Soil/Solid (S)	3.60 - 4.00 Soil/Solid (S)
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	20/04/2018		20/04/2018	19/04/2018	19/04/2018	19/04/2018	19/04/2018
** % recovery of the surrogate standard to check the efficiency of the method. The		Sample Time Date Received	14:28:00 24/04/2018		14:28:00 24/04/2018	15:50:00 24/04/2018	15:50:00 24/04/2018	15:50:00 24/04/2018	15:50:00 24/04/2018
results of individual compounds within samples aren't corrected for the recovery		SDG Ref	180424-31 17431905		180424-31 17431904	180424-31 17431908	180424-31 17431909	180424-31 17431910	180424-31 17431907
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendix)		ab Sample No.(s) AGS Reference	17431903		17431904	17431900	17431909	17431910	17431907
Component Majorium Content Datio (0/ of co.	LOD/Units	Method PM024	23		13	19	15	13	13
Moisture Content Ratio (% of as received sample)	%	PIVIU24	23		13	19	15	13	13
2,2',4,4',6-pentabromodiphenyl ether (BDE-100)*	mg/kg	SUB	<0.1	М	<0.1 M	<0.1 M	<0.1 M	<0.1 M	<0.1 M
2,2',3,4,4',5'-hexabromodipheny I ether (BDE-138)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4',5,5'-hexabromodipheny I ether (BDE-153)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4',5,6'-hexabromodipheny I ether (BDE-154)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
2,4,4'-tribromodiphenyl ether (BDE-28)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4'-tetrabromodiphenyl ether (BDE-47)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
2,3',4,4'-tetrabromodiphenyl ether (BDE-66)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
2,2',3,4,4'-pentabromodiphenyl ether (BDE-85)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
2,2',4,4',5-pentabromodiphenyl ether (BDE-99)*	mg/kg	SUB	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
Solids, Total	<0.1 %	TBC	77		87	81	85	87	87
Loss on ignition	<0.7 %	TM018	9.71	М	<0.7 M	1.96 M	<0.7 M	0.854 M	<0.7 M
Sulphate, 2:1 water soluble	<0.002 g/l	TM019	0.158	М	0.00798 M	0.0369 M	0.016 M	0.0454 M	0.0153 M
Mineral oil >C10-C40	<1 mg/kg	TM061	7.57		<1	5.09	<1	<1	<1
Mineral Oil Surrogate % recovery**	%	TM061	89.4		87.2	88.4	85.6	83	86.1
Phenol	<0.01 mg/kg	TM062 (S)	<0.01	М	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Organic Carbon, Total	<0.2 %	TM132	0.414	М	<0.2 M	<0.2 M	<0.2 M	<0.2 M	<0.2 M
Soil Organic Matter (SOM)	<0.35 %	TM132	0.714	#	<0.35 #	<0.35 #			
pH	1 pH Units	TM133	6.26	М	5.78 M	8.69 M	8.42 M	7.49 M	6.18 M
Chromium, Hexavalent	<0.6 mg/kg	TM151	<0.6	#	<0.6 #	<0.6 #	<0.6 #	<0.6 #	<0.6 #
Cyanide, Total	<1 mg/kg	TM153	<1	М	<1 M	<1 M	<1 M	<1 M	<1 M
Cyanide, Free	<1 mg/kg	TM153	<1	М	<1 M	<1 M		<1 M	<1 M
PCB congener 28	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 52	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 101	<3 µg/kg	TM168	<3	М	<3 M	<3 M		<3 M	<3 M
PCB congener 118	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 138	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 153	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 180	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21		<21	<21	<21	<21	<21
PCB congener 81	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3 M	<3 M	<3 M
PCB congener 77	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3	<3 M	<3 M
PCB congener 123	<3 µg/kg	TM168	<3	М	<3 M	<3 M	<3	<3	<3



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC03 VC03 VC04 VC04 VC04 VC04 ISO17025 accredited mCERTS accredited Aqueous / settled sample Depth (m) 2.80 - 3.20 3.39 - 3.79 0.80 - 1.20 1.80 - 2.20 2.80 - 3.20 3 60 - 4 00 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Soil/Solid (S) Soil/Solid (S) Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Sampled 20/04/2018 20/04/2018 19/04/2018 19/04/2018 19/04/2018 19/04/2018 Sample Time 14.28.00 14.28.00 15:50:00 15:50:00 15:50:00 15:50:00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 24/04/2018 180424-31 180424-31 SDG Ref samples aren't corrected for the recover 17431905 17431904 17431908 17431909 17431910 17431907 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M М М M M PCB congener 126 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 167 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M Μ М M Μ М PCB congener 156 TM168 <3 <3 <3 <3 <3 <3 µg/kg <3 M М M Μ M М TM168 PCB congener 157 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ Μ Μ Μ М Μ PCB congener 169 TM168 <3 µg/kg <3 <3 <3 <3 <3 <3 M M Μ M M М PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 М M M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 <36 <36 Arsenic TM181 22.4 1.75 3.4 1.35 2.74 0.936 <0.6 mg/kg M M M M M M TM181 7.28 0.832 5.62 1.71 1.45 Boron <0.7 mg/kg <0.7 # TM181 1.01 0.0378 0.139 0.0362 0.0528 <0.02 Cadmium <0.02 ma/ka М M M M M Μ <0.9 mg/kg TM181 <0.9 2.91 12 2 89 4.51 Chromium 1.1 Μ Μ Μ Μ Μ Μ Copper <1.4 mg/kg TM181 8.11 2.9 10.8 2 29 5.46 <14 Μ M M Μ M M 3.31 Lead <0.7 mg/kg TM181 10.9 4.52 10.2 3 54 9.64 М M Μ M M M TM181 Mercury <0.14 mg/kg < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 M М Μ М M M Nickel <0.2 mg/kg TM181 18.3 2.78 12.9 3 6.32 1.1 Μ Μ Μ M M М Selenium TM181 1.87 <1 <1 <1 <1 <1 <1 mg/kg # # # # # Zinc <1.9 mg/kg TM181 47.5 9.05 31.6 8.28 15 4.24 Μ M M M M M 0.0825 0.0866 0.0799 0.0369 0.0605 0.0635 ANC @ pH 4 <0.03 TM182 mol/kg ANC @ pH 6 < 0.03 TM182 < 0.03 < 0.03 0.0537 < 0.03 0.0388 < 0.03 mol/kg TM221 425 <48 <48 <48 <48 mg/kg 98.9 54.9 Sulphate, Total M M Μ M M M

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Results Legend # ISO17025 accredited.	Custo	mer Sample Ref.	VC05	П	VC05	VC05		VC06	VC06		VC07	
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20	2.53 - 2.93		0.80 - 1.20	2.00 - 2.46		0.80 - 1.20	
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid (S) 19/04/2018		Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018		Soil/Solid (S) 20/04/2018	oil/Solid (S) 20/04/2018		Soil/Solid (S) 20/04/2018	
** % recovery of the surrogate st check the efficiency of the met		Sample Time	14:45:00		14:45:00	14:45:00		08:29:00	08:29:00		17:40:00	
results of individual compound	ds within	Date Received SDG Ref	24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	
samples aren't corrected for th (F) Trigger breach confirmed	· Li	ab Sample No.(s)	17431895		17431896	17431898		17431899	17431900		17431883	
1-5&+§@ Sample deviation (see appending Component	LOD/Units	AGS Reference Method										
Moisture Content Ratio (% of as received sample)	%	PM024	44	T	16	16		38	1.8		16	
2,2',4,4',6-pentabromodiphenyl ether (BDE-100)*	mg/kg	SUB	<0.1	М	<0.1	<0.1	M	<0.1	<0.1	М	<0.1	М
2,2',3,4,4',5'-hexabromodipheny I ether (BDE-138)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	
2,2',4,4',5,5'-hexabromodipheny I ether (BDE-153)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	
2,2',4,4',5,6'-hexabromodipheny I ether (BDE-154)*	mg/kg	SUB	<0.1	T	<0.1	<0.1		<0.1	<0.1		<0.1	
2,4,4'-tribromodiphenyl ether (BDE-28)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	
2,2',4,4'-tetrabromodiphenyl ether (BDE-47)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	
2,3',4,4'-tetrabromodiphenyl ether (BDE-66)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	
2,2',3,4,4'-pentabromodiphenyl ether (BDE-85)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	
2,2',4,4',5-pentabromodiphenyl ether (BDE-99)*	mg/kg	SUB	<0.1		<0.1	<0.1		<0.1	<0.1		<0.1	
Solids, Total	<0.1 %	TBC	56		84	84		62	98.2		84	
Loss on ignition	<0.7 %	TM018	<0.7	М	<0.7 M	2.24 N	VI	<0.7 M	<0.7	М	<0.7	М
Sulphate, 2:1 water soluble	<0.002 g/l	TM019	0.0616	M	0.0221 M	0.0603 N	VI	0.041 M	0.0174	М	0.0117	M
Mineral oil >C10-C40	<1 mg/kg	TM061	59.7		1.5	20.7		62.4	<1		<1	
Mineral Oil Surrogate % recovery**	%	TM061	84.2		87	88.1		86	85.5		86.5	
Phenol	<0.01 mg/kg			М	<0.01 M		VI	<0.01	<0.01	М	<0.01	M
Organic Carbon, Total	<0.2 %	TM132		М	<0.2 M		VI	1.68 M	<0.2	М	<0.2	М
Soil Organic Matter (SOM)	<0.35 %	TM132		#	<0.35		#	2.9	<0.35	#	<0.35	#
рН	1 pH Units	TM133		М	7.91 M		VI	8.48 M	9.01	М	7.08	M
Chromium, Hexavalent	<0.6 mg/kg	TM151		#	<0.6		#	<0.6	<0.6	#	<0.6	#
Cyanide, Total	<1 mg/kg	TM153		М	<1 M		VI	<1 M	<1	М	<1	М
Cyanide, Free	<1 mg/kg	TM153		М	<1 M		VI	<1 M	<1	М	<1	М
PCB congener 28	<3 µg/kg	TM168		М	<3 M		VI	<3 M	<3	М	<3	М
PCB congener 52	<3 µg/kg	TM168		М	<3 M		VI	<3 M	<3	М	<3	М
PCB congener 101	<3 µg/kg	TM168		М	<3 M	<3 	VI	<3 M	<3	М	<3	М
PCB congener 118	<3 µg/kg	TM168	<3 <3	М	<3 M		VI	<3 M	<3	М	<3 <3	М
PCB congener 138 PCB congener 153	<3 µg/kg	TM168 TM168		М	<3 M		VI	<3 M	<3	М	<3	M
	<3 µg/kg	TM168		М	<3 M		VI	<3 M	<3	М	-	M
PCB congener 180	<3 µg/kg			М	M	N	VI	<3 M <21	<3	М	<3	М
Sum of detected PCB 7 Congeners	<21 µg/kg	TM168	<21 <3	_	<21 <3	<21 <3	_	<21 <3	<21		<21 <3	
PCB congener 81 PCB congener 77	<3 µg/kg	TM168 TM168		М	<3 M		VI	<3 M	<3	М	<3	М
PCB congener 1/2 PCB congener 123	<3 µg/kg	TM168		М	<3 M		VI	<3 M	<3	М	<3	М
FOD CONGENER 123	<3 µg/kg	ΙΝΙΙ		М	<3 M		И	<3 M	\ 3	М	<3	М



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC05 VC05 VC05 VC06 VC06 VC07 ISO17025 accredited mCERTS accredited Aqueous / settled sample Depth (m) 0.80 - 1.20 1.80 - 2.20 2.53 - 2.93 0.80 - 1.20 2.00 - 2.46 0.80 - 1.20 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within Date Sampled 19/04/2018 19/04/2018 19/04/2018 20/04/2018 20/04/2018 20/04/2018 Sample Time 14:45:00 14.45.00 14.45.00 08:29:00 08:29:00 17:40:00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 24/04/2018 180424-31 180424-31 SDG Ref samples aren't corrected for the recover 17431895 17431896 17431898 17431899 17431900 17431883 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M М M M M PCB congener 126 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 167 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M M М M Μ М PCB congener 156 TM168 <3 <3 <3 <3 <3 <3 µg/kg <3 M М M Μ M М TM168 PCB congener 157 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ Μ Μ M М Μ PCB congener 169 TM168 <3 µg/kg <3 <3 <3 <3 <3 <3 M M Μ M M М PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 М M M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 <36 <36 Arsenic TM181 21 3.65 11.4 18.5 2.21 <0.6 <0.6 mg/kg M M M M M M TM181 40.1 1.64 2.95 34.8 <0.7 <0.7 Boron <0.7 mg/kg # TM181 0.241 0.0879 0.342 0.282 0.0301 Cadmium <0.02 ma/ka 0.13 М M M M M Μ <0.9 mg/kg TM181 24 7 1.73 < 0.9 23 1.65 1.11 Chromium Μ Μ Μ Μ Μ Μ 20.1 Copper <1.4 mg/kg TM181 23.3 5.48 7.98 2 14 3 43 Μ M M Μ M M 6.85 Lead <0.7 mg/kg TM181 36.3 8.54 38.3 2 49 2 72 М M Μ M M M TM181 Mercury <0.14 mg/kg < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 < 0.14 M М Μ М M M Nickel <0.2 mg/kg TM181 25.8 2.83 6.13 24.5 3.04 0.596 Μ Μ Μ M M М Selenium TM181 <1 <1 2.68 <1 <1 <1 <1 mg/kg # # # # # Zinc <1.9 mg/kg TM181 105 15.6 48.1 98.6 8.13 4.07 М M M M M M 2.46 0.0767 0.0849 0.0908 0.0389 ANC @ pH 4 <0.03 TM182 2.13 mol/kg ANC @ pH 6 0.247 < 0.03 TM182 < 0.03 < 0.03 0.223 < 0.03 < 0.03 mol/kg TM221 <48 <48 <48 <48 mg/kg 661 587 <48 Sulphate, Total M M Μ M M M

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC07 VC08 VC08 VC11 VC11 VC11 Results Leger ISO17025 accredited. mCERTS accredited.
Aqueous / settled sample
Dissolved / filtered sample
Total / unfiltered sample. Depth (m) 1.60 - 2.00 0.60 - 1.00 1.00 - 1.45 0.80 - 1.20 1.80 - 2.20 2.20 - 2.50 Soil/Solid (S) 20/04/2018 Soil/Solid (S) 20/04/2018 Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) tot.unfilt 20/04/2018 20/04/2018 20/04/2018 20/04/2018 Date Sample Subcontracted test. 8 recovery of the surrogate standard to Sample Time 17:40:00 17:06:00 17:06:00 12:24:00 12-24-00 12:24:00 check the efficiency of the method. The results of individual compounds within 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 Date Received 180424-31 180424-31 180/12/-31 180424-31 180424-31 180/12/-31 SDG Ref mples aren't corrected for the recove 17431882 17431902 17431886 17431901 17431887 17431889 (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see apper b Sample No.(s) AGS Reference LOD/Units Component Method Moisture Content Ratio (% of as 13 17 14 44 15 16 PM024 % received sample) 2.2'.4.4',6-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-100)* M M М M Μ M 2.2'.3.4,4',5'-hexabromodipheny SUB <0.1 <0.1 <0.1 mg/kg < 0.1 < 0.1 < 0.1 I ether (BDE-138)* SUB 2,2',4,4',5,5'-hexabromodipheny mg/kg < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 I ether (BDE-153)* 2,2',4,4',5,6'-hexabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg I ether (BDE-154)* 2,4,4'-tribromodiphenyl ether SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg (BDE-28)* 2,2',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-47)* 2,3',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-66)* 2.2'.3.4.4'-pentabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-85)* SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 2,2',4,4',5-pentabromodiphenyl mg/kg ether (BDE-99)* TBC 85 84 Solids, Total <0.1% 87 83 86 56 <0.7 % TM018 Loss on ignition <0.7 < 0.7 < 0.7 2.71 <0.7 < 0.7 Μ Μ Μ M М Μ Sulphate, 2:1 water soluble <0.002 g/l TM019 0.0117 0.0155 0.1 0.0755 0.0135 0.0412 M M Μ M Μ М Mineral oil >C10-C40 <1 mg/kg TM061 <1 1.16 <1 94 <1 <1 Mineral Oil Surrogate % TM061 82.8 78.4 85.7 84.4 82.1 86 recovery*3 <0.01 mg/kg TM062 (S) <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 Phenol M М M M M M Organic Carbon, Total <0.2 % TM132 <0.2 <0.2 <0.2 1.54 <0.2 < 0.2 Μ М Μ Μ M M Soil Organic Matter (SOM) <0.35 % TM132 <0.35 <0.35 <0.35 2.65 < 0.35 <0.35 # # # рΗ 1 pH Units TM133 8 97 8 56 8 65 7 4 7 76 7 11 M Μ Μ Μ Μ <0.6 <0.6 Chromium, Hexavalent < 0.6 mg/kg TM151 <0.6 <0.6 <0.6 <0.6 # # # TM153 Cvanide. Total <1 mg/kg <1 <1 <1 <1 <1 <1 M Μ М M M M TM153 Cyanide, Free <1 mg/kg <1 <1 <1 <1 <1 <1 M M Μ M Μ М PCB congener 28 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 52 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M М М M M M PCB congener 101 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M М М M M M PCB congener 118 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M Μ М PCB congener 138 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M M M M M Μ TM168 PCB congener 153 <3 <3 <3 µg/kg <3 <3 <3 <3 M М Μ М M M TM168 <3 PCB congener 180 <3 µg/kg <3 <3 <3 <3 <3 М M M Μ M Μ Sum of detected PCB 7 TM168 <21 µg/kg <21 <21 <21 <21 <21 <21 Congeners TM168 PCB congener 81 <3 µg/kg <3 <3 <3 <3 <3 <3 Μ M Μ M M М PCB congener 77 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M M M M M PCB congener 123 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M М M M M

Validated

CERTIFICATE OF ANALYSIS



Client Reference: 62240712 Order Number: 62240712 180424-31 Lowestoft SDG: Report Number: Superseded Report: 457244 Location: Customer Sample Ref. VC07 VC08 VC08 VC11 VC11 VC11

M modERTS accretions modE	(S) 8) 8 1
PCB congener 114 C3 μg/kg TM168 C3 M M M M M M M M M	
PCB congener 105 \$3 μg/kg TM168 \$3	
PCB congener 105 C3 μg/kg TM168 C3 M M M M M M M M M	М
PCB congener 167 <3 μg/kg TM168 <3 <3 <3 <3 <3 <3 <3 <	М
No No No No No No No No	М
PCB congener 157 C3 μg/kg TM168 C3 C3 C3 C3 C3 C3 C3 C	М
PCB congener 169 C3 μg/kg TM168 C3 C3 C3 C3 C3 C3 C3 C	М
PCB congener 189 C3 μg/kg TM168 C3 C3 C3 C3 C3 C3 C3 C	М
Sum of detected WHO 12 PCBs <36 μg/kg TM168 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36 <36	М
Arsenic	М
N	
Cadmium	М
Cadmium <0.02 mg/kg TM181 0.0674 <0.02 0.0247 0.277 0.0253 0.030 Chromium <0.9 mg/kg	#
	М
Copper <1.4 mg/kg TM181 <1.4 1.69 <1.4 27 <1.4 2.69 M	М
Lead <0.7 mg/kg TM181 5.36 3.3 1.95 38.8 2.48 4.25	М
Mercury <0.14 mg/kg TM181 <0.14 <0.14 <0.14 <0.14 <0.14 <0.14 <0.14 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15 <0.15	М
Nickel <0.2 mg/kg TM181 1.1 1.45 1.35 25.7 1.36 1.75 M M M M M M M	М
Selenium <1 mg/kg TM181 <1 <1 <1 <1 <1 <1 <1 <1 <1	#
Zinc <1.9 mg/kg TM181 4.78 6.29 3.87 117 5.66 7.5 M	М
ANC @ pH 4	
ANC @ pH 6	
Sulphate, Total <48 mg/kg TM221 <48 <48 118 685 <48 <48 M	М
	$\overline{}$

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC10A V/C10A VC10A VC12A VC12A VC12A Results Leger ISO17025 accredited. mCERTS accredited.
Aqueous / settled sample
Dissolved / filtered sample
Total / unfiltered sample. Depth (m) 0.80 - 1.20 1.80 - 2.20 2.45 - 2.85 0.80 - 1.20 1.80 - 2.20 2.80 - 3.30 Soil/Solid (S) 20/04/2018 Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) tot.unfilt 20/04/2018 20/04/2018 20/04/2018 20/04/2018 20/04/2018 Date Sample Subcontracted test. 8 recovery of the surrogate standard to Sample Time 09.24.00 09-24-00 09-24-00 13.27.00 13.27.00 13.27.00 check the efficiency of the method. The results of individual compounds within 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 24/04/2018 Date Received 180424-31 180424-31 180/12/-31 180424-31 180424-31 180424-31 SDG Ref mples aren't corrected for the recove 17431891 17431911 17431890 17431892 17431913 17431912 (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see apper b Sample No.(s) AGS Reference LOD/Units Component Method Moisture Content Ratio (% of as 42 13 16 42 12 18 PM024 % received sample) 2.2'.4.4',6-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-100)* M Μ M Μ M 2.2'.3.4,4',5'-hexabromodipheny SUB <0.1 <0.1 mg/kg < 0.1 < 0.1 < 0.1 I ether (BDE-138)* SUB 2,2',4,4',5,5'-hexabromodipheny mg/kg < 0.1 < 0.1 < 0.1 < 0.1 < 0.1 I ether (BDE-153)* 2,2',4,4',5,6'-hexabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg I ether (BDE-154)* 2,4,4'-tribromodiphenyl ether SUB <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg (BDE-28)* 2,2',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-47)* 2,3',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-66)* 2.2'.3.4.4'-pentabromodipheny SUB <0.1 <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-85)* SUB <0.1 <0.1 <0.1 <0.1 <0.1 2,2',4,4',5-pentabromodiphenyl mg/kg ether (BDE-99)* TBC Solids, Total <0.1% 58 87 84 58 88 82 <0.7 % TM018 0.728 1.54 Loss on ignition < 0.7 <0.7 <0.7 Μ M M М Μ TM019 Sulphate, 2:1 water soluble <0.002 g/l 0.0603 0.0156 0.0885 0.171 0.0107 0.0328 M M Μ Μ М M Mineral oil >C10-C40 <1 mg/kg TM061 79.9 <1 12.3 184 6.49 6.2 Mineral Oil Surrogate % TM061 85.7 85.5 87 84 82.2 89.9 recovery*3 <0.01 mg/kg TM062 (S) <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 Phenol M M М M M M Organic Carbon, Total <0.2 % TM132 1.26 <0.2 <0.2 1.55 <0.2 < 0.2 Μ Μ M Μ M Μ Soil Organic Matter (SOM) <0.35 % TM132 2.17 <0.35 <0.35 2.67 < 0.35 <0.35 # # # # рΗ 1 pH Units TM133 8 75 8 22 8 55 8 77 8 68 8 1 M Μ Μ M Μ <0.6 <0.6 Chromium, Hexavalent < 0.6 mg/kg TM151 <0.6 <0.6 <0.6 <0.6 # # # TM153 Cvanide. Total <1 mg/kg <1 <1 <1 <1 <1 <1 M Μ М M M M TM153 Cyanide, Free <1 mg/kg <1 <1 <1 <1 <1 <1 M M Μ M Μ Μ PCB congener 28 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M M M PCB congener 52 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M М М M M M PCB congener 101 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M М М M M M PCB congener 118 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M M M Μ М PCB congener 138 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg M M M M M M TM168 PCB congener 153 <3 <3 <3 µg/kg <3 <3 <3 <3 M Μ Μ М M M TM168 <3 PCB congener 180 <3 µg/kg <3 <3 <3 <3 <3 М M M Μ M M Sum of detected PCB 7 TM168 <21 µg/kg <21 <21 <21 <21 <21 <21 Congeners TM168 PCB congener 81 <3 µg/kg <3 <3 <3 <3 <3 <3 M M Μ M M М PCB congener 77 TM168 <3 <3 <3 <3 <3 <3 <3 µg/kg М M M M M M PCB congener 123 <3 µg/kg TM168 <3 <3 <3 <3 <3 <3 M M М M M M





SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Results Legend	Cust	tomer Sample Ref.	VC10A		VC10A		VC10A		VC12A	VC12A	VC12A
# ISO17025 accredited. M mCERTS accredited.		.oo. Gampio rion	VOTOA		VOTOA		VOTOR		VC12A	VOIZA	VOIZA
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20		2.45 - 2.85		0.80 - 1.20	1.80 - 2.20	2.80 - 3.30
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test. ** % recovery of the surrogate sta	andard to	Date Sampled Sample Time	20/04/2018 09:24:00		20/04/2018 09:24:00		20/04/2018 09:24:00		20/04/2018 13:27:00	20/04/2018 13:27:00	20/04/2018 13:27:00
check the efficiency of the met	hod. The	Date Received	24/04/2018		24/04/2018		24/04/2018		24/04/2018	24/04/2018	24/04/2018
results of individual compound samples aren't corrected for th	e recovery	SDG Ref	180424-31		180424-31		180424-31		180424-31	180424-31	180424-31
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi		Lab Sample No.(s) AGS Reference	17431891		17431890		17431892		17431913	17431911	17431912
Component	LOD/Units										
PCB congener 114	<3 µg/kg	TM168	<3		<3		<3		<3	<3	<3
				М		М		М	M	М	M
PCB congener 105	<3 µg/kg	TM168	<3		<3		<3		<3	<3	<3
				М	_	М		М	M	М	M
PCB congener 126	<3 µg/kg	TM168	<3		<3		<3		<3	<3	<3
DOD	40 . // .	TM168	<3	М	<3	М	<3	M	<3	<3	<3 M
PCB congener 167	<3 µg/kg	11/11/00	<3	М	\ 3	М	<3	М	<->	M	<-> M
PCB congener 156	<3 µg/kg	TM168	<3	IVI	<3	IVI	<3	IVI	<3	<3	<3
FCB congener 150	~5 μg/kg	1101100	\3	М	\3	М	\ 3	М	M	\ M	_3 M
PCB congener 157	<3 µg/kg	TM168	<3	141	<3	101	<3	171	<3	<3	<3
1 CD congener 107	·ο μg/ng	1111100	-0	М		М	٠.	М	M	М	M
PCB congener 169	<3 µg/kg	TM168	<3		<3		<3		<3	<3	<3
	- 1-33			М		М		М	M	M	М
PCB congener 189	<3 µg/kg	TM168	<3		<3		<3		<3	<3	<3
, and the second	100			М		М		М	М	М	М
Sum of detected WHO 12 PCBs	<36 µg/kg	TM168	<36		<36		<36		<36	<36	<36
Arsenic	<0.6 mg/kg	TM181	19		1.67		1.09		18.3	1.08	4.54
				М		М		М	M	М	M
Boron	<0.7 mg/kg	TM181	37.2		0.794		0.932		28.6	1.06	4.91
				#		#		#	#	#	#
Cadmium	<0.02 mg/kg	g TM181	0.243		0.0515		0.0453		0.373	0.0509	0.116
				М		М		М	M	М	M
Chromium	<0.9 mg/kg	TM181	24.4		1.68		1.11		24.1	1.62	14
	4.4. 0	771404		М		M	4.00	М	M	M	M
Copper	<1.4 mg/kg	TM181	23		1.45		1.92		26.2	1.99	10.4
Lood	<0.7 mg/kg	TM181	34.1	М	2.97	М	4.31	M	43.7	2.5	11.9
Lead	<0.7 mg/kg	1101101	34.1	М	2.97	М	4.31	М	43.7 M	2.5 M	11.9 M
Mercury	<0.14 mg/kg	g TM181	<0.14	IVI	<0.14	IVI	<0.14	IVI	<0.14	<0.14	<0.14
Mercury	~0.14 mg/kį	g iwiioi	\0.14	М	\0.14	М	\0.14	М	V0.14 M	√0.14 M	V0.14 M
Nickel	<0.2 mg/kg	TM181	24.8	141	2.37	101	1.38	171	23	1.88	15.3
THORE	10.2 mg/ng	, , , , , , , , , , , , , , , , , , , ,	24.0	М	2.07	М	1.00	М	M	1.00 M	М
Selenium	<1 mg/kg	TM181	<1		<1		<1		<1	<1	<1
	0 0			#		#		#	#	#	#
Zinc	<1.9 mg/kg	TM181	101		8.26		10.1		125	5.35	48.6
				М		М		М	M	М	M
ANC @ pH 4	<0.03	TM182	2.12		0.0449		0.0553		1.74	0.0497	0.0616
	mol/kg										
ANC @ pH 6	<0.03	TM182	0.198		<0.03		<0.03		0.177	0.0344	0.0407
	mol/kg			_							
Sulphate, Total	<48 mg/kg	TM221	529	N 4	<48		55.8	N 4	631	<48	<48
				М		М		М	M	М	M
						-					
				-		-					
						- 1					
				-							
				-							

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC01B VC01B VC09R VC09B Results Leger ISO17025 accredited. mCERTS accredited.
Aqueous / settled sample
Dissolved / filtered sample. Depth (m) 0.80 - 1.20 1.24 - 1.54 0.80 - 1.20 1.26 - 1.66 Sample Type Date Sampled Soil/Solid (S) 20/04/2018 Soil/Solid (S) 19/04/2018 Soil/Solid (S) 19/04/2018 Soil/Solid (S) tot.unfilt 20/04/2018 Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within 11:50:00 24/04/2018 Sample Time 11.50.00 13:44:00 13-44-00 24/04/2018 24/04/2018 24/04/2018 Date Received 180424-31 17431884 180424-31 180424-31 180424-31 SDG Ref mples aren't corrected for the recove 17431885 17431893 17431894 samples aren't corrected fo (F) Trigger breach confirmed 1-5&•§@ Sample deviation (see appe b Sample No.(s) AGS Reference LOD/Units Component Method Moisture Content Ratio (% of as 16 14 27 14 PM024 received sample) 2,2',4,4',6-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-100)* M M Μ M 2.2'.3.4,4',5'-hexabromodipheny SUB <0.1 <0.1 <0.1 <0.1 mg/kg I ether (BDE-138)* SUB 2,2',4,4',5,5'-hexabromodipheny mg/kg < 0.1 < 0.1 < 0.1 < 0.1 I ether (BDE-153)* 2,2',4,4',5,6'-hexabromodipheny SUB <0.1 <0.1 <0.1 <0.1 mg/kg I ether (BDE-154)* 2,4,4'-tribromodiphenyl ether SUB <0.1 <0.1 <0.1 <0.1 mg/kg (BDE-28)* 2,2',4,4'-tetrabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-47)* 2,3',4,4'-tetrabromodiphenyl mg/kg SUB <0.1 <0.1 <0.1 <0.1 ether (BDE-66)* 2.2',3,4,4'-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-85)* 2,2',4,4',5-pentabromodiphenyl SUB <0.1 <0.1 <0.1 <0.1 mg/kg ether (BDE-99)* TBC 84 73 Solids, Total <0.1% 86 86 Loss on ignition <0.7 % TM018 <0.7 < 0.7 13.5 <0.7 Μ Μ M М TM019 Sulphate, 2:1 water soluble <0.002 g/l 0.0154 0.0133 0.0655 0.011 M M Μ M Mineral oil >C10-C40 <1 mg/kg TM061 <1 <1 8.36 <1 Mineral Oil Surrogate % TM061 82.8 85.9 86.1 85.1 recovery*3 <0.01 mg/kg TM062 (S) <0.01 <0.01 <0.01 <0.01 Phenol M M M M Organic Carbon, Total <0.2 % TM132 <0.2 <0.2 0.327 <0.2 Μ M Μ M Soil Organic Matter (SOM) <0.35 % TM132 <0.35 <0.35 0.564 <0.35 # # # TM133 7.93 рΗ 1 pH Units 8 28 6.15 6 64 M Μ Μ Chromium, Hexavalent < 0.6 mg/kg TM151 <0.6 <0.6 <0.6 <0.6 # # Cyanide, Total TM153 <1 mg/kg <1 <1 <1 <1 M Μ M M TM153 Cyanide, Free <1 mg/kg <1 <1 <1 <1 M M Μ M PCB congener 28 <3 µg/kg TM168 <3 <3 <3 <3 M M M M PCB congener 52 TM168 <3 <3 <3 <3 <3 µg/kg M М M M PCB congener 101 TM168 <3 <3 <3 <3 <3 µg/kg M M M M PCB congener 118 <3 µg/kg TM168 <3 <3 <3 <3 M M M M PCB congener 138 TM168 <3 <3 µg/kg <3 <3 <3 M M M M PCB congener 153 TM168 <3 <3 µg/kg <3 <3 <3 M Μ M M PCB congener 180 TM168 <3 <3 <3 <3 <3 µg/kg M M Μ M Sum of detected PCB 7 TM168 <21 µg/kg <21 <21 <21 <21 Congeners TM168 PCB congener 81 <3 µg/kg <3 <3 <3 <3 M M Μ M PCB congener 77 TM168 <3 <3 <3 <3 <3 µg/kg M M M M PCB congener 123 <3 µg/kg TM168 <3 <3 <3 <3 M M M М



CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Customer Sample Ref. VC01B VC09B VC01B VC09B Results Lege ISO17025 accredited mCERTS accredited. Aqueous / settled sample 0.80 - 1.20 Soil/Solid (S) Depth (m) 0.80 - 1.20 1.24 - 1.54 1.26 - 1.66 Dissolved / filtered sa Sample Type Soil/Solid (S) Soil/Solid (S) Soil/Solid (S) Total / unfiltered sa Total / unfiltered sample.
Subcontracted test.
% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recover-Date Sampled 20/04/2018 20/04/2018 19/04/2018 19/04/2018 11:50:00 Sample Time 11:50:00 13:44:00 13:44:00 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 24/04/2018 180424-31 SDG Ref 17431884 17431885 17431893 17431894 Trigger breach confirmed Lab Sample No.(s) 1-5&+§@ Sample deviation (see appe AGS Reference Component LOD/Units Method PCB congener 114 <3 µg/kg TM168 <3 <3 <3 <3 M M M M PCB congener 105 TM168 <3 <3 <3 <3 <3 µg/kg М M M M <3 PCB congener 126 <3 µg/kg TM168 <3 <3 <3 M Μ M M PCB congener 167 TM168 <3 <3 <3 <3 <3 µg/kg M M Μ M TM168 <3 <3 PCB congener 156 <3 <3 <3 µg/kg M M Μ M PCB congener 157 TM168 <3 µg/kg <3 <3 <3 <3 Μ Μ Μ PCB congener 169 TM168 <3 <3 <3 µg/kg <3 <3 M M Μ M PCB congener 189 <3 µg/kg TM168 <3 <3 <3 <3 M M M M Sum of detected WHO 12 PCBs <36 µg/kg TM168 <36 <36 <36 <36 Arsenic TM181 2.24 1.32 36.1 0.703 <0.6 mg/kg M M M M Boron TM181 0.867 0.755 7.58 <0.7 <0.7 mg/kg TM181 0.0375 0.0435 1.98 0.0321 Cadmium <0.02 mg/kg M M M M <0.9 mg/kg TM181 2.16 1.69 < 0.9 1.65 Chromium Μ Μ Μ Μ Copper <1.4 mg/kg TM181 5.08 26.9 3.79 <1.4 M M Μ M 9.04 Lead <0.7 mg/kg TM181 4.42 11.3 2.34 M M Μ M TM181 < 0.14 <0.14 < 0.14 Mercury <0.14 mg/kg < 0.14 M M Μ M Nickel <0.2 mg/kg TM181 2.44 2.24 14.7 1.16 Μ М Μ M Selenium TM181 <1 <1 3.05 <1 <1 mg/kg # # # Zinc <1.9 mg/kg TM181 9.08 15.3 47.2 6.75 M M Μ M TM182 0.08 0.0475 0.104 0.0853 ANC @ pH 4 < 0.03 mol/kg 0.0318 0.0324 ANC @ pH 6 < 0.03 TM182 < 0.03 <0.03 mol/kg TM221 <48 <48 172 <48 Sulphate, Total <48 mg/kg M M Μ M



CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

OC, OP Pesticides ar								
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fill: Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * % recovery of the surrogate st. check the efficiency of the met results of individual compount samples aren't corrected for th 1-5&4§@ Sample deviation (see appendit	andard to thod. The distribution of the distri		VC02 0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	VC02 1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	VC02 2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	VC02 3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	VC03 0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	VC03 1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Tecnazene	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Phorate	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Quintozene (PCNB)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Triallate	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Disulfoton	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Heptachlor	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Aldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Chlorothalonil	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Telodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Isodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Triadimefon	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Pendimethalin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endosulphan I	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Trans-chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
cis-Chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Dieldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p'-DDD (TDE)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endrin	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-TDE (DDD)	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endosulphan II	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
o,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50
Endosulphan sulphate	<50 µg/kg	TM073	<50	<50	<50	<50	<250	<50

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides a								
Results Legend # ISO17025 accredited.		ustomer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
M mCERTs accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the me results of individual compour samples aren't corrected for (F) Trigger breach confirmed 1-5&*§@ Sample deviation (see appen	ethod. The nds within the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDR Ref Lab Sample No.(s) AGS Reference ts Method	0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component Permethrin I	<50 µg/k	g TM073	<50	<50	<50	<50	<250	<50
	l oo pg//		.00				200	
Permethrin II	<50 µg/k	g TM073	<50	<50	<50	<50	<250	<50



180424-31 Lowestoft SDG:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

Location:

OC, OP Pesticides ar	nd Triazin	e Herb						
Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
M mCERTS accredited. aq Aqueous / settled sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the met results of individual compount samples aren't corrected for trigger breach confirmed 1-5&+§@ Sample deviation (see append)	thod. The ds within ne recovery L ix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 1804/24-31 17431905	3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904	0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	1.80 - 2.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909	2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910	3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Component Tecnazene	LOD/Units <50 μg/kg	Method TM073	<50	<50	<50	<50	<50	<50
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Phorate	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Quintozene (PCNB)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Triallate	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Disulfoton	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Heptachlor	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Aldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Chlorothalonil	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Telodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Isodrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Triadimefon	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Pendimethalin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
o,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Endosulphan I	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Trans-chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
cis-Chlordane	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
p,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Dieldrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
o,p'-DDD (TDE)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Endrin	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
o,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
p,p-TDE (DDD)	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Endosulphan II	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
p,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
o,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50
Endosulphan sulphate	<50 µg/kg	TM073	<50	<50	<50	<50	<50	<50

Validated

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides a								
Results Legend # ISO17025 accredited.		ustomer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate check the efficiency of the mesults of individual compou samples aren't corrected for (F) Trigger breach confirmed 1-5&-§@ Sample deviation (see appen	ethod. The nds within the recovery dix)	Depth (m) Sample Type Date Sampled Type Date Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference ts Method	2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431905	3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904	0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	1.80 - 2.20 Soil/Solid (S) 19/04/2018 15.50:00 24/04/2018 180424-31 17431909	2.80 - 3.20 Soil/Solid (S) 19/04/2018 15.50:00 24/04/2018 180424-31 17431910	3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Component Permethrin I	LOD/Uni <50 μg/k	g TM073	<50	<50	<50	<50	<50	<50
r enneumm	-30 μg/r	ly TWO75	\ 30	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\	\ 30	\ 30	\ 50
Permethrin II	<50 µg/k	rg TM073	<50	<50	<50	<50	<50	<50



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the met results of individual compouns samples aren't corrected for the (F) Trigger breach confirmed	thod. The ds within ne recovery L	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s)	0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895	1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896	2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898	0.80 - 1.20 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899	2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900	0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
1-5&+§@ Sample deviation (see append		AGS Reference						
Component Tecnazene	LOD/Units <50 μg/kg	Method TM073	<250	<50	<50	<250	<50	<50
Hexachlorobenzene	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Trifluralin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Phorate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Quintozene (PCNB)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Triallate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Disulfoton	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Heptachlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Aldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Chlorothalonil	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Telodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Isodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Heptachlor epoxide	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Triadimefon	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Pendimethalin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan I	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Trans-chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
cis-Chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Dieldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p'-DDD (TDE)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-DDT	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-TDE (DDD)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan II	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-DDT	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-Methoxychlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-Methoxychlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan sulphate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	ıd irlazli	ne Herb						
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)		1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	0.80 - 1.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S) 19/04/2018	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test. ** % recovery of the surrogate st	andard to	Date Sampled Sample Time	19/04/2018	19/04/2018	19/04/2018	20/04/2018	20/04/2018	20/04/2018
check the efficiency of the me	thod. The	Date Received	14:45:00 24/04/2018	14:45:00 24/04/2018	14:45:00 24/04/2018	08:29:00 24/04/2018	08:29:00 24/04/2018	17:40:00 24/04/2018
results of individual compound samples aren't corrected for the	ds within	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	ic recovery	Lab Sample No.(s) AGS Reference	17431895	17431896	17431898	17431899	17431900	17431883
	ix)	AGS Reference						
Component	LOD/Units		<250	<50	<50	<250	∠ E0	450
Permethrin I	<50 µg/kg	1101073	<200	\ 50	<50	<200	<50	<50
Permethrin II	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	nd Triazir	ne Herb						
# ISO17025 accredited. # M mCERTS accredited. aq Aqueous / settled sample. diss.fill: Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st	Custo	Depth (m) Sample Type Date Sampled Sample Time	VC07 1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00	VC08 0.60 - 1.00 Soil/Solid (S) 20/04/2018 17:06:00	VC08 1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00	VC11 0.80 - 1.20 Soil/Solid (S) 20/04/2018 12:24:00	VC11 1.80 - 2.20 Soil/Solid (S) 20/04/2018 12:24:00	VC11 2.20 - 2.50 Soil/Solid (S) 20/04/2018 12:24:00
check the efficiency of the met	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compound		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
samples aren't corrected for the (F) Trigger breach confirmed	ie recovery	ab Sample No.(s)	17431882	17431902	17431901	17431887	17431886	17431889
1-5&+§@ Sample deviation (see append	ix)	AGS Reference						
Component	LOD/Units	Method						
Tecnazene	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
	13.3							
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Tilluralli	<50 μg/kg	110173	\30	\30	\ 500	\2 50	\ 500	\30
	"							
Phorate	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
alpha-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
(HCH)								
Quintozene (PCNB)	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
	55 [25.15							
Triallate	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
manato	-ou µg/kg	1 IVIO / S	\ 00		,,,,	`~200	```	\"
	.FO "	T140=0	.50	.50	.50	:050	.50	.50
gamma-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
(HCH / Lindane)								
Disulfoton	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Heptachlor	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
	11 11 31 3							
Aldrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Alum	100 µg/kg	110073	100	,50	100	1200	100	100
011 11 11	.50 //	T14070	-50	.50	-50	.050	.50	.50
Chlorothalonil	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Telodrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
beta-Hexachlorocyclohexane	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
(HCH)	11 11 31 3							
Isodrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
ISOUIII	-50 μg/kg	110073	\ 30	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ 00	\250	\ 50	\ 30
Harteshia a a Cita	4FO . // .	T14070	-50	.50	-50	-050	-50	.50
Heptachlor epoxide	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Triadimefon	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Pendimethalin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
	11 11 31 3							
o,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
0,p-00L	-50 μg/kg	110073	\ 30	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ 00	\250	\ 50	\ 30
	.50 //	T14070	-50	.50	-50	-050	-50	.50
Endosulphan I	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Trans-chlordane	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
cis-Chlordane	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
p,p-DDE	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
F,F 552	Jou pyrky			,,,,,	,,,,	,200	,,,,	
Dialdria	حدالم	TM072	∠ E0	-E0	∠ E0	<0E0	∠ E0	4 E0
Dieldrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
1000 (7==)								
o,p'-DDD (TDE)	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
Endrin	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
o,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
	JU Maring							"
p,p-TDE (DDD)	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
ρ,ρ-10L (000 <i>)</i>	~ou µg/kg	I IVIU / 3	\J U	\"	\J0	~230	\00	\J U
Ender lake "	.FO "	T1 10=0	.50		:50	.050	-50	.50
Endosulphan II	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
p,p-DDT	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
o,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
, , , , , ,	· 109							
p,p-Methoxychlor	<50 µg/kg	TM073	<50	<50	<50	<250	<50	<50
אָרָ אויסנווסאָיסוווסו	-oo µg/ng	1111070	-00	,50	,50	-200	,50	
Endosulphan sulphate	<50 walka	TM072	<50	<50	<50	<250	<50	<50
	<50 µg/kg	TM073	~ 50	\00	\ 50	^ 200	\ 50	\ 50

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides a								
Results Legend # ISO17025 accredited.		ustomer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** % recovery of the surrogate check the efficiency of the m results of individual compou samples aren't corrected for Trigger breach confirmed 1-5&*§@ Sample deviation (see appen	ethod. The nds within the recovery	Depth (m) Sample Type Date Sampled Type Date Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference ts Method	1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 1804/24-31 17431882	0.60 - 1.00 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431902	1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901	0.80 - 1.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 1804224-31 17431887	1.80 - 2.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 1804/24-31 17431886	2.20 - 2.50 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431889
Permethrin I	<50 µg/l	kg TM073	<50	<50	<50	<250	<50	<50
		•						
Permethrin II	<50 µg/l	kg TM073	<50	<50	<50	<250	<50	<50
				<u> </u>	<u> </u>		l	



180424-31 Lowestoft SDG:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

Location:

OC, OP Pesticides ar	nd Triazir	ne Herb						
Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
M mCERTS accredited. aq Aqueous / settled sample. bissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * Verovery of the surrogate st check the efficiency of the meresults of individual compounsamples aren't corrected for the Trigger breach confirmed 1-5&*§@ Sample deviation (see append)	thod. The ds within he recovery L lix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912
Tecnazene	LOD/Units <50 μg/kg	Method TM073	<250	<50	<50	<250	<50	<50
Hexachlorobenzene	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Trifluralin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Phorate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
alpha-Hexachlorocyclohexane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
(HCH) Quintozene (PCNB)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Triallate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
gamma-Hexachlorocyclohexane (HCH / Lindane)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Disulfoton	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Heptachlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Aldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Chlorothalonil	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Telodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
beta-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Isodrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Heptachlor epoxide	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Triadimefon	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Pendimethalin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan I	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Trans-chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
cis-Chlordane	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-DDE	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Dieldrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p'-DDD (TDE)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endrin	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-DDT	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-TDE (DDD)	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan II	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-DDT	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
o,p-Methoxychlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
p,p-Methoxychlor	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50
Endosulphan sulphate	<50 µg/kg	TM073	<250	<50	<50	<250	<50	<50

Validated

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides a				V0404 V0404 V0404 V0404							
Results Legend # ISO17025 accredited.	Cı	stomer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A			
M mCERTS accredited. aq Aqueous / settled sample. diss.fillt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. " % recovery of the surrogate s check the efficiency of the me results of individual compour samples aren't corrected for t 1-5&+§@ Sample deviation (see append	ethod. The nds within the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDR Ref Lab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912			
Permethrin I	<50 μg/k	g TM073	<250	<50	<50	<250	<50	<50			
Permethrin II	<50 μg/k	`	<250	<50	<50	<250	<50	<50			



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	nd Triazin	e Herb					
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.	Custo	omer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * Vecovery of the surrogate st	tandard to	Depth (m) Sample Type Date Sampled Sample Time	0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00	1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00	0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00	1.26 - 1.66 Soil/Solid (S) 19/04/2018 13:44:00	
check the efficiency of the me results of individual compoun	ds within	Date Received SDG Ref	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	
samples aren't corrected for the (F) Trigger breach confirmed	1 L	ab Sample No.(s)	17431884	17431885	17431893	17431894	
1-5&+§@ Sample deviation (see append Component	LOD/Units	AGS Reference Method					
Tecnazene	<50 μg/kg	TM073	<50	<50	<50	<50	
Hexachlorobenzene	<50 µg/kg	TM073	<50	<50	<50	<50	
Trifluralin	<50 µg/kg	TM073	<50	<50	<50	<50	
Phorate	<50 µg/kg	TM073	<50	<50	<50	<50	
alpha-Hexachlorocyclohexane (HCH)	<50 µg/kg	TM073	<50	<50	<50	<50	
Quintozene (PCNB)	<50 μg/kg	TM073	<50	<50	<50	<50	
Triallate	<50 μg/kg	TM073	<50	<50	<50	<50	
gamma-Hexachlorocyclohexane (HCH / Lindane)		TM073	<50	<50	<50	<50	
Disulfoton	<50 μg/kg	TM073	<50	<50	<50	<50	
Heptachlor	<50 μg/kg	TM073	<50	<50	<50	<50	
Aldrin	<50 μg/kg	TM073	<50	<50	<50	<50	
Chlorothalonil	<50 μg/kg	TM073	<50	<50	<50	<50	
Telodrin	<50 μg/kg	TM073	<50	<50	<50	<50	
beta-Hexachlorocyclohexane (HCH)	<50 μg/kg	TM073	<50	<50	<50	<50	
Isodrin	<50 μg/kg	TM073	<50	<50	<50	<50	
Heptachlor epoxide	<50 μg/kg	TM073	<50	<50	<50	<50	
Triadimefon	<50 μg/kg	TM073	<50	<50	<50	<50	
Pendimethalin	<50 μg/kg	TM073	<50 <50	<50 <50	<50 <50	<50	
o,p-DDE Endosulphan I	<50 μg/kg	TM073 TM073	<50 <50	<50	<50	<50 <50	
·	<50 µg/kg	TM073	<50 <50	<50	<50	<50 <50	
Trans-chlordane cis-Chlordane	<50 μg/kg	TM073	<50	<50	<50	<50 <50	
p,p-DDE	<50 μg/kg	TM073	<50	<50	<50	<50	
Dieldrin	<50 μg/kg	TM073	<50	<50	<50	<50 <50	
o,p'-DDD (TDE)	<50 μg/kg	TM073	<50	<50	<50	<50 <50	
Endrin	<50 μg/kg	TM073	<50	<50	<50	<50	
		TM073	<50	<50	<50	<50 <50	
o,p-DDT p,p-TDE (DDD)	<50 µg/kg	TM073	<50 <50	<50 <50	<50	<50 <50	
Endosulphan II	<50 μg/kg	TM073	<50 <50	<50	<50	<50 <50	
p,p-DDT	<50 μg/kg	TM073	<50 <50	<50	<50	<50 <50	
ס,p-Methoxychlor	<50 μg/kg	TM073	<50 <50	<50	<50	<50 <50	
p,p-Methoxychlor	<50 μg/kg	TM073	<50 <50	<50	<50 <50	<50 <50	
Endosulphan sulphate	<50 μg/kg	TM073	<50 <50	<50	<50	<50 <50	
Endosulprian sulpriate	→JU µg/kg	INIUIS	\ 00	\50	\50	\ 00	

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712

Report Number: 457244 Superseded Report:

OC, OP Pesticides ar	nd Triazi	ine Herb					
Results Legend	Cu	stomer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the me results of individual compoun samples aren't corrected for tr (F) Trigger breach confirmed	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference Method	0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431884	1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431885	0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431893	1.26 - 1.66 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431894	
1-5&+§@ Sample deviation (see append Component	LOD/Unit	s Method					
Permethrin I	<50 μg/kg	g TM073	<50	<50	<50	<50	
Permethrin II	<50 μg/kg	g TM073	<50	<50	<50	<50	
		+					



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Organotins on soils*								
Organotins on soils* Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the me results of individual compoun samples aren't corrected for the firinger breach confirmed confirmed sample deviation (see append	andard to thod. The ds within he recovery ix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component Dibutyl Tin*	LOD/Units mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Organotins on soils* Results Legend Customer Sample Ref. VC03 VC03 VC04 VC04 VC04 VC04 VC04										
# ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04		
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. Krecovery of the surrogate st check the efficiency of the met results of individual compouns samples aren't corrected for trigger breach confirmed 1-5&+§@ Sample deviation (see append	thod. The ds within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431905	3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904	0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	1.80 - 2.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909	2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910	3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907		
Component	LOD/Units	Method								
Dibutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Organotins on soils*								
# ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
m mCERTS accretioned, aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** % recovery of the surrogate st check the efficiency of the met results of individual compount samples aren't corrected for th Trigger breach confirmed 1-5&4§@ Sample deviation (see append	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895	1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896	2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898	0.80 - 1.20 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899	2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900	0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
Component	LOD/Units	Method						
Dibutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

# ISO17025 accredited. M mCERTS accredited. Aqueous / settled sample. Depth (m)	Organotins on soils* Results Legend Customer Sample Ref. VC07 VC08 VC08 VC11 VC11 VC11										
Aqueous / settled sample. Sample Miss.fil Disorder of fittered sample. Sample Type Sample Ty	# ISO17025 accredited.	Custo	omer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11		
Component CoD/Units Method Meth	aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the met results of individual compoun samples aren't corrected for the	thod. The ds within	Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31	Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31		
Tributyl Tin*	Component	LOD/Units	Method		<0.02	<0.02	<0.02	<0.02	<0.02		
Triphenyl Tin* mg/kg SUB <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05 <0.05		mg/kg									
Tetrabutyl Tin*											
Monobutyl Tin* mg/kg SUB <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1											
Monophenyl Tin* mg/kg SUB <0.02 <0.02 <0.02 <0.02 <0.02 <0.02											
Company Tin'											
	Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		



CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Organotins on soils* Results Legend Customer Sample Ref. VC10A VC10A VC10A VC12A VC12A VC12A VC12A									
# ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the mere results of individual compoun samples aren't corrected for the Trigger breach confirmed 1-5&4§@ Sample deviation (see append	thod. The ds within he recovery L ix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	0.80 - 1.20 Soii/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	1.80 - 2.20 Soii/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	0.80 - 1.20 Soii/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912	
Component Dibutyl Tin*	LOD/Units mg/kg	Method SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
	mg/kg								
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Triphenyl Tin*	mg/kg	SUB	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	



CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Organotins on soils*							
# ISO17025 accredited.	Cus	stomer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * % recovery of the surrogate st check the efficiency of the met results of individual compount samples aren't corrected for th Trigger breach confirmed	ds within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s)	0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431884	1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431885	0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431893	1.26 - 1.66 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431894	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append Component	LOD/Units	Lab Sample No.(s) AGS Reference Method					
Dibutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	
Tributyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	
Triphenyl Tin*	mg/kg	SUB	<0.05	<0.05	<0.05	<0.05	
Tetrabutyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	
Monobutyl Tin*	mg/kg	SUB	<0.1	<0.1	<0.1	<0.1	
Monophenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	
Diphenyl Tin*	mg/kg	SUB	<0.02	<0.02	<0.02	<0.02	



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS								
Results Legend # ISO17025 accredited.	Cu	stomer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.20 - 3.63	0.80 - 1.20	1.80 - 2.20
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018
** % recovery of the surrogate sta		Sample Time	15:43:00	15:43:00	15:43:00	15:43:00	14:28:00	14:28:00
check the efficiency of the met results of individual compound	hod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	1	Lab Sample No.(s)	17431917	17431916	17431915	17431914	17431903	17431906
1-5&+§@ Sample deviation (see appendi	LOD/Unit	AGS Reference s Method						
Naphthalene-d8 % recovery**	%	TM218	109	109	100	108	110	106
Naphinalene-do // recovery	/0	1101210	103	103	100	100	110	100
Acenaphthene-d10 %	%	TM218	103	102	97	108	111	107
recovery**	/0	1101210	100	102	31	100	'''	107
	0/	TM040	404	400	00	400	400	405
Phenanthrene-d10 % recovery**	%	TM218	104	102	99	106	108	105
Chrysene-d12 % recovery**	%	TM218	90.9	87.4	97.9	93	96.2	98.5
Perylene-d12 % recovery**	%	TM218	82.4	82.9	93.8	99.2	102	109
Naphthalene	<9 µg/kg	TM218	<9	<9	<9	<9	49.1	<9
·			M	M	M	M		M
Acenaphthylene	<12 µg/k	g TM218	<12	<12	<12	<12	<12	<12
, , , , ,	F-5-11	~ · · ·	 M		М	М		М
Acenaphthene	<8 µg/kg	TM218	<8	<8	<8	<8	46	<8
, conaphanone	-υ μυ/κυ	, 1141210	_0 M		M	N M	"	M
Eluorono	<10 ua/la	g TM218	<10	<10	<10	<10	36.1	<10
Fluorene	<10 µg/k	y IIVI∠Iŏ	<10 M	1			۱ .۵۵	
Discounting	4E . //	TM040			M	M	440	M
Phenanthrene	<15 µg/k	g TM218	<15	<15	<15	<15	140	<15
	40 "	711010	M		M	M		M
Anthracene	<16 µg/k	g TM218	<16	<16	<16	<16	72.3	<16
			M		M	M		M
Fluoranthene	<17 µg/k	g TM218	27.8	<17	<17	<17	270	<17
			M		M	M		M
Pyrene	<15 µg/k	g TM218	22.8	<15	<15	<15	218	<15
			M		M	M		M
Benz(a)anthracene	<14 µg/k	g TM218	<14	<14	<14	<14	79.9	<14
			M	M	M	M		M
Chrysene	<10 µg/k	g TM218	<10	<10	<10	<10	63	<10
			M	M	M	M		M
Benzo(b)fluoranthene	<15 µg/k	g TM218	<15	<15	<15	<15	109	<15
		·	M	M	M	M		M
Benzo(k)fluoranthene	<14 µg/k	g TM218	<14	<14	<14	<14	38.2	<14
` '	, ,	Ĭ	М	M	M	M		M
Benzo(a)pyrene	<15 µg/k	g TM218	<15	<15	<15	<15	57.8	<15
		9	М	1				М
Indeno(1,2,3-cd)pyrene	<18 µg/k	g TM218	<18	<18	<18	<18	39.9	<18
		9	М		M	M		М
Dibenzo(a,h)anthracene	<23 µg/k	g TM218	<23	<23	<23	<23	<23	<23
2.5020(4,)444000	_0 µg/	9	M		M	M	_~	М
Benzo(g,h,i)perylene	<24 µg/kg	g TM218	<24	<24	<24	<24	55	<24
20.120(9,1.1,1/por) 10.110	p.g/	9	 M		 M	 M	""	 M
PAH, Total Detected USEPA 16	<118 µg/k	g TM218	<118	<118	<118	<118	1270	<118
1711, 10tal 20totto 00217110	тто ру	(9) 1111210	110	110	1110	1110	1210	1110
PAH total 17 (inclusive of	<10 mg/k	g TM218	<10	<10	<10	<10	<10	<10
Coronene)	110 mg/k	9 1111210	110	110	110	110	110	110
Coronono								
		+						
		+						
		+						
		+						
				<u> </u>				



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	tomer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample.		Depth (m)	2.80 - 3.20	3.39 - 3.79	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.60 - 4.00
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	2.80 - 3.20 Soil/Solid (S)	3.39 - 3.79 Soil/Solid (S)	0.80 - 1.20 Soil/Solid (S)	1.80 - 2.20 Soil/Solid (S)	2.80 - 3.20 Soil/Solid (S)	3.60 - 4.00 Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	19/04/2018	19/04/2018
** % recovery of the surrogate st check the efficiency of the met	andard to	Sample Time	14:28:00	14:28:00	15:50:00	15:50:00	15:50:00	15:50:00
results of individual compound		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th	e recovery	SDG Ref	180424-31 17431905	180424-31 17431904	180424-31 17431908	180424-31 17431909	180424-31 17431910	180424-31 17431907
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	ix)	Lab Sample No.(s) AGS Reference	17431903	17431904	17431900	17451909	17431910	17431907
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	105	97.7	92.1	108	95	109
Acenaphthene-d10 % recovery**	%	TM218	104	101	95.8	101	98.4	102
Phenanthrene-d10 % recovery**	%	TM218	103	102	95.9	102	98	103
Chrysene-d12 % recovery**	%	TM218	92.1	87.9	82.9	88.1	82.9	89.8
Perylene-d12 % recovery**	%	TM218	99.4	86.6	80	77.4	76.5	81.2
Naphthalene	<9 µg/kg	TM218	<9	<9 M M	<9 M	<9 M	<9 M	<9 M
Acenaphthylene	<12 µg/kg	TM218	<12	<12 M M	<12	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218	<8	<8 M M	<8	<8 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	<10	<10 M	<10	<10 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218	<15	<15 M M	<15	<15 M	<15 M	<15 M
Anthracene	<16 µg/kg	TM218	<16	<16 M M	<16	<16 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218	<17 !	<17 M M	<17 M	<17 M	<17 M	<17 M
Pyrene	<15 µg/kg	TM218	<15 !	<15 M M	<15 M	<15 M	<15 M	<15 M
Benz(a)anthracene	<14 µg/kg	TM218	<14 !	<14 M M		<14 M	<14 M	<14 M
Chrysene	<10 µg/kg			<10 M M		<10 M	<10 M	<10 M
Benzo(b)fluoranthene	<15 µg/kg			<15 M M		<15 M	<15 M	<15 M
Benzo(k)fluoranthene	<14 µg/kg			<14 M M		<14 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg			<15 M M		<15 M		<15 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg			<18 M M		<18 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg			<23 M M		<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg			<24 M M		<24 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg		<118	<118	<118	<118	<118	<118
PAH total 17 (inclusive of Coronene)	<10 mg/kg	TM218	<10	<10	<10	<10	<10	<10



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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS								
Results Legend # ISO17025 accredited.	Cust	tomer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	0.80 - 1.20
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018
** % recovery of the surrogate st	andard to	Sample Time	14:45:00	14:45:00	14:45:00	08:29:00	08:29:00	17:40:00
check the efficiency of the met results of individual compound		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th	e recovery	SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	iv)	Lab Sample No.(s) AGS Reference	17431895	17431896	17431898	17431899	17431900	17431883
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	103	105	106	104	103	92.9
Acenaphthene-d10 %	%	TM218	98.5	99.5	99.7	99.5	100	97.8
recovery** Phenanthrene-d10 % recovery**	%	TM218	103	101	99.9	104	97.5	102
Chrysene-d12 % recovery**	%	TM218	97.1	97.1	87	92.8	91.1	92.6
Perylene-d12 % recovery**	%	TM218	106	104	76.5	91.9	89.8	100
·								
Naphthalene	<9 µg/kg	TM218		<9 M M		37.1 M	<9 M	<9 M
Acenaphthylene	<12 µg/kg			<12 M M		<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kg	TM218		<8 M M		13.9 M	<8 M	<8 M
Fluorene	<10 µg/kg	TM218	<10	<10 M M	<10 M	17.4 M	<10 M	<10 M
Phenanthrene	<15 µg/kg	TM218	73 N	<15 M M	<15 M	70.6 M	<15 M	<15 M
Anthracene	<16 µg/kg		<16	<16 M M	<16 M	<16 M	<16 M	<16 M
Fluoranthene	<17 µg/kg	TM218	144 N	<17 M M	<17 M	105 M	<17 M	<17 M
Pyrene	<15 µg/kg	TM218	119 N	<15 M M	<15 M	83.9 M	<15 M	<15 M
Benz(a)anthracene	<14 µg/kg	TM218	55.5	<14 M M	<14 M	33.2 M	<14 M	<14 M
Chrysene	<10 µg/kg	TM218	46.1	<10 M	<10	35.3 M	<10 M	<10 M
Benzo(b)fluoranthene	<15 µg/kg	TM218	81.6	<15 M M	<15	56.1 M	<15 M	<15 M
Benzo(k)fluoranthene	<14 µg/kg	TM218	35.5	<14 M M	<14	<14 M	<14 M	<14 M
Benzo(a)pyrene	<15 µg/kg	TM218	49.6	<15 M M	<15	29.9 M	<15 M	<15 M
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	<18	<18 M M	<18	<18 M	<18 M	<18 M
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	<23 M M	<23	<23 M	<23 M	<23 M
Benzo(g,h,i)perylene	<24 µg/kg	TM218	49	<24 M M	<24	<24 M	<24 M	<24 M
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	690	<118	<118	483	<118	<118
PAH total 17 (inclusive of Coronene)	<10 mg/kg	TM218	<10	<10	<10	<10	<10	<10



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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS								
Results Legend # ISO17025 accredited.	Cı	ıstomer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
M mCERTS accredited. aq Aqueous / settled sample.								
diss.filt Dissolved / filtered sample.		Depth (m) Sample Type	1.60 - 2.00 Soil/Solid (S)	0.60 - 1.00 Soil/Solid (S)	1.00 - 1.45 Soil/Solid (S)	0.80 - 1.20 Soil/Solid (S)	1.80 - 2.20 Soil/Solid (S)	2.20 - 2.50 Soil/Solid (S)
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate st	andard to	Sample Time	17:40:00	17:06:00	17:06:00	12:24:00	12:24:00	12:24:00
check the efficiency of the met results of individual compound		Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
samples aren't corrected for th		SDG Ref	180424-31 17431882	180424-31 17431902	180424-31 17431901	180424-31 17431887	180424-31 17431886	180424-31 17431889
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	ix)	Lab Sample No.(s) AGS Reference	17431002	17431302	17451501	17431007	17451000	17451005
Component	LOD/Unit	s Method						
Naphthalene-d8 % recovery**	%	TM218	112	107	95.3	108	112	103
Acenaphthene-d10 % recovery**	%	TM218	104	107	99.3	103	105	107
Phenanthrene-d10 % recovery**	%	TM218	105	105	100	107	106	109
Chrysene-d12 % recovery**	%	TM218	95.4	94.7	85.6	103	95	112
Perylene-d12 % recovery**	%	TM218	99.6	101	73.7	114	85.6	127
Naphthalene	<9 µg/k(g TM218	<9 N	<9 M	<9 M	85.7 M	<9 M	<9 M
Acenaphthylene	<12 µg/k	g TM218	<12 N	<12	<12	<12 M	<12 M	<12 M
Acenaphthene	<8 µg/kç	g TM218	<8 N	<8	<8	49.9 M	<8 M	<8 M
Fluorene	<10 µg/k	g TM218	<10	<10	<10	39.6	<10	<10
Phenanthrene	<15 µg/k	g TM218	<15	<15	<15	97.6	<15 M	<15 M
Anthracene	<16 µg/k	g TM218	<16	<16	<16	57.7	<16 M	<16 M
Fluoranthene	<17 µg/k	g TM218	<17	<17	<17	500	<17	<17
Pyrene	<15 µg/k	g TM218	<15	<15	<15	368	<15	<15
Benz(a)anthracene	<14 µg/k	g TM218	<14	<14	<14	97.7	<14	<14
Chrysene	<10 µg/k	g TM218	<10 N	<10	<10	64.4	<10 M	<10 M
Benzo(b)fluoranthene	<15 µg/k	g TM218	<15	<15	<15	97.2	<15	<15
Benzo(k)fluoranthene	<14 µg/k	g TM218	<14	<14	<14	40.8	<14	<14
Benzo(a)pyrene	<15 µg/k	g TM218	<15	<15	<15	58.4	<15	<15
Indeno(1,2,3-cd)pyrene	<18 µg/k	g TM218	<18	/ M	<18	34.5	<18	<18
Dibenzo(a,h)anthracene	<23 µg/k	g TM218	<23	<23	<23	<23	<23	<23
Benzo(g,h,i)perylene	<24 µg/k	g TM218	<24	<24	<24	44	<24 M	M <24
PAH, Total Detected USEPA 16	<118 µg/l	kg TM218	<118	1	<118	1640	<118	<118
PAH total 17 (inclusive of	<10 mg/k	g TM218	<10	<10	<10	<10	<10	<10
Coronene)								
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS													
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	tomer Sample Ref.	VC10A		VC10A		VC10A		VC12A	VC12A		VC12A	
aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20		2.45 - 2.85		0.80 - 1.20	1.80 - 2.20		2.80 - 3.30	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)	
* Subcontracted test.		Date Sampled	20/04/2018		20/04/2018		20/04/2018		20/04/2018	20/04/2018		20/04/2018	
** % recovery of the surrogate st check the efficiency of the met	andard to	Sample Time	09:24:00		09:24:00		09:24:00		13:27:00	13:27:00		13:27:00	
results of individual compound	ds within	Date Received	24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	
samples aren't corrected for th (F) Trigger breach confirmed	e recovery	SDG Ref Lab Sample No.(s)	17431891		17431890		17431892		17431913	17431911		17431912	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appendi	ix)	AGS Reference											
Component	LOD/Units	Method											
Naphthalene-d8 % recovery**	%	TM218	103		102		105		95.6	112		110	
Acenaphthene-d10 % recovery**	%	TM218	99.6	1	100		105		104	105		103	\dashv
Phenanthrene-d10 % recovery**	%	TM218	105		88.5		102		112	105		104	П
Chrysene-d12 % recovery**	%	TM218	104		79.9		94.4		111	91.5		92.1	П
Perylene-d12 % recovery**	%	TM218	115	1	79.4		101		117	81.1		87.1	٦
Naphthalene	<9 µg/kg	TM218	59.2	М	<9	М	<9	М	120 M	<9	М	<9	М
Acenaphthylene	<12 µg/kg	TM218	<12	М	<12	М	<12	M	<12 M	<12	М	<12	M
Acenaphthene	<8 µg/kg	TM218	31.7	М	<8	M	<8	M	82.9 M	<8	M	<8	M
Fluorene	<10 µg/kg	TM218	33.8	\neg	<10		<10		62.4	<10		<10	
Phenanthrene	<15 µg/kg	TM218	97.2	M M	<15	M M	<15	M M	209 M	<15	M M	<15	M M
Anthracene	<16 µg/kg	TM218	73.3	M	<16	M	<16	M	104 M	<16	M	<16	M
Fluoranthene	<17 µg/kg	TM218	418	M	<17	M	<17	M	610 M	<17	М	<17	M
Pyrene	<15 µg/kg	TM218	321	М	<15	М	<15	M	481 M	<15	М	<15	M
Benz(a)anthracene	<14 µg/kg	TM218	107	М	<14	М	<14	М	151 M	<14	М	<14	М
Chrysene	<10 µg/kg	TM218	78.4	М	<10	М	<10	M	148 M	<10	М	<10	M
Benzo(b)fluoranthene	<15 µg/kg	TM218	92.7	М	<15	М	<15	М	206 M	<15	М	<15	М
Benzo(k)fluoranthene	<14 µg/kg	TM218	39.2	М	<14	М	<14	М	82.6 M	<14	М	<14	М
Benzo(a)pyrene	<15 µg/kg	TM218	68	М	<15	М	<15	М	120 M	<15	М	<15	М
Indeno(1,2,3-cd)pyrene	<18 µg/kg	TM218	34.4	М	<18	М	<18	М	77.2 M	<18	М	<18	М
Dibenzo(a,h)anthracene	<23 µg/kg	TM218	<23	М	<23	М	<23	М	<23	<23	М	<23	М
Benzo(g,h,i)perylene	<24 µg/kg	TM218	47.5	М	<24	М	<24	М	108 M	<24	М	<24	М
PAH, Total Detected USEPA 16	<118 µg/kg	TM218	1500		<118		<118		2560	<118		<118	
PAH total 17 (inclusive of Coronene)	<10 mg/kg	TM218	<10		<10		<10		<10	<10		<10	
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

PAH by GCMS	0							
Results Legend # ISO17025 accredited.	Cu	stomer Sample Ref.	VC01B	VC01B	VC09B	VC09B		
M mCERTS accredited. aq Aqueous / settled sample.		5 4 ()						
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.80 - 1.20 Soil/Solid (S)	1.24 - 1.54 Soil/Solid (S)	0.80 - 1.20 Soil/Solid (S)	1.26 - 1.66 Soil/Solid (S)		
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018		
** % recovery of the surrogate sta check the efficiency of the met	andard to hod. The	Sample Time Date Received	11:50:00 24/04/2018	11:50:00 24/04/2018	13:44:00 24/04/2018	13:44:00 24/04/2018		
results of individual compound samples aren't corrected for th		SDG Ref	180424-31	180424-31	180424-31	180424-31		
(F) Trigger breach confirmed 1-5&•§@ Sample deviation (see appendi	1	Lab Sample No.(s)	17431884	17431885	17431893	17431894		
Component	LOD/Unit	AGS Reference s Method						
Naphthalene-d8 % recovery**	%	TM218	107	105	101	105		
Acenaphthene-d10 % recovery**	%	TM218	100	98.2	100	101	,	
Phenanthrene-d10 % recovery**	%	TM218	102	99.5	99.7	99.4		
Chrysene-d12 % recovery**	%	TM218	96.3	92.5	89.9	91.3		
Perylene-d12 % recovery**	%	TM218	100	98.1	93.4	92.3		
Naphthalene	<9 µg/kg	TM218	<9 M	<9 M	<9 M	<9 M		
Acenaphthylene	<12 µg/kį	g TM218	<12 M	<12	<12 M	<12 M		
Acenaphthene	<8 µg/kg	TM218	<8 M	<8	<8 M	<8 M		
Fluorene	<10 µg/kç	g TM218	<10 M	<10	<10 M	<10 M		
Phenanthrene	<15 µg/k	g TM218	<15	<15	<15	<15		
Anthracene	<16 µg/kį	g TM218	<16	<16	<16 M	<16 M		
Fluoranthene	<17 µg/kg	g TM218	<17	<17	<17	<17		
Pyrene	<15 µg/kį	g TM218	<15	<15	<15	<15		
Benz(a)anthracene	<14 µg/k	g TM218	<14	<14	<14	<14		
Chrysene	<10 µg/k	g TM218	<10	<10	<10 M	<10 M		
Benzo(b)fluoranthene	<15 µg/kį	g TM218	<15	<15	<15	<15		
Benzo(k)fluoranthene	<14 µg/kį	g TM218	<14	<14	<14	<14		
Benzo(a)pyrene	<15 µg/kį	g TM218	<15	<15	<15	<15		
Indeno(1,2,3-cd)pyrene	<18 µg/kç	g TM218	<18	<18	<18	<18		
Dibenzo(a,h)anthracene	<23 µg/kg	g TM218	<23	<23	<23	<23		
Benzo(g,h,i)perylene	<24 µg/k	g TM218	<24	<24	<24	<24		
PAH, Total Detected USEPA 16	<118 µg/k	kg TM218	<118	<118	<118	<118		
PAH total 17 (inclusive of	<10 mg/k	g TM218	<10	<10	<10	<10		
Coronene)								
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. # ISO17025 accredited. # mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the m results of individual compour samples aren't corrected for 1.75ger breach confirmed 1.584\$@ Sample deviation (see append	standard to ethod. The ids within the recovery	Depth (m) Sample Type Date Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	VC02 0.80 - 1.20 Soil/Soid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	VC02 1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	VC02 2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	VC02 3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	VC03 0.80 - 1.20 Soil/Soid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	VC03 1.80 - 2.20 Soii/Soiid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Phenol	<100 µg/kg		<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.20 - 3.63	0.80 - 1.20	1.80 - 2.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate s	tandard to	Sample Time	15:43:00	15:43:00	15:43:00	15:43:00	14:28:00	14:28:00
check the efficiency of the me	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compoun samples aren't corrected for t		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	lie recovery	ab Sample No.(s)	17431917	17431916	17431915	17431914	17431903	17431906
1-5&+§@ Sample deviation (see append	dix)	AGS Reference						
Component	LOD/Units	Method						
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.fillt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the me results of individual compour samples aren't corrected for t (F) Trigger breach confirmed 1-5&4§@ Sample deviation (see append	tandard to hthod. The ds within he recovery lix)	Depth (m) Sample Type Date Sampled Time Date Received SDG Ref ab Sample No.(s) AGS Reference	VC03 2.80 - 3.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431905	VC03 3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904	VC04 0.80 - 1.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908	VC04 1.80 - 2.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909	VC04 2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910	VC04 3.60 - 4.00 Soii/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Phenol	LOD/Units <100 μg/kg		<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg		<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	2.80 - 3.20	3.39 - 3.79	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.60 - 4.00
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	19/04/2018	19/04/2018 [°]
** % recovery of the surrogate s	tandard to	Sample Time	14:28:00	14:28:00	15:50:00	15:50:00	15:50:00	15:50:00
check the efficiency of the me	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compoun samples aren't corrected for the		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	La	ab Sample No.(s)	17431905	17431904	17431908	17431909	17431910	17431907
1-5&+§@ Sample deviation (see append	lix)	AGS Reference						
Component	LOD/Units	Method						
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 μg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate scheck the efficiency of the m results of individual compour samples aren't corrected for 1.5&4§@ Sample deviation (see appendictions)	standard to ethod. The ids within the recovery	Depth (m) Sample Type Date Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	VC05 0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895	VC05 1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896	VC05 2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898	VC06 0.80 - 1.20 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899	VC06 2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900	VC07 0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883
Phenol	<100 µg/kg		<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC05	VC05	VC05	VC06	VC06	VC07
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	0.80 - 1.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	19/04/2018	19/04/2018	19/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate s	tandard to	Sample Time	14:45:00	14:45:00	14:45:00	08:29:00	08:29:00	17:40:00
check the efficiency of the me	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compoun samples aren't corrected for t		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	Li	ab Sample No.(s)	17431895	17431896	17431898	17431899	17431900	17431883
1-5&+§@ Sample deviation (see append	dix)	AGS Reference						
Component	LOD/Units	Method						
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. # ISO17025 accredited. M mCERT3 accredited. aq Aqueous / settled sample. diss.fillt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate s check the efficiency of the m results of individual compour samples aren't corrected for 1-5&4\$@ Sample deviation (see append	standard to bthod. The ds within the recovery dix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	VC07 1.60 - 2.00 Soil/Solid (S) 20/04/2018 17-40:00 24/04/2018 180424-31 17431882	VC08 0.60 - 1.00 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431902	VC08 1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901	VC11 0.80 - 1.20 Soil/Soid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431887	VC11 1.80 - 2.20 Soil/Soid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	VC11 2.20 - 2.50 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431889
Phenol	LOD/Units <100 μg/kg		<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	1.60 - 2.00	0.60 - 1.00	1.00 - 1.45	0.80 - 1.20	1.80 - 2.20	2.20 - 2.50
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate s	tandard to	Sample Time	17:40:00	17:06:00	17:06:00	12:24:00	12:24:00	12:24:00
check the efficiency of the me	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compoun samples aren't corrected for t		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	Li	ab Sample No.(s)	17431882	17431902	17431901	17431887	17431886	17431889
1-5&+§@ Sample deviation (see append	dix)	AGS Reference						
Component	LOD/Units	Method						
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organi	c Compo	unds						
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * % recovery of the surrogate s check the efficiency of the me results of individual compoun samples aren't corrected for the filter of the me results of the me r	tandard to thod. The ds within he recovery	Depth (m) Sample Type Date Sampled Time Date Received SDG Ref .ab Sample No.(s)	VC10A 0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	VC10A 1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	VC10A 2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	VC12A 0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	VC12A 1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	VC12A 2.80 - 3.30 Soii/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912
1-5&•§@ Sample deviation (see append	dix)	AGS Reference						
Component	LOD/Units	Method						
Phenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Nitroso-n-dipropylamine	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Nitrobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachloroethane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Hexachlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dimethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Diethyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Carbazole	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethoxy)methane	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
bis(2-Chloroethyl)ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Azobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chlorophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Chloro-3-methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
4-Bromophenylphenylether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
3-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitrophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Nitroaniline	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Methylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,2,4-Trichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100



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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi voiatile Organic								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20	2.45 - 2.85	0.80 - 1.20	1.80 - 2.20	2.80 - 3.30
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate st	andard to	Sample Time	09:24:00	09:24:00	09:24:00	13:27:00	13:27:00	13:27:00
check the efficiency of the me	thod. The	Date Received	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018	24/04/2018
results of individual compound samples aren't corrected for the		SDG Ref	180424-31	180424-31	180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	ie recovery	ab Sample No.(s)	17431891	17431890	17431892	17431913	17431911	17431912
1-5&+§@ Sample deviation (see append	ix)	AGS Reference						
Component	LOD/Units	Method						
2,6-Dinitrotoluene	<100 µg/kg		<100	<100	<100	<100	<100	<100
Z,o Birillotolderio	1100 pg/kg	1101107	100	1100	1100	1100	1100	1100
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4-Diffiettiyipfietioi	-100 μg/kg	1101137	100	100	100	100	100	100
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
· ·								
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2,4,6-Trichiorophenoi	< 100 µg/kg	TIVITO	<100	< 100	<100	<100	<100	<100
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
, ,,,	11,5							
4.4 Diablantino	4100 "	T14457	-400	-400	:400	-400	-400	:400
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
I								
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
1,0 510111010001120116	1 100 µg/kg	1111131	1100	100	100	001	001	יייי
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
I	1							
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
2-Chloronaphthalene	< 100 µg/kg	TIVITO	<100	< 100	<100	<100	<100	<100
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
, , , , , , , , ,	11,5							
D () "	.400 //	T14457	:100	.400	.400	.400	.400	.400
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Onlysone	100 µg/kg	1101157	100	100	100	100	100	100
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	<100	<100
Dis(2-chioroisopropyr) ether	-100 μg/kg	TIVITO	~100	100	\100	\100	\100	\100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi Volatile Organic	c Compo	unds					
Results Legend # ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample.	Custo	omer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Depth (m) Sample Type	0.80 - 1.20 Soil/Solid (S)	1.24 - 1.54 Soil/Solid (S)	0.80 - 1.20 Soil/Solid (S)	1.26 - 1.66 Soil/Solid (S)	
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	
** % recovery of the surrogate st check the efficiency of the me	andard to	Sample Time	11:50:00	11:50:00	13:44:00	13:44:00	
results of individual compoun	ds within	Date Received SDG Ref	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	
samples aren't corrected for the (F) Trigger breach confirmed	ne recovery	ab Sample No.(s)	17431884	17431885	17431893	17431894	
1-5&+§@ Sample deviation (see append	ix)	AGS Reference					
Component	LOD/Units	Method	-100	-100	-100	-100	
Phenol	<100 µg/kg		<100	<100	<100	<100	
Pentachlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100 <100	
n-Nitroso-n-dipropylamine	<100 µg/kg		<100	<100	<100		
Nitrobenzene	<100 µg/kg		<100	<100	<100	<100	
Isophorone	<100 µg/kg	TM157	<100	<100	<100	<100	
Hexachloroethane	<100 µg/kg		<100	<100	<100	<100	
Hexachlorocyclopentadiene	<100 µg/kg	TM157	<100	<100	<100	<100	
Hexachlorobutadiene	<100 µg/kg	TM157	<100	<100	<100	<100	
Hexachlorobenzene	<100 µg/kg		<100	<100	<100	<100	
n-Dioctyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	
Dimethyl phthalate	<100 µg/kg		<100	<100	<100	<100	
Diethyl phthalate	<100 µg/kg		<100	<100	<100	<100	
n-Dibutyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	
Dibenzofuran	<100 µg/kg	TM157	<100	<100	<100	<100	
Carbazole	<100 µg/kg		<100	<100	<100	<100	
Butylbenzyl phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	
bis(2-Ethylhexyl) phthalate	<100 µg/kg	TM157	<100	<100	<100	<100	
bis(2-Chloroethoxy)methane	<100 µg/kg		<100	<100	<100	<100	
bis(2-Chloroethyl)ether	<100 µg/kg		<100	<100	<100	<100	
Azobenzene	<100 µg/kg		<100	<100	<100	<100	
4-Nitrophenol	<100 µg/kg		<100	<100	<100	<100	
4-Nitroaniline	<100 µg/kg		<100	<100	<100	<100	
4-Methylphenol	<100 µg/kg		<100	<100	<100	<100	
4-Chlorophenylphenylether	<100 µg/kg		<100	<100	<100	<100	
4-Chloroaniline	<100 µg/kg		<100	<100	<100	<100	
4-Chloro-3-methylphenol	<100 µg/kg		<100	<100	<100	<100	
4-Bromophenylphenylether	<100 µg/kg		<100	<100	<100	<100	
3-Nitroaniline	<100 µg/kg		<100	<100	<100	<100	
2-Nitrophenol	<100 µg/kg		<100	<100	<100	<100	
2-Nitroaniline	<100 µg/kg		<100	<100	<100	<100	
2-Methylphenol	<100 µg/kg		<100	<100	<100	<100	
1,2,4-Trichlorobenzene	<100 µg/kg		<100	<100	<100	<100	
2-Chlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	





SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Semi volatile Organic							
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	mer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.24 - 1.54	0.80 - 1.20	1.26 - 1.66	
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S) 20/04/2018	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
* Subcontracted test. ** % recovery of the surrogate st	andard to	Date Sampled Sample Time	20/04/2018	20/04/2018	19/04/2018	19/04/2018	
check the efficiency of the me	thod. The	Date Received	11:50:00 24/04/2018	11:50:00 24/04/2018	13:44:00 24/04/2018	13:44:00 24/04/2018	
results of individual compound samples aren't corrected for the	ds within	SDG Ref	180424-31	180424-31	180424-31	180424-31	
(F) Trigger breach confirmed	i Li	ab Sample No.(s)	17431884	17431885	17431893	17431894	
1-5&+§@ Sample deviation (see append		AGS Reference					
Component	LOD/Units	Method	:100	.400	.400	.400	
2,6-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4-Dinitrotoluene	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4-Dimethylphenol	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4-Dichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4,6-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	
2,4,5-Trichlorophenol	<100 µg/kg	TM157	<100	<100	<100	<100	
1,4-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	
1,3-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	
1,2-Dichlorobenzene	<100 µg/kg	TM157	<100	<100	<100	<100	
2-Chloronaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	
2-Methylnaphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	
Benzo(a)anthracene	<100 µg/kg	TM157	<100	<100	<100	<100	
Chrysene	<100 µg/kg	TM157	<100	<100	<100	<100	
Naphthalene	<100 µg/kg	TM157	<100	<100	<100	<100	
Bis(2-chloroisopropyl) ether	<100 µg/kg	TM157	<100	<100	<100	<100	

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. "Subcontracted test. " frecovery of the surrogate st check the efficiency of the meresults of individual compoun samples aren't corrected for the Trigger breach confirmed 1-5&\$\pm\$\@ Sample deviation (see append	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917	1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916	2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915	3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component	LOD/Units	Method						
GRO Surrogate % recovery**	%	TM089	140	126	78	75	65	128
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	<44	130	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10	11.2	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	<10	31.6	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	<10	20.5	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	<10	27.9	<10
Aliphatics >C12-C16	<100 µg/kg	g TM173	<100	<100	<100	590	3300	<100
Aliphatics >C16-C21	<100 µg/kç	g TM173	<100	<100	<100	1450	11000	<100
Aliphatics >C21-C35	<100 µg/kç	g TM173	<100	<100	3300	5280	41800	<100
Aliphatics >C35-C44	<100 µg/kç	g TM173	<100	<100	<100	<100	8940	<100
Total Aliphatics >C12-C44	<100 µg/kç	g TM173	<100	<100	3300	7320	65000	<100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	<10	18.6	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	<10	18.6	<10
Aromatics >EC12-EC16	<100 µg/kg	g TM173	<100	<100	<100	<100	1710	<100
Aromatics >EC16-EC21	<100 µg/kg		<100	<100	663	1230	8690	<100
Aromatics >EC21-EC35	<100 µg/kg		<100	<100	2940	4160	31400	<100
Aromatics >EC35-EC44	<100 µg/kg		<100	<100	690	3330	13100	<100
Aromatics >EC40-EC44	<100 µg/kg		<100	<100	226	1380	4540	<100
Total Aromatics >EC12-EC44	<100 µg/kg		<100	<100	4290	8720	54900	<100
Total Aliphatics & Aromatics	<100 µg/kg		<100	<100	7590	16000	120000	<100
>C5-C44	-100 μg/κ(5 1 1W1170	-100	100	1000	10000	120000	100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	stomer Sample Ref.	VC03	VC03	VC04	VC04	VC04	VC04
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	2.80 - 3.20	3.39 - 3.79	0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.60 - 4.00
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)					
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	19/04/2018	19/04/2018
** % recovery of the surrogate st check the efficiency of the me	andard to	Sample Time	14:28:00	14:28:00	15:50:00	15:50:00	15:50:00	15:50:00
results of individual compound	ds within	Date Received	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31
samples aren't corrected for the	ne recovery	SDG Ref	17431905	17431904	17431908	17431909	17431910	17431907
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	ix)	Lab Sample No.(s) AGS Reference			11.10.000	11 10 1000		
Component	LOD/Units							
GRO Surrogate % recovery**	%	TM089	73	111	159	22	122	118
onto camegato /oncorony	, ,		. •					
GRO TOT (Moisture Corrected)	<44 µg/kç	g TM089	<44	<44	<44	<44	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 μg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kç	g TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg		<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kç		<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kç	g TM089	<10	<10	<10	<10	<10	<10
Aliphatics >C6-C8	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aliphatics >C8-C10	<10 µg/kç	g TM089	<10	<10	<10	<10	<10	<10
Aliphatics >C10-C12	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aliphatics >C12-C16	<100 µg/k		<100	<100	<100	<100	<100	<100
Aliphatics >C16-C21	<100 µg/k		<100	<100	1080	<100	<100	<100
Aliphatics >C21-C35	<100 µg/k		2790	<100	2860	<100	<100	<100
Aliphatics >C35-C44	<100 µg/k		<100	<100	<100	<100	<100	<100
Total Aliphatics >C12-C44	<100 µg/k		2790	<100	3940	<100	<100	<100
Aromatics >EC5-EC7	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aromatics >EC10-EC12	<10 µg/kç		<10	<10	<10	<10	<10	<10
Aromatics >EC12-EC16	<100 µg/k		<100	<100	<100	<100	<100	<100
Aromatics >EC16-EC21	<100 µg/k		<100	<100	<100	<100	<100	<100
Aromatics >EC21-EC35	<100 µg/k		2230	<100	<100	<100	<100	<100
Aromatics >EC35-EC44	<100 µg/k		1320	<100	<100	<100	<100	<100
Aromatics >EC40-EC44	<100 µg/k		<100	<100	<100	<100	<100	<100
Total Aromatics >EC12-EC44	<100 µg/k		3550	<100	<100	<100	<100	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/k	g TM173	6340	<100	3940	<100	<100	<100
<u> </u>								

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)								
# ISO17025 accredited. M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.	Cust	omer Sample Ref. Depth (m)	VC05 0.80 - 1.20	VC05 1.80 - 2.20	VC05 2.53 - 2.93	VC06 0.80 - 1.20	VC06 2.00 - 2.46	VC07 0.80 - 1.20
tot.unfilt Total / unfiltered sample. * Subcontracted test.		Sample Type Date Sampled	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 19/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018	Soil/Solid (S) 20/04/2018
** % recovery of the surrogate st		Sample Time	14:45:00	14:45:00	14:45:00	08:29:00	08:29:00	17:40:00
check the efficiency of the met results of individual compound		Date Received	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31
samples aren't corrected for the (F) Trigger breach confirmed	ne recovery	SDG Ref Lab Sample No.(s)	17431895	17431896	17431898	17431899	17431900	17431883
1-5&+§@ Sample deviation (see append Component	LOD/Units	AGS Reference						
GRO Surrogate % recovery**	%	TM089	63	104	112	55	115	17
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	246	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg		<10	<10	<10	16.1	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	21.5	<10	<10	59.6	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	10.7	<10	<10	43.5	<10	<10
Aliphatics >C10-C12	<10 µg/kg		<10	<10	<10	54.7	<10	<10
Aliphatics >C12-C16	<100 µg/kg		4120	<100	<100	1190	<100	<100
Aliphatics >C16-C21	<100 µg/kg		12800	<100	<100	4470	<100	<100
Aliphatics >C21-C35	<100 µg/kg		47100	<100	<100	22000	<100	<100
Aliphatics >C35-C44	<100 µg/kg		8200	<100	<100	3420	<100	<100
Total Aliphatics >C12-C44	<100 µg/kg		72200	<100	<100	31100	<100	<100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg		<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg		10.7	<10	<10	35.4	<10	<10
Aromatics >EC10-EC12	<10 µg/kg		<10	<10	<10	37	<10	<10
Aromatics >EC12-EC16	<100 µg/kg		2910	<100	<100	1690	<100	<100
Aromatics >EC16-EC21	<100 µg/kg		10100	1860	<100	5640	<100	<100
Aromatics >EC21-EC35	<100 µg/kg		35500	16000	<100	24700	<100	<100
Aromatics >EC35-EC44	<100 µg/kg		13300	7980	<100	11400	1120	<100
Aromatics >EC40-EC44	<100 µg/kg		4460	2660	<100	3700	<100	<100
Total Aromatics >EC12-EC44	<100 µg/kg		61700	25800	<100	43400	1120	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	134000	25800	<100	74700	1120	<100
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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	stomer Sample Ref.	VC07	VC08	VC08	VC11	VC11	VC11
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. "Subcontracted test. " frecovery of the surrogate st check the efficiency of the meresults of individual compoun samples aren't corrected for the Trigger breach confirmed 1-5&\$\pm\$\@ Sample deviation (see append	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431882	0.60 - 1.00 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431902	1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901	0.80 - 1.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431887	1.80 - 2.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	2.20 - 2.50 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431889
Component	LOD/Units	Method	115	115	110	22	110	100
GRO Surrogate % recovery**	%	TM089	115	115	116	66	113	122
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	211	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	10.7	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	30.4	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	26.9	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	71.6	<10	<10
Aliphatics >C12-C16	<100 µg/kg	g TM173	<100	139	<100	5600	<100	<100
Aliphatics >C16-C21	<100 µg/k	g TM173	<100	<100	<100	14600	<100	<100
Aliphatics >C21-C35	<100 µg/kį	g TM173	<100	<100	<100	38000	<100	<100
Aliphatics >C35-C44	<100 µg/kį	g TM173	<100	<100	<100	3710	<100	<100
Total Aliphatics >C12-C44	<100 µg/k	g TM173	<100	139	<100	61800	<100	<100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	21.5	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	48.3	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	g TM173	<100	<100	<100	3740	<100	<100
Aromatics >EC16-EC21	<100 µg/kį	g TM173	<100	<100	<100	19000	<100	<100
Aromatics >EC21-EC35	<100 µg/k	g TM173	<100	149	<100	43800	<100	<100
Aromatics >EC35-EC44	<100 µg/kį	g TM173	<100	4380	<100	13200	<100	<100
Aromatics >EC40-EC44	<100 µg/kg	g TM173	<100	2850	<100	4880	<100	<100
Total Aromatics >EC12-EC44	<100 µg/kg	g TM173	<100	4530	<100	79800	<100	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/k(g TM173	<100	4670	<100	142000	<100	<100

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)								
Results Legend # ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. * % recovery of the surrogate st check the efficiency of the meresults of individual compounsamples aren't corrected for the firinger breach confirmed	thod. The ds within ne recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref .ab Sample No.(s)	0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891	1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890	2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892	0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913	1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911	2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912
1-5&+§@ Sample deviation (see append	ix)	AGS Reference						
GRO Surrogate % recovery**	LOD/Units %	Method TM089	67	75	114	68	131	85
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	298	<44	82.1	824	<44	<44
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	<5	<5
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	<2	<2
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	<6	<6
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	<3	<3
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	<9	<9
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	<24	<24
Aliphatics >C5-C6	<10 µg/kg	TM089	15.4	<10	<10	18.9	<10	<10
Aliphatics >C6-C8	<10 µg/kg	TM089	49.6	<10	<10	75.7	<10	<10
Aliphatics >C8-C10	<10 µg/kg	TM089	42.8	10.4	27.4	151	<10	<10
Aliphatics >C10-C12	<10 µg/kg	TM089	94.1	<10	14.3	282	<10	<10
Aliphatics >C12-C16	<100 µg/kg	TM173	1140	<100	<100	4690	<100	<100
Aliphatics >C16-C21	<100 µg/kg	TM173	4200	<100	<100	10100	<100	<100
Aliphatics >C21-C35	<100 µg/kg	TM173	14800	<100	<100	22600	<100	<100
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	<100	<100	<100	<100
Total Aliphatics >C12-C44	<100 µg/kg	TM173	20100	<100	<100	37400	<100	<100
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	<10	<10
Aromatics >EC8-EC10	<10 µg/kg	TM089	34.2	<10	19	108	<10	<10
Aromatics >EC10-EC12	<10 µg/kg	TM089	63.3	<10	<10	187	<10	<10
Aromatics >EC12-EC16	<100 µg/kg	TM173	1160	<100	<100	3860	<100	<100
Aromatics >EC16-EC21	<100 µg/kg	TM173	7400	<100	<100	14400	<100	<100
Aromatics >EC21-EC35	<100 µg/kg	TM173	17400	<100	<100	23600	<100	<100
Aromatics >EC35-EC44	<100 µg/kg	TM173	5280	<100	<100	3100	<100	<100
Aromatics >EC40-EC44	<100 µg/kg	TM173	2070	<100	<100	<100	<100	<100
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	31300	<100	<100	45000	<100	<100
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	51700	<100	<100	83200	<100	<100



ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

TPH CWG (S)							
# ISO17025 accredited. M mCERTS accredited.	Custo	omer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. "Subcontracted test. " frecovery of the surrogate st check the efficiency of the met results of individual compoun samples aren't corrected for the Trigger breach confirmed 1-5&+§@ Sample deviation (see append	thod. The ds within ne recovery L	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431884	1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31 17431885	0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431893	1.26 - 1.66 Soii/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31 17431894	
Component	LOD/Units	Method	100	110	110	444	
GRO Surrogate % recovery**	%	TM089	109	118	113	111	
GRO TOT (Moisture Corrected)	<44 µg/kg	TM089	<44	<44	<44	<44	
Methyl tertiary butyl ether (MTBE)	<5 µg/kg	TM089	<5	<5	<5	<5	
Benzene	<10 µg/kg	TM089	<10	<10	<10	<10	
Toluene	<2 µg/kg	TM089	<2	<2	<2	<2	
Ethylbenzene	<3 µg/kg	TM089	<3	<3	<3	<3	
m,p-Xylene	<6 µg/kg	TM089	<6	<6	<6	<6	
o-Xylene	<3 µg/kg	TM089	<3	<3	<3	<3	
sum of detected mpo xylene by GC	<9 µg/kg	TM089	<9	<9	<9	<9	
sum of detected BTEX by GC	<24 µg/kg	TM089	<24	<24	<24	<24	
Aliphatics >C5-C6	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C6-C8	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C8-C10	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C10-C12	<10 µg/kg	TM089	<10	<10	<10	<10	
Aliphatics >C12-C16	<100 µg/kg	TM173	<100	<100	<100	271	
Aliphatics >C16-C21	<100 µg/kg	TM173	<100	<100	352	847	
Aliphatics >C21-C35	<100 µg/kg	TM173	<100	<100	2510	1850	
Aliphatics >C35-C44	<100 µg/kg	TM173	<100	<100	2740	<100	
Total Aliphatics >C12-C44	<100 µg/kg	TM173	<100	<100	5600	2970	
Aromatics >EC5-EC7	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC7-EC8	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC8-EC10	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC10-EC12	<10 µg/kg	TM089	<10	<10	<10	<10	
Aromatics >EC12-EC16	<100 µg/kg	TM173	<100	<100	<100	282	
Aromatics >EC16-EC21	<100 µg/kg	TM173	<100	<100	<100	377	
Aromatics >EC21-EC35	<100 µg/kg	TM173	<100	<100	622	466	
Aromatics >EC35-EC44	<100 µg/kg	TM173	1380	<100	<100	<100	
Aromatics >EC40-EC44	<100 µg/kg	TM173	1100	<100	<100	<100	
Total Aromatics >EC12-EC44	<100 µg/kg	TM173	1380	<100	622	1120	
Total Aliphatics & Aromatics >C5-C44	<100 µg/kg	TM173	1380	<100	6220	4100	

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)											
Results Legend # ISO17025 accredited.	Cust	omer Sample Ref.	VC02		VC02		VC02		VC02	VC03	VC03
M mCERTS accredited. aq Aqueous / settled sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * % recovery of the surrogate s check the efficiency of the me results of individual compoun samples aren't corrected for t Trigger breach confirmed 1-5&4§@ Sample deviation (see append	thod. The ds within he recovery L lix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	0.80 - 1.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431917		1.80 - 2.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431916		2.80 - 3.20 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431915		3.20 - 3.63 Soil/Solid (S) 20/04/2018 15:43:00 24/04/2018 180424-31 17431914	0.80 - 1.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431903	1.80 - 2.20 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431906
Component Dibromofluoromethane**	LOD/Units %	Method TM116	107		108		103		105	109	130
Toluene-d8**	%	TM116	101		101		97.5		96.7	98.7	99
4-Bromofluorobenzene**	%	TM116	97		96.2		83.4		83.8	91.7	101
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 #	<6 M
Chloromethane	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7 ‡	<70	<7 #
Vinyl Chloride	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 #	<6 M
Bromomethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100	<10 M
Chloroethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 #	<10 M
Trichlorofluorormethane	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 #	<6 M
1,1-Dichloroethene	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10 #	<100 #	<10 #
Carbon Disulphide	<7 μg/kg	TM116	<7	М	<7	М	24.3	М	<7 N	<70 #	<7 M
Dichloromethane	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10 #	<100 #	<10 #
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 M	<100 #	<10 M
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 #	<10 M
1,1-Dichloroethane	<8 µg/kg	TM116	<8	М	<8	М	<8	М	<8 N	<80 #	<8 M
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6 N	<60 #	<6 M
2,2-Dichloropropane	<10 µg/kg	TM116	<10		<10		<10		<10	<100	<10
Bromochloromethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 #	<10 M
Chloroform	<8 µg/kg	TM116	<8	М	<8	М	<8	М	<8 M	<80 #	<8 M
1,1,1-Trichloroethane	<7 μg/kg	TM116	<7	М	<7	М	<7	М	<7 N	<70 #	<7 M
1,1-Dichloropropene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 #	<10 M
Carbontetrachloride	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 #	<10 M
1,2-Dichloroethane	<5 μg/kg	TM116	<5	М	<5	М	<5	М	<5 N	<50 #	<5 M
Benzene	<9 µg/kg	TM116	<9	М	<9	М	<9	М	<9 N	<90 #	<9 M
Trichloroethene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9 #	<90 #	<9 #
1,2-Dichloropropane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N	<100 #	<10 M
Dibromomethane	<9 µg/kg	TM116	<9	М	<9	М	<9	М	<9 N	<90 #	<9 M
Bromodichloromethane	<7 μg/kg	TM116	<7	М	<7	М	<7	М	<7 N		<7 M
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N		<10 M
Toluene	<7 μg/kg	TM116	<7	М	<7	М	<7	М	<7 N		<7 M
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10		<10		<10		<10	<100	<10
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 N		<10 M
1,3-Dichloropropane	<7 µg/kg	TM116	<7	М	<7	М	<7	М	<7 N	<70 #	<7 M



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)

VUC IVIS (S)									
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC02	VC02		VC02	VC02	VC03	VC03
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.80 - 2.20)	2.80 - 3.20	3.20 - 3.63	0.80 - 1.20	1.80 - 2.20
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	3	20/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate s check the efficiency of the me	tandard to	Sample Time	15:43:00	15:43:00		15:43:00	15:43:00	14:28:00	14:28:00
results of individual compoun	ds within	Date Received SDG Ref	24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31
samples aren't corrected for to (F) Trigger breach confirmed	he recovery	Lab Sample No.(s)	17431917	17431916		17431915	17431914	17431903	17431906
1-5&+§@ Sample deviation (see append		AGS Reference							
Component	LOD/Units	Method							
Tetrachloroethene	<5 µg/kg	TM116	<5	<5		<5	<5	<50	<5
		1 1	M	И	M		M	Λ #	M
Dibromochloromethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
	'0'	1 1	N	И	М		M		М
1.2-Dibromoethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
1,2-Dibrofficetriane	~10 μg/kg	1101110		1		\10			
	- "	771110		И	М	_			
Chlorobenzene	<5 µg/kg	TM116	<5	<5		<5	<5	<50	<5
				И	M			Л #	
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
		1 1	N	и	M		M	л #	M
Ethylbenzene	<4 µg/kg	TM116	<4	<4		<4	<4	<40	<4
Laryiborizorio	n pg/ng	1		и	М		М		
n/m Vulana	<10/lea	TM116	<10	<10	IVI	<10	<10	<100	<10
p/m-Xylene	<10 µg/kg	TIVITIO				\10			
				#	#			# #	#
o-Xylene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
		1 1	M	и	М		M	Λ #	M
Styrene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
	10 [25/13			#	#			# #	
Bromoform	<10 µg/kg	TM116	<10	<10	- "	<10	<10	<100	<10
Bioinoloini	~10 μg/kg	1101110			1.4	\10	-		
	.5 "	T1440		И	M		M N		M
Isopropylbenzene	<5 µg/kg	TM116	<5	<5		<5	<5	<50	<5
				#	#			# #	
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
		1 1		#	#		#	# #	#
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16	<16		<16	<16	<160	<16
1,2,0 1110111010001000110	no pg/ng	'''''		и	М	-10	M		M
Dramahanzana	<10/lea	TM116	<10	<10	IVI	<10	<10	<100	<10
Bromobenzene	<10 µg/kg	1101110		1		\10		1.1	1 1
	40 "	771110		М	M	40	M N		
Propylbenzene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
				И	M			Л #	
2-Chlorotoluene	<9 µg/kg	TM116	<9	<9		<9	<9	<90	<9
		1 1	M	и	М		M	л #	M
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	<8		<8	<8	<80	<8
1,0,0	0 49/119			и	М	ľ	M	1.1	1 1
4-Chlorotoluene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
4-Chlorotoluene	<10 μg/kg	1101110		.		\10			
				VI .	M			A #	
tert-Butylbenzene	<14 µg/kg	TM116	<14	<14		<14	<14	<140	<14
				И	М			Λ #	
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	<9		<9	<9	<90	<9
-		1 1		#	#		#	# #	#
sec-Butylbenzene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
200 200, 201.201.0			. •						.*
A la annouvillativana	410	TM44C	<10	<10		<10	<10	<100	<10
4-Isopropyltoluene	<10 µg/kg	TM116				<10			
				И	М			Λ #	
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8	<8		<8	<8	<80	<8
			N	И	М			Λ #	
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	<5		<5	<5	<50	<5
				И	М			л #	
n-Butylbenzene	<11 µg/kg	TM116	<11	<11		<11	<11	<110	<11
II-Butylberizerie	·π μg/kg	1101110	*11]		711	\$11	110	311
4.0 D'alda ada a a a a	140 . // .	TMAAC	-10	-10		-40	-40	+400	-40
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
				И	М			Л #	
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	<14		<14	<14	<140	<14
			N	И	M		M	л #	М
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	<10		<10	<10	<100	<10
a,ourji ouloi	I Pagring			#	#			# #	
1.2.4 Triphlorahanasa	- المدر ١٥٥	TM44C			#	200			
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20		<20	<20	<200	<20
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20		<20	<20	<200	<20
Naphthalene	<13 µg/kg	TM116	<13	<13		<13	<13	<130	<13
			M	И	М			л #	
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20	<20		<20	<20	<200	<20
, ,=				#	#	_ <u>-</u> ~		# #	
		-		<u>" 1</u>	π		"	. π	π

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

OC MS (S)

VOC MS (S)									
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cust	omer Sample Ref.	VC03	VC03		VC04	VC04	VC04	VC04
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	2.80 - 3.20	3.39 - 3.79		0.80 - 1.20	1.80 - 2.20	2.80 - 3.20	3.60 - 4.00
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test. ** % recovery of the surrogate	standard to	Date Sampled Sample Time	20/04/2018	20/04/2018		19/04/2018	19/04/2018	19/04/2018	19/04/2018
check the efficiency of the m	ethod. The	Date Received	14:28:00 24/04/2018	14:28:00 24/04/2018		15:50:00 24/04/2018	15:50:00 24/04/2018	15:50:00 24/04/2018	15:50:00 24/04/2018
results of individual compou samples aren't corrected for		SDG Ref	180424-31	180424-31		180424-31	180424-31	180424-31	180424-31
(F) Trigger breach confirmed	· L	ab Sample No.(s)	17431905	17431904		17431908	17431909	17431910	17431907
1-5&+§@ Sample deviation (see apper		AGS Reference							
Component	LOD/Units	+	405	100	\rightarrow	405	400	400	404
Dibromofluoromethane**	%	TM116	125	106		105	102	103	101
					_				
Toluene-d8**	%	TM116	99.4	98.5		100	100	99.1	99.4
45 6 1 **	0/	T14440	00.0	00.4	\rightarrow	04.0	07.0	00.0	00.7
4-Bromofluorobenzene**	%	TM116	92.8	96.1		94.9	97.6	96.9	98.7
5.11 "5 "	0 "	T11110	•		\dashv	•	•		•
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	<6		<6	<6	<6	<6
			N		М	M	M	M	M
Chloromethane	<7 µg/kg	TM116	<7	<7		<7	<7	<7	<7
				#	#	#	#	#	#
Vinyl Chloride	<6 µg/kg	TM116	<6	<6		<6	<6	<6	<6
			Λ		М	M	M	M	М
Bromomethane	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
			N	Λ .	M	M	M	M	М
Chloroethane	<10 µg/kg	TM116	<10	<10	\neg	<10	<10	<10	<10
	1,3,3		N	1	М	М	M	М	М
Trichlorofluorormethane	<6 µg/kg	TM116	<6	<6	\neg	<6	<6	<6	<6
Thomasonation	о ружу	'''''	.0		М	M	M	M	M
1,1-Dichloroethene	<10 µg/kg	TM116	<10	<10	IVI	<10	<10	<10	<10
1,1-Dichiologuighe	10 µg/kg	1101110		#	#	*10	*10	10 #	*10
Carban Diaulahida	47a/l/a	TM11C			#				
Carbon Disulphide	<7 μg/kg	TM116	17.5	<7		<7	<7	<7	<7
5:	10 "	T11110	N		M	M	M	M	M
Dichloromethane	<10 µg/kg	TM116	14.3	<10		<10	<10	<10	<10
				#	#	#	#	#	#
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
			N	<i>1</i>	M	M	M	M	M
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
			N	Λ .	М	M	M	M	М
1,1-Dichloroethane	<8 µg/kg	TM116	<8	<8	\neg	<8	<8	<8	<8
,	100		N	л I	М	M	М	М	М
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6	<6	\neg	<6	<6	<6	<6
, , , , , , , , , , , , , , , , , , , ,	1,2,2		N	Λ	М	М	М	М	М
2,2-Dichloropropane	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
2,2 Biomoropropario	To pg///g	'''''	10			.10	10	10	110
Bromochloromethane	<10 µg/kg	TM116	<10	<10	\dashv	<10	<10	<10	<10
Biomochioromethane	-10 μg/kg	1101110			Ν4				
Chlanafanna	40	TM44C			M	M	M <8	<8	M <8
Chloroform	<8 µg/kg	TM116	<8	<8		<8		· ·	
4447:11	-7 "	T14440	N		M	M	M	M	. .
1,1,1-Trichloroethane	<7 µg/kg	TM116	<7	<7		<7	<7	<7	<7
	10 0		N		М	M	M	M	M
1,1-Dichloropropene	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
			N		M	M	M	M	M
Carbontetrachloride	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
			Λ		М	M	М	M	M
1,2-Dichloroethane	<5 µg/kg	TM116	<5	<5		<5	<5	<5	<5
			N	/	M	M	M	M	M
Benzene	<9 µg/kg	TM116	<9	<9		<9	<9	<9	<9
			N	Λ .	М	M	M	M	М
Trichloroethene	<9 µg/kg	TM116	<9	<9	\neg	<9	<9	<9	<9
	1 - 1-33			#	#	#	#	#	#
1,2-Dichloropropane	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
1,2 Districtopropurio	To pg/kg	1,1110	1,0		М	M	M	M	110 M
Dibromomethane	<9 µg/kg	TM116	<9	<9	-141	<9	<9	<9	<9
Dibromometrarie	√3 μg/kg	1101110			М	\ 9	\ \ M	\ \ M	_9 M
Day and Palalana and the con-	.7 . // .	TNAAC			IVI				
Bromodichloromethane	<7 µg/kg	TM116	<7	<7	إر	<7	<7	<7	<7
: 40 B: 1:	.40 "	T	N		M	M	M	M	M
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
			N		М	M	M	M	М
Toluene	<7 µg/kg	TM116	<7	<7	T	<7	<7	<7	<7
			N		М	M	M	M	M
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<10		<10	<10	<10	<10
·									
1,1,2-Trichloroethane	<10 µg/kg	TM116	<10	<10	\neg	<10	<10	<10	<10
			N		М	М	M	M	M
1,3-Dichloropropane	<7 µg/kg	TM116	<7	<7	\dashv	<7	<7	<7	<7
,. =	. ~~~	''	٠,		М	М	м	ı, M	ν,
			1	* [IVI	101	IVI	191

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SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)

Reculte Legend	Cue	tomor Sample Dof	1/002		1/002		1/004	_	1/004	V/004	1/004
# ISO17025 accredited. # ISO17025 accredited. A mCERTS accredited. aq Aqueous / settled sample. diss.fill: Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate st check the efficiency of the me results of individual compoun samples aren't corrected for tf. Trigger breach confirmed 1-5&4§@ Sample deviation (see append	tandard to thod. The ds within he recovery	Depth (m) Sample Type Date Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference Method	VC03 2.80 - 3.20 Soiil/Soid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431905		VC03 3.39 - 3.79 Soil/Solid (S) 20/04/2018 14:28:00 24/04/2018 180424-31 17431904		VC04 0.80 - 1.20 Soii/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431908		VC04 1.80 - 2.20 Soii/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431909	VC04 2.80 - 3.20 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431910	VC04 3.60 - 4.00 Soil/Solid (S) 19/04/2018 15:50:00 24/04/2018 180424-31 17431907
Tetrachloroethene	<5 µg/kg		<5	М	<5	М	<5	М	<5 M	<5 M	<5 M
Dibromochloromethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 M	<10 M	<10 M
1,2-Dibromoethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 M	<10 M	<10 M
Chlorobenzene	<5 µg/kg	TM116	<5	М	<5	М	<5	М	<5 M	<5 M	<5 M
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 M	<10 M	<10 M
Ethylbenzene	<4 µg/kg	TM116	<4	M	<4	M	<4	М	<4 M	<4 M	<4 M
p/m-Xylene	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10 #	<10 #	<10 #
o-Xylene	<10 µg/kg	TM116	<10	M	<10	M	<10	M	<10 M	<10 M	<10 M
Styrene	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10 #	<10 #	<10 #
Bromoform	<10 µg/kg	TM116	<10	m M	<10	M	<10	M	<10 M	<10 M	<10 M
Isopropylbenzene	<5 µg/kg	TM116	<5	#	<5	#	<5	#	<5 #	<5 #	<5 #
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10 #	<10 #	<10 #
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16	m M	<16	M	<16	M	<16 M	<16 M	<16 M
Bromobenzene	<10 µg/kg	TM116	<10	M	<10	M	<10	M	<10 M	<10 M	<10 M
Propylbenzene	<10 µg/kg	TM116	<10	M	<10	M	<10	M	<10 M	<10 M	<10 M
2-Chlorotoluene	<9 µg/kg	TM116	<9	M	<9	M	<9	М	<9 M	<9 M	<9 M
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	M	<8	M	<8	М	<8 M	<8 M	<8 M
4-Chlorotoluene	<10 µg/kg	TM116	<10	M	<10	M	<10	М	<10 M	<10 M	<10 M
tert-Butylbenzene	<14 µg/kg	TM116	<14	M	<14	M	<14	M	<14 M	<14 M	<14 M
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	#	<9	#	<9	#	<9 #	<9 #	<9 #
sec-Butylbenzene	<10 µg/kg	TM116	<10	π	<10	π	<10	π	<10	<10	<10
4-Isopropyltoluene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 M	<10 M	<10 M
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8	М	<8	М	<8	М	<8 M	<8 M	<8 M
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	М	<5	M	<5	М	<5 M	<5 M	<5 M
n-Butylbenzene	<11 µg/kg	TM116	<11	. *1	<11	141	<11	**1	<11	<11	<11
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10 M	<10 M	<10 M
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	M	<14	M	<14	M	<14 M	<14 M	<14 M
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	#	<10	#	<10	#	<10 #	<10 #	<10 #
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	π	<20	ıΤ	<20	iF	<20	<20	<20
Hexachlorobutadiene	<20 µg/kg	TM116	<20		<20		<20	+	<20	<20	<20
Naphthalene	<13 µg/kg	TM116	<13	М	<13	М	<13	М	<13	<13 M	<13 M
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20		<20		<20		<20	<20	<20
				#		#		#	#	#	#

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)														
Results Legend # ISO17025 accredited.	Cust	omer Sample Ref.	VC05		VC05		VC05		VC06		VC06	Τ	VC07	1
M mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. * Subcontracted test. ** % recovery of the surrogate s check the efficiency of the me results of individual compoun samples aren't corrected for t Trigger breach confirmed 1-5&*§@ Sample deviation (see append Component	thod. The ds within he recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	0.80 - 1.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431895		1.80 - 2.20 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431896		2.53 - 2.93 Soil/Solid (S) 19/04/2018 14:45:00 24/04/2018 180424-31 17431898		0.80 - 1.20 Soii/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431899		2.00 - 2.46 Soil/Solid (S) 20/04/2018 08:29:00 24/04/2018 180424-31 17431900		0.80 - 1.20 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431883	
Dibromofluoromethane**	%	TM116	103		113		150		141		104	Ť	111	1
Toluene-d8**	%	TM116	99.2		98.3		101		98.1		99.1	Ť	99.7	1
4-Bromofluorobenzene**	%	TM116	94.4		96.3		104		94.3		96.6	Ť	100	1
Dichlorodifluoromethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6 N	1	<6	1
Chloromethane	<7 µg/kg	TM116	<70	#	<7	#	<7	#	<70	#	<7	#	<7 #	٦
Vinyl Chloride	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6 N	1	<6 M	1
Bromomethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 M	1	<10	1
Chloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	1	<10 M	1
Trichlorofluorormethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	M	<6 N	Л	<6 M	1
1,1-Dichloroethene	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10 #	#	<10 #	‡
Carbon Disulphide	<7 μg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7 N	1	<7 M	1
Dichloromethane	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10 #	#	<10 #	‡
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	1	<10 M	1
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	Л	<10	,
1,1-Dichloroethane	<8 µg/kg	TM116	<80	М	<8	М	<8	М	<80	М	<8 N	1	<8 M	,
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6 N	1	<6 M	1
2,2-Dichloropropane	<10 µg/kg	TM116	<100		<10		<10		<100		<10	Τ	<10]
Bromochloromethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	Л	<10 M	1
Chloroform	<8 µg/kg	TM116	<80	М	<8	М	<8	М	<80	М	<8 N	Л	<8 M	1
1,1,1-Trichloroethane	<7 μg/kg	TM116	<70	М	<7	М	<7	М		М	<7 N	1	<7 M	1
1,1-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	Л	<10 M	1
Carbontetrachloride	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	Л	<10 M	,
1,2-Dichloroethane	<5 µg/kg	TM116	<50	М	<5	М	<5	М		М	<5 N	Л	<5 M	1
Benzene	<9 µg/kg	TM116	<90	М	<9	М	<9	М		М	<9 N	1	<9 M	1
Trichloroethene	<9 µg/kg	TM116	<90	#	<9	#	<9	#	<90	#	<9 #	#	<9 #	ŧ
1,2-Dichloropropane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10 N	1	<10 M	1
Dibromomethane	<9 µg/kg	TM116	<90	М	<9	М	<9	М	<90	М	<9 N	1	<9 M	1
Bromodichloromethane	<7 μg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7 N	1	<7 M	1
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	М	<10	М		M	<10 N	1	<10 M	1
Toluene	<7 μg/kg	TM116	<70	М	<7	М	<7	М		М	<7 N	1	<7 M	1
trans-1,3-Dichloropropene	<10 µg/kg		<100		<10		<10		<100		<10		<10	
1,1,2-Trichloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М		М	<10 N	1	<10 M	1
1,3-Dichloropropane	<7 μg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7 N	1	<7 M	1

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)

VOC IVIS (S)										
Results Legend # ISO17025 accredited. M mCERTS accredited.	C	ustomer Sample Ref.	VC05		VC05		VC05	VC06	VC06	VC07
aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20		2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	0.80 - 1.20
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
* Subcontracted test.		Date Sampled	19/04/2018		19/04/2018		19/04/2018	20/04/2018	20/04/2018	20/04/2018
** % recovery of the surrogate so check the efficiency of the me	tandard to thod. The	Sample Time	14:45:00		14:45:00		14:45:00	08:29:00	08:29:00 24/04/2018	17:40:00
results of individual compoun	ds within	Date Received SDG Ref	24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31
samples aren't corrected for the (F) Trigger breach confirmed	he recovery	Lab Sample No.(s)	17431895		17431896		17431898	17431899	17431900	17431883
1-5&+§@ Sample deviation (see append	lix)	AGS Reference								
Component	LOD/Uni									
Tetrachloroethene	<5 µg/k	g TM116	<50		<5		<5	<50	<5	<5
				M		M	N	1 M	M	M
Dibromochloromethane	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
	. •	Ĭ		М		M	N	1 M	M	M
1,2-Dibromoethane	<10 µg/l	kg TM116	<100		<10		<10	<100	<10	<10
1,2 Bibromodulano	no pg/i	1111110	100	М	10	М	N.			М
Chlorobenzene	المدالة	a TM116	<50	IVI	<5	IVI	<5	<50	<5	<5
Chloroberizerie	<5 µg/k	g HWHTO	\50		\3					
444074 11 11	.40 //	T1440	:100	М	.40	M	N			M
1,1,1,2-Tetrachloroethane	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
				М		M	N			M
Ethylbenzene	<4 µg/k	g TM116	<40		<4		<4	<40	<4	<4
				M		M	N	1 M	M	M
p/m-Xylene	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
' '		Ĭ		#		#	;	# #	#	#
o-Xylene	<10 µg/l	kg TM116	<100		<10	-	<10	<100	<10	<10
0-Atyleric	10 µg/i	Ng I IWI 10	1100	М	10	М	110			M
01	-40 - //	TN444C	-400	IVI	-40	IVI				
Styrene	<10 µg/k	kg TM116	<100	.,	<10	,,	<10	<100	<10	<10
				#		#	i			#
Bromoform	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
				М		M	N	l M	M	M
Isopropylbenzene	<5 µg/k	g TM116	<50		<5		<5	<50	<5	<5
		Ĭ		#		#	;	# #	#	#
1,1,2,2-Tetrachloroethane	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
1,1,2,2 1000000000000	no pg/i	1111110	100	#	10	#		# #		#
1 2 2 Trichlessesses	41C/I	TM44C	-100	π	-110	π				
1,2,3-Trichloropropane	<16 µg/k	kg TM116	<160		<16		<16	<160	<16	<16
				М		M	N			М
Bromobenzene	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
				М		M	N	l M	M	M
Propylbenzene	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
	. •	Ĭ		М		M	N	1 M	M	М
2-Chlorotoluene	<9 µg/k	g TM116	<90		<9		<9	<90	<9	<9
2 00.0.0.00	۰ ۳۶٬۰۰	9		М	Ĭ	М	N			М
1,3,5-Trimethylbenzene	<0 ua/k	g TM116	<80	141	<8	141	<8	<80	<8	<8
1,3,5-11imetriyiberizerle	<8 µg/k	g HWHTO	\0 0	М	\ 0	М	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		1	M
4.011	.40 #	T1440	.400	IVI	.10	IVI				
4-Chlorotoluene	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
				М		M	Λ			
tert-Butylbenzene	<14 µg/k	kg TM116	<140		<14		<14	<140	<14	<14
				М		M	N	1 M		M
1,2,4-Trimethylbenzene	<9 µg/k	g TM116	<90		<9		<9	<90	<9	<9
·		Ĭ		#		#	;	#	#	#
sec-Butylbenzene	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
000 24,9,00,120,10	. o pag									
4-Isopropyltoluene	<10 µg/l	kg TM116	<100		<10		<10	<100	<10	<10
- 130propyitolucile	- 10 μg/r	A LIMITIO	100	М	اد	М	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			M
4.2 Diablander	-0 "	T14440	-00	IVI		IVI				
1,3-Dichlorobenzene	<8 µg/k	g TM116	<80		<8		<8	<80	<8	<8
				М		M				M
1,4-Dichlorobenzene	<5 µg/k	g TM116	<50		<5		<5	<50	<5	<5
				М		M	N		M	M
n-Butylbenzene	<11 µg/k	kg TM116	<110		<11		<11	<110	<11	<11
,		Ĭ								
1,2-Dichlorobenzene	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
1,2 Diomoroponizono	10 µg/1	Ng INITIO	1100	М	110	М	110		1	M
1.0 Dibaaaa 2 ahlaaaaaa	-11/I	TM44C	-110	IVI	-11	IVI				
1,2-Dibromo-3-chloropropane	<14 µg/k	kg TM116	<140		<14		<14	<140	<14	<14
				М		M	N			M
Tert-amyl methyl ether	<10 µg/k	kg TM116	<100		<10		<10	<100	<10	<10
				#		#	i			#
1,2,4-Trichlorobenzene	<20 µg/k	kg TM116	<200		<20		<20	<200	<20	<20
Hexachlorobutadiene	<20 µg/l	kg TM116	<200		<20		<20	<200	<20	<20
	LV Mg/I							-200		-
Naphthalene	<13 µg/l	kg TM116	<130		<13		<13	<130	<13	<13
rvapritiralerite	>13 µg/l	NS INITIO	\130	N 4	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	N 4			1	I
1007:11	20			М		M	N			M
1,2,3-Trichlorobenzene	<20 µg/k	kg TM116	<200		<20		<20	<200	<20	<20
				#		#	;	#	#	#

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)													
Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC07	VC	8	VC08		VC11		VC11		VC11	
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. * % recovery of the surrogate s check the efficiency of the mersults of individual compour samples aren't corrected for 1.5&4\$@ Sample deviation (see append	ethod. The nds within the recovery L dix)	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference	1.60 - 2.00 Soil/Solid (S) 20/04/2018 17:40:00 24/04/2018 180424-31 17431882	0.60 - Soil/So 20/04/ 17:06 24/04/ 18042 17431	id (S) 2018 :00 2018 4-31	1.00 - 1.45 Soil/Solid (S) 20/04/2018 17:06:00 24/04/2018 180424-31 17431901		0.80 - 1.20 Soil/Solid (S) 20/04/2018 12:24:00 24/04/2018 180424-31 17431887)	1.80 - 2.20 Soil/Solid (S 20/04/2018 12:24:00 24/04/2018 180424-31 17431886	()	2.20 - 2.50 Soil/Solid (20/04/201 12:24:00 24/04/201 180424-3 17431885	S) B B
Component Dibromofluoromethane**	LOD/Units %	Method TM116	102	10	4	103		111		110		105	
Toluene-d8**	%	TM116	99.3	99	2	98.6		98.2		99		99.1	
4-Bromofluorobenzene**	%	TM116	98.3	98.	3	95.9		94.2		95.7		95.7	
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	<(6 M	<6	М	<120	М	<6	М	<6	М
Chloromethane	<7 μg/kg	TM116	<7	# <7		<7	#	<140	#	<7	#	<7	#
Vinyl Chloride	<6 µg/kg	TM116	<6			<6	<i></i> М	<120	M	<6	M	<6	
Bromomethane	<10 µg/kg	TM116	<10	 VI		<10	М	<200	М	<10	М	<10	М
Chloroethane	<10 µg/kg	TM116	<10	<1 M		<10	М	<200	М	<10	М	<10	М
Trichlorofluorormethane	<6 µg/kg	TM116	<6	<6 VI		<6	М	<120	М	<6	М	<6	М
1,1-Dichloroethene	<10 µg/kg	TM116	<10	< 1	0 #	<10	#	<200	#	<10	#	<10	#
Carbon Disulphide	<7 μg/kg	TM116	<7	VI <		<7	М	<140	М	<7	М	<7	М
Dichloromethane	<10 µg/kg	TM116	<10	< 1	0 #	<10	#	<200	#	<10	#	<10	#
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<10	<1 VI		<10	М	<200	М	<10	М	<10	М
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<10	<1 VI		<10	М	<200	М	<10	М	<10	М
1,1-Dichloroethane	<8 µg/kg	TM116	<8	3> <		<8	М	<160	М	<8	М	<8	М
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<6 I	<6 VI		<6	М	<120	М	<6	М	<6	М
2,2-Dichloropropane	<10 µg/kg	TM116	<10	<1)	<10		<200		<10		<10	
Bromochloromethane	<10 µg/kg	TM116	<10	<1 VI	0 M	<10	М	<200	М	<10	М	<10	М
Chloroform	<8 µg/kg	TM116	<8 I	3> N	B M	<8	М	<160	М	<8	М	<8	М
1,1,1-Trichloroethane	<7 μg/kg	TM116	<7	VI < 7	, M	<7	М	<140	М	<7	М	<7	М
1,1-Dichloropropene	<10 µg/kg	TM116	<10	<1 VI	0 M	<10	М	<200	М	<10	М	<10	М
Carbontetrachloride	<10 µg/kg	TM116	<10 I	<1 VI	0 M	<10	М	<200	М	<10	М	<10	М
1,2-Dichloroethane	<5 μg/kg	TM116	<5 !	ΛI <	5 M	<5	М	<100	М	<5	М	<5	М
Benzene	<9 µg/kg	TM116		-< γ	М		М	<180	М	<9	М	<9	М
Trichloroethene	<9 µg/kg	TM116	<9	# < <u> </u>) #	<9	#	<180	#	<9	#	<9	#
1,2-Dichloropropane	<10 µg/kg	TM116		<1 VI	0 M	<10	М	<200	М	<10	М	<10	М
Dibromomethane	<9 µg/kg	TM116		<(M	М		М	<180	М	<9	М	<9	М
Bromodichloromethane	<7 μg/kg	TM116		<7 Μ	М		М	<140	М	<7	М	<7	М
cis-1,3-Dichloropropene	<10 µg/kg	TM116		<1 VI	М		М	<200	М	<10	М	<10	М
Toluene	<7 μg/kg	TM116		<7 M	М		М	<140	М	<7	М	<7	М
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<10	<1		<10		<200		<10		<10	
1,1,2-Trichloroethane	<10 µg/kg	TM116		<1 VI	М		М	<200	М	<10	М	<10	М
1,3-Dichloropropane	<7 μg/kg	TM116	<7 !	<7 VI	M	<7	М	<140	М	<7	М	<7	М



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)

# ISO17025 accredited. # mCERTS accredited. aq Aqueous / settled sample. diss.filit Dissolved / filtered sample. tot.unfilit Total / unfiltered sample.	Cu	istomer Sample Ref.	VC07		VC08		VC08		VC11		VC11		VC11	
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.														
tot.unfilt Total / unfiltered sample.		Depth (m)	1.60 - 2.00		0.60 - 1.00		1.00 - 1.45		0.80 - 1.20		1.80 - 2.20		2.20 - 2.50	
		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	
* Subcontracted test. ** % recovery of the surrogate s		Date Sampled	20/04/2018		20/04/2018		20/04/2018		20/04/2018		20/04/2018		20/04/2018	
** % recovery of the surrogate s check the efficiency of the me		Sample Time Date Received	17:40:00 24/04/2018		17:06:00 24/04/2018		17:06:00 24/04/2018		12:24:00 24/04/2018		12:24:00 24/04/2018		12:24:00 24/04/2018	
results of individual compour	nds within	SDG Ref	180424-31		180424-31		180424-31		180424-31		180424-31		180424-31	
samples aren't corrected for t (F) Trigger breach confirmed	the recovery	Lab Sample No.(s)	17431882		17431902		17431901		17431887		17431886		17431889	
1-5&+§@ Sample deviation (see append		AGS Reference												
Component	LOD/Unit									_				
Tetrachloroethene	<5 μg/kg	g TM116	<5	М	<5	М	<5	М	<100	М	<5	М	<5	М
Dibromochloromethane	<10 µg/k	g TM116	<10	М	<10	М	<10	М	<200	М	<10	М	<10	М
1,2-Dibromoethane	<10 µg/k	g TM116	<10	М	<10	М	<10	М	<200	М	<10	М	<10	М
Chlorobenzene	<5 μg/kg	TM116	<5	М	<5	М	<5	М	<100	М	<5	М	<5	М
1,1,1,2-Tetrachloroethane	<10 µg/k	g TM116	<10	М	<10	М	<10	М	<200	М	<10	М	<10	М
Ethylbenzene	<4 μg/kg	g TM116	<4	М	<4	М	<4	M	<80	М	<4	M	<4	М
p/m-Xylene	<10 µg/k	g TM116	<10	#	<10	#	<10	#	<200	#	<10	#	<10	#
o-Xylene	<10 µg/k	g TM116	<10		<10		<10		<200		<10		<10	
Styrene	<10 µg/k	g TM116	<10	М	<10	M	<10	M	<200	М	<10	М	<10	<u>М</u>
Bromoform	<10 µg/k	g TM116	<10	#	<10	#	<10	#	<200	#	<10	#	<10	#
Isopropylbenzene	<5 μg/kg	g TM116	<5	M	<5	M	<5	M	<100	M	<5	M	<5	M
1,1,2,2-Tetrachloroethane	<10 µg/k	g TM116	<10	#	<10	#	<10	#	<200	#	<10	#	<10	#
1,2,3-Trichloropropane	<16 µg/k	g TM116	<16	#	<16	#	<16	#	<320	#	<16	#	<16	#
Bromobenzene	<10 µg/k	g TM116	<10	М	<10	M	<10	M	<200	М	<10	М	<10	М
Propylbenzene	<10 μg/k		<10	М	<10	M	<10	M	<200	М	<10	М	<10	М
2-Chlorotoluene	<9 μg/kg		<9	М	<9	M	<9	M	<180	М	<9	М	<9	М
1,3,5-Trimethylbenzene	<8 μg/kg		<8	М	<8	М	<8	M	<160	М	<8	М	<8	M
4-Chlorotoluene	<10 μg/k		<10	М	<10	М	<10	М	<200	М	<10	М	<10	М
tert-Butylbenzene	<14 µg/k		<14	М	<14	М	<14	М	<280	М	<14	М	<14	М
1,2,4-Trimethylbenzene			<9	М	<9	М	<9	M	<180	М	<9	М	<9	М
	<9 μg/kg			#		#		#		#		#		#
sec-Butylbenzene	<10 µg/k		<10		<10		<10		<200		<10		<10	
4-Isopropyltoluene	<10 µg/k		<10	М	<10	М	<10	М	<200	М	<10	М	<10	М
1,3-Dichlorobenzene	<8 µg/kç		<8	М	<8	М	<8	М	<160	М	<8	М	<8	М
1,4-Dichlorobenzene	<5 µg/kg		<5	М	<5	М	<5	М	<100	М	<5	М	<5	М
n-Butylbenzene	<11 µg/k		<11		<11		<11		<220		<11		<11	
1,2-Dichlorobenzene	<10 µg/k		<10	М	<10	М	<10	М	<200	М	<10	М	<10	М
1,2-Dibromo-3-chloropropane	<14 µg/k	g TM116	<14	М	<14	М	<14	М	<280	М	<14	М	<14	М
Tert-amyl methyl ether	<10 µg/k	g TM116	<10	#	<10	#	<10	#	<200	#	<10	#	<10	#
1,2,4-Trichlorobenzene	<20 µg/k	g TM116	<20		<20		<20		<400		<20		<20	
Hexachlorobutadiene	<20 µg/k	g TM116	<20		<20		<20		<400	\forall	<20		<20	
Naphthalene	<13 µg/k	g TM116	<13	М	<13	М	<13	М	<260	М	<13	М	<13	М
1,2,3-Trichlorobenzene	<20 µg/k	g TM116	<20	#	<20	#	<20	#	<400	#	<20	#	<20	#

457244

CERTIFICATE OF ANALYSIS

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

VOC MS (S)														
Results Legend # ISO17025 accredited.	Custo	omer Sample Ref.	VC10A		VC10A		VC10A		VC12A		VC12A		VC12A	
M mCERTS accredited. Aqueous / settled sample. Dissolved / filtered sample. Subcontracted test. W recovery of the surrogate check the efficiency of the results of individual compous samples aren't corrected for Trigger breach confirmed 1-5&+§@ Sample deviation (see apper	nethod. The unds within the recovery	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref ab Sample No.(s) AGS Reference Method	0.80 - 1.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431891		1.80 - 2.20 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431890		2.45 - 2.85 Soil/Solid (S) 20/04/2018 09:24:00 24/04/2018 180424-31 17431892		0.80 - 1.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431913		1.80 - 2.20 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431911		2.80 - 3.30 Soil/Solid (S) 20/04/2018 13:27:00 24/04/2018 180424-31 17431912	
Dibromofluoromethane**	%	TM116	122		104		101		118		107		111	
Toluene-d8**	%	TM116	97.4		99		98.8		97.4		100		101	
4-Bromofluorobenzene**	%	TM116	92.1		96.3		96.5		91.5		99.1		105	
Dichlorodifluoromethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6	М	<6	М
Chloromethane	<7 µg/kg	TM116	<70	#	<7	#	<7	#	<70	#	<7	#	<7	#
Vinyl Chloride	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6	М	<6	М
Bromomethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Chloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Trichlorofluorormethane	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6	М	<6	М
1,1-Dichloroethene	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10	#	<10	#
Carbon Disulphide	<7 µg/kg	TM116	<70	M	<7	M	<7	M	147	M	<7	M	<7	M
Dichloromethane	<10 µg/kg	TM116	<100	#	<10	#	<10	#	<100	#	<10	#	<10	#
Methyl Tertiary Butyl Ether	<10 µg/kg	TM116	<100	M	<10	M	<10	M	<100	M	<10	M	<10	M
trans-1,2-Dichloroethene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
1,1-Dichloroethane	<8 µg/kg	TM116	<80	М	<8	M	<8	М	<80	M	<8	M	<8	M
cis-1,2-Dichloroethene	<6 µg/kg	TM116	<60	М	<6	М	<6	М	<60	М	<6	М	<6	М
2,2-Dichloropropane	<10 µg/kg	TM116	<100		<10	141	<10		<100	101	<10		<10	141
Bromochloromethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Chloroform	<8 µg/kg	TM116	<80	М	<8	М	<8	М	<80	М	<8	М	<8	М
1,1,1-Trichloroethane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7	М	<7	М
1,1-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
Carbontetrachloride	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
1,2-Dichloroethane	<5 µg/kg	TM116	<50	М	<5	М	<5	М	<50	М	<5	М	<5	М
Benzene	<9 µg/kg	TM116	<90	М	<9	М	<9	М	<90	М	<9	М	<9	М
Trichloroethene	<9 µg/kg	TM116	<90	#	<9	#	<9	#	<90	#	<9	#	<9	#
1,2-Dichloropropane	<10 µg/kg	TM116	<100	M	<10	M	<10	M	<100	M	<10	M	<10	M
Dibromomethane	<9 µg/kg	TM116	<90	М	<9	М	<9	М	<90	М	<9	М	<9	М
Bromodichloromethane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7	М	<7	М
cis-1,3-Dichloropropene	<10 µg/kg	TM116	<100	М	<10	M	<10	М	<100	M	<10	M	<10	M
Toluene	<7 µg/kg	TM116	<70	М	<7	M	<7	M	<70	M	<7	M	<7	M
trans-1,3-Dichloropropene	<10 µg/kg	TM116	<100	IVI	<10	IVI	<10	IVI	<100	141	<10	IVI	<10	191
1,1,2-Trichloroethane	<10 µg/kg	TM116	<100	М	<10	М	<10	М	<100	М	<10	М	<10	М
1,3-Dichloropropane	<7 µg/kg	TM116	<70	М	<7	М	<7	М	<70	М	<7	М	<7	М
	1					141		141						



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)

VUC IVIS (S)												
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC10A		VC10A		VC10A		VC12A	VC12A	T	VC12A
aq Aqueous / settled sample.		Depth (m)	0.80 - 1.20		1.80 - 2.20		2.45 - 2.85		0.80 - 1.20	1.80 - 2.20		2.80 - 3.30
diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)
* Subcontracted test.		Date Sampled	20/04/2018		20/04/2018		20/04/2018		20/04/2018	20/04/2018		20/04/2018
** % recovery of the surrogate s check the efficiency of the me	tandard to	Sample Time	09:24:00		09:24:00		09:24:00		13:27:00	13:27:00		13:27:00
results of individual compoun	ds within	Date Received	24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31		24/04/2018 180424-31	24/04/2018 180424-31		24/04/2018 180424-31
samples aren't corrected for to (F) Trigger breach confirmed	he recovery	SDG Ref Lab Sample No.(s)	17431891		17431890		17431892		17431913	17431911		17431912
1-5&+§@ Sample deviation (see append		AGS Reference					11 10 1002					
Component	LOD/Units											
Tetrachloroethene	<5 µg/kg	TM116	<50		<5		<5		<50	<5	Т	<5
	''			М		М		M	M		М	N
Dibromochloromethane	<10 µg/kg	TM116	<100		<10		<10	_	<100	<10	ナ	<10
Distromosticitos	no pg/ng	' '''''	100	М		М	10	М	M		м	Λ,0
1.2 Dibrama athana	<10 a/lea	TM116	<100	IVI	<10	IVI	<10	IVI	<100	<10	**	<10
1,2-Dibromoethane	<10 µg/kg	I IIVIIIO	<100	N 4	<10	N 4	<10					
				М		M		М	M		М	N
Chlorobenzene	<5 µg/kg	TM116	<50		<5		<5		<50	<5		<5
				М		М		M	M		М	N
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<100		<10		<10		<100	<10	Т	<10
				М		М		М	M		М	N
Ethylbenzene	<4 µg/kg	TM116	<40		<4		<4	***	<40	<4	\dashv	<4
Laryiderizono	" pg/kg	1111110	110	М		М	``	М	M	1	М	۱۰۰۰
. In Wiles	140 . // .	TNAAC	-100	IVI	-40	IVI	-40	IVI			VI	
p/m-Xylene	<10 µg/kg	TM116	<100		<10		<10		<100	<10		<10
				#		#		#	#		#	i
o-Xylene	<10 µg/kg	TM116	<100		<10		<10		<100	<10		<10
		1		М		M		М	M		М	N
Styrene	<10 µg/kg	TM116	<100		<10		<10		<100	<10	す	<10
0.9.00		, , ,,,,,,		#		#		#	#		#	
Bromoform	<10 µg/kg	TM116	<100	π	<10	π	<10	π	<100	<10	#	<10
PIOIIIOIOIIII	< 10 µg/kg	I IIVIIIO	<100		<10		<10			1		
				М	_	M	_	М	M		М	N
Isopropylbenzene	<5 µg/kg	TM116	<50		<5		<5		<50	<5		<5
				#		#		#	#		#	i
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<100		<10		<10		<100	<10	Т	<10
				#		#		#	#		#	1
1,2,3-Trichloropropane	<16 µg/kg	TM116	<160		<16		<16	-	<160	<16	7	<16
1,2,0-Theriloroproparie	10 µg/kg	1 1111110	1100	М	110	М	10	М	1100 M		м	110
Daniel	440 . // .	TMAAC	-400	IVI	-40	IVI	-40	IVI			VI	
Bromobenzene	<10 µg/kg	TM116	<100		<10		<10		<100	<10		<10
				М		M		М	M		М	N
Propylbenzene	<10 µg/kg	TM116	<100		<10		<10		<100	<10		<10
				М		М		M	M	I	М	N
2-Chlorotoluene	<9 µg/kg	TM116	<90		<9		<9		<90	<9	Т	<9
	100	1 1		М		М		М	M		М	N
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<80		<8		<8	***	<80	<8	7	<8
1,5,5-11IIICIIIyibciizciic	10 µg/kg	111111111111111111111111111111111111111	400	М	,0	М	10	М	M		М	- V
1.011	.40 //	T1440	.400	IVI	:40	IVI	.40	IVI			VI	
4-Chlorotoluene	<10 µg/kg	TM116	<100		<10		<10		<100	<10		<10
				М		M		М	M		М	N
tert-Butylbenzene	<14 µg/kg	TM116	<140		<14		<14		<140	<14		<14
		1 1		М		M		M	M	1	М	N
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<90		<9		<9		<90	<9	T	<9
•	100			#		#		#	#		#	į
sec-Butylbenzene	<10 µg/kg	TM116	<100		<10		<10	"	<100	<10	7	<10
Sec-Dutylberizerie	10 µg/kg	1 1101110	100		110		10		100	10		10
	40 "	T14440	400				10	-	400	40	\dashv	40
4-Isopropyltoluene	<10 µg/kg	TM116	<100		<10		<10		<100	<10		<10
				М		M		М	M		М	N
1,3-Dichlorobenzene	<8 µg/kg	TM116	<80		<8		<8		<80	<8		<8
				М		M		M	M	1	М	N
1,4-Dichlorobenzene	<5 µg/kg	TM116	<50		<5		<5		<50	<5	ヿ	<5
.,. 2.0	0 455			М	Ĭ	М	Ĭ	М	M		М	N
n Butulbanzana	<11 ug/kg	TM116	<110	IVI	<11	IVI	<11	IVI	<110	<11	*	<11
n-Butylbenzene	<11 µg/kg	I IIVIIIO	<110		\ 11		\ 11		<110	×11		\11
								_			4	
1,2-Dichlorobenzene	<10 µg/kg	TM116	<100		<10		<10		<100	<10		<10
				М		M		M	M	1	М	N
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<140		<14		<14		<140	<14	Т	<14
	-33	Ή Έ		М		М	•	М	M		М	١.
Tert-amyl methyl ether	<10 µg/kg	TM116	<100		<10		<10		<100	<10	\dashv	<10
ron-amyr meuryr euler	- 10 μg/kg	1 1101110	~100	щ	10	щ	10	μ			"I	
404 Table 1	100 "	T14440	.000	#		#	.00	#	#		#	100
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<200		<20		<20		<200	<20		<20
Hexachlorobutadiene	<20 µg/kg	TM116	<200		<20		<20	T	<200	<20	T	<20
	1	1										
Naphthalene	<13 µg/kg	TM116	<130		<13		<13	\dashv	<130	<13	+	<13
. apriliaiono	το μίσκο	' '''''	-100	М	,10	М	,,,,	М	130 M		М	-15 N
1 2 2 Triphlambanasa	٠ المدر ٥٥٠	TNA140	-000	IVI	200	IVI	200	IVI			**	
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<200	,,	<20	,,	<20	ا پر	<200	<20	, [<20
				#		#		#	#		#	

180424-31 Lowestoft SDG: Location:

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report: 457244

VOC MS (S)											
Results Legend # ISO17025 accredited.	Cus	stomer Sample Ref.	VC01B		VC01B		VC09B		VC09B		
M mCERTS accredited. aq Aqueous / settled sample. diss.filt Dissolved / filtered sample. tot.unfilt Total / unfiltered sample. Subcontracted test. ** % recovery of the surrogate sicheck the efficiency of the me results of individual compoun	thod. The ds within	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref	0.80 - 1.20 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31		1.24 - 1.54 Soil/Solid (S) 20/04/2018 11:50:00 24/04/2018 180424-31		0.80 - 1.20 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31		1.26 - 1.66 Soil/Solid (S) 19/04/2018 13:44:00 24/04/2018 180424-31		
samples aren't corrected for the (F) Trigger breach confirmed 1-5&+§@ Sample deviation (see appending the confirmed for	1	Lab Sample No.(s) AGS Reference	17431884		17431885		17431893		17431894		
Component Dibromofluoromethane**	LOD/Units		160		111		116		103		
Toluene-d8**	%	TM116	103		99		99.1		99		
4-Bromofluorobenzene**	%	TM116	107		95.2		97.1		95.1		
Dichlorodifluoromethane	<6 µg/kg	TM116	<6	М	<6	М	<6	М	<6	М	
Chloromethane	<7 µg/kg	TM116	<7	#	<7	#	<7	#	<7	#	
Vinyl Chloride	<6 µg/kg		<6	М	<6	М	<6	М	<6	М	
Bromomethane	<10 µg/kg		<10	М	<10	М	<10	M	<10	М	
Chloroethane	<10 µg/kg		<10	М	<10	М	<10	M	<10	М	
Trichlorofluorormethane	<6 µg/kg		<6	М	<6	М	<6	M	<6	М	
1,1-Dichloroethene	<10 µg/kg		<10	#	<10	#	<10	#	<10	#	
Carbon Disulphide	<7 µg/kg		<7	М	<7	М	<7	M	<7	М	
Dichloromethane	<10 µg/kg		<10	#	<10	#	<10	#	<10	#	
Methyl Tertiary Butyl Ether	<10 µg/kg		<10	М	<10	М	<10	М	<10	М	
trans-1,2-Dichloroethene	<10 µg/kg		<10	М	<10	М	<10	М	<10	М	
1,1-Dichloroethane	<8 µg/kg		<8	М	<8	М	<8	М	<8	М	
cis-1,2-Dichloroethene	<6 µg/kg		<6	М	<6	М	<6	M	<6	М	
2,2-Dichloropropane	<10 µg/kg		<10		<10		<10		<10		
Bromochloromethane	<10 µg/kg		<10	М	<10 <8	М	<10	M	<10	М	
Chloroform	<8 µg/kg		<8	М	-	М	<8	M	<8	М	
1,1,1-Trichloroethane	<7 µg/kg		<7	М	<7	М	<7	M	<7	М	
1,1-Dichloropropene	<10 µg/kg	TM116	<10	М	<10	М	<10	M	<10	М	
Carbontetrachloride	<10 µg/kg	TM116	<10	М	<10	М	<10	М	<10	М	
1,2-Dichloroethane	<5 µg/kg	TM116	<5	М	<5	М	<5	М	<5	М	
Benzene	<9 µg/kg	TM116	<9	М	<9	М	<9	М	<9	М	
Trichloroethene	<9 µg/kg		<9	#	<9	#	<9	#	<9	#	
1,2-Dichloropropane	<10 µg/kg		<10	М	<10	М	<10	M	<10	М	
Dibromomethane	<9 µg/kg		<9	М	<9	М	<9	М	<9	М	
Bromodichloromethane	<7 µg/kg		<7	М	<7	М	<7	М	<7	М	
cis-1,3-Dichloropropene	<10 µg/kg		<10	М	<10	М	<10	М	<10	М	
Toluene	<7 µg/kg		<7	М	<7	М	<7	М	<7	М	
trans-1,3-Dichloropropene	<10 µg/kg		<10		<10		<10		<10		
1,1,2-Trichloroethane	<10 µg/kg		<10	М	<10	М	<10	М	<10	М	
1,3-Dichloropropane	<7 µg/kg	TM116	<7	М	<7	М	<7	M	<7	М	
17:17:48 22/05/2018											

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

VOC MS (S)

VOC MS (S)							
Results Legend # ISO17025 accredited. M mCERTS accredited.	Cus	tomer Sample Ref.	VC01B	VC01B	VC09B	VC09B	
aq Aqueous / settled sample. diss.filt Dissolved / filtered sample.		Depth (m)	0.80 - 1.20	1.24 - 1.54	0.80 - 1.20	1.26 - 1.66	
tot.unfilt Total / unfiltered sample.		Sample Type	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	
* Subcontracted test.		Date Sampled	20/04/2018	20/04/2018	19/04/2018	19/04/2018	
** % recovery of the surrogate s check the efficiency of the me		Sample Time	11:50:00	11:50:00	13:44:00	13:44:00	
results of individual compoun	nds within	Date Received SDG Ref	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	24/04/2018 180424-31	
samples aren't corrected for t (F) Trigger breach confirmed	he recovery	Lab Sample No.(s)	17431884	17431885	17431893	17431894	
(F) Trigger breach confirmed 1-5&+§@ Sample deviation (see append	dix)	AGS Reference					
Component	LOD/Units	Method					
Tetrachloroethene	<5 µg/kg	TM116	<5	<5	<5	<5	
Tottadriididettidile	·ο μg/kg	1,0110	M	M	M	M	
Dibromochloromethane	<10 µg/kg	TM116	<10	<10	<10	<10	
Distriction of the thank	To pg/kg	1101110	M	M	M	M	
1.2.711							
1,2-Dibromoethane	<10 µg/kg	TM116	<10	<10	<10	<10	
			M	M	M	M	
Chlorobenzene	<5 µg/kg	TM116	<5	<5	<5	<5	
	''	1 1	М	М	М	M	
1,1,1,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10	<10	<10	
1,1,1,2-Tetraciliordetrialie	-10 μg/kg	TIVITIO					
			M	M	M	M	
Ethylbenzene	<4 µg/kg	TM116	<4	<4	<4	<4	
		1 1	M	M	M	M	
p/m-Xylene	<10 µg/kg	TM116	<10	<10	<10	<10	
··· · · · · · · · · · · · · · · · · ·			#	#	#	#	
- Video	z40 "	T14440					
o-Xylene	<10 µg/kg	TM116	<10	<10	<10	<10	
			M	M	M	M	
Styrene	<10 µg/kg	TM116	<10	<10	<10	<10	
l [*]			#	#	#	#	
Bromoform	<10 µg/kg	TM116	<10	<10	<10	<10	
Bioinoloitii	10 µg/kg	1101110					
			M	M	M	M	
Isopropylbenzene	<5 µg/kg	TM116	<5	<5	<5	<5	
		1 1	#	#	#	#	
1,1,2,2-Tetrachloroethane	<10 µg/kg	TM116	<10	<10	<10	<10	
1,1,2,2 100000000000000	10 μg/g		#	#	#	#	
400 Tible	440 . // .	TMAAC					
1,2,3-Trichloropropane	<16 µg/kg	TM116	<16	<16	<16	<16	
			M	М	M	M	
Bromobenzene	<10 µg/kg	TM116	<10	<10	<10	<10	
		1 1	M	М	M	M	
Propylbenzene	<10 µg/kg	TM116	<10	<10	<10	<10	
1 Topyiberizerie	10 pg/kg	1101110	M	M	110 M	M	
2.011	.0 "	T14440					
2-Chlorotoluene	<9 µg/kg	TM116	<9	<9	<9	<9	
			M	M	M	M	
1,3,5-Trimethylbenzene	<8 µg/kg	TM116	<8	<8	<8	<8	
,	''	1 1	M	М	M	M	
4-Chlorotoluene	<10 ug/kg	TM116	<10	<10	<10	<10	
4-Chiorotoluene	<10 µg/kg	TIVITIO					
			M			M	
tert-Butylbenzene	<14 µg/kg	TM116	<14	<14	<14	<14	
		1 1	M	M	M	M	
1,2,4-Trimethylbenzene	<9 µg/kg	TM116	<9	<9	<9	<9	
, , , , , , , , , , , , , , , , , , , ,		"""	#	#	#	#	
soc Butulhonzono	<10/lea	TM116	<10	<10	<10	<10	
sec-Butylbenzene	<10 µg/kg	IIVIIIO	\10	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\10	
4-Isopropyltoluene	<10 µg/kg	TM116	<10	<10	<10	<10	
	1		M	М	M	M	
1,3-Dichlorobenzene	<8 µg/kg	TM116	<8	<8	<8	<8	
.,5 2.55.5561126116	Pg/ng		M	M	M	M	
1.4 Diablanch	√F B	TMAAAC					
1,4-Dichlorobenzene	<5 µg/kg	TM116	<5	<5	<5	<5	
			M	М	M	M	
n-Butylbenzene	<11 µg/kg	TM116	<11	<11	<11	<11	
]	1						
1,2-Dichlorobenzene	<10 µg/kg	TM116	<10	<10	<10	<10	
1,2 210111010001120116	- 10 µg/kg	1101110					
40.00	.44 **	T	M	M	M	M	
1,2-Dibromo-3-chloropropane	<14 µg/kg	TM116	<14	<14	<14	<14	
	<u> </u>		M	М	M	M	
Tert-amyl methyl ether	<10 µg/kg	TM116	<10	<10	<10	<10	
, , , , , , , , , , , , , , , , , , , ,	· · · · · · · · · · · · · · · · · · ·	"""	#	#	#	#	
124 Trioblershon-	Z20 // ·	TM440					
1,2,4-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<20	<20	
		1					
Hexachlorobutadiene	<20 µg/kg	TM116	<20	<20	<20	<20	
	1						
Naphthalene	<13 µg/kg	TM116	<13	<13	<13	<13	
παριπιαιοπο	15 µg/kg	1101110	~13 M				
1007:11	.00 "	T1111		M	M	M	
1,2,3-Trichlorobenzene	<20 µg/kg	TM116	<20	<20	<20	<20	
		1	#	#	#	#	



457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Asbestos Identification - Solid Samples

		730	COLOG	iacii			Cona	Carri	0.00		
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:42:27 180424-31 17431917 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 1.80 - 2.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:50:19 180424-31 17431916 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 2.80 - 3.20 SOLID 20/04/2018 00:00:00 25/04/2018 13:06:46 180424-31 17431915 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC02 3.20 - 3.63 SOLID 20/04/2018 00:00:00 25/04/2018 13:08:45 180424-31 17431914 TM048	30/04/2018	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 Receieved SDG Original Sample Method Number	VC03 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 09:52:24 180424-31 17431903 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC03 1.80 - 2.20 SOLID 20/04/2018 00:00:00 24/04/2018 18:23:11 180424-31 17431906 TM048	30/04/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244
Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	tort	Oit	ier Numbe	er: 62240	// 12	346	erseaea ke	port.	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC03 2.80 - 3.20 SOLID 20/04/2018 00:00:00 25/04/2018 09:51:11 180424-31 17431905 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC03 3.39 - 3.79 SOLID 20/04/2018 00:00:00 24/04/2018 18:19:07 180424-31 17431904 TM048	30/04/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 0.80 - 1.20 SOLID 19/04/2018 00:00:00 24/04/2018 18:03:51 180424-31 17431908 TM048	30/04/2018	Marcin Magdziarek		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 1.80 - 2.20 SOLID 19/04/2018 00:00:00 25/04/2018 20:47:33 180424-31 17431909 TM048	02/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 2.80 - 3.20 SOLID 19/04/2018 00:00:00 24/04/2018 18:21:50 180424-31 17431910 TM048	30/04/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC04 3.60 - 4.00 SOLID 19/04/2018 00:00:00 25/04/2018 20:51:56 180424-31 17431907 TM048	02/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244
Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	toft	Orc	ler Numbe	er: 62240)712	Sup	erseded Re	port:	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC05 0.80 - 1.20 SOLID 19/04/2018 00:00:00 25/04/2018 08:27:11 180424-31 17431895 TM048	01/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC05 1.80 - 2.20 SOLID 19/04/2018 00:00:00 25/04/2018 20:45:16 180424-31 17431896 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC05 2.53 - 2.93 SOLID 19/04/2018 00:00:00 25/04/2018 08:23:57 180424-31 17431898 TM048	30/04/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC06 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:43:48 180424-31 17431899 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC06 2.00 - 2.46 SOLID 20/04/2018 00:00:00 25/04/2018 15:08:49 180424-31 17431900 TM048	02/05/2018	Renata Bozhkov	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC07 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 14:53:52 180424-31 17431883 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	tort	Orc	ler Numbe	er: 62240	1712	Sup	erseded Re	port:	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC07 1.60 - 2.00 SOLID 20/04/2018 00:00:00 25/04/2018 14:52:46 180424-31 17431882 TM048	02/05/2018	Lucy Caroe		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC08 0.60 - 1.00 SOLID 20/04/2018 00:00:00 25/04/2018 09:49:32 180424-31 17431902 TM048	30/04/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC08 1.00 - 1.45 SOLID 20/04/2018 00:00:00 25/04/2018 20:41:09 180424-31 17431901 TM048	02/05/2018	Lucy Caroe	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC11 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 08:35:34 180424-31 17431887 TM048	30/04/2018		•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC11 1.80 - 2.20 SOLID 20/04/2018 00:00:00 25/04/2018 08:38:06 180424-31 17431886 TM048	01/05/2018	Lucy Caroe		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC11 2.20 - 2.50 SOLID 20/04/2018 00:00:00 25/04/2018 13:01:12 180424-31 17431889 TM048	30/04/2018	Andrzej Ferfecki	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

ALS

SDG: 180424-31 Client Reference:62240712 Report Number: 457244
Location: Lowestoft Order Number: 62240712 Superseded Report:

(ALS)	Location:	Lowes	itort	Oit	ier Numbe	er: 62240	7712	Зир	erseaea ke	port.	
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC10A 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 08:39:49 180424-31 17431891 TM048	01/05/2018	Lucy Caroe	Loose fibres in soil	Not Detected (#)	Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	1.80 - 2.20 SOLID 20/04/2018 00:00:00 24/04/2018 17:53:03 180424-31 17431890 TM048	01/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC10A 2.45 - 2.85 SOLID 20/04/2018 00:00:00 25/04/2018 08:41:53 180424-31 17431892 TM048	30/04/2018	Lucy Caroe		Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC12A 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 12:59:32 180424-31 17431913 TM048	01/05/2018	Andrzej Ferfecki	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Trace
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC12A 1.80 - 2.20 SOLID 20/04/2018 00:00:00 25/04/2018 20:48:59 180424-31 17431911 TM048	02/05/2018	Barbara Urbanek-Wal sh	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC12A 2.80 - 3.30 SOLID 20/04/2018 00:00:00 24/04/2018 18:20:21 180424-31 17431912 TM048	30/04/2018	James Richards	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

Validated

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Client Reference: 62240712 Report Number: 457244

(ALS)	Location:	Lowes	stoft	Order Number: 62240712			Superseded Report:				
		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC01B 0.80 - 1.20 SOLID 20/04/2018 00:00:00 25/04/2018 14:56:21 180424-31 17431884 TM048	02/05/2018	Marcin Magdziarek	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC01B 1.24 - 1.54 SOLID 20/04/2018 00:00:00 25/04/2018 14:57:45 180424-31 17431885 TM048	02/05/2018	Renata Bozhkov	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Receieved SDG Original Sample Method Number	VC09B 0.80 - 1.20 SOLID 19/04/2018 00:00:00 25/04/2018 08:25:40 180424-31 17431893 TM048	30/04/2018	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 Receieved SDG Original Sample Method Number	VC09B 1.26 - 1.66 SOLID 19/04/2018 00:00:00 25/04/2018 08:30:37 180424-31 17431894 TM048	30/04/2018	Andrzej Ferfecki	•	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected

457244

Non-reactive

azardous Waste

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS **REF: BS EN 12457/2 Client Reference Site Location** Lowestoft **Natural Moisture Content (%)** 14.9 Mass Sample taken (kg) 0.103 87 Mass of dry sample (kg) 0.090 **Dry Matter Content (%)**

Particle Size <4mm >95%

Case **Landfill Waste Acceptance Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431882 Stable

Sampled Date 20-Apr-2018 **Customer Sample Ref.** VC07 Depth (m)

Solid Waste Analysis

Total Organic Carbon (%) Loss on Ignition (%) Sum of BTEX (mg/kg) Sum of 7 PCBs (mg/kg) Mineral Oil (mg/kg) PAH Sum of 17 (mg/kg) pH (pH Units) ANC to pH 6 (mol/kg) ANC to pH 4 (mol/kg)

Ha	n Non- Was zardous _andfill
	.andiiii
3	5
-	-
6	-
1	-
500	-
100	-
-	>6
-	-
-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00395	<0.0005	0.0395	<0.005	0.5	2	25
Barium	0.00297	<0.0002	0.0297	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00228	<0.001	0.0228	<0.01	0.5	10	70
Copper	0.00212	<0.0003	0.0212	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00126	<0.0004	0.0126	<0.004	0.4	10	40
Lead	0.00204	<0.0002	0.0204	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00352	<0.001	0.0352	<0.01	4	50	200
Chloride	3.2	<2	32	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	26.7	<5	267	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018							
pH (pH Units)	7.33							
Conductivity (µS/cm)	20.30							
Temperature (°C)	19.90							
Volume Leachant (Litres)	0.887							

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 Mcerts Certification does not apply to leachates



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF: BS EN 12457/2 Client Reference Site Location Lowestoft

Mass Sample taken (kg) 0.107 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Natural Moisture Content (%)** 19 84 **Dry Matter Content (%)**

Landfill Waste Acceptance Case **Criteria Limits SDG** 180424-31

Lab Sample Number(s) 17431883 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC07 Depth (m) 0.80 - 1.20

Stable Non-reactive **Inert Waste** Hazardous lazardous Waste Landfill Waste Landfill

in Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	7.08	
ANC to pH 6 (mol/kg)	<0.03	
ANC to pH 4 (mol/kg)	0.0389	

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A2 10:1 conc	ⁿ leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_		
Arsenic	0.00273	<0.0005	0.0273	<0.005	0.5	2	25
Barium	0.00111	<0.0002	0.0111	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000555	<0.0003	0.00555	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000599	<0.0004	0.00599	<0.004	0.4	10	40
Lead	0.000669	<0.0002	0.00669	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00105	<0.001	0.0105	<0.01	4	50	200
Chloride	2.7	<2	27	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	17.5	<5	175	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.93
Conductivity (µS/cm)	17.70
Temperature (°C)	20.00
Volume Leachant (Litres)	0.883

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 Mcerts Certification does not apply to leachates

Hazardous

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAI	L RESULTS
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Client Reference Mass Sample taken (kg) 0.107 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 19 84 **Dry Matter Content (%)**

Inert Waste

Landfill

Case **SDG** 180424-31 Lab Sample Number(s) 17431884 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC01B Depth (m) 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits Stable

Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.28
ANC to pH 6 (mol/kg)	0.0318
ANC to pH 4 (mol/kg)	0.08

Total Organic Carbon (%)	<0.2				3	5	6
Loss on Ignition (%)	<0.7				-	-	10
Sum of BTEX (mg/kg)	<0.024				6	-	-
Sum of 7 PCBs (mg/kg)	<0.021				1	-	-
Mineral Oil (mg/kg)	<1				500	-	-
PAH Sum of 17 (mg/kg)	<10				100	-	-
pH (pH Units)	8.28				-	>6	-
ANC to pH 6 (mol/kg)	0.0318				-	-	-
ANC to pH 4 (mol/kg)	0.08				-	-	-
Eluate Analysis C2 Conc ⁿ in 10:1 eluate (0:1 eluate (mg/l)	A 2 10:1 conc	leached (mg/kg)		for compliance I EN 12457-3 at L	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0072	<0.0005	0.072	<0.005	0.5	2	25
Barium	0.00378	<0.0002	0.0378	<0.002	20	100	300
Cadmium	< 0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5

Eluate Analysis	U 2		17.2		using BS EN 12457-3 at L/S		/S 10 l/kg
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0072	<0.0005	0.072	<0.005	0.5	2	25
Barium	0.00378	<0.0002	0.0378	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00566	<0.001	0.0566	<0.01	0.5	10	70
Copper	0.0104	<0.0003	0.104	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00504	< 0.003	0.0504	<0.03	0.5	10	30
Nickel	0.00479	<0.0004	0.0479	<0.004	0.4	10	40
Lead	0.00525	<0.0002	0.0525	<0.002	0.5	10	50
Antimony	0.00145	<0.001	0.0145	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.0115	<0.001	0.115	<0.01	4	50	200
Chloride	11.2	<2	112	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	53.7	<5	537	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	7.03	<3	70.3	<30	500	800	1000
	1	1	I				

Leach Test Information

26-Apr-2018
7.48
66.20
20.10
0.883

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 Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.105

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)16.3Dry Matter Content (%)86

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431885

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC01B

 Depth (m)
 1.24 - 1.54

Landfill Waste Acceptance Criteria Limits

Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.93
ANC to pH 6 (mol/kg)	0.0324
ANC to pH 4 (mol/kg)	0.0475
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Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			. , ,	
Arsenic	0.00551	<0.0005	0.0551	<0.005	0.5	2	25	
Barium	0.00204	<0.0002	0.0204	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.00122	<0.001	0.0122	<0.01	0.5	10	70	
Copper	0.00342	<0.0003	0.0342	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00116	<0.0004	0.0116	<0.004	0.4	10	40	
Lead	0.000973	<0.0002	0.00973	<0.002	0.5	10	50	
Antimony	0.0011	<0.001	0.011	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00279	<0.001	0.0279	<0.01	4	50	200	
Chloride	5.6	<2	56	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	40.5	<5	405	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	5.14	<3	51.4	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018					
pH (pH Units)	7.54					
Conductivity (µS/cm)	48.30					
Temperature (°C)	19.90					
Volume Leachant (Litres)	0.885					

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 Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference Mass Sample taken (kg) 0.106 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 17.6 85 **Dry Matter Content (%)**

Case **SDG** 180424-31 Lab Sample Number(s) 17431886 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC11 Depth (m) 1.80 - 2.20

Landfill Waste Acceptance Criteria Limits Stable Non-reactive **Inert Waste** Hazardous

lazardous Waste

in Non-

Waste Landfill

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	7.4	
ANC to pH 6 (mol/kg)	0.0522	
ANC to pH 4 (mol/kg)	0.0715	

	Hazardous Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_			
Arsenic	0.0069	<0.0005	0.069	<0.005	0.5	2	25	
Barium	0.000795	<0.0002	0.00795	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00112	<0.0003	0.0112	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	< 0.003	< 0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.000467	<0.0004	0.00467	<0.004	0.4	10	40	
Lead	0.00074	<0.0002	0.0074	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200	
Chloride	3	<2	30	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	18.4	<5	184	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000	

Leach Test Information

	=
Date Prepared	26-Apr-2018
pH (pH Units)	7.92
Conductivity (µS/cm)	20.30
Temperature (°C)	20.10
Volume Leachant (Litres)	0.884

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 Mcerts Certification does not apply to leachates

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS		

Client Reference Mass Sample taken (kg) 0.122 Mass of dry sample (kg) 0.090 Particle Size <4mm >95%

Site Location Lowestoft **Natural Moisture Content (%)** 35.8 73.7 **Dry Matter Content (%)**

Case **SDG** 180424-31 Lab Sample Number(s) 17431887 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC11 D

Landfill Waste Acceptance Criteria Limits

Stable

Non-reactive

lazardous Waste

in Non-

457244

epth (m)	0.80 - 1.20
Solid Waste Analysis	Result
Total Organic Carbon (%)	1.54
oss on Ignition (%)	2.71
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
lineral Oil (mg/kg)	94
AH Sum of 17 (mg/kg)	<10
H (pH Units)	8.65
NC to pH 6 (mol/kg)	0.185
ANC to pH 4 (mol/kg)	2.19

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	Result	Result Limit of Detection		Limit of Detection	, ,			
Arsenic	0.0205	<0.0005	0.205	<0.005	0.5	2	25	
Barium	0.0285	<0.0002	0.285	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.01	<0.001	0.1	<0.01	0.5	10	70	
Copper	0.00849	<0.0003	0.0849	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.0158	<0.003	0.158	<0.03	0.5	10	30	
Nickel	0.00656	<0.0004	0.0656	<0.004	0.4	10	40	
Lead	0.00923	<0.0002	0.0923	<0.002	0.5	10	50	
Antimony	0.00197	<0.001	0.0197	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.0191	<0.001	0.191	<0.01	4	50	200	
Chloride	179	<2	1790	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	24.8	<2	248	<20	1000	20000	50000	
Total Dissolved Solids	592	<5	5920	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	10.9	<3	109	<30	500	800	1000	

Leach Test Information

Date Prepared	27-Apr-2018
pH (pH Units)	7.90
Conductivity (µS/cm)	765.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.868

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 Mcerts Certification does not apply to leachates

457244

CERTIFICATE OF ANALYSIS



Particle Size <4mm

Solid Waste Analysis

Total Organic Carbon (%) Loss on Ignition (%)

Sum of BTEX (mg/kg) Sum of 7 PCBs (mg/kg)

PAH Sum of 17 (mg/kg)

ANC to pH 6 (mol/kg)

Mineral Oil (mg/kg)

pH (pH Units)

SDG: 180424-31 Location: Lowestoft

>95%

Result

<0.7 <0.024

<0.021

<1

<10

7.76

< 0.03

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Mass Sample taken (kg) 0.107 Mass of dry sample (kg) 0.090 Site Location Natural Moisture Content (%) 19 Dry Matter Content (%) 84

Case
SDG 180424-31
Lab Sample Number(s) 17431889
Sampled Pate 20 Apr 2018
Stable

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC11

 Depth (m)
 2.20 - 2.50

Landfill	Hazardous Waste in Non- Hazardous Landfill	Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-

Non-reactive

ANC to pH 4 (mol/kg)	-	-	-					
Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.00653	<0.0005	0.0653	<0.005	0.5	2	25	
Barium	0.00204	<0.0002	0.0204	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.00184	<0.001	0.0184	<0.01	0.5	10	70	
Copper	0.000954	<0.0003	0.00954	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00135	<0.0004	0.0135	<0.004	0.4	10	40	
Lead	0.00237	<0.0002	0.0237	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00292	<0.001	0.0292	<0.01	4	50	200	
Chloride	2.8	<2	28	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	42.3	<5	423	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	4.78	<3	47.8	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.83
Conductivity (µS/cm)	18.60
Temperature (°C)	18.50
Volume Leachant (Litres)	0.883

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 Mcerts Certification does not apply to leachates

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

V	٨	ı	Δ	C	Δ	N	JΔ	ı	Υ	TI	C	Δ		R	F	SI		ΙT	S
v		,	_	v	$\overline{}$	A P	1/7	_			$\mathbf{}$	$\boldsymbol{-}$	_		└	v	u	_,	•

Client Reference Mass Sample taken (kg) 0.103 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 14.9 87 **Dry Matter Content (%)**

Inert Waste

Landfill

Case **SDG** 180424-31 Lab Sample Number(s) 17431890 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC10A Depth (m) 1.80 - 2.20

Landfill Waste Acceptance Criteria Limits Stable Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	0.728
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.22
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0449

Total Organic Carbon (%)	<0.2				3	5	6
Loss on Ignition (%)	0.728				-	-	10
Sum of BTEX (mg/kg)	<0.024				6	-	-
Sum of 7 PCBs (mg/kg)	<0.021				1	-	-
Mineral Oil (mg/kg)	<1				500	-	-
PAH Sum of 17 (mg/kg)	<10				100	-	-
pH (pH Units)	8.22				-	>6	-
ANC to pH 6 (mol/kg)	<0.03				-	-	-
ANC to pH 4 (mol/kg)	0.0449				-	-	-
Eluate Analysis	C ₂ Conc ⁿ in 10	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)		for compliance I EN 12457-3 at L	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0149	<0.0005	0.149	<0.005	0.5	2	25
Parium	0.00126	<0.0002	0.0126	<0.000	20	100	200

Eluate Analysis	C2 Conc" in 10	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_		_
Arsenic	0.0149	<0.0005	0.149	<0.005	0.5	2	25
Barium	0.00126	<0.0002	0.0126	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000387	<0.0003	0.00387	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000945	<0.0004	0.00945	<0.004	0.4	10	40
Lead	0.000573	<0.0002	0.00573	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00132	<0.001	0.0132	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	7.1	<2	71	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	46.9	<5	469	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.31	<3	43.1	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.46
Conductivity (µS/cm)	56.60
Temperature (°C)	20.10
Volume Leachant (Litres)	0.887

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 Mcerts Certification does not apply to leachates

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS	

Client Reference

Mass Sample taken (kg) 0.180

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)100Dry Matter Content (%)49.9

Inert Waste

Landfill

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431891

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC10A

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result
	1.00
Total Organic Carbon (%)	1.26
Loss on Ignition (%)	-
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	79.9
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.75
ANC to pH 6 (mol/kg)	0.198
ANC to pH 4 (mol/kg)	2.12

	Landfill	
3	5	6
-	-	-
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

ate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A 2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection				
enic	0.0359	<0.0005	0.359	<0.005	0.5	2	25	
um	0.03	<0.0002	0.3	<0.002	20	100	300	
mium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
omium	0.00526	<0.001	0.0526	<0.01	0.5	10	70	
per	0.00971	<0.0003	0.0971	<0.003	2	50	100	
cury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
/bdenum	0.033	<0.003	0.33	<0.03	0.5	10	30	
el	0.00847	<0.0004	0.0847	<0.004	0.4	10	40	
t	0.00521	<0.0002	0.0521	<0.002	0.5	10	50	
mony	0.0036	<0.001	0.036	<0.01	0.06	0.7	5	
enium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
:	0.0138	<0.001	0.138	<0.01	4	50	200	
oride	676	<10	6760	<100	800	15000	25000	
ride	0.714	<0.5	7.14	<5	10	150	500	
hate (soluble)	4	<2	40	<20	1000	20000	50000	
l Dissolved Solids	1810	<5	18100	<50	4000	60000	100000	
l Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
olved Organic Carbon	25.7	<3	257	<30	500	800	1000	
-								
olved Organic Carbon	25.7	<3	257	<30	500		800	

Leach Test Information

Date Prepared	27-Apr-2018
pH (pH Units)	8.46
Conductivity (µS/cm)	2,710.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.810

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS	3
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Client Reference

Mass Sample taken (kg) 0.107

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site Location Lowestoft
Natural Moisture Content (%) 19
Dry Matter Content (%) 84

Inert Waste

Landfill

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431892

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC10A

 Depth (m)
 2.45 - 2.85

Landfill Waste Acceptance Criteria Limits

Stable

Non-reactive

lazardous Waste

in Non-

457244

Depth (m)	2.45 - 2.85
Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	12.3
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.1
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0553

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A 2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_			
Arsenic	0.00909	<0.0005	0.0909	<0.005	0.5	2	25	
Barium	0.00207	<0.0002	0.0207	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.00201	<0.001	0.0201	<0.01	0.5	10	70	
Copper	0.00271	<0.0003	0.0271	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00304	<0.0004	0.0304	<0.004	0.4	10	40	
Lead	0.00189	<0.0002	0.0189	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00393	<0.001	0.0393	<0.01	4	50	200	
Chloride	5.4	<2	54	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	28	<5	280	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	4.72	<3	47.2	<30	500	800	1000	

Leach Test Information

26-Apr-2018
7.25
32.20
20.00
0.883

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 Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

457244

Landfill Waste Acceptance Criteria Limits

Stable

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS	
Client Reference	

0.123 Mass Sample taken (kg) 0.090 Mass of dry sample (kg) Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 37 73 **Dry Matter Content (%)**

Case **SDG** 180424-31 Lab Sample Number(s) 17431893 **Sampled Date** 19-Apr-2018 **Customer Sample Ref.** VC09B Depth (m) 0.80 - 1.20

Inert Waste Landfill	Non-reactive Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-

Solid Waste Analysis	Result	
Total Organic Carbon (%)	0.327	
Loss on Ignition (%)	13.5	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	8.36	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	6.15	
ANC to pH 6 (mol/kg)	<0.03	
ANC to pH 4 (mol/kg)	0.104	

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A 2 10:1 conc ^r	leached (mg/kg)		mit values for compliance leaching using BS EN 12457-3 at L/S 10 I/	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00691	<0.0005	0.0691	<0.005	0.5	2	25
Barium	0.00534	<0.0002	0.0534	<0.002	20	100	300
Cadmium	0.000341	<0.00008	0.00341	<0.0008	0.04	1	5
Chromium	0.00148	<0.001	0.0148	<0.01	0.5	10	70
Copper	0.00459	<0.0003	0.0459	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.0025	<0.0004	0.025	<0.004	0.4	10	40
Lead	0.0013	<0.0002	0.013	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00957	<0.001	0.0957	<0.01	4	50	200
Chloride	16	<2	160	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	10.4	<2	104	<20	1000	20000	50000
Total Dissolved Solids	98	<5	980	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	5.93	<3	59.3	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.09
Conductivity (µS/cm)	124.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.867

Hazardous

Waste Landfill

10

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

3

6

500 100

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANAI	LYTICAL	RESU	LTS

Client Reference

Mass Sample taken (kg) 0.104

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)16.3Dry Matter Content (%)86

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431894

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC09B

 Depth (m)
 1.26 - 1.66

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

>6

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	6.64
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0853

ANC to pH 6 (mol/kg) ANC to pH 4 (mol/kg)	<0.03 0.0853				-	-	-
Tivo to pri + (monng)	0.0000						
Eluate Analysis	C ₂ Conc ⁿ in 10	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)		imit values for compliance leaching using BS EN 12457-3 at L/S 10 I/	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00342	<0.0005	0.0342	<0.005	0.5	2	25
Barium	0.00451	<0.0002	0.0451	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.0145	<0.001	0.145	<0.01	0.5	10	70
Copper	0.00691	<0.0003	0.0691	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00552	<0.0004	0.0552	<0.004	0.4	10	40
Lead	0.00181	<0.0002	0.0181	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00342	<0.001	0.0342	<0.01	4	50	200
Chloride	5.7	<2	57	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	25	<5	250	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	7.8	<3	78	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.67
Conductivity (µS/cm)	27.20
Temperature (°C)	20.20
Volume Leachant (Litres)	0.885

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 Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.161

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)78.6Dry Matter Content (%)56

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431895

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC05

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Non-reactive

lazardous Waste

in Non-

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	1.56
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	59.7
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.54
ANC to pH 6 (mol/kg)	0.247
ANC to pH 4 (mol/kg)	2.46

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)		Limit values for compliance leaching using BS EN 12457-3 at L/S 10 l/k	
	Result	Limit of Detection	Result	Limit of Detection	_		
Arsenic	0.0213	<0.0005	0.213	<0.005	0.5	2	25
Barium	0.0448	<0.0002	0.448	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00429	<0.0003	0.0429	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0235	<0.003	0.235	<0.03	0.5	10	30
Nickel	0.00447	<0.0004	0.0447	<0.004	0.4	10	40
Lead	0.00261	<0.0002	0.0261	<0.002	0.5	10	50
Antimony	0.00221	<0.001	0.0221	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00803	<0.001	0.0803	<0.01	4	50	200
Chloride	1160	<20	11600	<200	800	15000	25000
Fluoride	0.62	<0.5	6.2	<5	10	150	500
Sulphate (soluble)	18.2	<2	182	<20	1000	20000	50000
Total Dissolved Solids	2950	<20	29500	<200	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	17.7	<3	177	<30	500	800	1000

Leach Test Information

Date Prepared	27-Apr-2018
pH (pH Units)	8.13
Conductivity (µS/cm)	3,740.00
Temperature (°C)	19.70
Volume Leachant (Litres)	0.829

Hazardous

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC	ANA	LYTICAL	RESUL	_TS
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Client Reference

Mass Sample taken (kg) 0.107

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)19Dry Matter Content (%)84

Inert Waste

Landfill

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431896

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC05

 Depth (m)
 1.80 - 2.20

Landfill Waste Acceptance Criteria Limits

Non-reactive

lazardous Waste

in Non-

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	1.5
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.91
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0767

	Landfill	
		_
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		leached (mg/kg)	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_		
Arsenic	0.00221	<0.0005	0.0221	<0.005	0.5	2	25
Barium	0.0163	<0.0002	0.163	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00145	<0.0003	0.0145	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00211	<0.0004	0.0211	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00173	<0.001	0.0173	<0.01	4	50	200
Chloride	113	<2	1130	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	4.1	<2	41	<20	1000	20000	50000
Total Dissolved Solids	395	<5	3950	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.16	<3	31.6	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.65
Conductivity (µS/cm)	518.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.883

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS		REF : BS EN 12457		
Client Reference	Site Location	Lowestoft		

0.107 Mass Sample taken (kg) Mass of dry sample (kg) 0.090 Particle Size <4mm >95%

Lowestoft 19 **Natural Moisture Content (%)** 84 **Dry Matter Content (%)**

Case **Landfill Waste Acceptance Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431898 Stable 19-Apr-2018 Non-reactive

Sampled Date Customer Sample Ref. VC05 Depth (m) 2.53 - 2.93

Result

Solid Waste Analysis

inert waste Landfill	Hazardous Waste in Non- Hazardous Landfill	Waste Landfill
2	_	0
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-

Total Organic Carbon (%)	<0.2				3	5	6
Loss on Ignition (%)	2.24				-	-	10
Sum of BTEX (mg/kg)	<0.024				6	-	-
Sum of 7 PCBs (mg/kg)	<0.021				1	-	-
Mineral Oil (mg/kg)	20.7				500	-	-
PAH Sum of 17 (mg/kg)	<10				100	-	-
pH (pH Units)	6.27				-	>6	-
ANC to pH 6 (mol/kg)	< 0.03				-	-	-
ANC to pH 4 (mol/kg)	0.0849				-	-	-
Eluate Analysis	C ₂ Conc ⁿ in 10	0:1 eluate (mg/l)	A 2 10:1 conc ^r	leached (mg/kg)		for compliance N 12457-3 at L	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0141	<0.0005	0.141	<0.005	0.5	2	25
Barium	0.0169	<0.0002	0.169	<0.002	20	100	300
Cadmium	0.0000959	<0.00008	0.000959	<0.0008	0.04	1	5
Chromium	0.00364	<0.001	0.0364	<0.01	0.5	10	70
	0.00004	0.001	0.0004	₹0.01	0.0		7.0
Copper	0.0137	<0.0003	0.137	<0.003	2	50	100

				using b5 LN 12457-5 at L/5 10 1/kg		
Result	Limit of Detection	Result	Limit of Detection	_		
0.0141	<0.0005	0.141	<0.005	0.5	2	25
0.0169	<0.0002	0.169	<0.002	20	100	300
0.0000959	<0.00008	0.000959	<0.0008	0.04	1	5
0.00364	<0.001	0.0364	<0.01	0.5	10	70
0.0137	<0.0003	0.137	<0.003	2	50	100
0.0000439	<0.00001	0.000439	<0.0001	0.01	0.2	2
<0.003	<0.003	<0.03	<0.03	0.5	10	30
0.00557	<0.0004	0.0557	<0.004	0.4	10	40
0.0185	<0.0002	0.185	<0.002	0.5	10	50
<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
0.00178	<0.001	0.0178	<0.01	0.1	0.5	7
0.109	<0.001	1.09	<0.01	4	50	200
12.5	<2	125	<20	800	15000	25000
<0.5	<0.5	<5	<5	10	150	500
5.8	<2	58	<20	1000	20000	50000
33.2	<5	332	<50	4000	60000	100000
<0.016	<0.016	<0.16	<0.16	1	-	-
<3	<3	<30	<30	500	800	1000
<3	<3	<30	<30	500	800	
	0.0141 0.0169 0.0000959 0.00364 0.0137 0.0000439 <0.003 0.00557 0.0185 <0.001 0.00178 0.109 12.5 <0.5 5.8 33.2 <0.016	0.0141 <0.0005 0.0169 <0.0002	0.0141 <0.0005	0.0141 <0.0005 0.141 <0.005 0.0169 <0.0002	Result Limit of Detection Result Limit of Detection 0.0141 <0.0005	Result Limit of Detection Result Limit of Detection 0.0141 <0.0005

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.64
Conductivity (µS/cm)	39.40
Temperature (°C)	19.40
Volume Leachant (Litres)	0.883

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.145

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)61.3Dry Matter Content (%)62

Case
SDG 180424-31
Lab Sample Number(s) 17431899
Landfill Waste Acceptance
Criteria Limits

 Cab Sample Number(s)
 17431899

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC06

 Depth (m)
 0.80 - 1.20

Stable
Non-reactive
Hazardous Waste
Landfill
In Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	1.68	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	62.4	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.48	
ANC to pH 6 (mol/kg)	0.223	
ANC to pH 4 (mol/kg)	2.13	

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 10	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.0169	<0.0005	0.169	<0.005	0.5	2	25	
Barium	0.0192	<0.0002	0.192	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00289	<0.0003	0.0289	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.0209	<0.003	0.209	<0.03	0.5	10	30	
Nickel	0.00464	<0.0004	0.0464	<0.004	0.4	10	40	
Lead	0.000626	<0.0002	0.00626	<0.002	0.5	10	50	
Antimony	0.00275	<0.001	0.0275	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00148	<0.001	0.0148	<0.01	4	50	200	
Chloride	366	<4	3660	<40	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	1080	<5	10800	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	24.1	<3	241	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.32
Conductivity (µS/cm)	1,420.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.845

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

0.090

Result

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

98.2

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALY IICAL RE	REF : B5 EN 1245//2		
Client Reference		Site Location	Lowestoft
Mass Sample taken (kg)	0.092	Natural Moisture Content (%)	1.83

Dry Matter Content (%)

Mass of dry sample (kg) Particle Size <4mm >95%

Case **Landfill Waste Acceptance Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431900 Stable

Sampled Date 20-Apr-2018 **Customer Sample Ref.** VC06 Depth (m) 2.00 - 2.46

Solid Waste Analysis

Inert Waste Landfill	Hazardous Waste in Non- Hazardous Landfill	Hazardous Waste Landfill
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-

Non-reactive

Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	9.01
ANC to pH 6 (mol/kg)	< 0.03
ANC to pH 4 (mol/kg)	0.0908

Result 0.0112 0.00329 <0.0008 0.00325	Limit of Detection <0.0005 <0.0002 <0.0008	0.112 0.0329	Limit of Detection <0.005 <0.002	0.5	2	25
0.00329 <0.00008	<0.0002	0.0329		0.5	2	25
<0.00008	*****		<0.002			25
	<0.00008	<0.0000	~0.00∠	20	100	300
0.00325		<0.0008	<0.0008	0.04	1	5
	<0.001	0.0325	<0.01	0.5	10	70
0.00438	<0.0003	0.0438	<0.003	2	50	100
<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
0.00388	<0.003	0.0388	<0.03	0.5	10	30
0.00158	<0.0004	0.0158	<0.004	0.4	10	40
0.00156	<0.0002	0.0156	<0.002	0.5	10	50
<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
0.00343	<0.001	0.0343	<0.01	4	50	200
12.7	<2	127	<20	800	15000	25000
<0.5	<0.5	<5	<5	10	150	500
<2	<2	<20	<20	1000	20000	50000
64.1	<5	641	<50	4000	60000	100000
<0.016	<0.016	<0.16	<0.16	1	-	-
6.23	<3	62.3	<30	500	800	1000
	0.00438 <0.00001 0.00388 0.00158 0.00156 <0.001 <0.001 0.00343 12.7 <0.5 <2 64.1 <0.016	0.00438 <0.0003	0.00438 <0.0003	0.00438 <0.0003	0.00438 <0.0003	0.00438 <0.0003

Leach Test Information

	•
Date Prepared	26-Apr-2018
pH (pH Units)	7.87
Conductivity (µS/cm)	62.90
Temperature (°C)	19.90
Volume Leachant (Litres)	0.898

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.105

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)16.3Dry Matter Content (%)86

Case Landfill Waste Acceptance
SDG 180424-31 Criteria Limits
Lab Sample Number(s) 17431901

 Cab Sample Number(s)
 17431901

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC08

 Depth (m)
 1.00 - 1.45

Stable
Non-reactive
Hazardous Waste
Landfill
Hazardous
Waste Landfill
Hazardous

Landfill

>6

6 10

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.56
ANC to pH 6 (mol/kg)	<0.03
ANC to pH 4 (mol/kg)	0.0826

ANC to pH 4 (mol/kg)	0.0826				-	-	-
Eluate Analysis	C ₂ Conc ⁿ in 10	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00362	<0.0005	0.0362	<0.005	0.5	2	25
Barium	0.00512	<0.0002	0.0512	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00477	<0.001	0.0477	<0.01	0.5	10	70
Copper	0.000852	<0.0003	0.00852	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00281	<0.0004	0.0281	<0.004	0.4	10	40
Lead	0.000305	<0.0002	0.00305	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	74.5	<2	745	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	10.3	<2	103	<20	1000	20000	50000
Total Dissolved Solids	224	<5	2240	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	<3	<3	<30	<30	500	800	1000

Leach Test Information

	-
Date Prepared	26-Apr-2018
pH (pH Units)	8.10
Conductivity (µS/cm)	285.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.885

Hazardous

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANAI	YTICAL F	RESULTS
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Client Reference

Mass Sample taken (kg) 0.108

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)20.5Dry Matter Content (%)83

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431902

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC08

 Depth (m)
 0.60 - 1.00

Landfill Waste Acceptance Criteria Limits

Stable

Non-reactive

lazardous Waste

in Non-

457244

zopan (iii)	0.00 1.00
Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	1.16
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.97
ANC to pH 6 (mol/kg)	0.0375
ANC to pH 4 (mol/kg)	0.059
	,

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00823	<0.0005	0.0823	<0.005	0.5	2	25
Barium	0.00549	<0.0002	0.0549	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000726	<0.0003	0.00726	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00425	<0.003	0.0425	<0.03	0.5	10	30
Nickel	0.000502	<0.0004	0.00502	<0.004	0.4	10	40
Lead	0.000444	<0.0002	0.00444	<0.002	0.5	10	50
Antimony	0.00177	<0.001	0.0177	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	56	<2	560	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	4.4	<2	44	<20	1000	20000	50000
Total Dissolved Solids	183	<5	1830	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.03	<3	40.3	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.18
Conductivity (µS/cm)	239.00
Temperature (°C)	20.20
Volume Leachant (Litres)	0.882

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.167

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)85.2Dry Matter Content (%)54

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431903

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC03

 Depth (m)
 0.80 - 1.20

Landfill Waste Acceptance Criteria Limits

Non-reactive

lazardous Waste

in Non-

Hazardous

457244

-1 ()	
Solid Waste Analysis	Result
Total Organic Carbon (%)	1.37
Loss on Ignition (%)	6.91
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	56.1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.62
ANC to pH 6 (mol/kg)	0.227
ANC to pH 4 (mol/kg)	2.02

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.035	<0.0005	0.35	<0.005	0.5	2	25
Barium	0.0286	<0.0002	0.286	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00283	<0.0003	0.0283	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.021	<0.003	0.21	<0.03	0.5	10	30
Nickel	0.00298	<0.0004	0.0298	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	0.00127	<0.001	0.0127	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.0056	<0.001	0.056	<0.01	4	50	200
Chloride	588	<10	5880	<100	800	15000	25000
Fluoride	0.614	<0.5	6.14	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	1610	<5	16100	<50	4000	60000	100000
Total Monohydric Phenols (W)	0.02	<0.016	0.2	<0.16	1	-	-
Dissolved Organic Carbon	22	<3	220	<30	500	800	1000

Leach Test Information

Date Prepared	27-Apr-2018
pH (pH Units)	8.30
Conductivity (µS/cm)	2,290.00
Temperature (°C)	19.40
Volume Leachant (Litres)	0.823

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANAI	YTICAL F	RESULTS
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Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)14.9Dry Matter Content (%)87

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431904

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC03

 Depth (m)
 3.39 - 3.79

Landfill Waste Acceptance
Criteria Limits

Stable
Non-reactive
Hazardous Waste
Hazardous

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	5.78
ANC to pH 6 (mol/kg)	< 0.03
ANC to pH 4 (mol/kg)	0.0866

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	_		
Arsenic	0.00688	<0.0005	0.0688	<0.005	0.5	2	25
Barium	0.112	<0.0002	1.12	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00231	<0.001	0.0231	<0.01	0.5	10	70
Copper	0.00263	<0.0003	0.0263	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	< 0.003	< 0.03	<0.03	0.5	10	30
Nickel	0.00228	<0.0004	0.0228	<0.004	0.4	10	40
Lead	0.00167	<0.0002	0.0167	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00362	<0.001	0.0362	<0.01	0.1	0.5	7
Zinc	0.0148	<0.001	0.148	<0.01	4	50	200
Chloride	7.3	<2	73	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	49.3	<5	493	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	8.36	<3	83.6	<30	500	800	1000
-							

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.42
Conductivity (µS/cm)	44.70
Temperature (°C)	20.10
Volume Leachant (Litres)	0.887

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 Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.117

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)29.9Dry Matter Content (%)77

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431905

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC03

 Depth (m)
 2.80 - 3.20

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	0.414	
Loss on Ignition (%)	9.71	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	7.57	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	6.26	
ANC to pH 6 (mol/kg)	<0.03	
ANC to pH 4 (mol/kg)	0.0825	

		Landfill	
		_	
	3	5	6
	-	-	10
	6	-	-
	1	-	-
	500	-	-
	100	-	-
	-	>6	-
	-	-	-
	-	-	-
/ka)	Limit values	for compliance l	eaching test

Arsenic	Result	Limit of Detection					
Arsenic		t or Detection	Result	Limit of Detection			
	0.00378	<0.0005	0.0378	<0.005	0.5	2	25
Barium	0.0096	<0.0002	0.096	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000823	<0.0003	0.00823	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00775	<0.0004	0.0775	<0.004	0.4	10	40
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00193	<0.001	0.0193	<0.01	4	50	200
Chloride	8.8	<2	88	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	3.7	<2	37	<20	1000	20000	50000
Total Dissolved Solids	128	<5	1280	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.83	<3	38.3	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.31
Conductivity (µS/cm)	162.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.873

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Site Location Lowestoft

Mass Sample taken (kg)0.113Mass of dry sample (kg)0.090Particle Size <4mm</th>>95%

Site LocationLowestoftNatural Moisture Content (%)25Dry Matter Content (%)80

Case Landfill Waste Acceptance SDG 180424-31 Criteria Limits

 Lab Sample Number(s)
 17431906

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC03

 Depth (m)
 1.80 - 2.20

Inert Waste Landfill Stable Non-reactive Hazardous Waste in Non-Hazardous Landfill Waste Landfill

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	1.04	-
Sum of BTEX (mg/kg)	<0.024	6
Sum of 7 PCBs (mg/kg)	<0.021	1
Mineral Oil (mg/kg)	3.87	50
PAH Sum of 17 (mg/kg)	<10	10
pH (pH Units)	8.08	-
ANC to pH 6 (mol/kg)	< 0.03	-
ANC to pH 4 (mol/kg)	0.0787	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A 2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg	
-	Result	Limit of Detection	Result	Limit of Detection			,
Arsenic	0.00436	<0.0005	0.0436	<0.005	0.5	2	25
Barium	0.00322	<0.0002	0.0322	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00135	<0.0003	0.0135	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000709	<0.0004	0.00709	<0.004	0.4	10	40
Lead	0.000574	<0.0002	0.00574	<0.002	0.5	10	50
Antimony	0.00133	<0.001	0.0133	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00113	<0.001	0.0113	<0.01	4	50	200
Chloride	15	<2	150	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	78.5	<5	785	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	3.15	<3	31.5	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.35
Conductivity (µS/cm)	100.00
Temperature (°C)	19.90
Volume Leachant (Litres)	0.878

Hazardous

Waste Landfill

10

25000

500

50000

100000

1000

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

3

6

800

10

1000

4000

500

<20

<5

<20

<50

<0.16

<30

15000

150

20000

60000

800

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)14.9Dry Matter Content (%)87

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431907

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC04

 Depth (m)
 3.60 - 4.00

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

azardous Waste

in Non-

Hazardous Landfill

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	6.18	
ANC to pH 6 (mol/kg)	< 0.03	
ANC to pH 4 (mol/kg)	0.0635	

Mineral Oil (mg/kg)	<1				500	-	-
PAH Sum of 17 (mg/kg)	<10				100	-	-
pH (pH Units)	6.18				-	>6	-
ANC to pH 6 (mol/kg)	<0.03				-	-	-
ANC to pH 4 (mol/kg)	0.0635				-	-	-
Eluate Analysis	C ₂ Conc ⁿ in 10	0:1 eluate (mg/l)	A 2 10:1 conc ⁿ	leached (mg/kg)		for compliance l EN 12457-3 at L	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00381	<0.0005	0.0381	<0.005	0.5	2	25
Barium	0.0033	<0.0002	0.033	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00184	<0.001	0.0184	<0.01	0.5	10	70
Copper	0.00536	<0.0003	0.0536	<0.003	2	50	100
Mercury Dissolved (CVAF)	0.0000123	<0.00001	0.000123	<0.0001	0.01	0.2	2
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.00115	<0.0004	0.0115	<0.004	0.4	10	40
Lead	0.00249	<0.0002	0.0249	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7
Zinc	0.00295	<0.001	0.0295	<0.01	4	50	200

141

<5

<20

668

<0.16

32.3

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.80
Conductivity (µS/cm)	53.60
Temperature (°C)	20.00
Volume Leachant (Litres)	0.887

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 Mcerts Certification does not apply to leachates

14.1

< 0.5

<2

66.8

<0.016

3.23

<2

<0.5

<2

<5

<0.016

<3

22/05/2018 17:18:21

Chloride

Fluoride

Sulphate (soluble)

Total Dissolved Solids

Total Monohydric Phenols (W)

Dissolved Organic Carbon

CERTIFICATE OF ANALYSIS



Particle Size <4mm

SDG: 180424-31 Location: Lowestoft

>95%

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS **REF: BS EN 12457/2**

Client Reference Site Location Lowestoft Mass Sample taken (kg) **Natural Moisture Content (%)** 23.5 0.111 0.090 81 Mass of dry sample (kg) **Dry Matter Content (%)**

Landfill Waste Acceptance Case **Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431908

Sampled Date 19-Apr-2018 **Customer Sample Ref.** VC04 Depth (m) 0.80 - 1.20

Stable Non-reactive **Inert Waste** Hazardous lazardous Waste Landfill Waste Landfill

in Non-

Hazardous

6 10

457244

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Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	1.96
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	5.09
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.69
ANC to pH 6 (mol/kg)	0.0537
ANC to pH 4 (mol/kg)	0.0799

Eluate Analysis	C ₂ Conc ⁿ in 10:1 eluate (mg/l) A ₂ 10:1 conc ⁿ leached (mg/kg) Limit values for compliance leaching using BS EN 12457-3 at L/S 10							
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.00379	<0.0005	0.0379	<0.005	0.5	2	25	
Barium	0.00958	<0.0002	0.0958	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00198	<0.0003	0.0198	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.00881	<0.003	0.0881	<0.03	0.5	10	30	
Nickel	0.00177	<0.0004	0.0177	<0.004	0.4	10	40	
Lead	0.001	<0.0002	0.01	<0.002	0.5	10	50	
Antimony	0.00168	<0.001	0.0168	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200	
Chloride	45.6	<2	456	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	2.3	<2	23	<20	1000	20000	50000	
Total Dissolved Solids	172	<5	1720	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	4.23	<3	42.3	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.08
Conductivity (µS/cm)	218.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.879

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference Mass Sample taken (kg) 0.106 0.090 Mass of dry sample (kg) Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 17.6 85 **Dry Matter Content (%)**

Landfill

Case **SDG** 180424-31 Lab Sample Number(s) 17431909 **Sampled Date** 19-Apr-2018 **Customer Sample Ref.** VC04 Depth (m) 1.80 - 2.20

Landfill Waste Acceptance Criteria Limits			
Inert Waste	Stable Non-reactive Hazardous Waste	Hazardous	

Hazardous Waste

in Non-

Waste Landfill

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.42	
ANC to pH 6 (mol/kg)	<0.03	
ANC to pH 4 (mol/kg)	0.0369	

	Hazardous Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A 2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching tes using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			, , ,	
Arsenic	0.00634	<0.0005	0.0634	<0.005	0.5	2	25	
Barium	0.00406	<0.0002	0.0406	<0.002	20	100	300	
Cadmium	0.000131	<0.00008	0.00131	<0.0008	0.04	1	5	
Chromium	0.0107	<0.001	0.107	<0.01	0.5	10	70	
Copper	0.00943	<0.0003	0.0943	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	<0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00639	<0.0004	0.0639	<0.004	0.4	10	40	
Lead	0.00739	<0.0002	0.0739	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.0192	<0.001	0.192	<0.01	4	50	200	
Chloride	18	<2	180	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	60.7	<5	607	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	7.16	<3	71.6	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.09
Conductivity (µS/cm)	73.60
Temperature (°C)	18.40
Volume Leachant (Litres)	0.884

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANAL	YTICAL	RESU	LTS

Client Reference

Mass Sample taken (kg) 0.103

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)14.9Dry Matter Content (%)87

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431910

 Sampled Date
 19-Apr-2018

 Customer Sample Ref.
 VC04

 Depth (m)
 2.80 - 3.20

_	Waste Acce Priteria Limit	•	
	Stable		

Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	0.854
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	<1
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	7.49
ANC to pH 6 (mol/kg)	0.0388
ANC to pH 4 (mol/kg)	0.0605

		Landfill	
	3	5	6
	-	-	10
	6	-	-
	1	-	-
	500	-	-
	100	-	-
	-	>6	-
	-	-	-
	-	-	-
(ka)	Limit values	for compliance l	eaching test

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)				imit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection	J	•		
Arsenic	0.00843	<0.0005	0.0843	<0.005	0.5	2	25	
Barium	0.00643	<0.0002	0.0643	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00144	<0.0003	0.0144	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	< 0.003	< 0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00581	<0.0004	0.0581	<0.004	0.4	10	40	
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00456	<0.001	0.0456	<0.01	4	50	200	
Chloride	28.1	<2	281	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	2.9	<2	29	<20	1000	20000	50000	
Total Dissolved Solids	163	<5	1630	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	4.52	<3	45.2	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.41
Conductivity (µS/cm)	213.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.887

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 Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS

Client Reference

Mass Sample taken (kg) 0.102

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)13.6Dry Matter Content (%)88

 Case

 SDG
 180424-31

 Lab Sample Number(s)
 17431911

 Sampled Date
 20-Apr-2018

 Customer Sample Ref.
 VC12A

 Depth (m)
 1.80 - 2.20

Landfill Waste Acceptance Criteria Limits

Stable
Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	<0.2
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	6.49
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.77
ANC to pH 6 (mol/kg)	0.0344
ANC to pH 4 (mol/kg)	0.0497

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	10:1 eluate (mg/l) A2 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.00534	<0.0005	0.0534	<0.005	0.5	2	25
Barium	0.00226	<0.0002	0.0226	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.000939	<0.0003	0.00939	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30
Nickel	0.000878	<0.0004	0.00878	<0.004	0.4	10	40
Lead	0.00106	<0.0002	0.0106	<0.002	0.5	10	50
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5
Selenium	0.00119	<0.001	0.0119	<0.01	0.1	0.5	7
Zinc	0.00123	<0.001	0.0123	<0.01	4	50	200
Chloride	13.6	<2	136	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	60.8	<5	608	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	4.95	<3	49.5	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.86
Conductivity (µS/cm)	74.20
Temperature (°C)	20.10
Volume Leachant (Litres)	0.888

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF : BS EN 12457/2

Client Reference

Mass Sample taken (kg) 0.110

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Site LocationLowestoftNatural Moisture Content (%)22Dry Matter Content (%)82

Case
SDG 180424-31

Lab Sample Number(s) 17431912
Sampled Date 20-Apr-2018

Landfill Waste Acceptance Criteria Limits

Stable Number(s) Stable Number(s)

Customer Sample Ref.VC12ADepth (m)2.80 - 3.30

Inert Waste Landfill

Non-reactive Hazardous Waste in Non-Hazardous Landfill

3 5 6 - 10 10 - 10 - 10

457244

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg			
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.00959	<0.0005	0.0959	<0.005	0.5	2	25	
Barium	0.0028	<0.0002	0.028	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70	
Copper	0.00494	<0.0003	0.0494	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.00903	<0.003	0.0903	<0.03	0.5	10	30	
Nickel	0.00217	<0.0004	0.0217	<0.004	0.4	10	40	
Lead	0.0016	<0.0002	0.016	<0.002	0.5	10	50	
Antimony	0.00549	<0.001	0.0549	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00153	<0.001	0.0153	<0.01	4	50	200	
Chloride	13.2	<2	132	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	53.7	<5	537	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	5.85	<3	58.5	<30	500	800	1000	

Leach Test Information

	·=
Date Prepared	26-Apr-2018
pH (pH Units)	8.22
Conductivity (µS/cm)	66.20
Temperature (°C)	20.00
Volume Leachant (Litres)	0.880

Hazardous

Waste Landfill

457244

Non-reactive

lazardous Waste

in Non-

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS **REF: BS EN 12457/2**

Client Reference Site Location Lowestoft Mass Sample taken (kg) **Natural Moisture Content (%)** 72.4 0.155 58 Mass of dry sample (kg) 0.090 **Dry Matter Content (%)**

Particle Size <4mm >95%

Landfill Waste Acceptance Case **Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431913 Stable **Sampled Date** 20-Apr-2018

Customer Sample Ref. VC12A Depth (m) 0.80 - 1.20

Depth (m)	0.80 - 1.20
Solid Waste Analysis	Result
Total Organic Carbon (%)	1.55
Loss on Ignition (%)	<0.7
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	184
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	8.55
ANC to pH 6 (mol/kg)	0.177
ANC to pH 4 (mol/kg)	1.74

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching tes using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection				
Arsenic	0.0438	<0.0005	0.438	<0.005	0.5	2	25	
Barium	0.0161	<0.0002	0.161	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.00503	<0.001	0.0503	<0.01	0.5	10	70	
Copper	0.0017	<0.0003	0.017	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	0.0239	< 0.003	0.239	<0.03	0.5	10	30	
Nickel	0.00496	<0.0004	0.0496	<0.004	0.4	10	40	
Lead	0.000316	<0.0002	0.00316	<0.002	0.5	10	50	
Antimony	0.0029	<0.001	0.029	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00533	<0.001	0.0533	<0.01	4	50	200	
Chloride	379	<4	3790	<40	800	15000	25000	
Fluoride	0.516	<0.5	5.16	<5	10	150	500	
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000	
Total Dissolved Solids	1120	<5	11200	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	20	<3	200	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.61
Conductivity (µS/cm)	1,440.00
Temperature (°C)	18.20
Volume Leachant (Litres)	0.835

Hazardous

Waste Landfill

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

ALYTICAL RESULTS

Client Reference Mass Sample taken (kg) 0.115 Mass of dry sample (kg) 0.090 Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 28.2 78 **Dry Matter Content (%)**

Case **SDG** 180424-31 Lab Sample Number(s) 17431914 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC02 Depth (m) 3.20 - 3.63

Landfill Waste Acceptance Criteria Limits Stable Non-reactive

lazardous Waste

in Non-

Hazardous

457244

Solid Waste Analysis	Result
Total Organic Carbon (%)	0.552
Loss on Ignition (%)	11.5
Sum of BTEX (mg/kg)	<0.024
Sum of 7 PCBs (mg/kg)	<0.021
Mineral Oil (mg/kg)	7.47
PAH Sum of 17 (mg/kg)	<10
pH (pH Units)	6.73
ANC to pH 6 (mol/kg)	< 0.03
ANC to pH 4 (mol/kg)	0.0986

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

				C ₂ Conc ⁿ in 10:1 eluate (mg/l) A ₂ 10:1 conc ⁿ leached (mg/kg)			Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 I/kg		
	Result	Limit of Detection	Result	Limit of Detection					
Arsenic	0.00242	<0.0005	0.0242	<0.005	0.5	2	25		
Barium	0.0133	<0.0002	0.133	<0.002	20	100	300		
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5		
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70		
Copper	0.00318	<0.0003	0.0318	<0.003	2	50	100		
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2		
Molybdenum	< 0.003	<0.003	<0.03	< 0.03	0.5	10	30		
Nickel	0.00884	<0.0004	0.0884	<0.004	0.4	10	40		
Lead	<0.0002	<0.0002	<0.002	<0.002	0.5	10	50		
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5		
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7		
Zinc	0.00809	<0.001	0.0809	<0.01	4	50	200		
Chloride	21.1	<2	211	<20	800	15000	25000		
Fluoride	<0.5	<0.5	<5	<5	10	150	500		
Sulphate (soluble)	4.5	<2	45	<20	1000	20000	50000		
Total Dissolved Solids	184	<5	1840	<50	4000	60000	100000		
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-		
Dissolved Organic Carbon	4.17	<3	41.7	<30	500	800	1000		

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	7.38
Conductivity (µS/cm)	243.00
Temperature (°C)	19.80
Volume Leachant (Litres)	0.875

457244

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS Client Reference Site Location Lowestoft

Mass Sample taken (kg) 0.123

Mass of dry sample (kg) 0.090

Particle Size <4mm >95%

Natural Moisture Content (%) 37

Dry Matter Content (%) 73

Case Landfill Waste Acceptance SDG 180424-31 Criteria Limits

Lab Sample Number(s)17431915Sampled Date20-Apr-2018Customer Sample Ref.VC02Depth (m)2.80 - 3.20

Stable Non-reactive Inert Waste Hazardous Waste Landfill in Non-Hazardous

Solid Waste Analysis Result			
Total Organic Carbon (%)	0.78		
Loss on Ignition (%)	5.27		
Sum of BTEX (mg/kg)	<0.024		
Sum of 7 PCBs (mg/kg)	<0.021		
Mineral Oil (mg/kg)	19.2		
PAH Sum of 17 (mg/kg)	<10		
pH (pH Units)	5.77		
ANC to pH 6 (mol/kg)	<0.03		
ANC to pH 4 (mol/kg)	0.101		

	Landfill	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	C ₂ Conc ⁿ in 10:1 eluate (mg/l)		A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection		•		
Arsenic	0.0136	<0.0005	0.136	<0.005	0.5	2	25	
Barium	0.0104	<0.0002	0.104	<0.002	20	100	300	
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5	
Chromium	0.0052	<0.001	0.052	<0.01	0.5	10	70	
Copper	0.00656	<0.0003	0.0656	<0.003	2	50	100	
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2	
Molybdenum	< 0.003	<0.003	<0.03	<0.03	0.5	10	30	
Nickel	0.00272	<0.0004	0.0272	<0.004	0.4	10	40	
Lead	0.00184	<0.0002	0.0184	<0.002	0.5	10	50	
Antimony	<0.001	<0.001	<0.01	<0.01	0.06	0.7	5	
Selenium	<0.001	<0.001	<0.01	<0.01	0.1	0.5	7	
Zinc	0.00957	<0.001	0.0957	<0.01	4	50	200	
Chloride	21.3	<2	213	<20	800	15000	25000	
Fluoride	<0.5	<0.5	<5	<5	10	150	500	
Sulphate (soluble)	6.5	<2	65	<20	1000	20000	50000	
Total Dissolved Solids	92.2	<5	922	<50	4000	60000	100000	
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-	
Dissolved Organic Carbon	5.16	<3	51.6	<30	500	800	1000	

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.20
Conductivity (µS/cm)	117.00
Temperature (°C)	20.00
Volume Leachant (Litres)	0.867

Hazardous

Waste Landfill

REF: BS EN 12457/2

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

Inert Waste

Landfill

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALY	TICAL	RESU	JLTS
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Client Reference Mass Sample taken (kg) 0.105 0.090 Mass of dry sample (kg) Particle Size <4mm >95% **Site Location** Lowestoft **Natural Moisture Content (%)** 16.3 86 **Dry Matter Content (%)**

Case **SDG** 180424-31 Lab Sample Number(s) 17431916 **Sampled Date** 20-Apr-2018 **Customer Sample Ref.** VC02 Depth (m) 1.80 - 2.20

Landfill Waste Acceptance Criteria Limits Stable Non-reactive

lazardous Waste

in Non-

Hazardous Landfill

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	<0.2	
Loss on Ignition (%)	<0.7	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	<1	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	7.32	
ANC to pH 6 (mol/kg)	<0.03	
ANC to pH 4 (mol/kg)	0.0613	

Total Organic Carbon (%)	<0.2				3	5	6
Loss on Ignition (%)	<0.7				-	-	10
Sum of BTEX (mg/kg)	<0.024				6	-	-
Sum of 7 PCBs (mg/kg)	<0.021				1	-	-
Mineral Oil (mg/kg)	<1				500	-	-
PAH Sum of 17 (mg/kg)	<10				100	-	-
pH (pH Units)	7.32				-	>6	-
ANC to pH 6 (mol/kg)	<0.03				-	-	-
ANC to pH 4 (mol/kg)	0.0613				-	-	-
Eluate Analysis	<u> </u>	D:1 eluate (mg/l)	7.2	leached (mg/kg)		for compliance l N 12457-3 at L	
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0109	<0.0005	0.109	<0.005	0.5	2	25
Barium	0.00347	<0.0002	0.0347	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	_
	10.00000	10.00000	-0.0000	-0.0000			5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70

	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0109	<0.0005	0.109	<0.005	0.5	2	25
Barium	0.00347	<0.0002	0.0347	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	<0.001	<0.001	<0.01	<0.01	0.5	10	70
Copper	0.00225	<0.0003	0.0225	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.0113	<0.003	0.113	<0.03	0.5	10	30
Nickel	0.00104	<0.0004	0.0104	<0.004	0.4	10	40
Lead	0.000231	<0.0002	0.00231	<0.002	0.5	10	50
Antimony	0.00281	<0.001	0.0281	<0.01	0.06	0.7	5
Selenium	0.00127	<0.001	0.0127	<0.01	0.1	0.5	7
Zinc	<0.001	<0.001	<0.01	<0.01	4	50	200
Chloride	23.2	<2	232	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	138	<5	1380	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	6.49	<3	64.9	<30	500	800	1000

Leach Test Information

26-Apr-2018
7.92
157.00
20.00
0.885

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 Mcerts Certification does not apply to leachates

17:17:48 22/05/2018

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft

0.101

Client Reference: 62240712 Order Number: 62240712

Report Number: Superseded Report:

12.4

89

CEN 10:1 SINGLE STAGE LEACHATE TEST

WAC ANALYTICAL RESULTS REF: BS EN 12457/2 Client Reference Site Location Lowestoft

0.090 Mass of dry sample (kg) Particle Size <4mm >95%

Mass Sample taken (kg)

Natural Moisture Content (%) Dry Matter Content (%)

Landfill Waste Acceptance Case **Criteria Limits SDG** 180424-31 Lab Sample Number(s) 17431917

Sampled Date 20-Apr-2018 **Customer Sample Ref.** VC02 Depth (m) 0.80 - 1.20

Stable Non-reactive **Inert Waste** Hazardous lazardous Waste Landfill Waste Landfill

in Non-

Hazardous

457244

Solid Waste Analysis	Result	
Total Organic Carbon (%)	0.235	
Loss on Ignition (%)	6.24	
Sum of BTEX (mg/kg)	<0.024	
Sum of 7 PCBs (mg/kg)	<0.021	
Mineral Oil (mg/kg)	13.2	
PAH Sum of 17 (mg/kg)	<10	
pH (pH Units)	8.5	
ANC to pH 6 (mol/kg)	0.0689	
ANC to pH 4 (mol/kg)	0.157	

	Lanatili	
3	5	6
-	-	10
6	-	-
1	-	-
500	-	-
100	-	-
-	>6	-
-	-	-
-	-	-

Eluate Analysis	C ₂ Conc ⁿ in 1	0:1 eluate (mg/l)	A ₂ 10:1 conc ⁿ leached (mg/kg)		Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg		
	Result	Limit of Detection	Result	Limit of Detection			
Arsenic	0.0128	<0.0005	0.128	<0.005	0.5	2	25
Barium	0.00729	<0.0002	0.0729	<0.002	20	100	300
Cadmium	<0.00008	<0.00008	<0.0008	<0.0008	0.04	1	5
Chromium	0.00126	<0.001	0.0126	<0.01	0.5	10	70
Copper	0.00351	<0.0003	0.0351	<0.003	2	50	100
Mercury Dissolved (CVAF)	<0.00001	<0.00001	<0.0001	<0.0001	0.01	0.2	2
Molybdenum	0.00536	< 0.003	0.0536	<0.03	0.5	10	30
Nickel	0.00179	<0.0004	0.0179	<0.004	0.4	10	40
Lead	0.00183	<0.0002	0.0183	<0.002	0.5	10	50
Antimony	0.00369	<0.001	0.0369	<0.01	0.06	0.7	5
Selenium	0.00128	<0.001	0.0128	<0.01	0.1	0.5	7
Zinc	0.00319	<0.001	0.0319	<0.01	4	50	200
Chloride	119	<2	1190	<20	800	15000	25000
Fluoride	<0.5	<0.5	<5	<5	10	150	500
Sulphate (soluble)	<2	<2	<20	<20	1000	20000	50000
Total Dissolved Solids	374	<5	3740	<50	4000	60000	100000
Total Monohydric Phenols (W)	<0.016	<0.016	<0.16	<0.16	1	-	-
Dissolved Organic Carbon	7.17	<3	71.7	<30	500	800	1000

Leach Test Information

Date Prepared	26-Apr-2018
pH (pH Units)	8.54
Conductivity (µS/cm)	491.00
Temperature (°C)	20.10
Volume Leachant (Litres)	0.889

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Client Reference: 62240712 Report Number: 457244 Location: Lowestoft Order Number: 62240712 Superseded Report:

Notification of NDPs (No determination possible)

Date Received: 24/04/2018 11:01:28

Sample No	Customer Sample Ref.	Depth (m)	Test	Comment
17431891	VC10A	0.80 - 1.20	Loss on Ignition in soils	Unsuitable sample for analysis
17431891	VC10A	0.80 - 1.20	Polybrominated Diphenyl Ethers*	Unsuitable sample for analysis
17431891	VC10A	0.80 - 1.20	Passing Through >63µm sieve	Unsuitable sample for analysis

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Table of Results - Appendix

Method No	Reference	Description
ASB_PREP		
PM001		Preparation of Samples for Metals Analysis
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
TBC		
TM008	BS 1377:Part 1977	Particle size distribution of solid samples
TM018	BS 1377: Part 3 1990	Determination of Loss on Ignition
TM019	Modified: US EPA Method 9056	Determination of Anions in Soils using Ion Chromatography
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material
TM061	Method for the Determination of EPH, Massachusetts Dept. of EP, 1998	Determination of Extractable Petroleum Hydrocarbons by GC-FID (C10-C40)
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) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)
TM090	EPA Method 415.1 & 9060	Determination of Total Organic Carbon/Total Inorganic Carbon in Water and Waste Water
TM104	Method 4500F, AWWA/APHA, 20th Ed., 1999	Determination of Fluoride using the Kone Analyser
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS
TM123	BS 2690: Part 121:1981	The Determination of Total Dissolved Solids in Water
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
TM151	Method 3500D, AWWA/APHA, 20th Ed., 1999	Determination of Hexavalent Chromium using Kone analyser
TM152	Method 3125B, AWWA/APHA, 20th Ed., 1999	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
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES
TM182	Behaviour Tests- Acid and Base Neutralization Capacity Test	Determination of Acid Neutralisation Capacity (ANC) Using Autotitration in Soils
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 IRIS Emission Spectrometer
TM259	by HPLC	Determination of Phenols in Waters and Leachates by HPLC

NA = not applicable.

Chemical testing (unless subcontracted) performed at ALS Life Sciences Ltd Hawarden (Method codes TM) or ALS Life Sciences Ltd Aberdeen (Method codes S).

CERTIFICATE OF ANALYSIS



SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

umber: 457244

Test Completion Dates

	· · · · · · · · · · · · · · · · · · ·									
Lab Sample No(s)	17431914	17431915	17431916	17431917	17431903	17431904	17431905	17431906	17431907	17431908
Customer Sample Ref.	VC02	VC02	VC02	VC02	VC03	VC03	VC03	VC03	VC04	VC04
oustomer oumple itel.										
AGS Ref.										
Depth	3.20 - 3.63	2.80 - 3.20	1.80 - 2.20	0.80 - 1.20	0.80 - 1.20	3.39 - 3.79	2.80 - 3.20	1.80 - 2.20	3.60 - 4.00	0.80 - 1.20
Туре	()	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018		30-Apr-2018	27-Apr-2018	30-Apr-2018	30-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	30-Apr-2018
Anions by ion Chromatography	03-May-2018		02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	30-Apr-2018	30-Apr-2018	02-May-2018	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	02-May-2018	30-Apr-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	27-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	30-Apr-2018		01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	30-Apr-2018	30-Apr-2018
Dissolved Metals by ICP-MS	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018
Dissolved Organic/Inorganic Carbon	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	02-May-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
EPH CWG (Aliphatic) GC (S)	01-May-2018		30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
EPH CWG (Aromatic) GC (S)	01-May-2018		30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Fluoride	04-May-2018	04-May-2018	03-May-2018	04-May-2018	03-May-2018	04-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018
GRO by GC-FID (S)	01-May-2018		01-May-2018	01-May-2018	02-May-2018	03-May-2018	01-May-2018	02-May-2018	02-May-2018	01-May-2018
Hexavalent Chromium (s)	30-Apr-2018		03-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018	02-May-2018	03-May-2018	03-May-2018	02-May-2018
Loss on Ignition in soils	02-May-2018		03-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018
Mercury Dissolved	02-May-2018	02-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	03-May-2018	03-May-2018
Metals in solid samples by OES	01-May-2018		30-Apr-2018	30-Apr-2018	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	01-May-2018		30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018
OC, OP Pesticides and Triazine Herb	02-May-2018		02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018		11-May-2018	11-May-2018	11-May-2018	11-May-2018	22-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	02-May-2018		01-May-2018	01-May-2018	02-May-2018	01-May-2018	02-May-2018	02-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	02-May-2018	02-May-2018	03-May-2018	04-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018
PCBs by GCMS	03-May-2018		30-Apr-2018	30-Apr-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018
pH	27-Apr-2018		28-Apr-2018	28-Apr-2018	27-Apr-2018	28-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Phenols by HPLC (S)	29-Apr-2018		29-Apr-2018	29-Apr-2018	27-Apr-2018	29-Apr-2018	27-Apr-2018	29-Apr-2018	29-Apr-2018	27-Apr-2018
Phenols by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018		17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018
Sample description	25-Apr-2018		24-Apr-2018	24-Apr-2018	25-Apr-2018	24-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018
Semi Volatile Organic Compounds	02-May-2018		02-May-2018	02-May-2018	27-Apr-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Solid Content	26-Apr-2018		25-Apr-2018	25-Apr-2018	27-Apr-2018	25-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Total Organic Carbon	30-Apr-2018		27-Apr-2018	27-Apr-2018	30-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	01-May-2018		30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
TPH CWG GC (S)	01-May-2018		01-May-2018	01-May-2018	02-May-2018	03-May-2018	01-May-2018	02-May-2018	02-May-2018	01-May-2018
VOC MS (S)	01-May-2018		01-May-2018	01-May-2018	03-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

(ALS) Location:	Location: Lowestoft Order Number: 62240712 Superseded Report:									
Lab Sample No(s)	17431909	17431910	17431895	17431896	17431898	17431899	17431900	17431882	17431883	17431901
Customer Sample Ref.	VC04	VC04	VC05	VC05	VC05	VC06	VC06	VC07	VC07	VC08
AGS Ref.										
Depth	1.80 - 2.20	2.80 - 3.20	0.80 - 1.20	1.80 - 2.20	2.53 - 2.93	0.80 - 1.20	2.00 - 2.46	1.60 - 2.00	0.80 - 1.20	1.00 - 1.45
Туре	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018	30-Apr-2018	30-Apr-2018	27-Apr-2018	03-May-2018	02-May-2018	30-Apr-2018	27-Apr-2018	30-Apr-2018	02-May-2018
Anions by ion Chromatography	02-May-2018	02-May-2018	03-May-2018	02-May-2018	04-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	02-May-2018	30-Apr-2018	01-May-2018	02-May-2018	30-Apr-2018	02-May-2018	02-May-2018	02-May-2018	30-Apr-2018	02-May-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	27-Apr-2018	26-Apr-2018						
CEN Readings	27-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018
Dissolved Metals by ICP-MS	03-May-2018	03-May-2018	03-May-2018	04-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	04-May-2018
Dissolved Organic/Inorganic Carbon	02-May-2018	02-May-2018	01-May-2018	01-May-2018	03-May-2018	02-May-2018	01-May-2018	01-May-2018	02-May-2018	02-May-2018
EPH CWG (Aliphatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
EPH CWG (Aromatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
Fluoride	03-May-2018	04-May-2018	04-May-2018	04-May-2018	03-May-2018	03-May-2018	04-May-2018	04-May-2018	03-May-2018	04-May-2018
GRO by GC-FID (S)	01-May-2018	02-May-2018	02-May-2018	02-May-2018	01-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Hexavalent Chromium (s)	03-May-2018	30-Apr-2018	03-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	02-May-2018	03-May-2018	30-Apr-2018
Loss on Ignition in soils	03-May-2018	02-May-2018	02-May-2018	03-May-2018	01-May-2018	04-May-2018	03-May-2018	03-May-2018	02-May-2018	03-May-2018
Mercury Dissolved	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018
Metals in solid samples by OES	30-Apr-2018	30-Apr-2018	02-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	03-May-2018	01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
OC, OP Pesticides and Triazine Herb	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	03-May-2018	02-May-2018	02-May-2018	04-May-2018	02-May-2018	04-May-2018	04-May-2018	04-May-2018	02-May-2018	03-May-2018
PCBs by GCMS	02-May-2018	02-May-2018	03-May-2018	02-May-2018	03-May-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018	03-May-2018
pH	27-Apr-2018	28-Apr-2018	27-Apr-2018	27-Apr-2018	28-Apr-2018	28-Apr-2018	28-Apr-2018	28-Apr-2018	27-Apr-2018	28-Apr-2018
Phenols by HPLC (S)	01-May-2018	29-Apr-2018	29-Apr-2018	01-May-2018	29-Apr-2018	29-Apr-2018	01-May-2018	29-Apr-2018	30-Apr-2018	01-May-2018
Phenols by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018	17-May-2018	17-May-2018	17-May-2018	17-May-2018	22-May-2018	22-May-2018	22-May-2018	22-May-2018	22-May-2018
Sample description	25-Apr-2018	24-Apr-2018	25-Apr-2018	25-Apr-2018	24-Apr-2018	24-Apr-2018	24-Apr-2018	25-Apr-2018	25-Apr-2018	24-Apr-2018
Semi Volatile Organic Compounds	27-Apr-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018	03-May-2018	27-Apr-2018	02-May-2018	02-May-2018
Solid Content	26-Apr-2018	25-Apr-2018	27-Apr-2018	26-Apr-2018	25-Apr-2018	26-Apr-2018	25-Apr-2018	26-Apr-2018	26-Apr-2018	25-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Total Organic Carbon	27-Apr-2018	27-Apr-2018	30-Apr-2018	27-Apr-2018	03-May-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	30-Apr-2018	30-Apr-2018	01-May-2018	30-Apr-2018	03-May-2018	01-May-2018	30-Apr-2018	30-Apr-2018	01-May-2018	01-May-2018
TPH CWG GC (S)	01-May-2018	02-May-2018	02-May-2018	02-May-2018	01-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
VOC MS (S)	01-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018	03-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: 457244 Superseded Report:

Location: Lo	Lowestort Order Number: 02240712 Superseded Report.									
Lab Sample No(s)	17431902	17431886	17431887	17431889	17431890	17431891	17431892	17431911	17431912	17431913
Customer Sample Ref.	VC08	VC11	VC11	VC11	VC10A	VC10A	VC10A	VC12A	VC12A	VC12A
AGS Ref.										
Depth	0.60 - 1.00	1.80 - 2.20	0.80 - 1.20	2.20 - 2.50	1.80 - 2.20	0.80 - 1.20	2.45 - 2.85	1.80 - 2.20	2.80 - 3.30	0.80 - 1.20
-	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)		Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	()	30-Apr-2018	27-Apr-2018	02-May-2018	30-Apr-2018	27-Apr-2018
Anions by ion Chromatography	02-May-2018	03-May-2018	03-May-2018	02-May-2018		03-May-2018	02-May-2018	02-May-2018	02-May-2018	04-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018		05-May-2018	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	30-Apr-2018	01-May-2018	30-Apr-2018	30-Apr-2018		01-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018	01-May-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	27-Apr-2018	01-May-2018		27-Apr-2018	26-Apr-2018	01-May-2018	01-May-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	30-Apr-2018	02-May-2018		28-Apr-2018	30-Apr-2018	02-May-2018	02-May-2018	27-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	01-May-2018
Dissolved Metals by ICP-MS	03-May-2018	03-May-2018	03-May-2018	03-May-2018		03-May-2018	04-May-2018	03-May-2018	03-May-2018	03-May-2018
Dissolved Organic/Inorganic Carbon	30-Apr-2018	30-Apr-2018	03-May-2018	01-May-2018		02-May-2018	30-Apr-2018	02-May-2018	02-May-2018	01-May-2018
EPH CWG (Aliphatic) GC (S)	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
EPH CWG (Aromatic) GC (S)	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	30-Apr-2018
Fluoride	04-May-2018	03-May-2018	03-May-2018	04-May-2018		04-May-2018	03-May-2018	04-May-2018	03-May-2018	04-May-2018
GRO by GC-FID (S)	03-May-2018	02-May-2018	03-May-2018	02-May-2018		02-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018
Hexavalent Chromium (s)	03-May-2018	02-May-2018	30-Apr-2018	30-Apr-2018		30-Apr-2018	30-Apr-2018	02-May-2018	02-May-2018	30-Apr-2018
Loss on Ignition in soils	02-May-2018	02-May-2018	02-May-2018	02-May-2018			02-May-2018	03-May-2018	02-May-2018	02-May-2018
Mercury Dissolved	03-May-2018	03-May-2018	03-May-2018	03-May-2018		03-May-2018	03-May-2018	02-May-2018	02-May-2018	03-May-2018
Metals in solid samples by OES	01-May-2018	30-Apr-2018	02-May-2018	30-Apr-2018		02-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	01-May-2018	01-May-2018	01-May-2018	30-Apr-2018		01-May-2018	30-Apr-2018	01-May-2018	01-May-2018	01-May-2018
OC, OP Pesticides and Triazine Herb	02-May-2018	02-May-2018	02-May-2018	02-May-2018		02-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018	11-May-2018	11-May-2018	11-May-2018		11-May-2018	11-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	02-May-2018	01-May-2018	01-May-2018	01-May-2018	03-May-2018	01-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	02-May-2018	02-May-2018	02-May-2018	02-May-2018			02-May-2018	04-May-2018	02-May-2018	02-May-2018
PCBs by GCMS	03-May-2018	03-May-2018	03-May-2018	03-May-2018		03-May-2018	02-May-2018	02-May-2018	02-May-2018	02-May-2018
рН	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018		27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	28-Apr-2018
Phenols by HPLC (S)	27-Apr-2018	29-Apr-2018	29-Apr-2018	27-Apr-2018		29-Apr-2018	27-Apr-2018	01-May-2018	01-May-2018	29-Apr-2018
Phenols by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	03-May-2018		01-May-2018	01-May-2018	03-May-2018	03-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018	17-May-2018	17-May-2018	17-May-2018			17-May-2018	22-May-2018	17-May-2018	17-May-2018
Sample description	25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018		25-Apr-2018	25-Apr-2018	25-Apr-2018	25-Apr-2018	24-Apr-2018
Semi Volatile Organic Compounds	02-May-2018	27-Apr-2018	02-May-2018	27-Apr-2018		02-May-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	03-May-2018
Solid Content	26-Apr-2018	26-Apr-2018	27-Apr-2018	26-Apr-2018		27-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	01-May-2018	01-May-2018		01-May-2018	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Total Organic Carbon	30-Apr-2018	27-Apr-2018	30-Apr-2018	27-Apr-2018		30-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	01-May-2018	01-May-2018	01-May-2018	01-May-2018		01-May-2018	01-May-2018	01-May-2018	30-Apr-2018	01-May-2018
TPH CWG GC (S)	03-May-2018	02-May-2018	03-May-2018	02-May-2018		02-May-2018	02-May-2018	01-May-2018	01-May-2018	01-May-2018
VOC MS (S)	02-May-2018	01-May-2018	03-May-2018	01-May-2018		03-May-2018	01-May-2018	01-May-2018	01-May-2018	02-May-2018
-										

457244

CERTIFICATE OF ANALYSIS

ALS

SDG: 180424-31 Location: Lowestoft Client Reference: 62240712 Order Number: 62240712 Report Number: Superseded Report:

(ALS) Location.	OWESTOIL	ibei. 022		
Lab Sample No(s	17431884	17431885	17431893	17431894
Customer Sample Ref		VC01B	VC09B	VC09B
Customer Sample Ker				
AGS Ref				
Depth		1.24 - 1.54	0.80 - 1.20	1.26 - 1.66
Туре	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)	Soil/Solid (S)
ANC at pH4 and ANC at pH 6	02-May-2018	30-Apr-2018	27-Apr-2018	27-Apr-2018
Anions by ion Chromatography	02-May-2018	02-May-2018	03-May-2018	02-May-2018
Anions by Kone (w)	05-May-2018	05-May-2018	05-May-2018	05-May-2018
Asbestos ID in Solid Samples	02-May-2018	02-May-2018	30-Apr-2018	30-Apr-2018
CEN 10:1 Leachate (1 Stage)	26-Apr-2018	26-Apr-2018	26-Apr-2018	26-Apr-2018
CEN Readings	30-Apr-2018	30-Apr-2018	28-Apr-2018	30-Apr-2018
Cyanide Comp/Free/Total/Thiocyanate	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Dissolved Metals by ICP-MS	03-May-2018	04-May-2018	03-May-2018	04-May-2018
Dissolved Organic/Inorganic Carbon	01-May-2018	01-May-2018	02-May-2018	02-May-2018
EPH CWG (Aliphatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018
EPH CWG (Aromatic) GC (S)	01-May-2018	30-Apr-2018	01-May-2018	01-May-2018
Fluoride	03-May-2018	03-May-2018	03-May-2018	04-May-2018
GRO by GC-FID (S)	02-May-2018	02-May-2018	02-May-2018	03-May-2018
Hexavalent Chromium (s)	30-Apr-2018	03-May-2018	30-Apr-2018	30-Apr-2018
Loss on Ignition in soils	03-May-2018	03-May-2018	02-May-2018	02-May-2018
Mercury Dissolved	03-May-2018	03-May-2018	03-May-2018	03-May-2018
Metals in solid samples by OES	01-May-2018	30-Apr-2018	30-Apr-2018	30-Apr-2018
Mineral Oil	01-May-2018	30-Apr-2018	01-May-2018	30-Apr-2018
OC, OP Pesticides and Triazine Herb	02-May-2018	02-May-2018	02-May-2018	02-May-2018
Organotins on soils*	11-May-2018	11-May-2018	11-May-2018	11-May-2018
PAH by GCMS	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Passing Through >63µm sieve	03-May-2018	04-May-2018	02-May-2018	02-May-2018
PCBs by GCMS	03-May-2018	03-May-2018	02-May-2018	30-Apr-2018
pH	27-Apr-2018	27-Apr-2018	28-Apr-2018	28-Apr-2018
Phenols by HPLC (S)	27-Apr-2018	02-May-2018	29-Apr-2018	01-May-2018
Phenols by HPLC (W)	01-May-2018	01-May-2018	01-May-2018	01-May-2018
Polybrominated Diphenyl Ethers*	17-May-2018	17-May-2018	17-May-2018	17-May-2018
Sample description	25-Apr-2018	25-Apr-2018	24-Apr-2018	24-Apr-2018
Semi Volatile Organic Compounds	27-Apr-2018	02-May-2018	02-May-2018	02-May-2018
Solid Content	26-Apr-2018	26-Apr-2018	25-Apr-2018	25-Apr-2018
Total Dissolved Solids	01-May-2018	01-May-2018	02-May-2018	01-May-2018
Total Organic Carbon	30-Apr-2018	01-May-2018	27-Apr-2018	27-Apr-2018
Total Sulphate	01-May-2018	01-May-2018	01-May-2018	01-May-2018
TPH CWG GC (S)	02-May-2018	02-May-2018	02-May-2018	03-May-2018
VOC MS (S)	02-May-2018	01-May-2018	02-May-2018	01-May-2018

CERTIFICATE OF ANALYSIS



SDG: Location: 180424-31 Lowestoft

Client Reference: Order Number:

62240712 62240712

Report Number Superseded Report: 457244

Appendix

General

- Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except 21. For the BSEN 12457-3 two batch process to allow the cumulative release to be 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. Samples will be run in duplicate upon request, but an additional charge may be incurred
- 3. 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.
- 4. 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.
- 5. 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
- 6. 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 (2005), 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.
- 7. 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
- 8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
- 9. NDP No determination possible due to insufficient/unsuitable sample.
- 10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately
- 11. Results relate only to the items tested.
- 12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content
- 13. 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%, they are generally wider for volatiles analysis, 50-150%. 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.
- 14. Product analyses Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
- 15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).
- 16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).
- 17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
- 18. 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.
- 19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
- 20. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

- 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.
- 22. 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.
- 23. 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.
- 24. 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.

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	Holding time exceeded before sample received
5	Samples exceeded holding time before presevation was performed
§	Sampled on date not provided
•	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

Asbestos

Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials 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 (2005).

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, based on HSG 248 (2005).

Asbe stos Type	Common Name
Chrysof le	White Asbests
Amosite	Brown Asbestos
Cro di dolite	Blue Asbe stos
Fibrous Act nolite	-
Fib to us Anthop hyll ite	-
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.

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.

Annex E

HUMAN HEALTH RISK ASSESSMENT





METHODOLOGY FOR THE DERIVATION OF GENERIC QUANTITATIVE ASSESSMENT CRITERIA TO EVALUATE RISKS TO HUMAN HEALTH FROM SOIL & GROUNDWATER CONTAMINATION

UK APPROACH

In the UK, the potential risks to human health from contamination in the ground are usually evaluated through a generic quantitative risk assessment (GQRA) approach. This allows generic and conservative exposure assumptions to be readily applied to risk assessments and can be a useful tool for rapidly screening data and to identify those contaminants or scenarios that could benefit from further investigation and/or site-specific detailed quantitative risk assessment (DQRA). Current industry good practice is to use the approach presented in the Environment Agency (EA) publications SR2¹ and SR3². This approach allows the derivation of Generic Assessment Criteria (GACs), primarily for chronic exposure.

In April 2012, the Department of Environment, Food and Rural Affairs (Defra) published updated statutory guidance³ which introduced a four category approach to determining whether land <u>in England and Wales</u> is contaminated or not on the grounds of significant possibility of significant harm (SPOSH). **Figure 1** presents a graphical representation of the categories.

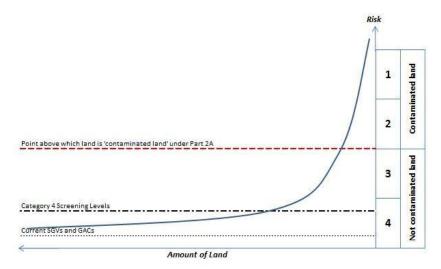


Figure 1: Four Categories for Determining if Land Represent a SPOSH

Cases classified as Category 1 are considered to be SPOSH based on actual evidence or an unacceptably high probability of harm existing. Category 4 cases are those where there is no risk, or a low risk of SPOSH.

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¹ Environment Agency 'Human Health Toxicological Assessment of Contaminants in Soil', Report SC050021/SR2. January 2009.

² Environment Agency 'Updated Technical Background to the CLEA Model,' Report SC050021/SR3. January 2009.

Defra 'Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance'. April 2012.



GACs represent a minimal risk level, well within Category 4. A 2014 publication by Contaminated Land: Applicatons in Real Environments (CL:AIRE),SP1010⁴ and endorsed by Defra⁵ provided an approach to determine Category 4 Screening Levels (C4SLs) which are higher than the GACs whilst being "more pragmatic but still strongly precautionary". It also provided C4SLs for six contaminants of concern. Although the C4SLs were designed to support Part 2A assessments to determine 'contaminated land' they are specifically mentioned, along with reference to the Part 2A statutory guidance, by the Department for Communities and Local Government (DCLG) for use in a planning context⁶.

An updated version the Contaminated Land Exposure Assessment (CLEA) Workbook (v1.071) was released by the EA in September 2015 to take into account the publication of SP1010. The updates comprised: additional toxicity data for the six chemicals for which C4SLs were derived; two new public open space land use scenarios; updated exposure parameters; options to run the model using C4SL exposure assumptions; and increased functionality. There were no changes to algorithms, so it is still possible to replicate the withdrawn SGVs using the input parameters held within v1.071.

It should be noted that the four category approach has not been adopted in Scotland under Part 2A or the planning regime. The Part 2A statutory guidance applicable in Scotland (Paper SE/2006/44 dated May 2006) does not reflect the changes introduced by Defra in April 2012 which allow for the use of C4SLs within Part 2A risk assessments. Additionally, it is considered that the principal of 'minimal risk' should still apply under planning in Scotland, based on current guidance.

WSP APPROACH

Following the withdrawal of the SGVs, and in the absence of an industry-wide, accepted set of GACs it is down to individual practitioners to derive their own soil assessment criteria. WSP has used the approach provided within SR2, SR3, SP1010, CLEA Workbook v1.071and SR4⁷ to produce a set of minimal risk GACs. The chemical-specific data within two key publications were considered during their production: CL:AIRE 2010⁸ and LQM 2015⁹. Both documents provide comprehensive sets of GACs for different contaminants of concern.

The LQM Suitable For Use Levels (S4ULs) have selected exposure parameters someway between those of the SR3 land uses and the C4SL exposure scenarios. This approach was rejected by WSP as not representing minimal risk, however, the LQM S4UL document was critically reviewed and the approach and chemical input parameters were utilised where considered to be appropriate.

An industry-led C4SL Working Group is in the process of deriving a larger set of C4SLs in the near future, for approximately 20 contaminants. This will include a critical review of the chemical input data for all selected substances, and may therefore lead to further amendments to the chemical input data used in the WSP in-house screening values. It is considered likely that the contaminant list will

⁴ CL:AIRE 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination' SP1010, Final Project Report (Revision 2). September 2014.

⁵ Defra 'SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document'. December 2014.

⁶ DCLG Planning Practice Guidance 'Land Affected by Contamination', particularly Paragraphs 001 and 007. Ref IDs: 33-001-20140306 & 33-007-20140612.

⁷ Environment Agency 'CLEA Software (Version 1.05) Handbook (and Software)', Report SC050021/SR4. September 2009.

⁸ CL:AIRE 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. ISBN 978-1-05046-20-1. January 2010.

⁹ Nathanail et al 'The LQM/CIEH S4ULs for Human Health Risk Assessment', Land Quality Press, ISBN 978-0-9931084-0-2. 2015.



crossover with the current CL:AIRE GACs. As such, this document was not critically reviewed by WSP.

WSP's current approach to the assessment of risks to human health is to continue to evaluate minimal risk through the use of in-house derived GACs, and to use the published C4SLs as a secondary tier of assessment until such time as additional C4SLs are published and/or in-house values are derived.

EXPOSURE MODELS

LAND USES

WSP has largely adopted the exposure assumptions of the generic land use scenarios included within SR3, with two additional public open space scenarios included from within SP1010:

- a Residential with homegrown produce consumption;
- a Residential without homegrown produce consumption;
- à Allotments:
- à Commercial;
- à Public open space near residential housing (POS_{resi}); and
- à Public park (POSpark).

Exceptions are described in the following Sections.

SOIL PROPERTIES

SR3 assumes a sandy loam soil with a pH of 7 and a Soil Organic Matter (SOM) content of 6% for its generic land uses, based on the geographical spread of topsoils in the UK. WSP has adopted these default values. In addition, GACs based on an SOM of 1% and 2.5% have been derived, based on common experience of the nature of Made Ground and lack of topsoil on many brownfield sites.

RECEPTOR CHARACTERISTICS AND BEHAVIOURS

SP1010 provides some updated exposure parameters for long-term inhalation rates¹⁰ and the consumption rates for homegrown produce¹¹ compared to those provided in SR3. This data was used to derived WSP's GACs.

The changes in inhalation rates do not apply to the allotment generic land use scenario, as these are based on the breathing rates for short-term exposure of light to moderate intensity activity which were derived from a study that was not updated in USEPA 2011, so the SR3 rates were retained.

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¹⁰ USEPA, National Centre for Environmental Assessment 'Exposure Factors Handbook: 2011 Edition' EPA/600/R-09/052F. September 2011.

¹¹ National Diet and Nutrition Survey 2008/2009 to 2010/2011.



CHEMICAL DATA

PHYSICO-CHEMICAL PARAMETERS

Physico-chemical properties for the contaminants for which GACs have been derived have been obtained following critical review of the following hierarchy of data sources:

- 1. Environment Agency/Defra SGV reports where available.
- 2. Environment Agency 'Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values', Report SC050021/SR7, November 2008.
- 3. Published fate and transport reviews within Nathanail et. al 2015 and CL:AIRE 2010.

Where appropriate, and where sufficient data is available, values were adjusted to reflect a UK soil temperature of 10°C (e.g. K_{aw}).

TOXICOLOGICAL DATA

Toxicological data for the derivation of minimal risk Health Criteria Values (HCV) for each contaminant was selected with due regard to the approach presented in SR2. Where appropriate, the following hierarchy of data sources was used:

- 1. UK toxicity reviews published by authoritative bodies including:
 - < EA;
 - Public Health England (PHE);
 - Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT);
 and
 - Committee on Carcinogenicity of Chemicals in Food, Consumer Products and the Environment (COC).
- Authoritative European sources such as European Food Standards Agency (EFSA)
- 3. International organisations including:
 - World Health Organisation (WHO); and
 - Joint FAO/WHO Expert Committee on Food Additives (JECFA).
- **4.** Authoritative country-specific sources including:
 - United States Environmental Protection Agency (USEPA);
 - US Agency for Toxic Substances and Disease Registry (ATSDR);
 - US Integrated Risk Information System (IRIS); and
 - Netherlands National Institute for Public Health and the Environment (RIVM).

Factors such as the applicability of the data to human health (e.g. epidemiological vs. animal studies), the quality of the data, the level of uncertainty in the results and the age of the data were also taken into account in the final selection. Details for specific substances are available on request.



MEAN DAILY INTAKES

Estimations of background exposure for each threshold substance have been updated. In line with the SR2 approach, the exposure from non-threshold substances in the soil does not take into account exposure from other sources, and as such GACs were derived without consideration of the Mean Daily Intake (MDI) for those substances.

The data published by the EA in its series of TOX reports between 2002 and 2009 was evaluated to determine whether the values were considered to remain valid today. Values from these current UK published sources were not amended unless they were considered to be significantly different so that the GACs remained as comparable as possible with the revoked SGVs.

ORAL MEAN DAILY INTAKES

Oral MDI were generally estimated as the sum of exposure via the ingestion of food and drinking water using the default adult physiological parameters presented in Table 3.3 of SR2.

Data on the exposure of substances from food ingestion was generally obtained from UK Total Diet Studies (TDS) published by the Food Standards Agency (FSA) and its predecessor the Ministry of Agriculture, Fisheries and Food (MAFF) and from studies commissioned by COT. Where no UK-specific data was available, MDI were derived from the European Food Safety Authority (EFSA), Health Canada and US sources. This was a rare occurrence, and in these instances, the data was evaluated to determine its applicability to the UK.

Data on the concentrations of substances in tap water was obtained from a variety of sources. UK data was used where available, with preference given to Drinking Water Inspectorate (DWI) 2014 data from water company tap water testing (LOD, 1st and 99th percentile data is available). Where the substance was not included in tap water testing, other UK sources of information were considered including:

- à DWI data from water company tap water testing from previous years;
- à COT; and
- à FSA.

Where UK data was not available, a number of other data sources were considered, largely WHO International Programme on Chemical Safety (IPCS) Concise International Chemical Assessment Documents (CICADs) and background documents for the development of Guidelines for Drinking Water Quality, using professional judgement on the relevance of the data to the UK. The final decision on the MDI from drinking water was made using professional judgement on the balance of relevance and probability, taking into account the detection limit where not detected, Koc and solubility, reduction in use of the substance, banned substances, tight controls (e.g. on explosives) and with due consideration to the SR2 instruction that "if no data or information in background exposure are available, background exposure should be assumed to be negligible and the MDI set to zero...."

Data from other countries was generally not used because it was considered that the hydrogeology of these countries along with industrial practices were unlikely to be reflective of the UK.



INHALATION MEAN DAILY INTAKES

Inhalation MDIs were based on estimates of average daily exposure by the inhalation pathway and calculated using the default adult physiological parameters presented in Table 3.3 of SR2.

The inhalation MDIs were generally estimated using background exposure data from the UK, derived from Defra's UK-AIR: Air Information Resource¹², which provides ambient air quality data from a number of sites forming a UK-wide monitoring network. The MDIs for heavy metals were based on rolling annual average metal mass concentration data from Defra's UK Heavy Metals Monitoring Network from the period October 2009 to September 2010¹³.

Information for some substances was obtained from UK sources including Environment Agency TOX reports and data from the UK Expert Panel on Air Quality Standards (EPAQS). Where recent UK data was not available, data was sourced from the International Programme on Chemical Safety (IPCS), the World Health Organisation (WHO), the Agency for Toxic Substances and Diseases Registry (ATSDR), Health Canada, and various other peer-reviewed sources summarised by LQM/CIEH¹⁴.

For other substances, where no data or information on background exposure was available, background exposure was assumed to be negligible and the MDI set at 0.5*TDI in accordance with guidance in SR2.

PLANT UPTAKE

Soil to plant concentration factors are available in CLEA v1.071 for arsenic, cadmium, hexavalent chromium, lead, mercury, nickel and selenium. For all remaining inorganic chemicals, concentration factors were obtained using the PRISM model. Substance-specific correction factors have been selected in accordance with the guidance established within SR3. This is consistent to the approach utilised in the derivation of the LQM S4UL values and the EIC/AGS/CL:AIRE GAC.

Where there is a lack of appropriate data to enable the derivation of specific soil to plant concentrations factors for organic chemicals, plant uptake was modelled within CLEA v1.071 using the generic equations recommended within SR3, as follows:

- a Green Vegetables Ryan et al. (1988);
- à Root Vegetables Trapp (2002);
- Tuber Vegetables Trapp et al. (2007); and
- a Tree Fruit Trapp et al. (2003).

There are no suitable models available for modelling uptake for herbaceous fruit or shrub fruit. Exposure is considered negligible.

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¹² Crown 2016 copyright Defra via uk-air.defra.gov.uk, licenced under the Open Government Licence (OGL).

¹³ Defra, 2013 Spreadsheet of historic data for multiple years for the Metals network. Available online at: http://uk-air.defra.gov.uk/data/metals-data. [Accessed 13/03/2016].

¹⁴ LQM/CIEH, 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment.



SOIL SATURATION LIMITS

GACs are not limited to their theoretical soil saturation within CLEA, although where either the aqueous or the vapour-based saturation is exceeded, this is highlighted within the Workbook (compared with the lower of the two values). This affects pathways which depend on partitioning calculations so in reality this only affects the vapour pathways and is relevant to organic substances and other substances, such as elemental mercury, that have a significant volatile component. However, the Workbook highlights saturation for direct contact pathways to indicate to the user where further qualitative consideration of free phase contamination at surface may be required.

Where the lower of the two saturation limits is exceeded and the vapour pathway is the only exposure route being considered, the chronic risks to human health are likely to be negligible. Further evaluation could be undertaken using an alternative model suitable for evaluating non-aqueous phase liquids (NAPLs), such as the Johnson & Ettinger (J&E) approach described in USEPA 2003. However, WSP considers that if NAPLs are suspected, given the known limitations and oversimplifications of J&E, soil vapour monitoring is a more accurate way of assessing potential risks.

Where the lower saturation limit is exceeded for the vapour pathway and a number of exposure routes are being considered, then the contribution from the NAPL via vapour inhalation to the overall exposure can be evaluated using the procedure provided in SR4. WSP would evaluate this as part of a DQRA process or through soil vapour monitoring on-site to determine site-specific soil vapour concentrations.

CHEMICAL SPECIFIC ASSUMPTIONS

CYANIDES

Cyanide has high acute toxicity, and short term exposure is an important consideration when assessing the risks from soils contaminated with cyanide. The primary risk to human receptors from free cyanide in soils is an acute risk.

There is no current UK guidance available for calculating acute risks from free cyanide. Consequently, GAC for acute exposure were derived using the algorithms presented in MADEP 1992¹⁵ and assuming a one-off ingestion of 10g of soil (this conservative value has been taken as an upper bound estimate for a one-off soil ingestion rate amongst children). Receptor body weights have been selected according to the critical receptor for each exposure scenario. The lowest of the chronic and acute GAC for each land use scenario were adopted by WSP. Brinckerhoff.

LEAD

The SGV for lead was withdrawn by the EA in 2009, and in 2011 the EA withdrew their published TOX report in light of new scientific evidence. The C4SL for lead was derived using the latest scientific evidence from a large human dataset. As such, no chemical-specific margin was applied in the derivation of the C4SL for lead. It may be possible for WSP to derive a GAC for lead using the same dataset and applying a chemical-specific margin, but the value is likely to be lower than UK natural background concentrations. Therefore, WSP has adopted the toxicological data used to derive the C4SLs in deriving the GAC for lead until such time as alternative GACs are published by an authoritative body. The relative bioavailability was set at 100% in line with the approach taken for other GACs, whereas the C4SL assumes 60% for soil and 64% for airborne dust. Thus, the WSP GAC are lower than the C4SLs.

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¹⁵ MADEP 'Background Documentation for the Development of an "Available Cyanide" Benchmark Concentration' 1992. http://www.mass.gov/dep/toxics/cn_soil.htm



POLYCYCLIC AROMATIC HYDROCARBONS

WSP's approach to the assessment of polycyclic aromatic hydrocarbons (PAHs) uses the surrogate marker approach. BaP was used as a surrogate marker for all genotoxic PAHs in line with the Health Protection Agency 2010¹⁶ recommendations and SP1010. This assumes that the PAH profile of the data is similar to that of the coal tars used in the Culp *et al* oral carcinogenicity study from which the toxicity data for BaP was produced. In reality, this profile has been shown by HPA to be applicable on the majority of contaminated sites based on assessment of sites across the country.

The alternative is the Toxic Equivalency Factor (TEF) approach which uses a reference compound and assigns TEFs for other compounds based on estimates of potency. Key uncertainties with this approach include the assumption that all compounds have the same toxic mechanism of action within the body and that no compounds with a greater potency than the reference compound are present. It is considered by the HPA that the TEF approach is likely to under predict the true carcinogenicity of PAHs and therefore favours the surrogate marker approach.

For these reasons, WSP considers that the adoption of BaP as a surrogate marker for genotoxic PAHs as opposed to the TEF approach is reasonable, even in cases where the PAH profile may differ from that of the Culp *et al* study. In addition, WSP has derived a GAC for naphthalene, which is commonly a risk driver due to its high volatility, relative to other PAH compounds, as an indicator compound for threshold PAHs.

TRIMETHYLBENZENES

The GAC for trimethylbenzenes can be used for the assessment of any individual isomer (1,2,3-trimethylbenzene, 1,2,4-trimethylbenzene or 1,3,5-trimethylbenzene), or a mixture of the three isomers.

CHEMICAL GROUPS

For a number of chemical groups, the available toxicity data is for combinations of chemicals. Given that the physico-chemical parameters may differ between the chemicals, the GACs for the chemicals within the groups have been calculated and then the lowest GAC selected to represent the entire group. This was the approach taken by the EA for m-, o- and p-xylenes, and has also been adopted by WSP for:

- 2-chlorophenol, 2,4-dichlorophenol, 2,4,6-trichlorophenol and 2,3,4,6-tetrachlorophenol;
- 2-, 3- and 4-methylphenol (total cresols);
- aldrin and dieldrin; and
- $\stackrel{\ }{a}$ α and β -endosulphan.

¹⁶ HPA Contaminated Land Information Sheet 'Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs) 2010

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EXPOSURE TO VAPOURS

INHALATION OF MEASURED VAPOURS

WSP has derived a set of soil vapour GACs (GAC_{sv}) that allow for the assessment of measured site soil vapour concentrations, using J&E, in order to establish potential risks via indoor inhalation of vapours. This methodology enables a more robust assessment of exposure via the inhalation of soil vapours indoors than using CLEA-derived soil GAC, as it is based upon measured soil vapour concentrations beneath the site. It also allows for the assessment of vapours from all source terms (i.e. groundwater, soil or NAPL). Outdoor inhalation was not included. WSP considers that the indoor inhalation pathway is the significantly dominant risk-driver.

The generic land use scenarios within CLEA (residential and commercial) that were used to derive the soil GAC were used to define the receptor and building characteristics for the soil vapour GAC. Only residential and commercial generic land use scenarios include the indoor inhalation of vapours pathway.

The GAC_{sv} were derived for three different soil types; sand, sandy loam and clay, reflecting the importance of this parameter within the J&E model. A depth to contamination of 0.85 m below the base of the building foundation was assumed (i.e. 1 m below ground level). This differs from the depth assumed for the soil GAC (0.5 m bgl), but was selected by WSP as a reasonable worst case scenario.

It is acknowledged that the J&E commonly over-predicts indoor vapour concentrations. In particular, it will significantly over-predict vapour concentrations for suspended floor slabs, which many new builds are constructed with, it does not take into account lateral migration and assumes an infinite source of contamination at steady state conditions. In addition, it is common for soil gas/vapour wells to be installed with at least 1 m of plain riser at the surface and this equates to a total depth of 0.85 m below the building foundation plus a 0.15 m thick foundation, and so is more representative of the depth that samples will be taken from.

The TDSIs and IDs for each substance were converted from $\mu g k g^{-1}_{bw} day^{-1}$ to $\mu g m^{-3}$ using the standard conversions quoted in Table 3.3 of SR2, thereby replacing the need to model C_{air} in the equation:

$$C_{air} = \alpha. C_{vap}. 1,000,000 cm^3 m^{-3}$$

Where:

 C_{air} is the concentration of vapours within the building, mg⁻³ α is the steady state attenuation coefficient between soil and indoor air, dimensionless C_{vap} is the soil vapour concentration, mgcm⁻³

The target concentrations within indoor air for each substance (C_{air}) are a function of receptor inhalation rates and occupancy periods, as defined by the site conceptual exposure model (assuming standard CLEA occupancy periods and receptors).

The attenuation factor was calculated using J&E (Equation 10.4 in SR3) and the resulting C_{vap} is equivalent to the GAC_{sv} for the modelled exposure scenario.

Where the calculated GAC_{sv} for a substance exceeds the vapour saturation limit, no GAC_{sv} has been proposed.



INHALATION OF GROUNDWATER-DERIVED VAPOURS

The CLEA model does not have the capacity to derive GACs to assess vapours derived from dissolved phase contamination. WSP has derived a set of groundwater GACs (GAC_{gw}) to evaluate the potential risks through the indoor inhalation of groundwater-derived vapours by first applying the approach described above for the derivation of the WSP GAC_{sv} to determine the acceptable concentration in soil vapour directly above the water table.

The depth to groundwater was assumed to be 1 m bgl (i.e. 0.85 m below the base of the building foundation). This depth was considered to be more representative of commonly encountered groundwater conditions than the 0.5 m below the base of the building foundation (i.e. 0.65 m bgl) that is used by CLEA for an unsaturated source present in the overlying soil.

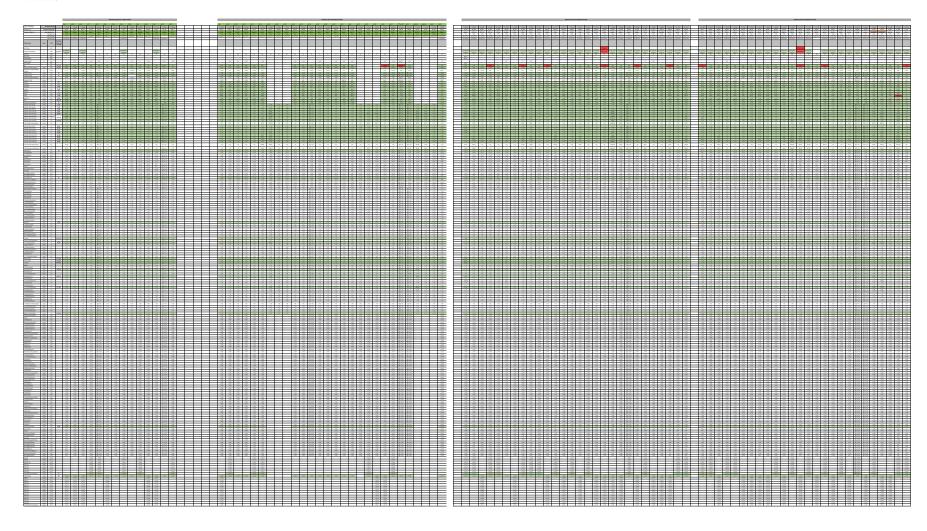
The GAC_{gw} was then back-calculated from the GAC_{sv} using the air-water partition coefficient (K_{aw}) for each substance.

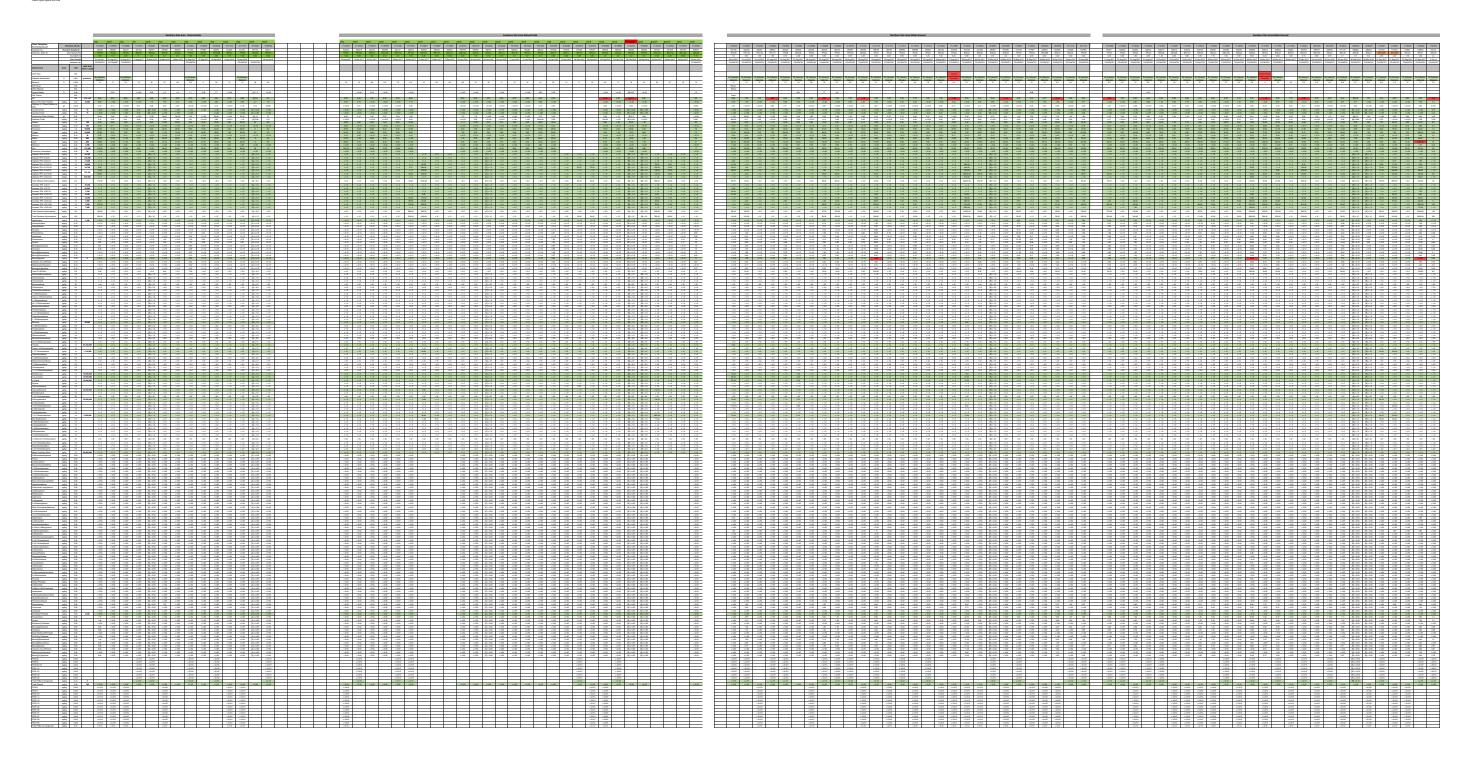
Where the calculated GAC_{gw} for a substance exceeds the solubility limit, no GAC_{gw} has been proposed.

Annex F

CHEMICAL SCREENING







Determinand (laboratory concentrations) Un	Init BHC06 TPC05	TPC103 TPC103[1] TPC101	TROOS TROOSISI	BHC06[1] TPC03	TROM TROMIS TROM	TRC102 RUC02	DUC03841	IBC01 IBC02	libcus libcus	ipons	pucns Tpcns	TPC21 TPC21[1]	TEC22	TPC23 TPC23[II BHC04 BHC05	BHC28 BHC28[1]	pucsersi pu	C101 WSC17	WSC19 WSC14 WSC19A	WSC19A[1] WSC22	WSC23 BHC103	BH102 BH102[1]	DUC27 DUC27141	Puctotta Puctotta l	HC101[3] BHC101[4] WSC19A[2]
Classification Result	Non Hazardous Non Hazardous	Non Hazardous Non Hazardous Non Hazardous	Non Hazardous Non Hazardous	Non Hazardous Non Hazardous	Non Hazardous Non Hazardous Non Hazardous	s Non Hazardous Non Hazardous	Non Hazardous	Non Hazardous Non Hazardous	Non Hazardous Non Haz	rardous Non Hazardous	Non Hazardous Hazardous	Non Hazardous Non Hazard	fous Non Hazardous	Non Hazardous Non Ha	rardous Hazardous Non Hazardous	s Non Hazardous Non Hazardous	s Non Hazardous Non	Hazardous Non Hazardous	Non Hazardous Non Hazardous Non Haza	irdous Non Hazardous Non Hazardo	ous Hazardous Non Hazardous	Non Hazardous Non Hazardous	s Hazardous Non Hazardo	ous Hazardous Hazardous N	Ion Hazardous Non Hazardous Non Hazardous
Depth m	0.5 1.00	0.50 1.50 1.80	0.70 1.10	2.00 0.80	0.55 2.20 0.20	0.50 0.25	3	0.30 0.60	0.90 0.90	1.20	1.30 0.30	0.25 1.45	0.60	1.00 2.60	0.90 0.6	1.40 2.60	3.60 0.6	0 1.60	0.30 1.70 1.50	2.10 0.50	0.50 4.5	0.30 1.50	0.60 1.60	2.10 3.00 4	.00 10.00 0.80
	notice 11	4 12 10 1	/ 13 1/	/ 18 2.8	16 / 3.	.7 2.6 5	9 13	2.1 1.	8 4.3	4.4 1.5	9 9.4 3.	4 9.2	19 2.8	15	8.4 2.1 7.	b 2/ 1	10	16 8.8	9.7 7.7	3.7 5.9	5 7.8 7.	9 11	6 15	24 5.3 15	25 20 4.8
arsenic (arsenic trioxide) mg	19/kg 10 9	2 8.2 <1.32 <1.32	14 8.6	6 8.9 4.6	17 7.6 9.	.3 4.8 8.1	1 <1.32	12 2	.1 4.8	7 <1.32	<1.32	5 11	16 2.2	20	6.5 3.3 9.	.1 24 1.	9 3.9	7.1 12	9.9 12	29 1.6	8 12 8.	5 32 1	10 25	25 16	<1.32
beryflium (beryflium oxide) mg	ng/kg																								
boron (diboron trioxide; boric oxide) mg cadmium (cadmium oxide) mg	ng/kg 0.43 0	1.2 <1.288 <1.288	0.66 < 1.288	0.43 <1.288	<1.288 <1.288 <1.288	0.65 4.2	2 <1.288	1.5 <1.288	0.44	0.84 <1.288	<1.288 0.4	4 1.288	0.53 <1.288	0.81	0.68 <1.288 0.6	1.2 0.8	85 0.74	0.76 <1.288	0.46 <1.288 <1.288	<1.288	1.2 0.58 <1.288	<1.288 1	1.1 0.81	1.9 <1.288	0.4
chromium in chromium(III) compounds (chromium(III) c mg	no/kg 9 1	8.1 4.1	3 10 1:	1 6.2 4.2	21 12 7.	.2 4 15	5 4.3	62 4.	.7 6.6	6.9 3.5	5 24 2	5 13	28 4.5	21	9.2 8.5 7.	8 32 4	8 14	15 15	12 16	27 8.2	8.6 24 6.	4 18 1	12 21	24 21	3.2
chromium in chromium(VI) compounds (chromium(VI) emp	ng/kg <0.962 <0.962	<0.962 <0.962 <0.962	<0.962 <0.962	<0.962 <0.962	<0.962 <0.962 <0.962	<0.962 <0.962	<0.962	<0.962 <0.962	<0.962 <0.962	<0.962	k0.962 k0.962	<0.962 <0.962	<0.962	<0.962 <0.962	<0.962 <0.962	<0.962 <0.962	<0.962 <0.5	962 <0.962	<0.962 <0.962 <0.962	<0.962 <0.962	<0.962 <0.962	<0.962 <0.962	<0.962 <0.962	<0.962	<0.962
copper (dicopper oxide; copper (I) oxide) mg	ng/kg 57 5	5 100 3.7 1.	6 480 8.3	3 5.2 1.5	66 7.8 2	21 1.8 27	7 3.5	35 6.	.6 3.3	11 4.8	8 0.99 1	4 11	64 3.2	140	6 7.3 4	18 18	1 5.3	9.9 10	47 20	30 2.2	5.1 36	5 77	6 57	14 9.1	5.4
lead (lead compounds with the exception of those specing	ng/kg 85 S	8 540 15 1	1 110 12	2 54 14	110 11 7	70 5.2 23	7 4.8	170 2	8 9.8	44 7.8	8 3.7 4	5 53	88 10	270	8.4 40 11	10 48 6	.4 5.7	28 12	160 150	110 8.4	18 120 3.	5 330 4	47 250	44 19	54
manganese (manganese sulphate) mg mercury (mercury dichloride) mg	ng/kg 0.36 0.2	0.34 < 0.135 < 0.135	0.34 < 0.135	<0.135 <0.135	0.3 0.1 0.2	29 < 0.135 < 0.135	<0.135	0.11 < 0.135	<0.135 <0.135	<0.135	<0.135 0.1	1 0.17	0.15 < 0.135	0.16 < 0.135	<0.135 0.2	1 0.52 0.3	1 0.25	0.34 < 0.135	0.13 < 0.135	0.1 < 0.135 < 0.135	0.19 < 0.135	0.34 0.1	14 0.4 0	0.16 < 0.135	<0.135
molybdenum (molybdenum(VI) oxide) mg	naka																								
nickel (nickel chromate) mg	ng/kg 17 1	6 10 3 1.	7 17 13	3 6.4 3.3	24 11 9.	.3 2.9 14	4 2.7	18 4.	.3 4.8	6.9 2.8	8 25 1	4 11	47 3.6	44	12 7 1	2 30 2	.7 11	11 16	24 17	37 6.2	7.2 27 5.	2 32 1	11 22	24 16	2.1
selenium (selenium compounds with the exception of cing	ng kg k0.511 k0.511	<0.511 <0.511 <0.511 7	<0.511 <0.511 220 221	0.51 0.29	0.57 0.28 0.6	58 0.48 <0.511	<0.511	k0.511 k0.511	<0.511 <0.511	20.511	<0.511 <0.511 7 75 /	<0.511 <0.511	150 55	<0.511 <0.511	K0.511 K0.511	<0.511 <0.511	k0.511 k0.1	511 (40.511	<0.511 <0.511 <0.511	120 12	21 71 4	0.54 ×0.511	<0.511 C	0.31 x0.511	K0.511
zinc (zinc sulphate) mg TPH (C6 to C40) petroleum group mg	na/kg 140 28	130 <10 <10	<10 <10	<10 <10	85 <10 19	0 <10	<10	300 <10	<10	15 <10	<10 <10	320 <10	<10	190 <10	33000 16	0 < 10 < 10	<10 <10	<10	110 16<10	<10	18 3800 <10	260 33	30 230 <10	1200 1400	10 <10 <10
confirm TPH has NOT arisen from diesel or petrol n/a tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropa mg	/a																								
tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropa mg	ng/kg																								
benzane memy enter; MISE; 2-memoxy-2-memypropam; benzane ms folkene ms ethylbenzane ms xylene cyanides (salts of hydrogen cyanide with the exception ms	19×9 ktt.001 k0.001	KU.UUT KUUT K	KU.UU1 KU.UU1	<0.001 <0.001	<0.001 <0.001 <0.001 <0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	20.001 20.001	<001 <001 <001 <001 <001 <001 <001 <001 <001 <001 <042 <042	<0.001	<0.001 <0.001	0.0094 < 0.001	k0.001 k0.001	<0.001 <0.0	000 k0.001	 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001	0.001 <0.001 <0.001
ethylbenzene mo	ng/kg 0.016 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	0.0019 < 0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<0.001	<0.001	<0.001 <0.001	0.0076 < 0.001	<0.001 <0.001	<0.001 <0.0	001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	0.001 <0.001 <0.001
xylene mg	ng/kg 0.628 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	0.0066 < 0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.942	<0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	0.042 < 0.001	<0.001 <0.001	<0.001 <0.0	001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	0.001 <0.001 <0.001
cyanides (salts of hydrogen cyanide with the exception mg	g/kg <0.942 <0.942	<0.942 <0.942 <0.942	<0.942 <0.942	<0.942 <0.942	<0.942 <0.942 <0.942	<0.942 <0.942	8.4	0.5 k0.942	<0.942 <0.942	<0.942	5.5 < 0.942	<0.942 <0.942	<0.942	<0.942 <0.942	<0.942 3.	4 k0.942 k0.942	<0.942 <0.9	942 <0.942	<0.942 <0.942 <0.942	<0.942 <0.942	<0.942 <0.942	<0.942 <0.942	0.9 < 0.942	<0.942	<0.942
pH pH naphthalene mg	H 6.9 6	7.4 7.2 9.	9 8.2 8.5	.5 8.5 8.3	9.8 8.8 7.	.8 7.5 11	1 8.6	7.8 7.	5 7.6 c01 c04	7.7 7.6	7.9 11.	9.6	8.2 7	0.44	8.2 9.	.1 8.3	8.2	8.9 7.2	8.2 8.6	8.3 8	9.1 8.7 8.	11.2 8	s.b) 9.5	/./ 10.3	0.1
acenaphthylene mg	noko <0.1 <0.1	e0.1 e0.1 e0.1	<0.1 <0.1	<0.1 <0.1	0.1 <0.1	<0.1 <0.1	<0.1	1.9 < 0.1	<0.1 <0.1	<0.1	40.1	0.37 < 0.1	<0.1	0.79 < 0.1	<0.1 <0.1	40.1	<0.1	1 40.1	<0.1 0.16 ±0.1	<0.1 <0.1	2.4 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.1 <0.1 <0.1
acenaphthene mg		k0.1 k0.1 k0.1	<0.1 <0.1	<0.1 <0.1	0.13 < 0.1 < 0.1	<0.1 <0.1	<0.1	5.7 <0.1	<0.1 <0.1	<0.1	<0.1 <0.1	0.23 < 0.1	<0.1	0.19 < 0.1	<0.1 <0.1	k0.1 k0.1	<0.1 <0.1	1 <0.1	<0.1 <0.1 <0.1	<0.1 <0.1	1.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.1 <0.1 <0.1
fluorene mg		<0.1 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.27 <0.1 <0.1	<0.1 <0.1	<0.1	5.8 ×0.1	<0.1 <0.1	<0.1	40.1	0.4 < 0.1	<0.1	<0.1 <0.1	<0.1 <0.1	d0.1 d0.1	<0.1 <0.	1 40.1	<0.1 <0.1 <0.1	<0.1 <0.1	1.3 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1	0.1 <0.1
phenanthrene mg	okg <0.1 <0.1	1 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	1.5 (0.1 0.7	72 <0.1 0.83	2 <0.1	30 0.1	5 <0.1	0.62 40.1	c0.1 c0.1	1.8 40.1	<0.1	0.75 < 0.1	<0.1 1.	1 <0.1	40.1 40.1	1 40.1	0.81 0.52 < 0.1	<0.1 <0.1	11 <0.1	3.6 <0.1	1.6 (0.1	<0.1 <0.1	0.1 <0.1 <0.1
anthracene mg fluoranthene mg	10 kg = 0.1 0.7	3 2.3 <0.1 <0.1	0.91 <0.1	<0.1 <0.1	2.1 < 0.1 2.	.1 0.16 0.66	6 <0.1	30 0.3	8 < 0.1	1.2 < 0.1	40.1 0.3	4 4.7 < 0.1	<0.1	1.6 < 0.1	0.12 1.	4 < 0.1	40.1	0.43 (0.1	2.1 1.1	0.21 <0.1	0.36 42 40.1	4 <0.1	4.2	0.23 < 0.1 < 0.1	0.1 <0.1 <0.1
pyrene mg	0.8 g/kg <0.1	2 <0.1 <0.1	0.98 < 0.1	<0.1 <0.1	2.3 <0.1 2.	.8 0.2 0.79	9 <0.1	29 0.3	3 <0.1	1.2 <0.1	<0.1 0.1	8 4.4 <0.1	<0.1	1.6 < 0.1	0.1 1.	5 < 0.1 < 0.1	<0.1	0.44 < 0.1	1.9 0.93	0.23 <0.1	0.3 45 < 0.1	3.3 <0.1	4 (0.24 <0.1 <0.1	0.1 <0.1 <0.1
benzo[a]anthracene mg	ng/kg <0.1 0.6	2.7 <0.1 <0.1	1 <0.1	<0.1 <0.1	1.2 <0.1 1.	.2 <0.1 <0.1	<0.1	12 <0.1	<0.1	0.96 < 0.1	<0.1 <0.1	2.8 <0.1	<0.1	1.1 < 0.1	<0.1 1.	3 40.1 40.1	<0.1 do:	1 40.1	1.3 0.49 <0.1	<0.1 <0.1	20 <0.1	1 <0.1	2.6 <0.1	<0.1 <0.1	0.1 <0.1 <0.1
chrysene mg	ng/kg <0.1 0	3 1.3 <0.1 <0.1	0.49 < 0.1	<0.1 <0.1	1.1 (0.1 1.	.6 <0.1 <0.1	<0.1	16 k0.1	<0.1	0.55 40.1	c0.1 c0.1	2.8 <0.1	<0.1	0.72 < 0.1	<0.1 0.6	6 40.1	40.1 40.1	1 40.1	1.1 0.18 <0.1	<0.1 <0.1	22 <0.1	1.7 <0.1	3.3 (0.1	<0.1 <0.1	0.1 <0.1 <0.1
benzo[b]fluoranthene mg benzo[k]fluoranthene mg	10 kg e0.1 e0.1	0.8 < 0.1 < 0.1	0.78 < 0.1	<0.1 <0.1	0.52 <0.1 0.6	.6 eU.1 eU.1	<0.1	6.4 (0.1	<0.1	0.55 (0.1	40.1 40.1	1.5 <0.1	<0.1	1.5 < 0.1	<0.1 0.7 <0.1 0.2	9 40.1 40.1	40.1 40.1	1 40.1	0.53 e0.1 e0.1	<0.1 <0.1	12 <0.1	1.7 kU.1 0.54 k0.1	1.7 <0.1	<0.1 <0.1 <	0.1 <0.1 <0.1
benzo[a]pyrene; benzo[def]chrysene mg	nokg e0.1 e0.1	1 <0.1 <0.1	0.91 <0.1	<0.1 <0.1	1 <0.1	1 <0.1 <0.1	<0.1	12 < 0.1	<0.1	0.31 < 0.1	<0.1 <0.1	3.4 <0.1	<0.1	1.1 < 0.1	<0.1 0.3	7 40.1 40.1	d0.1 d0.	1 <0.1	1.1 0.27 <0.1	<0.1 <0.1	26 <0.1	1.2 <0.1	2.7 <0.1	<0.1 <0.1	0.1 <0.1 <0.1
indeno[123-od]pyrene mg	ng kg <0.1 <0.1	0.72 <0.1 <0.1	<0.1	<0.1 <0.1	0.4 <0.1 0.4	48 <0.1 <0.1	<0.1	7.8 < 0.1	<0.1 <0.1	<0.1	<0.1 <0.1	2.2 <0.1	<0.1	0.9 < 0.1	<0.1 0.2	5 <0.1 <0.1	<0.1 <0.1	1 <0.1	0.7 < 0.1 < 0.1	<0.1 <0.1	18 <0.1	0.72 <0.1	1.9 <0.1	<0.1 <0.1	0.1 <0.1 <0.1
dibenz(a,h)anthracene mg		0.17 <0.1 <0.1	<0.1 <0.1	<0.1 <0.1	<0.1 <0.1 <0.1	<0.1 <0.1	<0.1	5.1 k0.1	<0.1 <0.1	40.1	c0.1 c0.1	0.7 < 0.1	<0.1	0.19 < 0.1	<0.1 <0.1	<0.1 <0.1	40.1 40.1	1 40.1	<0.1 <0.1 <0.1	<0.1 <0.1	5.1 <0.1	<0.1	0.55 (0.1	<0.1 <0.1	0.1 <0.1 <0.1
benzo[ghi]perylene mg	19kg <0.3 <0.3	<0.3 <0.3 <0.3	<0.1 <0.3 <0.3	<0.3 <0.3	<0.3 <0.3 <0.3	<0.3 <0.3	<0.3	<0.3 <0.3	<0.3 <0.3	<0.3	40.3 40.3	k0.3 k0.3	<0.3	<0.3 <0.3	<0.3 <0.3	<0.3 <0.3	40.3 40.3	3 40.3	<0.3 <0.3 <0.3	<0.3 <0.3	<0.3 <0.3	<0.3 <0.3	<0.3 <0.3	 40.7 40.8 40.003 40.003 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 	<0.1
1,1-dichloroethane and 1,2-dichloroethane (combined) mg	g/kg <0.003 <0.003	-0.003 -0.003 -0.003 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001	<0.003 <0.003	<0.003 <0.003	<0.003 <0.003 <0.003	<0.003 <0.003	<0.003	<0.003 <0.003	<0.003 <0.003	<0.003	<0.003 <0.003	<0.003 <0.003	<0.003	<0.003 <0.003	<0.003 <0.003	<0.003 <0.003	<0.003	003 <0.003	<0.003 <0.003 <0.003	<0.003 <0.003	<0.003 <0.003	<0.03 <0.003 <0.003	<0.003 <0.003	<0.003 <0.003 <	0.003 <0.003 <0.003
retractionoethytene ing	19kg <0.001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<pre><0.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001</pre>	<0.001	<0.001 <0.001	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.1	001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.001 <0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	0.001 <0.001 <0.001
carbon tetrachloride; tetrachloromethane mg trichloroethylene; trichloroethene mg	919 k0.001 k0.001	-0.001 -0.001 -0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.001 -0.001 -0.001	<0.001 <0.001	<0.001	<0.001 <0.001 -0.004	<0.001 <0.001	<0.001 -0.001	40.001 40.001	<0.001 <0.001	<0.001 ·	<0.001 <0.001	<0.001 <0.001	-0.001 -0.001	-0.001 -0.0	001 40.001	-0.001 -0.001 -0.001	<0.001 ×0.001	<0.001 <0.001 -0.001 -0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <	0.001 <0.001 <0.001
vinyl chloride: chloroethylene mo	naka <0.001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001	<0.001 <0.001	<0.001	<0.001 <0.001		<0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.0	001 <0.001	<0.001 <0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	0.001 <0.001 <0.001
DDT (ISO); clofenotane (INN); dicophane; 1,1,1-trichloro mg chlordane (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-te mg	ng/kg																								
chlordane (ISO); 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-te mg	9kg																								
hexachlorocyclohexanes, including lindane mg			-																			+			
dieldrin (ISO) mg endrin (ISO); 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4 mg	na/kg																								
heptachlor (ISO); 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-te mg hexachlorobenzene	ng/kg																								
	ng/kg <0.5 <0.5	k0.5 k0.5 k0.5	<0.5	<0.5	<0.5 <0.5 <0.5	<0.5	<0.5	k0.5 k0.5	<0.5	<0.5	k0.5 k0.5	<0.5	<0.5	<0.5 <0.5	<0.5 <0.5	d0.5 d0.5	<0.5	5 <0.5	<0.5 <0.5 <0.5	<0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5	<0.5
chlordecone (ISO); perchloropentacyclo(5,3,0,02,6,03,9 mg aldrin (ISO) mg	ng/ng volen			 			1					 	-				+					 			
	ng/kg																								
polychlorobjehenyls; PCB mg dodecachloropentacyclo[5.2.1.02,6.03,9.05,8]decane; mg	ng kg <0.1 <0.12	<0.1 <0.12 <0.1	<0.12	<0.12	<0.1 <0.12 <0.1	<0.1 <0.12	<0.1	k0.1 k0.12	<0.1 <0.12	<0.1	<0.12 <0.12	<0.1	<0.1	<0.12 <0.1	<0.12 <0.12	d0.1 d0.12	40.1 40.1	12	<0.12 <0.12 <0.1	<0.12	<0.1 <0.1	<0.12 <0.1	<0.1 <0.12	<0.1	<0.12
dodecachloropentacyclo[5.2.1.02,6.03,9.05,8]decane; r mg camphechlor (ISO); toxaphene mg	ng kg	 	 	+	 	+	+		+		 	 				+	+		 		+	 	+		
camphechlor (ISO); toxaphene mg hexabromobiphenyl mg			 	+	 	 	1		 		+	 	-			1	+ + +		 			 	+ + +		
hexabromobiphenyl mg 2,3,7,8-TeCDD ng 1,2,3,7,8-PeCDD ng 1,2,3,4,7,8-HxCDD ng	g/kg																								
1,2,3,7,8-PeCDD ng	gkg gkg gkg						1																		
	gwg	 	 	+	 	+	+		+		 	 				+	+		 		+	 	+		
1,2,3,0,7,0*PMCDD 11g	g/kg g/kg		 	+	 	 	1		 		+	 	-			1	+ + +		 			 	+ + +		
	g/kg																								
	9%9																								
2,3,7,8-TeCDF ing	9/kg	+	 	+ + +			1	<u> </u>	-		 	 				 	1						+	+	
1,2,5,7,6 PRODE 00	g/kg g/kg			+ + +			1					 	-				+					 			
2,3,4,7,8-P8CDF ng 1,2,3,4,7,8-HxCDF ng	9%g																								
2,3,4,7,8-PsCDF	g/kg g/kg																								
1,2,3,7,8,9-HxCDF ng 2,3,4,6,7,8-HxCDF ng	9kg			1								 					1					———			
1234678-HoCDF 00	gay olio			+ + +			1					 	-				+					 			
1,2,3,4,6,7,8-HpCDF ng 1,2,3,4,7,8,9-HpCDF ng	gkg gkg						1										1 -								
OCDF ng	g/kg																								

Determinand (laboratory concentrations)				
 | | | |
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	Unit WSC19A	WSC21	WSC21[1] BHC14 BHC14[1]
 | BHC15[1] BHC22 | BHC17 | BHC17[1] BHC18 BHC19 | BHC19[1] BHC2
 | ZU BHC | 24 BHC26 BHC26[1] | BHC23 | BHC23[1] BHC32 BHC32[1]
 | | BHC05 TPC02 | IPC07 | IPC08 BH13CP BH13CP[1] BHC30
 | BHC31 BHC32[2] BHC102 | BHC102[1] | BHC102[2] BHC06B BHC06B[1] | BHC10 | BHC01[1] TPC09 | 1PC09[1]
 | BHC09 BHC10[1] WSC23 WSC16 |
| Classification Result | Non Hazardor | is Non Hazardous | Non Hazardous Non Hazardous Non Hazardo
1.75 3.10 5.10 | us Non Hazardou
 | Non Hazardous Non Hazardou | ous INON Hazardous | Non Hazardous Non Hazardous Non Hazardou | S Non Hazardous Non H
 | Hazardous Non H | Hazardous Non Hazardous Non Hazardou | us Non Hazardous | Non Hazardous Non Hazardous Non Hazard
 | us Non Hazardous | Non Hazardous Non Hazardous Non Hazardous | Non Hazardous | Non Hazardous Non Hazardous Non Hazardous Non Hazar
 | dous Hazardous Non Hazardous Non Hazardo
0.40 0.75 2.50 | us Non Hazardous
4.50 | Non Hazardous Non Hazardous Non Hazardous
10.50 0.45 2.60 | Non Hazardous | Non Hazardous Non Hazardous Non Hazardou |
 | Non Hazardous Non Hazardous Non Hazardous Non Hazardous |
| Depth
moisture (no correction) | m 2.40 | 0.75 | 1.75 3.10 5.10 | 3.7
 | 6.7 2.0 | 2.50 | 5.30 0.1 3.00 | 4.00 4.7
 | 2.5 | 0.7 2.3 | 0.8 | 3.0 0.6 4.5
 | 2.6 | 3.7 2.5 1.00 | 1.50 | 2.00 2.00 3.00 1.15
 | 0.40 0.75 2.50 | 4.50 | 10.50 0.45 2.60 | 0.20 | 0.30 1.70 0.20 | 1.50
 | 5.50 6.50 1.10 0.4 |
| | % . | 4.6 3.8 | 8 12 16 | 11
 | 12 12 | 16 21 | 14 6.8 | 1/ 15
 | 9.5 | 11 8.7 | 16 5.9 | 14 12
 | 16 1 | 2/ 30 | 9.6 | 5 15 9.6 7.9
 | 14 13 11 | 20 23 | 15 10 32 | 9.4 | 4.2 15 | 12 19
 | 26 24 12 7.3 |
antimony (antimony trioxide)	mg/kg mg/kg <1.32			
 | | | |
 | | | |
 | | | |
 | | | | | |
 | |
| arsenic (arsenic trioxide) | | <1.32 | 13 5.1 | 5.1 2
 | .5 3.3 | 18 1 | 12 |
 | 3.6 | 1.5 4.7 | 25 3.3 | 1.3 7.9
 | 9.8 4.8 | 15 22 7.8 | 6 9 | 5.8 7.7 26
 | 8.5 41 10 | | 11 27 | 25 | 4.5 2 | 24 25
 | 9.7 5.8 6 8.9 |
beryllium (beryllium oxide)	mg×g		<1.288 <1.288 <1.288	
 | | | |
 | | | |
 | _ | | |
 | | | | | |
 | |
| boron (diboron trioxide; boric oxide) | mg/kg <1.288 | <1.288 | <1.288 <1.288 <1.288 | <1.288
 | <1.288 0 | 0.86 <1.288 | 0.91 |
 | 38 <1.28 | | |
 | 1.1 <1.288 | 1.9 3.1 <1.288 | 0.5 | 1.1 <1.288 <1.288 <1.288
 | | | 1 2.5 | 1.9 | <1.288 <1.288 0. | .71 2.8
 | 2.7 1.6 <1.288 1.3 |
| cadmium (cadmium oxide) | mg/kg <0.114 | <0.114 | <0.114 <0.114 <0.114 | <0.114
 | <0.114 <0.114 | 0.2 | 0.12 | <0.114
 | 14 <0.11 | 14 0.22 <0.114 | <0.114 | <0.114 <0.114 <0.114
 | <0.114 | <0.114 <0.114 0.14 | 4 < 0.114 | <0.114 <0.114 <0.114
 | 0.14 0.84 0.15 | | <0.114 <0.114 | 2.4 | <0.114 <0.114 0. | .19 <0.114
 | <0.114 <0.114 <0.114 0. |
| chromium in chromium(III) compounds (chromi
chromium in chromium(VI) compounds (chromi | ium(III) d mg/kg | 2.4 | 5 7.9 4.6 | 5.1 4
 | .3 6.2 | 25 21 | 14 |
 | 10 | 3.4 6.8 | 29 4 | 2.3 10
 | 8.9 | 22 28 10 | 9.9 | 6 8.2 18
 | 11 33 10 | | 11 34 | 50 | 6.6 3.4 | 10 26
 | 11 8.2 7 13 |
| | | <0.962 | <0.962 <0.962 <0.962 | <0.962
 | <0.962 <0.962 | <0.962 | <0.962 | <0.96
 | 52 <0.96 | 62 <0.962 <0.962 | < 0.962 | <0.962 <0.962 <0.962
 | <0.962 | <0.962 <0.962 <0.962 | <0.962 | <0.962 <0.962 <0.962 <0.962
 | <0.962 <0.962 | | <0.962 <0.962 | <0.962 | <0.962 <0.962 <0.962 | <0.962
 | <0.962 <0.962 <0.962 <0.962 |
| copper (dicopper oxide; copper (1) oxide) | mg/kg | 1.8 2.9 | 9 5.5 3.5 | 3.8
 | .4 2.6 | 19 21 | 36 |
 | 3.9 | 1.3 9 | 12 1 | 0.63 43
 | 4.6 9.5 | 11 13 13 | 3 11 | 4.9 3.2 7.6
 | 7.4 250 16 | | 35 18 | 270 | 9.8 1.8 8 | 110 22
 | 5 3.9 7.2 10 |
| lead (lead compounds with the exception of the | ose spec mg/kg | 4.4 5.6 | 6 6.4 3.2 | 2.7 2
 | .9 2 | 12 2 | 52 |
 | 5.5 | 4.4 19 | 11 3.8 | 1.9 22
 | 8.4 28 | 41 31 74 | 4 22 | 15 5.6 9.8
 | 14 1500 21 | | 67 49 | 280 | 19 4.3 3 | 140 45
 | 13 9.8 47 3 |
manganese (manganese sulphate)	mg/kg			
 | | | |
 | | | |
 | | | |
 | | | | | |
 | |
| mercury (mercury dichloride) | mg/kg <0.135 | <0.135 | <0.135 <0.135 <0.135 | 0.1
 | 16 < 0.135 | 0.11 0.3 | 0.8 | <0.135
 | < 0.13 | 35 <0.135 <0.135 | < 0.135 | <0.135 0.19 <0.135
 | 0.11 | <0.135 <0.135 0.18 | B 0.1 | <0.135 <0.135 <0.135
 | 0.1 0.63 < 0.135 | | 0.24 < 0.135 | 0.43 | <0.135 <0.135 | 1.3 < 0.135
 | <0.135 <0.135 <0.135 0.1 |
molybdenum (molybdenum(VI) oxide)	maka			
 | | | |
 | | | |
 | | | |
 | | | | | |
 | |
| nickel (nickel chromate) | mg/kg | 1.4 2.9 | 9 5.3 4.6 | 4.4 5
 | .1 4.2 | 30 33 | 18 |
 | 6.1 | 1.5 7.3 | 16 3.2 | 1.9 12
 | 8.9 14 | 22 26 6.8 | 9.9 | 6.5 5.7 14
 | 12 64 12 | | 14 33 | 50 | 7.7 3 | 25 27
 | 10 8 6 12 |
| selenium (selenium compounds with the excep | mg/kg
otion of c mg/kg <0.511 | <0.511 | <0.511 <0.511 <0.511 | <0.511
 | <0.511 | 0.8 < 0.511 | 0.25 | <0.51
 | 11 <0.51 | 11 <0.511 <0.511 | < 0.511 | <0.511 <0.511 <0.511
 | <0.511 | <0.511 <0.511 <0.511 | < 0.511 | <0.511 <0.511 <0.511 <0.511
 | 0.73 < 0.511 | | < 0.511 < 0.511 | <0.511 | 0.23 0.2 1 | 1.3 0.56
 | <0.511 <0.511 <0.511 <0.511 |
| | mg/kg | B.1 1: | 1 18 13 | 10 9
 | .6 8.8 | 38 46 | 83 |
 | 12 | 4.2 27 | 54 6.7 | 3.9 32
 | 18 34 | 49 64 240 | 74 | 53 15 110
 | 29 330 30 | | 51 76 | 590 | 23 9.4 1 | 50 68
 | 28 18 17 59 |
| TPH (C6 to C40) petroleum group | mg/kg <10 | <10 | <10 <10 | <10
 | <10 <10 | <10 | <10 36 | 50 34 <10
 | <10 | <10 <10 | <10 | <10 <10 <10
 | <10 | <10 <10 28 | <10 | <10 180 910 <10
 | 2600 <10 | 780 66 | <10 <10 <10 | 39 | <10 <10 2 | 50 <10
 | <10 <10 <10 250 |
	trol n/a			
 | | | |
 | | | |
 | | | |
 | | | | | |
 | |
tert-butyl methyl ether; MTBE; 2-methoxy-2-met	hyloropa mo/ko			
 | | | |
 | | | |
 | | | |
 | | | | | |
 | |
| benzene | | <0.001 | <0.001 <0.001 <0.001
<0.001 <0.001 <0.001
<0.001 <0.001 <0.001 | <0.001
 | <0.001 <0.001 | < 0.001 | <0.001 <0.001 <0.001 | <0.001 <0.001
 | 0.00 | 01 <0.001 <0.001 | < 0.001 | <0.001 <0.001 <0.001
 | <0.001 | <0.001 <0.001 <0.001 | <0.001 | <0.001 <0.001 <0.001 <0.001
 | <0.001 <0.001 <0.001 | < 0.001 | <0.001 <0.001 <0.001 | <0.001 | <0.001 <0.001 <0.001 | <0.001
 | <0.001 <0.001 <0.001 |
| toluene | mg/kg e0.001 | <0.001 | <0.001 <0.001 <0.001 | <0.001
 | <0.001 <0.001 | <0.001 | <0.001 <0.001 <0.001 | <0.001 <0.00
 | 21 <0.00 | 01 <0.001 <0.001 | < 0.001 | <0.001 <0.001 <0.001
 | <0.001 | <0.001 <0.001 <0.001 | <0.001 | <0.001 <0.001 <0.001 <0.001
 | <0.001 <0.001 <0.001 | <0.001 | <0.001 <0.001 <0.001 | <0.001 | <0.001 <0.001 <0.001 | <0.001
 | <0.001 <0.001 <0.001 |
| ethylbenzene | mo/kg #0.001 | z0.001 | 40.001 40.001 | e0.001
 | Z0 001 Z0 001 | r0.001 | L-0.001 L-0.001 | c0.001 c0.00
 | 21 20.00 | 01 -0.001 -0.001 | c0.001 | r0.001 r0.001
 | v0.001 | r0.001 r0.001 r0.001 | z0.001 | r0.001 r0.001 r0.001
 | e0.001 e0.001 e0.001 | r0.001 | r0.001 r0.001 | r0.001 | 20.001 20.001 20.001 | z0.001
 | c0.001 c0.001 c0.001 |
| viene | moka #0.00* | r0.001 | <.0.001 <0.001 <0.001
<0.001 <0.001 <0.001
<0.942 <0.942 <0.942 | r0.001
 | Z0.001 Z0.001 | r0.001 | LO 001 LO 001 | r0.001 -0.00
 | 21 60.00 | 01 20.001 | c0.001 | r0.001 r0.001 r0.001
 | r0.001 | 40.001 40.001 | z0.001 | r0.001 r0.001 r0.001
 | e0.001 e0.001 c0.001 | r0.001 | <0.001 <0.001 <0.001 | r0.001 | a.001 a.001 a.001 | r0.001
 | c0.001 c0.001 c0.001 |
| ryanides (salts of hydronen ryanide with the ex- | voention marks #8.942 | r0.942 | r0 942 r0 942 r0 942 | r0 942
 | r0 942 r0 942 | r0.942 | r0 942 | -0.00
 | 12 #0.04 | 42 20.942 20.942 | r0 942 | r0 942 r0 942 r0 943
 | r0 942 | r0.942 r0.942 r0.942 | r0.942 | r0.942 r0.942 r0.942 r0.942
 | r0 942 | .0.001 | | r0 942 | <0.942 <0.942 4 | 49 (0.942
 | <0.942 <0.942 <0.942 <0.942 |
| nu | ntil manufacture | 8.2 8.3 | 2 0 02 | 8.3 8
 | 7 8.3 | 0.4 | 9.4 | CU.346
 | 10.4 | 0.0000000000000000000000000000000000000 | 40 70 | 0.2 0.0
 | 06 404 | 9.4 | | 01 01 03
 | 00 04 00 | | 8.1 9.2 | | | 8.4 8.5
 | 0 02 02 40 |
| naphthalene | | V.A. 8.1 | -01 -01 -01 | U.U. 8
 | -0.1 | e01 | 0.4 | -0.1
 | 10.4 | -04 -04 | -u /.3 | -01 -01 -01
 | UU 10.1 | 0.4 2 8.4 | 8./ | c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.942 c0.942 c0.942 c0.942 c0.1 c0.1 c0.1 c0.1
 | 3-04 0.0 | ×0.1 | -0.1 9.2
-0.1 -0.1 | 10 | 0.0 0.1 5 | 20-01
 | # 3.3 0.3 10.5
#0.1 #0.1 #0.1 |
| | mg/kg eu.1 | -0.1 | -0.1 | ×0.1
 | -0.1 -0.1 | ×0.1 | -0.4 0.1 0.00 and | -0.1
 | 40.1 | 101 101 | ×0.1 | -01 -01 01
 | -0.1 | -0.1 | 7 -0.1 | -0.1 -0.1 -0.1
 | 1 -0.1 | +0.1 | e0.1 e0.1 | 0.21 | -01 | 20 -0.1
 | -0.1 -0.1 -0.1 |
| acenaphthylene | mg/kg <0.1 | -0.1 | 0.1 0.1 | -0.1
 | 0.1 | CU.1 | 0.55 60.1 | 0.4
 | <0.1 | 04 01 | -0.1 | 0.1 0.1
 | 0.1 | 0.1 2.1 | 104 | 0.1 0.1 0.1
 | eu.1 eU.1 | -0.1 | 0.1 0.1 | 0.42 | 0.1 | 25 04
 | 0.1 (0.1 (0.1 |
| acenaphthene | mg/kg <0.1 | <0.1 | KU.1 KU.1 KU.1 | KU.1
 | 0.1 80.1 | <0.1 | 0.57 (0.1 | cu.1 <0.1
 | <0.1 | ku1 ku1 | <0.1 | 0.1 0.1 0.1
 | 40.1 | 0.7 | 1.04 | cu.1 ku.1 ku.1 ku.1
 | 0.53 RU.1 RO.1 | KU.1 | KU.1 KU.1 KU.1 | 0.24 | 0.1 | 40(60.1
 | eu.i eu.i eu.i e0.i |
| fluorene
phenanthrene | mg/kg <0.1 | <0.1 | KU.1 KU.1 KU.1 | <0.1
 | KU.1 KU.1 | KU.1 | 0.4 (0.1 | eu.1 <0.1
 | <0.1 | ku1 ku1 | <0.1 | 80.1 80.1
 | 40.1 | KU.1 KU.1 5.* | eu.1 | eu.1 eu.1 eu.1 e0.1
 | 1.2 80.1 80.1 | KU.1 | KU.1 KU.1 KU.1 | 0.25 | au.1 (U.1 (I) | 00/60.1
 | eu.1 eu.1 eu.1 e0.1 |
| | mg/kg k0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 0.5 | <0.1 4.4 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | d0.1 d0.1 d0.1
 | <0.1 | 40.1 20.1 20.1 | 5 1.1 | 0.33 <0.1 <0.1 <0.1
 | 8.3 0.14 < 0.1 | <0.1 | <0.1 <0.1 d0.1 | 2.3 | 40.1 | 1.6 < 0.1
 | <0.1 <0.1 0.97 0.44 |
| anthracene | mg/kg k0.1
mg/kg k0.1 | <0.1 | k0.1 k0.1 k0.1 | <0.1
 | <0.1 <0.1 | <0.1 | <0.1 2.2 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | k0.1 | d0.1 d0.1 d0.1
 | <0.1 | k0.1 k0.1 7.8 | B 0.33 | 0.11 < 0.1 < 0.1
 | 3.1 <0.1 <0.1 | <0.1 | k0.1 k0.1 k0.1 | 1.2 | k0.1 k0.1 | 0.3 < 0.1
 | <0.1 <0.1 0.2 0.16 |
| fluoranthene | mg/kg <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 1.5 | <0.1 15 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | 0.52 | <0.1 0.12 d0.1
 | <0.1 | 1.2 (0.1 21 | 1 1 | 0.61 <0.1 <0.1 <0.1
 | 13 0.2 <0.1 | <0.1 | 0.15 < 0.1 | 5.1 | 1 40.1 | 1.2 0.75
 | <0.1 <0.1 1.6 1. |
| pyrene | mg/kg <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 1.5 | <0.1 14 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | 0.42 | <0.1 0.15 <0.1
 | <0.1 | 1.2 < 0.1 | 9 1.1 | 0.88 < 0.1 < 0.1 < 0.1
 | 17 0.3 c0.1 | <0.1 | 0.17 < 0.1 | 6.1 | 0.82 < 0.1 | 1.4 0.51
 | <0.1 <0.1 2 0.94 |
| benzo[a]anthracene | mg/kg <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 0.9 | <0.1 7.5 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1
 | <0.1 | <0.1 <0.1 | 2 0.9 | 0.18 < 0.1 < 0.1
 | 8.1 <0.1 <0.1 | <0.1 | <0.1 <0.1 | 2.8 | <0.1 <0.1 | 0.6 < 0.1
 | <0.1 <0.1 1.6 0.43 |
| chrysene | mg/kg <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 0.98 | <0.1 6.7 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1
 | <0.1 | 40.1 40.1 12 | 2 0.66 | 0.23 <0.1 <0.1 <0.1
 | 10 <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1 | 3.5 | <0.1 <0.1 0. | 94 < 0.1
 | <0.1 <0.1 1 0.23 |
| chrysene
berzo[b]fluoranthene
berzo[k]fluoranthene | maka <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | | <0.1 9.2 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | d0.1 d0.1 d0.1
 | <0.1 | <0.1 <0.1 | 1 0.67 | 0.49 < 0.1 < 0.1 < 0.1
 | 12 <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1 | 3.9 | <0.1 <0.1 0.1 | 64 < 0.1
 | <0.1 <0.1 1.3 1.1 |
| benzo[k]fluoranthene | mg/kg <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 0.5 | <0.1 3.8 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1
 | <0.1 | 40.1 40.1 4.3 | 0.15 | 0.11 <0.1 <0.1
 | 4 <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1 | 1.8 | <0.1 <0.1 0. | 43 < 0.1
 | <0.1 <0.1 0.53 0.38 |
| benzo[a]pyrene; benzo[def]chrysene | maka <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 0.85 | <0.1 7.3 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | d0.1 d0.1 d0.1
 | <0.1 | <0.1 <0.1 7.8 | 0.33 | 0.4 < 0.1 < 0.1 < 0.1
 | 12 <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1 | 3.1 | <0.1 <0.1 0. | 56 <0.1
 | <0.1 <0.1 1.1 0.64 |
| indeno[123-od]pyrene | mg/kg <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 0.4 | <0.1 4.8 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 5.7 | 0.54 | 0.38 < 0.1 < 0.1 < 0.1
 | 7.9 < 0.1 < 0.1 | <0.1 | <0.1 <0.1 <0.1 | 2.2 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 0.61 0.73 |
| dibenz(a,h)anthracene | mg/kg <0.1 | <0.1 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | <0.1 | <0.1 1.3 < 0.1 | <0.1 <0.1
 | <0.1 | -01 -01 | <0.1 | <0.1 <0.1 <0.1
 | <0.1 | <0.1 <0.1 1.4 | 4 0.34 | <0.1 <0.1 <0.1 <0.1
 | 2.4 < 0.1 < 0.1 | <0.1 | <0.1 <0.1 <0.1 | 1.2 | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 <0.1 <0.1 |
berzo[ghi]perylene				
 | | | |
 | | | |
 | | | |
 | | | | | |
 | |
| | mg/kg <0.1 | | <0.1 <0.1 <0.1 | <0.1
 | <0.1 <0.1 | 0.5 | <0.1 5.1 <0.1 | <0.1 <0.1
 | <0.1 | <0.1 <0.1 | <0.1 | d0.1 d0.1 d0.1
 | <0.1 | 40.1 40.1 4.3 | 2 0.33 | 0.18 < 0.1 < 0.1
 | 14 <0.1 <0.1 | <0.1 | <0.1 <0.1 <0.1 | 2.1 | d0.1 d0.1 d0.1 | <0.1
 | <0.1 <0.1 0.73 0.33 |
| phenol | maka k0.1 | <0.3 | <0.1 <0.1 <0.1
<0.3 <0.3 <0.3 | <0.1
 | <0.1 <0.1
<0.3 <0.3 | <0.3 | <0.1 5.1 <0.1 <0.3 <0.3 | <0.1 <0.1
<0.3 <0.3
 | <0.1
<0.3 | <0.1 <0.1
<0.3 <0.3 | <0.1
<0.3 | <0.1 <0.1 <0.1
<0.3 <0.3 <0.3
 | <0.1
<0.3 | <0.1 <0.1 4.3
<0.3 <0.3 <0.3 | 2 0.33
<0.3 | 0.18 <0.1 <0.1 <0.1 <0.1 <0.3 <0.3 <0.3 <0.3
 | 14 <0.1 <0.1
<0.3 <0.3 | k0.1 | <0.1 <0.1 <0.1
<0.3 <0.3 | 2.1
<0.3 | 40.1 40.1 40.1
40.3 40.3 40.3 | <0.1
<0.3
 | <0.1 <0.1 0.73 0.31
<0.3 <0.3 <0.3 <0.3 |
| phenol | mg/kg k0.1
mg/kg k0.3 | <0.3
<0.003 | <0.1 <0.1 <0.3 <0.3 <0.03 <0.003 <0.003 <0.003 | <0.1
<0.3
<0.003
 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.003 | <0.3
<0.003 | <0.1 5.1 <0.1
<0.3 <0.3
<0.003 <0.003 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.001
 | <0.1
<0.3
<0.00 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.003 | <0.1
<0.3
<0.003 | <0.1 <0.1 <0.1 <0.1 <0.1 <0.3 <0.3 <0.03 <0.003 <0.003
 | <0.1
<0.3
<0.003 | e0.1 e0.1 4.3
e0.3 e0.3 e0.3
e0.003 e0.003 | 2 0.33
<0.3
<0.003 | 0.18 c0.1 c0.1 c0.1
c0.3 c0.3 c0.3 c0.3
c0.003 c0.003 c0.003
 | 14 <0.1 <0.1
<0.3 <0.3
<0.003 <0.003 <0.003 | <0.10 | <0.1 <0.1 <0.3 <0.03 <0.003 <0.003 | <0.3
<0.003 | 60.1 d0.1 d0.1
d0.3 d0.3 d0.3
d0.003 d0.003 | <0.1
<0.3
<0.003
 | <0.1 <0.1 0.73 0.38
<0.3 <0.3 <0.3 <0.3 <0.3
<0.003 <0.003 <0.003 |
| phenol
1,1-dichloroethane and 1,2-dichloroethane (con
tetrachloroethylene | mg/kg <0.1
mg/kg <0.3
mbined) mg/kg <0.003 | <0.03
<0.003
<0.001 | <0.1 <0.1 <0.3 <0.3 <0.003 <0.003 <0.003 <0.001 <0.001 <0.001 | <0.1
<0.3
<0.003
<0.001
 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001 | <0.3
<0.003
<0.001 | <0.1 <0.1 <0.3 <0.03 <0.003 <0.003 <0.001 <0.001 <0.001 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001
 | <0.1
<0.3
03 <0.00
01 <0.00 | <0.1 <0.1
<0.3 <0.3
0.003 <0.003
01 <0.001 <0.001 | <0.1
<0.3
<0.003
<0.001 | c0.1 c0.1 c0.1
c0.3 c0.3 c0.3
c0.003 c0.003 c0.003
c0.001 c0.001 c0.001
 | <0.1
<0.3
<0.003
<0.001 | 40.1 40.1 43.3
40.3 40.3 40.3
40.003 40.003 40.003
40.001 40.001 40.001 | 2 0.33
<0.3
<0.003
<0.001 | 0.18 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.3 <0.3 <0.3 <0.3 <0.3 <0.03 <0.003 <0.003 <0.003 <0.003 <0.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001
<0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 | 14 <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.003 <0.003
<0.001 <0.001 | <0.003
<0.001 | <0.1 <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001
<0.001 | 2.1
<0.3
<0.003
<0.001 | 40.1 <0.1 <0.1 <0.1 <0.1 <0.3 <0.3 <0.3 <0.3 <0.03 <0.003 <0.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.0 | <0.1
<0.3
<0.003
<0.001
 | <0.1 <0.1 <0.3 <0.3 <0.3 <0.0 <0.0 <0.003 <0.003 <0.003 <0.003 <0.003 <0.001 <0.001 <0.001 <0.001 |
| phenol
1,1-dichloroethane and 1,2-dichloroethane (con
tetrachloroethylene | mg/kg <0.1
mg/kg <0.3
mbined) mg/kg <0.003
mg/kg <0.001 | <0.03
<0.003
<0.001
<0.001 | k0.1 k0.1 k0.1 k0.3 k0.3 k0.3 k0.003 k0.003 k0.003 k0.001 k0.001 k0.001 k0.001 k0.001 k0.001 | <0.1
<0.3
<0.003
<0.001
<0.001
 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001
<0.001 <0.001 | <0.3
<0.003
<0.001
<0.001 | <0.1 <0.3 <0.03 <0.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001
<0.001 <0.001
 | <0.1
<0.3
33 <0.00
01 <0.00
01 <0.00 | e0.1 e0.1 e0.1 e0.0 e0.00 e0.003 e0.003 e0.003 e0.003 e0.001 e0.001 e0.001 e0.001 e0.001 | <0.1
<0.3
<0.003
<0.001
<0.001 | -0.1
 | <0.1
<0.3
<0.003
<0.001 | 60.1 60.1 62.3
60.3 60.3 60.3
60.003 60.003 60.003
60.001 60.001 60.001
60.001 60.001 60.001 | 2 0.33
<0.3
<0.003
<0.001 | 0.10 (0.1 c0.1 c0.1 c0.3 c0.3 c0.3 c0.3 c0.3 c0.3 c0.3 c0.003 c0.003 c0.001
c0.001 c0. | 14 <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001
<0.001 <0.001 <0.001 | <0.003
<0.001
<0.001 | <0.1 <0.1 <0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001 <0.001
<0.001 <0.001 <0.001 | 2.1
<0.3
<0.003
<0.001 | c0.1 c0.1 c0.1 c0.3 c0.3 c0.03 c0.003 c0.003 c0.001 c0.001 c0.001 c0.001 c0.001 | <0.1
<0.3
<0.003
<0.001
 | c0.1 c0.1 0.73 0.3 c0.3 c0.3 c0.3 c0.3 c0.003 c0.003 c0.003 c0.003 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 |
| phanol
1,1-dichloroethane and 1,2-dichloroethane (contextual-hioroethylene
carbon tetrachloride; tetrachloromethane | mg/kg <0.1
mg/kg <0.3
mbined) mg/kg <0.003 | <0.3
<0.003
<0.001
<0.001 | +0.1 +0.1 +0.1 +0.1 +0.3 +0.3 +0.3 +0.03 +0.003 +0.003 +0.001 | <0.1
<0.3
<0.003
<0.001
<0.001
 | <0.1 <0.1 <0.3 <0.03 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 | <0.3
<0.003
<0.001
<0.001
<0.001 | 40.1 5.1 40.1
40.03 40.03
40.003 40.003
40.001 40.001 40.001
40.001 40.001 40.001
40.001 40.001 40.001 | <0.1 <0.1
<0.3 <0.3
<0.003 <0.000
<0.001 <0.000
<0.001 <0.000
<0.001 <0.000
 | <0.1
<0.3
33 <0.00
01 <0.00
01 <0.00 | (0.1 (0.1 (0.1 (0.1 (0.1 (0.1 (0.1 (0.1 | <0.1
<0.3
<0.003
<0.001
<0.001 | 40.1 40.3 40.3 40.3 40.003 40.003 40.003 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001
 | <0.1
<0.3
<0.003
<0.001
<0.001 | 60.1 | 2 0.33
<0.3
<0.003
<0.001
<0.001 | 0.18 d0.1 d0.1 d0.1 d0.1 d0.1 d0.3 d0.3 d0.3 d0.3 d0.003 d0.003 d0.003 d0.003 d0.003 d0.003 d0.001
d0.001 d | 14 (0.1 <0.1
<0.3 <0.3
<0.003 <0.003
<0.001 <0.001 <0.001
<0.001 <0.001 <0.001
<0.001 <0.001 <0.001 | <0.003
<0.001
<0.001
<0.001 | c0.1 c0.1 c0.3 c0.3 c0.003 c0.003 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c0.001 c | 2.1
<0.3
<0.003
<0.001
<0.001 | 40.1 40.1 40.1
40.3 40.3 40.3
40.003 40.003 40.003
40.001 40.001 40.001
40.001 40.001 40.001 | <0.1
<0.3
<0.003
<0.001
<0.001
 | 6D1 6D3 0.73 0.3 40.3 <0.3 |
| phenol
1,1-dichloroethane and 1,2-dichloroethane (cor
tetrachloroethylene
carbon tetrachloride; tetrachloromethane
trichloroethylene; trichloroethene
viryl chloride; chloroethylene | mg/kg <0.1 mg/kg <0.3 mbined) mg/kg <0.003 mg/kg <0.001 mg/kg <0.001 mg/kg <0.001 mg/kg <0.001 | <0.03
<0.003
<0.001
<0.001
<0.001
<0.001 | (0.1 (0.1 (0.1 (0.1 (0.1 (0.1 (0.1 (0.1 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
 | <0.1 <0.1 <0.3 <0.3 <0.003 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 | 0.5
<0.03
<0.003
<0.001
<0.001
<0.001 | 60.1 5.1 0.1 60.3 60.03 60.003 60.003 60.001 60.001 60.001 60.001 60.001 60.001 60.001 60.001 60.001 60.001 60.001 60.001 | < 0.1 < 0.3 < 0.03 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001 < 0.001
 | <0.1
<0.3
33 <0.00
01 <0.00
01 <0.00
01 <0.00
01 <0.00 | 60.1 60.1
60.3 60.3
90.3 60.003 60.003
90.0001 60.001
90.001 60.001
90.001 60.001
90.001 60.001 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001 | 40.1 40.1 40.3 40.3 40.3 40.3 40.03 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001
 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001 | 40.1 40.1 4.2
40.3 40.3 40.3 40.003
40.003 40.003 40.003
40.001 40.001 40.001
40.001 40.001 40.001
40.001 40.001 40.001
40.001 40.001 40.001 | 2 0.33
<0.03
<0.003
<0.001
<0.001
<0.001 | 0.10 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1
 | <0.001 <0.001 <0.001 | <0.1
<0.003
<0.001
<0.001
<0.001
<0.001 | +0.1 | 2.1
<0.3
<0.003
<0.001
<0.001
<0.001 | 0.1 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
 | 60.1 60.1 0.73 0.31 |
| phanol
1,1-dichloroethane and 1,2-dichloroethane (coi
tetrachloroethylene
carbon tetrachloride; tetrachloromethane
trichloroethylene; trichloroethylene
vinjet bloride; chloroethylene
DDT (ISO): coldenotane (BN): dicophane: 1,1,1 | mg/kg <0.1 mg/kg <0.3 mbined mg/kg <0.003 mg/kg <0.001 mg/kg <0.001 mg/kg <0.001 mg/kg <0.001 | <0.03
<0.003
<0.001
<0.001
<0.001 | 40.1 40.1 40.1 40.3 40.3 40.303 40.003 40.003 40.003 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 40.001 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001
 | <0.1 | <.0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | (0.1 5.1 c0.1 c0.1 c0.1 c0.1 c0.1 c0.1 c0.0 c0.1 c0.0 c0.0 | <0.1 <0.1 <0.3 <0.03 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.000
 | <0.1
<0.3
33 <0.00
31 <0.00
31 <0.00
31 <0.00
31 <0.00
31 <0.00 | 0.1 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | -0.1
 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001 | 601 601 4.3 603 603 603 60003 60.003 60.003 60.001 60.001 60.001 60.001 60.001 60.001 60.001 60.001 60.001 | 2 0.33
<0.03
<0.003
<0.001
<0.001
<0.001 | 0.16 d0.1 d0.1 d0.1 d0.1 d0.1 d0.1 d0.2 d0.3 d0.3 d0.3 d0.3 d0.00
d0.00 | <0.001 <0.001 <0.001
<0.001 <0.001 | <0.01 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 | 0.1 | 2.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | 0.1 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
 | 40.1 40.73 0.37 0.37 40.3 40.3 40.3 40.3 40.00 400003 40.003 40.003 40.003 40.003 40001 40.001 40.001 40.001 40.001 40001 40.001 40.001 40.001 40.001 40001 40.001 40.001 40.001 40.001 |
| phanol
1,1-dichloroethane and 1,2-dichloroethane (coi
tetrachloroethylene
carbon tetrachloride; tetrachloromethane
trichloroethylene; trichloroethylene
vinjet bloride; chloroethylene
DDT (ISO): coldenotane (BN): dicophane: 1,1,1 | mg/kg <0.1 mg/kg <0.3 mbined mg/kg <0.003 mg/kg <0.001 mg/kg <0.001 mg/kg <0.001 mg/kg <0.001 | <0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | -0.1 -0.1 -0.1 -0.1 -0.1 -0.1 -0.1 -0.3 -0.3 -0.3 -0.3 -0.03 -0.003 -0.003 -0.003 -0.003 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 -0.001 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001
 | <0.1 <0.3 <0.3 <0.03 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 | 0.5 <0.3 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 | 40.1 5.1 60.1 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.3 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 | <0.1 <0.3 <0.3 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001
<0.001 <0.001 <0.001 | <0.1 | 0.0 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001 | 40.1 40.1 40.1 40.1 40.1 40.3 40.3 40.3 40.0 40.3 40.0 40.0 40.0
 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | 601 601 4.3 603 603 603 6000 6000 6000 60001 60001 60001 60001 60001 60001 60001 60001 60001 60001 60001 60001 | 2 0.33
<0.03
<0.003
<0.001
<0.001
<0.001 | 0.18 60.1 60.1 60.1 60.3 60.3 60.3 60.3 60.3 60.3 60.3 60.3
 | <0.001 <0.001 <0.001
<0.001 <0.001 | <0.01 <0.003 <0.001 <0.001 <0.001 <0.001 | 40.1 40.1 40.1 40.1 40.0 40.0 40.0 40.0 | 2.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | 40.1 40.1 40.1
40.2 40.3 40.3
40.003 40.003 40.003
40.001 40.001 40.001
40.001 40.001 40.001
40.001 40.001 40.001
40.001 40.001 40.001 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001
 | 801 401 0.73 0.34 -0.33 0.33 0.33 -0.0003 -0.0003 0.0003 -0.0001 0.0001 0.0001 -0.0001 0.0001 0.0001 -0.0001 0.0001 0.0001 -0.0001 0.0001 0.0001 -0.0001 0.0001 0.0001 -0.0001 0.0001 0.0001 -0.0001 0.0001 0.0001 |
| phenol 1.1-dichloroethane and 1,2-dichloroethane (col
tetrachloroethylene
earbon tetrachloridis, tetrachloromethane
trishloroethylene; trishloromethane
vnyl chloride; chloroethylene
DDT (ISD); chlerootane (MN); dicophane; 1,1,1-
rotrodane (ISD); 1,2,4,5,6,7,8,9-ostachloro-da- | mg/kg 40.1 mg/kg 40.3 mb/hed mg/kg 40.003 mg/kg 40.001 mg/kg 40.001 mg/kg 40.001 mg/kg 40.001 mg/kg 40.001 47.73-56 mg/kg | <0.3 <0.003 <0.001 <0.001 <0.001 <0.001 | 0.01 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
 | 60.1 60.1 60.3 60.3 60.03 60.003 60.003 60.001 | 0.5 <0.3 <0.003 <0.001 <0.001 <0.001 <0.001 | 0.1 | c0.1 <0.1 <0.1 c0.3 <0.3 c0.303 <0.003 c0.001 <0.001 c0.001 <0.001 c0.001 <0.001 c0.001 <0.001 c0.001 <0.001
 | <0.1 | 0.0 0.01 0.01 0.03 0.03 0.03 0.003 0.003 0.003 0.004 0.001 0.0 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | 60.1 60.1 60.1 60.1 60.1 60.1 60.1 60.1
 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001 | 0.1 | 2 0.33
<0.3
<0.003
<0.001
<0.001
<0.001 | 0 11 61 41 41 41
43 43 43 43 403
4000 4000 4000 4000 4000
40001 40001 40001 40001
40001 40001 40001 40001
40001 40001 40001 40001
40001 40001 40001 40001
 | <0.001 <0.001 <0.001
<0.001 <0.001 | <0.1 <0.003 <0.001 <0.001 <0.001 <0.001 <0.001 | 601 603 603
603 603
6003 6000 6000
6000 6000 | 2.1
<0.3
<0.003
<0.001
<0.001
<0.001
<0.001 | .01 | <0.1
<0.3
<0.003
<0.001
<0.001
<0.001
 | 401 401 0.73 0.35 |
| phenol 1,1-dichlorocethane and 1,2-dichlorocethane (col tetrachlorocethylene carbon tetrachlorocethylene trichlorocethylene, trichlorocethane trichlorocethylene, trichlorocethane trichlorocethylene, trichlorocethane trichlorocethylene, trichlorocethane DDT (ISD); cldenotane (INN); disciphane; 1,1,1- clinidane (ISO); 1,2,4,5,6,7,8-octaellorocal, hexachlorocyclothexanes, including lindane stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7,8-octaellorocal, stellorin (ISO); 1,2,4,5,6,7-octaellorocal, stellorin (ISO); 1,2,4,5,7-octaellorocal, stello | mg/kg e0.1 mg/kg e0.3 mbined mg/kg e0.003 mg/kg e0.001 mg/kg e0.001 mg/kg e0.001 mg/kg e0.001 mg/kg e0.001 4.7.7a-64 mg/kg mg/kg mg/kg mg/kg | 40.3
<0.003
<0.001
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Discondination of the Control of the	U U U U U U U U U U U U U N N N N N N N	1790 17	1904 1904 1904 1904 1904 1904 1904 1904	10 50 10 10 10 10 10 10 10 10 10 10 10 10 10	0.8677	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	< 10 < 10 < 20 < 10 < 20 < 10 < 20 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 1	<pre>< 10 < 10 < 20 < 10 < 20 < 110 < 20 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 <</pre>	<10 <10 <10 <20 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1	<10 <10 <10 <10 <20 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	<pre><+10 <+50 <+50 <10 <20 <110 <210 <110 <110 <110 <110</pre>	<10 <10 <10 <20 <10 <10 <20 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10
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Oktowethony(Methythend 1.2 Christorethony)Methythend 1.2 Christorethony(Methythend 1.2 Christorethony)Methythend 1.2 Christorethony(Methythend 1.2 Christorethony(M	N N N N N N N N N N N N N N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	1944 1944 1944 1944 1944 1944 1944 1944	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.0012	 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50
4-Bromophenylchenyl Eher Neszahlorobenzten Pentad-inorghenol Pentad-inorghenol Pentad-inorghenol Pentad-inorghenol Pentad-inorghenol Carbacone Car	N N N N N N N N N N N N N N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	1604 1604 1604 1604 1604 1604 1604 1604	0.50 0.50	0.004	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	<0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	<0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50

18-14854	18-15148	18-14854	18-14854	18-14854	18-14854	18-14854	18-15148	18-14854
628914	630539	628019	628912	628911	628909	628913	630538	628910
BHC09	BHC07	BHC27	BHC24 (s)	BHC24 (d)	BHC08	BHC01	BHC02	BHC102
WATER 24-May-2018	WATER 30-May-2018	WATER 23-May-2018	WATER 24-May-2018	WATER 24-May-2018	WATER 24-May-2018	WATER 25-May-2018	WATER 30-May-2018	WATER 24-May-20
8.5	8.3	8.7	11.8	11.4	9.1	12.6	7.7	8.4
0.28	0.32	0.16	9.2	0.49	0.096	0.25	< 0.050	0.098
< 0.050 < 0.050	< 0.050 < 0.050 7.2	< 0.050 < 0.050 9.8	< 0.050 < 0.050 2.1	< 0.050 < 0.050 2.3	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050
7.6 60 < 0.080	250 < 0.080	170 < 0.080	< 20 < 0.080	< 20 < 0.080	1.4 60 < 0.080	1.3 < 20 < 0.080	3.4 140 0.098	3.4 130 < 0.080
3	3.1	7.3	< 1.0	< 1.0	2.2	42	2.7	< 1.0
2.1	< 1.0	1.9	19	< 1.0		36	3.1	< 1.0
< 0.50	< 0.50	< 0.50	0.68	< 0.50		< 0.50	< 0.50	< 0.50
8.7 <1.0	2.7	1.8 <1.0	41 <1.0	4.8 < 1.0	19 <1.0 7.4	30 3.8 2.7	2.4 < 1.0	1.8
6.3 < 20	2.8 1.9 < 20	5.7 5.8 < 20	5.1 1.4 < 20	< 1.0 < 20	7.4 2.7 < 20	5.5 40	3.9 11 < 20	1.6
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	6.8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	53 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 5.0 < 0.10	< 0.10	< 0.10	< 5.0	< 5.0	< 5.0	< 5.0	< 0.10	< 5.0
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	9.5
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	59
< 0.10	< 0.10	50	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	36
< 0.10	< 0.10	22	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 10 < 0.10	< 10 < 0.10	130	< 10 < 0.10	110				
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
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< 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0	< 1.0 < 1.0	< 1.0	< 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Exceeds screening value

Limit of detection of above screening value

Client: Geosphere Environmental Ltd Quotation No.: Q17-10179 Order No.: 2543,GL Determinand	Accred.	SOP	Chemtesi Client Client	test Job No.: Sample ID.: Sample Ref.: It Sample ID.: Sample Type: late Sampled: LOD	EQS Screen	Janura 18-00330 560625 BHC102 W1 WATER 04-Jan-2018	18-00356 560719 BHC02 W1 WATER 05-Jan-2018	18-13183 621158 BHC09 WATER 10-May-2018	18-13032 620297 BHC07 W1 WATER 09-May-2018	18-13180 621138 BHC27 WATER 11-May-2018	18-13180 621139 BHC24 WATER 11-May-2018	18-13535 623008 BHC24(D) WATER 14-May-2018	18-13535 623009 BHC08 WATER 14-May-2018	18-13535 623010 BHC01 WATER 14-May-2018	18-13535 623011 BHC14 WATER 14-May-2018
per Ammonia (Free) as N Sulphur Sulphute Cyanide (Total) Cyanide (Total) Cyanide (Free) Arsenic (Dissolved) Boron (Dissolved) Cadmium (Dissolved) Copper (Dissolved) Copper (Dissolved)	U U U U U U U U U	1010 1220 1220 1220 1300 1300 1450 1450 1450 1450	mg/l mg/l mg/l mg/l mg/l mg/l pg/l pg/l pg/l	N/A 0.010 1.0 1.0 0.050 0.050 1.0 20 0.080 1.0 1.0		8.4 0.25 18 53 <0.050 <0.050 9.2 150 <0.080 5.1 8.8	6.9 <0.010 22 65 <0.050 <0.050 3.1 110 <0.080 6.0 1.0	11.7 1.1 160 < 0.050 < 0.050 3.8 34 0.082 19 4.8	8.2 0.39 33 <0.050 <0.050 5.1 270 <0.080 9.7 1.5	8.6 0.15 120 < 0.050 < 0.050 17 210 < 0.080 12 3.1	12.4 1.1 38 <0.050 <0.050 2.9 <20 <0.080 2.4	12.3 0.57 28 <0.050 <0.050 6.7 <20 <0.080 16 1.9	9.9 0.55 100 <0.050 <0.050 4.2 64 <0.080 22 1.6	13.2 0.31 350 < 0.050 < 0.050 2.4 < 20 0.088 160 61	8.7 < 0.050 < 0.050 2.4 < 20 < 0.080 7.4
Mecoury (Dissolved) Mecoury (Dissolved) Land (Dissolved) Land (Dissolved) Land (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Dissolved) Zinc (Zinc) Zinc) Zinc (Zinc) Zin	U U U U U U U U U U U U U U U U U U U	1450 1450 1450 1450 1450 1450 1450 1450	Rev Rev	0.50 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.	0.07 8.6 8.6 8.7 8.8 8.6 8.8 8.8 8.8 8.8 8.8 8.8 8.8 8.8	<0.50 <0.50 <0.90 <1.00 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10	<pre></pre>	<pre></pre>	< 0.50 1.9 < 1.0 7.8 7.9 < 20 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	 0.50 3.3 1.1 4.8 9.9 20 0.10 	<pre><0.50 77 <1.0 9.4 3.4 3.4 <20 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <0.10 <</pre>	<pre><0.50</pre>	<pre>< 0.50</pre>	< 0.50 43 43 5.2 9.6 17 160 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10 < 0.10	 <0.50 19 1.8 7.2 6.4 <20 <0.10
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Discondination of the Control of the	U U U U U U U U U U U U U N N N N N N N	1790 17	1904 1904 1904 1904 1904 1904 1904 1904	10 50 10 10 10 10 10 10 10 10 10 10 10 10 10	0.8677	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	< 10 < 10 < 20 < 10 < 20 < 10 < 20 < 10 < 10 < 10 < 10 < 10 < 10 < 10 < 1	<pre>< 10 < 10 < 20 < 10 < 20 < 110 < 20 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 110 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 <</pre>	<10 <10 <10 <20 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1	<10 <10 <10 <10 <20 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	<pre><+10 <+50 <+50 <10 <20 <110 <210 <110 <110 <110 <110</pre>	<10 <10 <10 <20 <10 <10 <20 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10
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Oktowethony(Methythend 1.2 Christorethony)Methythend 1.2 Christorethony(Methythend 1.2 Christorethony)Methythend 1.2 Christorethony(Methythend 1.2 Christorethony(M	N N N N N N N N N N N N N N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	1944 1944 1944 1944 1944 1944 1944 1944	0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.50	0.0012	 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 c 0.50 	 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50 c. 0.50
4-Bromophenylchenyl Eher Neszahlorobenzten Pentad-inorghenol Pentad-inorghenol Pentad-inorghenol Pentad-inorghenol Pentad-inorghenol Carbacone Car	N N N N N N N N N N N N N N N N N N N	1790 1790 1790 1790 1790 1790 1790 1790	1604 1604 1604 1604 1604 1604 1604 1604	0.50 0.50	0.004	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	<0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50 < 0.50	<0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50 <0.50

18-14854	18-15148	18-14854	18-14854	18-14854	18-14854	18-14854	18-15148	18-14854
628914	630539	628019	628912	628911	628909	628913	630538	628910
BHC09	BHC07	BHC27	BHC24 (s)	BHC24 (d)	BHC08	BHC01	BHC02	BHC102
WATER 24-May-2018	WATER 30-May-2018	WATER 23-May-2018	WATER 24-May-2018	WATER 24-May-2018	WATER 24-May-2018	WATER 25-May-2018	WATER 30-May-2018	WATER 24-May-20
8.5	8.3	8.7	11.8	11.4	9.1	12.6	7.7	8.4
0.28	0.32	0.16	9.2	0.49	0.096	0.25	< 0.050	0.098
< 0.050 < 0.050	< 0.050 < 0.050 7.2	< 0.050 < 0.050 9.8	< 0.050 < 0.050 2.1	< 0.050 < 0.050 2.3	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050
7.6 60 < 0.080	250 < 0.080	170 < 0.080	< 20 < 0.080	< 20 < 0.080	1.4 60 < 0.080	1.3 < 20 < 0.080	3.4 140 0.098	3.4 130 < 0.080
3	3.1	7.3	< 1.0	< 1.0	2.2	42	2.7	< 1.0
2.1	< 1.0	1.9	19	< 1.0		36	3.1	< 1.0
< 0.50	< 0.50	< 0.50	0.68	< 0.50		< 0.50	< 0.50	< 0.50
8.7 <1.0	2.7	1.8 <1.0	41 <1.0	4.8 < 1.0	19 <1.0 7.4	30 3.8 2.7	2.4 < 1.0	1.8
6.3 < 20	2.8 1.9 < 20	5.7 5.8 < 20	5.1 1.4 < 20	< 1.0 < 20	7.4 2.7 < 20	5.5 40	3.9 11 < 20	1.6
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	6.8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	53 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 5.0 < 0.10	< 0.10	< 0.10	< 5.0	< 5.0	< 5.0	< 5.0	< 0.10	< 5.0
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	9.5
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	59
< 0.10	< 0.10	50	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	36
< 0.10	< 0.10	22	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 10 < 0.10	< 10 < 0.10	130	< 10 < 0.10	110				
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 5.0 < 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
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< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0	< 1.0 < 1.0	< 1.0	< 1.0	< 1.0 < 1.0	< 1.0 < 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0 < 50	< 1.0 < 1.0
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< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Exceeds screening value

Limit of detection of above screening value

								sand	ı										sand	ı				sand									
Client: Geosphere Environmental Ltd Quotation No.:				mtest Job No.:		17-20019 491165	17-20560 493823	17-20560 493826	17-20669 494333	17-21231 496746	17-21712 499158	17-21913 500003	17-22420 502630	17-22844 504746	17-26355 521396	17-27357 526215	17-29383 535385	17-30076 538508	17-31448 545141	17-31794 546616	17-33041 552743	18-00159 559757	18-02644 571137	18-03574 575449	18-06475 588382	18-06487 588453	18-07089 591585		17-25501 517043	17-26029 519841	18-09432 602978	18-11312 612825	17-29274 534738
Order No.: 2543, GI				nt Sample Ref.: Top Depth (m):		BHC06 0.5	TPC101 1.80	TPC06 1.10	TPC01 0.20	BHC02 0.25	IPC01 0.30	IPC05 1.20	TPC23 1.00	BHC04 0.90	BHC05 0.6	BHC28 2.60	WSC19A 1.50	WSC23 0.50	BHC103 4.5	BH102 0.30	BHC101 2.10	WSC19A 0.80	BHC18 0.1	BHC19 3.00	BHC26 0.7	BHC23 0.8	BHC08 2.6		BH13CP 2.00	BHC30 1.15	BHC06B 0.45	BHC01 0.30	WSC16 0.4
Determinand	Accred.	SOP	Units	Date Sampled: LOD	DWS Screen	28-Jul-2017		01-Aug-2017	03-Aug-2017	10-Aug-2017		16-Aug-2017	21-Aug-2017	25-Aug-2017	03-Oct-2017	13-Oct-2017	02-Nov-2017	09-Nov-2017	22-Nov-2017	24-Nov-2017	07-Dec-2017	02-Jan-2018	26-Jan-2018	05-Feb-2018	26-Feb-2018	05-Mar-2018	09-Mar-2018		21-Sep-2017	27-Sep-2017	29-Mar-2018	19-Apr-2018	31-Oct-2017
pH Ammonia (Free) Sulphate	U	1010 1220 1220	mg/l	N/A 0.010 1.0	<6.5 >10	8.00 < 0.010 < 1.0	10.00 0.10 8.70	8.90 0.06 8.20	8.10 < 0.010 1.10	0.09 45.00	8.30 0.02 23.00	8.40 0.02 < 1.0	9.10 0.06 24.00	8.40 0.02 100.00	9.50 0.63 24.00	8.40 0.03 9.30	8.40 < 0.010 3.20	9.70 0.05 16.00		10.40 0.06 17.00	9.80 0.12 82.00	8.30 < 0.010 2.90	8.70 0.14 15.00		7.60 < 0.050 9.90	7.10 < 0.050 6.40	9.70 0.85 13.00	7.50 < 0.010 4.90	8.00 < 0.010 3.70	9.00 0.03 40.00	8.70 0.16 13.00	< 0.050 < 1.0	9.9 0.2 150.0
Cyanide (Total) Cyanide (Free)	U	1300	mg1 mg1	0.050	0.050 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.060 < 0.060	< 0.050 < 0.050	< 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050		< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050		< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	< 0.050 < 0.050	<0.050 <0.050
Arsenic (Dissolved) Boron (Dissolved)	U	1450 1450	164 164	1.0	10 1000	3.50 37.00	5.30 < 20	4.10 < 20	2.70 27.00	1.40 210.00	8.50 22.00	1.70	7.00 25.00	2.30 68.00	25.00 39.00	7.20 27.00	1.10 23.00	10.00 37.00		6.70 < 20	2.90 < 20	7.90 < 20	1.70		1.90 41.00	1.10 25.00	5.80 30.00	2.30	1.40	2.30	2.00 36.00	< 1.0 < 20	1.4 48.0
Cadmium (Dissolved) Chromium (Dissolved) Copper (Dissolved)	U	1450 1450 1450	pg1 pg1 lgq	0.080 1.0 1.0	50	< 0.080 < 1.0 15.00	< 0.080 < 1.0 2.60	< 0.080 < 1.0 2.80	< 0.080 < 1.0 4.20	< 0.080 < 1.0 7.40	0.11 1.50 10.00	< 0.080 < 1.0 3.20	< 0.080 1.90 7.40	< 0.080 < 1.0 5.10	< 0.080 2.40 19.00	< 0.080 10.00 3.80	< 0.080 1.30 < 1.0	< 0.080 1.80 2.80		< 0.080 < 1.0 32.00	< 0.080 2.00 4.30	< 0.080 < 1.0 1.50	< 0.080 < 1.0 1.20		< 0.080 1.20 4.60	< 0.080 < 1.0 1.60	0.21 52.00 22.00	< 0.080 < 1.0 < 1.0	< 0.080 < 1.0 < 1.0	< 0.080 < 1.0 1.80	< 0.080 < 1.0 3.00	< 0.080 < 1.0 < 1.0	<0.08 15.0 3.0
Mercury (Dissolved) Nickel (Dissolved)	U	1450	191 191	0.50	1 20	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	0.53	< 0.50	0.52	< 0.50	< 0.50	< 0.50	<0.5
Lead (Dissolved) Selenium (Dissolved)	U	1450 1450	164 164	1.0	10 10	6.30 < 1.0	< 1.0 1.30	1.40	6.30	< 1.0 < 1.0	25.00 < 1.0	2.20	2.30 1.60	2.30 1.70	2.90 3.70	3.60 2.60	1.10	< 1.0 1.10		14.00	< 1.0 < 1.0	5.20 < 1.0	1.80		3.70 < 1.0	1.80	19.00 7.80	< 1.0 1.10	< 1.0 < 1.0	1.30	1.20 < 1.0	< 1.0 < 1.0	ব ব
Zinc (Dissolved) Chromium (Hexavalent) Aliphatic TPH >C5-C6	U U N	1450 1490 1675	164 164 164	1.0 20 0.10	15000	3.40 < 20 < 0.10	< 1.0 < 20 < 0.10	2.10 < 20 < 0.10	11.00 < 20 < 0.10	2.80 [B] < 20 < 0.10	20.00 [B] < 20 < 0.10	4.00 < 20 < 0.10	3.10 < 20 < 0.10	7.80 [B] < 20 < 0.10	2.20 < 20 < 0.10	3.20 < 20 < 0.10	5.10 [B] < 20 < 0.10	< 1.0 < 20 < 0.10	×0.10	< 1.0 < 20 < 0.10	4.30 < 20 < 0.10	4.90 < 20 < 0.10	3.00 < 20 < 0.10	< 0.10	3.40 [B] < 20 [B] < 0.10	2.80 [B] < 20 [B] < 0.10	190.00 < 20 < 0.10	1.90 < 20 < 0.10	< 1.0 [B] < 20 < 0.10	3.50 [B] < 20 < 0.10	2.30 [B] < 20 < 0.10	1.10 < 20 < 0.10	7.1 <20 < 0.10
Aliphatic TPH >C6-C8 Aliphatic TPH >C8-C10	N N	1675	191 191	0.10	15000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12 Aliphatic TPH >C12-C16	N N	1675 1675	Pg1	0.10	300 300	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	29.00 97.00	< 0.10 < 0.10	< 0.10 310.00	[B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 18.00	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10							
Aliphatic TPH >C16-C21 Aliphatic TPH >C21-C35 Aliphatic TPH >C35-C44	N N	1675 1675 1675	pg1 pg1 lgq	0.10 0.10 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	6.90 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10 [B] < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	76.00 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Total Alphatic Hydrocarbons Aromatic TPH >C5-C7	N N	1675	pg1	5.0		< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0	< 5.0	< 5.0 < 0.10	< 5.0	< 5.0 < 0.10	< 5.0 < 0.10	140.00	< 5.0 < 0.10	< 5.0	< 5.0	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0 < 0.10	< 5.0	310.00	[B] < 5.0 [B] < 0.10	[B] < 5.0 [B] < 0.10	< 5.0	< 5.0 < 0.10	94.00	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C7-C8 Aromatic TPH >C8-C10	N N	1675	191 191	0.10	700	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12 Aromatic TPH >C12-C16	N N	1675 1675	164 164	0.10	90 90	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 84.00	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 7.90	[B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	8.00 110.00	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10					
Aromatic TPH >C16-C21 Aromatic TPH >C21-C35	N N	1675 1675	р91 184	0.10	90 90	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	74.00 60.00	< 0.10 < 0.10	[B] < 0.10 [B] < 0.10	[B] < 0.10 [B] < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10										
Aromatic TPH >C35-C44 Total Aromatic Hydrocarbons Total Petroleum	N N	1675	16d 16d	0.10 5.0		< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	220.00	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	7.90	[B] < 5.0	[B] < 5.0	< 5.0	< 5.0	110.00	< 5.0	< 5.0	< 5.0	< 5.0
Hydrocarbons Naphthalene	N U	1675 1700	194 194	10 0.10		< 10 < 0.10	< 10 < 0.10	< 10 < 0.10	< 10 1.70	140.00	< 10 < 0.10	< 10	220.00 < 0.10	< 10 < 0.10	< 10 < 0.10	< 10 < 0.10	< 10 < 0.10	< 10 < 0.10	320.00 < 0.10	[B] < 10 < 0.10	[B] < 10 < 0.10	< 10 < 0.10	< 10 < 0.10	210.00 < 0.10	< 10 < 0.10	< 10 < 0.10	< 10 < 0.10	< 10 < 0.10					
Aceraphthylene Aceraphthene Fluorene	U	1700 1700	pgt lgq lgq	0.10 0.10 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	1.00 1.20 2.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Pheranthrene Anthracene	U	1700 1700	191 191	0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	2.30 0.15	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	8.40 2.80	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Fluoranthene Pyrene Benzofalanthracene	U	1700 1700 1700	µ91 µ91	0.10 0.10 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	2.20 2.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	7.60 6.70 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Benzo(a)anthracene Chrysene Benzo(b)fluoranthene	U	1700 1700	164 164 164	0.10 0.10 0.10	-	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Benzo(k)fluoranthene Benzo(a)pyrene	U	1700 1700	164 164	0.10	0.01	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10 < 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene Diberz(a,h)Anthracene Benzo(a,h,i)perylene	U	1700 1700 1700	Pgq Pgq Pgq	0.10 0.10 0.10		< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10	< 0.10 < 0.10 < 0.10
Total 4 PAHs Total Of 16 PAH's	U	1700	191 194	2.0	0.1	<0.4 <2.0	<0.4 <2.0	<0.4 <2.0	<0.4	<0.10	<0.4 <2.0	<0.10 <0.4 <2.0	<0.4	<0.4 13.00	<0.4 <2.0	<0.10 <0.4 < 2.0	<0.4	<0.4 <0.4 26.00	<0.4 <2.0	<0.4 <2.0	<0.10 <0.4 < 2.0	<0.4 <2.0	<0.4 <2.0	<0.4 <2.0	<0.4	<0.4	<0.4	<0.4 <2.0	<0.4	<0.4 <2.0	<0.4 <2.0	<0.4 <2.0	< 2.0 < 1.0
Benzene Toluene	U	1760 1760	191 194	1.0	1 700	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 2.10	< 1.0 < 1.0		[B] < 1.0 [B] < 1.0	[B] < 1.0 [B] < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	<1.0 <1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0													
Ethylbenzene m & p-Xylene o-Xylene	U	1760 1760	Pg1 Fg4	1.0 1.0	300 500	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0	<1.0 <1.0	1.60 9.40 4.10	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0		[B] < 1.0 [B] < 1.0	[B] < 1.0 [B] < 1.0 [B] < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0	< 1.0 < 1.0 < 1.0
Methyl Tert-Butyl Ether N-Nitrosodimethylamine	N N	1760 1790	191 191	1.0	15	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 < 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50	[B] < 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0 < 0.50	< 0.50
Phenol 2-Chlorophenol	N N	1790 1790	164 164	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50
Bis-(2-Chloroethyl)Ether 1,3-Dichloroberzene 1,4-Dichloroberzene	N N	1790 1790 1790	pg1 pg1 lgq	0.50 0.50 0.50	-	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
1,2-Dichloroberzene 2-Methylphenol (o-Cresol)	N N	1790 1790	µ91 164	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Bis(2-Chloroisopropyl)Ethe	r N	1790	рд1	0.50		< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine	N	1790	164 164	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol Nitrobenzene Isophorone	N N	1790 1790 1790	pg1 lgq lgq	0.50 0.50 0.50	-	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
2-Nitrophenol 2,4-Dimethylphenol	N N	1790 1790	h84 h84	0.50		< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50			< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50
Bis(2- Chloroethoxy)Methane 2,4-Dichlorophenol	N N	1790 1790	164 164	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50
1,2,4-Trichlorobenzene Naphthalene	N N	1790 1790	р91 Р91	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50					
4-Chloroaniline Hexachlorobutadiene 4-Chloro-3-Methylohenol	N N	1790 1790 1790	1991 1991	0.50 0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50
2-Methylnaphthalene Hexachiorocyclopentadieni	N N	1790	pg1	0.50		< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,6-Trichlorophenol 2,4,5-Trichlorophenol	N N	1790	h91	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50
2-Chloronaphthalene 2-Nitroaniline	N N	1790 1790	164 164	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50					
Acenaphthylene Dimethylphthalate 2,6-Dinitrotoluene	N N	1790 1790 1790	164 164 164	0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Aceraphthene 3-Nitroaniline	N N	1790 1790	H91	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	0.92 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Diberzofuran 4-Chlorophenylphenylether	N N	1790 1790	164 164	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50
2,4-Dinitrotoluene Fluorene	N N	1790 1790		0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50					
Diethyl Phthalate 4-Nitroaniline	N N	1790 1790	pg1	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50					
2-Methyl-4,6-Dinitrophenol Azoberzene	N N	1790 1790	pg1	0.50		< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50			< 0.50	< 0.50	_	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50
4-Bromophenylphenyl Ethe Hexachlorobenzene	N N			0.50		< 0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pentachiorophenol Phenanthrene Anthracene	N N	1790 1790 1790	pg1 lgq lgq	0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 5.60 1.90	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Carbazole Di-N-Butyl Phthalate	N N	1790 1790	191 194	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	1.80	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 0.82										
Fluoranthene Pyrene	N N	1790 1790	рд1 194	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	9.50 7.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50			< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	1.3
Butylbenzyl Phthalate Benzo(ajanthracene Chrysene	N N	1790 1790 1790		0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 1.30 0.94	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	2.3 2.3 < 0.50
Bis(2-Ethylhoxyl)Phthalate	N N	1790	184	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate Benzo(b)fluoranthene Benzo(k)fluoranthene	N N		Pg1 Pg4 Pg4	0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Benzo(a)pyrene Indeno(1,2,3-c,d)Pyrene	N N	1790 1790	Pg1	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
Diberz(a,h)Anthracene Benzo[g,h,i]perylene 4-Nitrophenol	N N	1790 1790 1790	764 164 164	0.50 0.50 0.50		< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50			< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50	< 0.50 < 0.50 < 0.50
Total Phenois			mgil			< 0.030		0.05		< 0.030			< 0.030	< 0.030	< 0.030	< 0.030	< 0.030		. 0.30	< 0.030	< 0.030		< 0.030	< 0.030	< 0.030	< 0.030	< 0.030		< 0.030	< 0.030		< 0.030	

Exceeds screening value

Limit of detection of above screening value

Passes screening value

Part									sand																									
Part	Environmental Ltd								17-20560																									
Martin M				Clier	t Sample Ref.:		BHC06	TPC101		TPC01	BHC02	IPC01	IPC05	TPC23	BHC04	BHC05	BHC28	WSC19A	WSC23		BH102	BHC101	WSC19A	BHC18		BHC26	BHC23	BHC08	TPC08	BH13CP	BHC30	BHC06B	BHC01	WSC16
State Stat	Determinand	Accred	SOB		Date Sampled:	EQS-			01-Aug-2017											22-Nov-2017					05-Feb-2018									
Section Sect	pH Ammonia (Eree)	U	1010		N/A	Coastal																												
Charles	Sulphate	U	1220	mg/l	1.0	0.001						23											2.9							3.7				
	Arsenic (Dissolved)	U	1450	р91	1.0																													
Section Sect	Cadmium (Dissolved)	U	1450	pg1	0.080	0.2	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	0.11	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080		< 0.080	< 0.080	< 0.080	< 0.080		< 0.080	< 0.080	0.21	< 0.080	< 0.080	< 0.080	< 0.080	< 0.080	<0.08
Section Sect	Copper (Dissolved)	U	1450	pg/l	1.0		< 1.0 15			< 1.0 4.2	7.4	10		7.4	< 1.0 5.1	19	3.8				< 1.0 32	4.3	1.5	<1.0 1.2		4.6	1.6	52 22 0.53			< 1.0 1.8		< 1.0 < 1.0	3.0
Section	Nickel (Dissolved)	U	1450	µg/l	1.0	8.6	1.5		< 1.0	1.2	< 1.0		< 1.0	< 1.0 2.3	1.0		1.0				< 1.0	< 1.0		< 1.0 1.8				65 19			< 1.0 1.3			<1
Part	Zinc (Dissolved)	U	1450	µg/l	1.0		3.4		2.1	11	2.8	20		3.1	7.8	2.2	3.2	5.1				4.3	4.9			3.4		190	1.9	< 1.0	3.5			7.1
Septimine Septim	Aliphatic TPH >C5-C6	N	1675	р91	0.10	0.6	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10				< 0.10	< 0.10			[B] < 0.10		< 0.10	< 0.10	< 0.10	< 0.10			< 0.10
Section Sect	Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	-	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	5.8	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Section Sect	Aliphatic TPH >C16-C21	N	1675	Pg1 Pg1	0.10		< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	6.9	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10	76	< 0.10	< 0.10	< 0.10	< 0.10
	Aliphatic TPH >C35-C44	N	1675	µg1	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Hydrocarbons Aromatic TPH >C5-C7	N	1675	Pg4	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Column	Aromatic TPH >C8-C10	N	1675	pg1	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
The column	Aromatic TPH >C12-C16		1675	pg1	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	84	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	7.9	[B] < 0.10	[B] < 0.10	< 0.10	< 0.10	110	< 0.10	< 0.10	< 0.10	< 0.10
Section Sect	Aromatic TPH >C21-C35		1675	pg1	0.10		< 0.10																											
	Hydrocarbons Total Petroleum	N						1					-																					-
The column	Naphthalene	U	1700	P91	0.10	2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.7	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Part	Acenaphthene	U	1700	pg1	0.10		< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	1.2	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10 < 0.10	< 0.10 < 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
The column	Phenanthrene Anthracene	U	1700 1700	Pg1 Pgq	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Section Sect	Pyrene	U	1700	р91	0.10	0.0063																												
Marchanger Mar	Chrysene	U	1700	µg/l	0.10	0.017																												
Section Sect	Benzo(k)fluoranthene	U	1700	р91	0.10																													
Contine Cont	Dibenz(a,h)Anthracene	U	1700	µg/l	0.10		< 0.10				< 0.10					< 0.10						< 0.10	< 0.10						< 0.10	< 0.10	< 0.10			< 0.10
1	Total Of 16 PAH's	U	1700	pg1	2.0		< 2.0				< 2.0					< 2.0						< 2.0	< 2.0		< 2.0				< 2.0	< 2.0	< 2.0			< 2.0
The column	Toluene	U	1760	µg/l	1.0	74	< 1.0		< 1.0	< 1.0		< 1.0		< 1.0	2.1	< 1.0	< 1.0	< 1.0			< 1.0		< 1.0			[B] < 1.0	[B] < 1.0		< 1.0	< 1.0	< 1.0			< 1.0
Marchanger Mar	o-Xylene	U	1760	р91	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.1	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		[B] < 1.0	[B] < 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Section Personal	N-Nitrosodimethylamine	N	1790	µg1	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50		[B] < 1.0	[B] < 1.0		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Mathematical Content of the Conten	2-Chlorophenol	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Memory No. 196 69 69 69 69 69 69 69 69 69 69 69 69 6	1,4-Dichlorobenzene	N	1790 1790	рд1 164	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Market M									_				_									_												
Section Sect																																		
Section Sect																																		
Part	Nitrobenzene	N	1790 1790	pg/l	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50
Conting Cont		N	1790	P91	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Part	2,4-Dichlorophenol	N	1790	Pg4	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Continue	Naphthalene	N	1790	ру1	0.50	0.4	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Column C	Hexachiorobutadiene	N	1790	р91	0.50	0.6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Description Part	2-Methylnaphthalene Hexachlorocyclopentadiene	N N	1790 1790	164 164	0.50			< 0.50 < 0.50	_		< 0.50 < 0.50						< 0.50 < 0.50					< 0.50 < 0.50		< 0.50 < 0.50	< 0.50 < 0.50						< 0.50 < 0.50	< 0.50 < 0.50		< 0.50 < 0.50
December N 179			1790	µg/l	0.50																													
No. Property Company No. Prop.	2-Nitroaniline	N	1790	µg/l	0.50		< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Part	Dimethy/phthalate	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Compression Compression	Aceraphthene	N N	1790 1790	Pg4 Pg4	0.50 0.50	Ŀ	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.92	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50 < 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Part									_													_												
Marches N 770 yg 9 00 . 400 400 400 400 400 400 400 400 40	Fluorene	N	1790	рд1 1ец	0.50 0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Part Part	4-Nitroanline	N	1790	рэ1	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Procedure Processing Proc	Azoberzene	N	1790	рgl	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Perfectione N 1790 191 100 N 1790 100 N 1790 100 N 1790 100 N 1790 100 N 1790 100 N 1790 100 N 1790 100 N 1790 100 N 1790	Hexachlorobenzene	N	1790	µg/1	0.50	0.05	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Seminary N 1790 1991 000	Pheranthrene	N	1790	pg1	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Property Property	Carbazole	N	1790	pg1	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Participation Participatio Participation Participation Participation Participation	Fluoranthene Pyrene	N N	1790 1790	рд1 164	0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50	< 0.50 < 0.50	< 0.50 < 0.50	9.5 7.5	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	0.82 1.3
## Complementary N 1790 191 100 . 450 45	Benzo(a)arthracene	N	1790	р91	0.50	0.75	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.3	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.3
Secretary Secr	Bis(2-Ethylhexyl)Phthalate	N	1790	Pg4	0.50	1.3	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Secret Depart N 1790 1981 1.00 6.50 6.	Benzo(b)fluoranthene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Descript April Princage N 1770 197 0.50 . 0.50	Benzo(a)pyrene	N	1790	µg/l	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
	Diberz(a,h)Anthracene Benzo(g,h,i)perylene	N N	1790 1790	pg1 pg1	0.50 0.50		< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50			< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50	< 0.50 < 0.50
																				< 0.50						< 0.030	< 0.030							



			17424916	17424917	17424918	17424919
		SDG ID.	180423-34	180423-34	180423-34	180423-34
		Project Site	Lowestoft	Lowestoft	Lowestoft	Lowestoft
		Sample Description	WS01	WS02	WS03	WS04
		Sample Depth	0.00-0.20	0.00-0.20	0.00-0.20	0.00-0.20
		Date Sampled	19/04/2018	19/04/2018	19/04/2018	19/04/2018
		Received On	23/04/2018	23/04/2018	23/04/2018	23/04/2018
		Date Complete	30/04/2018	30/04/2018	30/04/2018	30/04/2018
		EQS Coastal				
		Screen				
Carbon						
Organic Carbon, Total	mg/l		<3	<3	<3	<3
Inorganics						
Alkalinity, Total as CaCO3	mg/l		135	124	122	122
Ammoniacal Nitrogen as N	mg/l		<0.2	<0.2	<0.2	<0.2
Apparent Colour	mg/l Pt/Co		27.3	13.7	9.61	11.3
Chloride			18400	18500	18000	18300
Conductivity @ 20 deg.C			45.8	46.7	46.3	45.1
Nitrate as NO3			<0.3	<0.3	<0.3	<0.3
	pH Units		7.9	7.92	7.93	7.9
-						
Phosphate (Ortho as PO4)			<0.05	<0.05	<0.05	<0.05
Sulphate			2640	2620	2610	2600
Suspended solids, Total	_	•	42.3	36.8	40.8	
True Colour	mg/l Pt/Co		1.38	1.95	1.49	1.51
Filtered (Dissolved) Metals	ı					ı
Aluminium (diss.filt)	μg/l		<60	<60	<60	<60
Arsenic (diss.filt)	μg/l	25	<3	<3	<3	<3
Cadmium (diss.filt)		0.2	<0.48	<0.48	<0.48	<0.48
Chromium (diss.filt)	μg/l	0.6	<6	<6	<6	<6
Copper (diss.filt)	μg/l	3.76	3.32	1.84	<1.8	<1.8
Iron (Dis.Filt)	mg/l	1	<0.114	<0.114	<0.114	<0.114
Lead (diss.filt)	μg/l	1.3	<1.2	<1.2	<1.2	<1.2
Manganese (diss.filt)	μg/l		<18	18.5	22.3	18.9
Mercury (diss.filt)	μg/l	0.07	<0.01	<0.01	<0.01	<0.01
Nickel (diss.filt)	μg/l	8.6	3.13	<2.4	<2.4	3.32
Zinc (diss.filt)	μg/l	6.8	26.8	19.9	21.2	8.88
Unfiltered (Total) Metals	11.0					
Calcium (Tot. Unfilt.)	ma/l		440	450	415	461
Magnesium (Tot. Unfilt.)			1130	1160	1150	1130
Potassium (Tot. Unfilt.)			361	356	355	349
Sodium (Tot. Unfilt.)	1		8440	8940	9050	8890
Gasoline Range Organics (GRO)	9/1		0440	0340	3030	0090
EPH (C6-C10)	ug/l		<100	<100	<100	<100
		•				
GRO >C5-C10	ру/і	•	<10	<10	<10	<10
EPH (Extractable Petroleum Hydrocarbons) EPH Range >C10 - C40 (aq)	ua/l		<100	<100	<100	.400
TPH Criteria Working Group (TPH CWG)	ру/і	•	<100	<100	<100	<100
	//	8	_	-	_	
Benzene			<7	<7	<7	<7
Ethylbenzene		20	<5	<5	<5	<5
m,p-Xylene		30	<8	<8	<8	<8>
Methyl tertiary butyl ether (MTBE)	μg/l		<3	<3	<3	<3
o-Xylene	μg/l	30	<3	<3	<3	<3
Sum of detected BTEX	μg/l		<28	<28	<28	<28
Toluene	μg/l	74	<4	<4	<4	<4
Total EPH (C6-C40) (aq)	μg/l		<100	<100	<100	<100

Sample		ı	Location		Contaminant	Arsenic	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc	Organotins; (TBT, DBT, MBT)	PCB's, ICES 7	PCB's, 25 congeners	Boron	Selenium	Total Metal Load Vs AL1
					Action Level 1	20	0.4	40	40	0.3	20	50	130	0.1	0.01	0.02	N/A	N/A	100
	Е	N	Lat	Long	Action Level 2	100	5	400	400	3	200	500	800	1	0.139	0.2	N/A	N/A	I
G01	652497.9	292762.6	52°28'27.59"N	001°42′59.65″E		19.1	0.392	26.2	131	<0.14	24.7	65.8	212	<lod< td=""><td><lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>162.4519259</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>162.4519259</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>40.3</td><td><lod< td=""><td>162.4519259</td></lod<></td></lod<>	40.3	<lod< td=""><td>162.4519259</td></lod<>	162.4519259
G02	653038.5	293033.9	52°28'35.48"N	001°43′28.96″E		18.4	<0.02	25.8	63.4	<0.14	23.6	47.8	161	<lod< td=""><td><lod< td=""><td><lod< td=""><td>34.6</td><td><lod< td=""><td>118.4944605</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>34.6</td><td><lod< td=""><td>118.4944605</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>34.6</td><td><lod< td=""><td>118.4944605</td></lod<></td></lod<>	34.6	<lod< td=""><td>118.4944605</td></lod<>	118.4944605
G03	653285.85	292941.3	52°28'32.06"N	001°43′41.77″E		19.8	0.297	27.2	35	<0.14	25.8	37.4	124	<lod< td=""><td><lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>91.4097875</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>91.4097875</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>41.8</td><td><lod< td=""><td>91.4097875</td></lod<></td></lod<>	41.8	<lod< td=""><td>91.4097875</td></lod<>	91.4097875
G04	653542.93	292882.1	52°28'29.73"N	001°43′55.25″E		19.8	0.313	24.3	23.6	<0.14	24.1	33.2	100	<lod< td=""><td><lod< td=""><td><lod< td=""><td>38.4</td><td><lod< td=""><td>74.58948174</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>38.4</td><td><lod< td=""><td>74.58948174</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>38.4</td><td><lod< td=""><td>74.58948174</td></lod<></td></lod<>	38.4	<lod< td=""><td>74.58948174</td></lod<>	74.58948174
G05	653619.93	292806	52°28'27.14"N	001°43′59.11″E		21.2	<0.02	23.4	21.3	<0.14	24	32.6	101	<lod< td=""><td><lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>74.58039978</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>41.8</td><td><lod< td=""><td>74.58039978</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>41.8</td><td><lod< td=""><td>74.58039978</td></lod<></td></lod<>	41.8	<lod< td=""><td>74.58039978</td></lod<>	74.58039978
G06	653760.79	292834.2	52°28'27.81"N	001°44′06.65″E		24.2	0.255	27.3	21.3	<0.14	27.8	36.5	108	<lod< td=""><td><lod< td=""><td><lod< td=""><td>44.8</td><td><lod< td=""><td>80.55085736</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>44.8</td><td><lod< td=""><td>80.55085736</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>44.8</td><td><lod< td=""><td>80.55085736</td></lod<></td></lod<>	44.8	<lod< td=""><td>80.55085736</td></lod<>	80.55085736
G07	654026.34	292762.7	52°28'25.08"N	001°44′20.47″E		18.6	0.311	24.7	21.7	<0.14	25.3	37.2	108	<lod< td=""><td><lod< td=""><td><lod< td=""><td>27.2</td><td><lod< td=""><td>79.63215949</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>27.2</td><td><lod< td=""><td>79.63215949</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>27.2</td><td><lod< td=""><td>79.63215949</td></lod<></td></lod<>	27.2	<lod< td=""><td>79.63215949</td></lod<>	79.63215949
G08	654060.18	292676.3	52°28'22.21"N	001°44′22.03″E		20.6	0.258	25.4	18.6	<0.14	25.4	31.4	94	<lod< td=""><td><lod< td=""><td><lod< td=""><td>45</td><td><lod< td=""><td>70.38430444</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>45</td><td><lod< td=""><td>70.38430444</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>45</td><td><lod< td=""><td>70.38430444</td></lod<></td></lod<>	45	<lod< td=""><td>70.38430444</td></lod<>	70.38430444
G09	654245.01	292706.7	52°28'22.90"N	001°44′31.90″E		18.7	0.236	20.3	13.9	<0.14	20.7	25.1	72.5	<lod< td=""><td><lod< td=""><td><lod< td=""><td>44.5</td><td><lod< td=""><td>54.85451822</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>44.5</td><td><lod< td=""><td>54.85451822</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>44.5</td><td><lod< td=""><td>54.85451822</td></lod<></td></lod<>	44.5	<lod< td=""><td>54.85451822</td></lod<>	54.85451822
G10	654843.57	292696.6	52°28'21.54"N	001°45′03.49″E		17.5	0.294	14.8	12.7	<0.14	16.5	21.4	60.4	<lod< td=""><td><lod< td=""><td><lod< td=""><td>32</td><td><lod< td=""><td>45.73505668</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>32</td><td><lod< td=""><td>45.73505668</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>32</td><td><lod< td=""><td>45.73505668</td></lod<></td></lod<>	32	<lod< td=""><td>45.73505668</td></lod<>	45.73505668
G11	655114.78	292628.4	52°28′18.89″N	001°45′17.69″E		19.5	<0.02	21.4	14.8	<0.14	22.3	29.9	85.1	<lod< td=""><td><lod< td=""><td><lod< td=""><td>41.7</td><td><lod< td=""><td>63.42667279</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>41.7</td><td><lod< td=""><td>63.42667279</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>41.7</td><td><lod< td=""><td>63.42667279</td></lod<></td></lod<>	41.7	<lod< td=""><td>63.42667279</td></lod<>	63.42667279
G12	655186.48	292816.4	52°28'24.84"N	001°45′21.96″E		19.6	0.286	22.5	20.7	<0.14	23.7	32.3	93.9	<lod< td=""><td><lod< td=""><td><lod< td=""><td>38.8</td><td><lod< td=""><td>70.15358554</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>38.8</td><td><lod< td=""><td>70.15358554</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>38.8</td><td><lod< td=""><td>70.15358554</td></lod<></td></lod<>	38.8	<lod< td=""><td>70.15358554</td></lod<>	70.15358554

Sample	Depth			Location		Contaminant	Arsenic	Cadmium	Chromium	Copper	Mercury	Nickel	Lead	Zinc	Organotins; (TBT, DBT, MBT)	PCB's, ICES 7	PCB's, 25 congeners	Boron	Selenium	Total Metal Load Vs AL1
						Action Level 1	20	0.4	40	40	0.3	20	50	130	0.1	0.01	0.02	N/A	N/A	100
		E	N	Lat	Long	Action Level 2	100	5	400	400	3	200	500	800	1	0.139	0.2	N/A	N/A	
VC2	1						4.22	0.098	3.31	4.19	0.14	4.38	7.83	16	<lod< td=""><td><lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>12.57927244</td></lod<></td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td>40.3</td><td><lod< td=""><td>12.57927244</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>40.3</td><td><lod< td=""><td>12.57927244</td></lod<></td></lod<>	40.3	<lod< td=""><td>12.57927244</td></lod<>	12.57927244
VC2	2						3.84	0.063	2.58	3.22	0.14	3.47	2.65	11.6	<lod< td=""><td></td><td><lod< td=""><td>34.6</td><td><lod< td=""><td>8.627117403</td></lod<></td></lod<></td></lod<>		<lod< td=""><td>34.6</td><td><lod< td=""><td>8.627117403</td></lod<></td></lod<>	34.6	<lod< td=""><td>8.627117403</td></lod<>	8.627117403
VC2	3						37.9	0.553	24.9	29.3	0.14	35.9	31.1	104		<lod< td=""><td><lod< td=""><td></td><td><lod< td=""><td>79.99599662</td></lod<></td></lod<></td></lod<>	<lod< td=""><td></td><td><lod< td=""><td>79.99599662</td></lod<></td></lod<>		<lod< td=""><td>79.99599662</td></lod<>	79.99599662
VC2	3.5						15.3	1.18	0.9	12.1	0.14	21.5	13.5	61.7			-		<lod< td=""><td>42.53165671</td></lod<>	42.53165671
VC3	1						19.7	0.241	22	25.6	0.14	23.4	31.7	95.8			<lod< td=""><td></td><td><lod< td=""><td>71.8160635</td></lod<></td></lod<>		<lod< td=""><td>71.8160635</td></lod<>	71.8160635
VC3	2						3.42	0.086	5.45	2.9	0.14	3.3	4.27	18.7					<lod< td=""><td>13.30317582</td></lod<>	13.30317582
VC3	3						22.4	1.01	0.9	8.11	0.14	18.3	10.9	47.5				27.2	<lod< td=""><td>33.73829767</td></lod<>	33.73829767
VC3	3.5						1.75	0.038	2.91	2.9	0.14	2.78	4.52	9.05		<lod< td=""><td>-</td><td>45</td><td><lod< td=""><td>7.374096943</td></lod<></td></lod<>	-	45	<lod< td=""><td>7.374096943</td></lod<>	7.374096943
VC4	1						3.4	0.139	12	10.8	0.14	12.9	10.2	31.6		<lod< td=""><td><lod< td=""><td>44.5</td><td><lod< td=""><td>25.02579075</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>44.5</td><td><lod< td=""><td>25.02579075</td></lod<></td></lod<>	44.5	<lod< td=""><td>25.02579075</td></lod<>	25.02579075
VC4	2						1.35	0.036	2.89	2.29	0.14	3	3.54	8.25		<lod< td=""><td><lod< td=""><td>32</td><td><lod< td=""><td>6.597179432</td></lod<></td></lod<></td></lod<>	<lod< td=""><td>32</td><td><lod< td=""><td>6.597179432</td></lod<></td></lod<>	32	<lod< td=""><td>6.597179432</td></lod<>	6.597179432
VC4	3						2.74	0.053	4.51	5.46	0.14	6.32	9.64	15			<lod< td=""><td></td><td><lod< td=""><td>12.87192709</td></lod<></td></lod<>		<lod< td=""><td>12.87192709</td></lod<>	12.87192709
VC4	3.8						0.936	0.02	1.1	1.4	0.14	1.1	3.31	4.24			<lod< td=""><td>38.8</td><td><lod< td=""><td>3.66436256</td></lod<></td></lod<>	38.8	<lod< td=""><td>3.66436256</td></lod<>	3.66436256
VC5	1						21	0.241	24.7	23.3	0.14	25.8	36.3	105		<lod< td=""><td></td><td></td><td></td><td>78.29462677</td></lod<>				78.29462677
VC5	2						3.65	0.088	1.73	5.48	0.14	2.83	6.85	15.6						11.91686909
VC5	2.7						11.4	0.342	0.9	7.98	0.14	6.13	8.54	48.1		<lod< td=""><td></td><td></td><td></td><td>31.56367475</td></lod<>				31.56367475
VC6	1						34.8	0.282	23	20.1	0.14	24.5	38.3	98.6		<lod< td=""><td><lod< td=""><td></td><td></td><td>75.39729191</td></lod<></td></lod<>	<lod< td=""><td></td><td></td><td>75.39729191</td></lod<>			75.39729191
VC6	2.2						2.21	0.13	1.65	2.14	0.14	3.04	2.49	8.13		<lod< td=""><td></td><td></td><td></td><td>6.145635196</td></lod<>				6.145635196
VC7	1						0.6	0.03	1.11	3.43	0.14	0.59	2.72	4.07		<lod< td=""><td></td><td></td><td></td><td>3.720276493</td></lod<>				3.720276493
VC7	1.8						0.832	0.067	1.69	1.4	0.14	1.1	5.36	4.78		<lod< td=""><td></td><td></td><td></td><td>4.494434034</td></lod<>				4.494434034
VC8	0.8						1.19	0.2	2.11	1.69	0.14	1.45	3.3	6.29						5.07525347
VC8	1.2						0.6	0.025	1.23	1.4	0.14	1.35	1.95	3.87		<lod< td=""><td>$\overline{}$</td><td></td><td></td><td>3.183093685</td></lod<>	$\overline{}$			3.183093685
VC9	1						36.1	1.98	0.9	3.79	0.14	14.7	11.3	47.2		<lod< td=""><td></td><td></td><td></td><td>33.78354505</td></lod<>				33.78354505
VC9	1.4						0.703	0.032	1.65	1.4	0.14	1.16	2.34	6.75		<lod< td=""><td></td><td></td><td></td><td>4.930779799</td></lod<>				4.930779799
VC10	1						19	0.243	24.4	23	0.14	24.8	34.1	101		<lod< td=""><td></td><td></td><td></td><td>75.24338073</td></lod<>				75.24338073
VC10	2						1.67	0.052	1.68	1.45	0.14	2.37	2.97	8.26		<lod< td=""><td>-</td><td></td><td></td><td>6.104048461</td></lod<>	-			6.104048461
VC10	2.7						1.09	0.045	1.1	1.95	0.14	1.38	4.31	10.1		<lod< td=""><td>-</td><td></td><td></td><td>7.26470871</td></lod<>	-			7.26470871
VC11	1						19.9	0.277	25.2	27	0.14	25.7	38.8	117		<lod< td=""><td>-</td><td></td><td>\square</td><td>86.11084411</td></lod<>	-		\square	86.11084411
VC11	2						1.21	0.025	1.6	1.4	0.14	1.36	2.48	5.66						4.407012746
VC11	2.4						1.54	0.03	1.76	2.69	0.14	1.75	4.25	7.5		<lod< td=""><td></td><td></td><td></td><td>6.116832085</td></lod<>				6.116832085
VC12	1						18.3	0.373	24.1	26.2	0.14	23	43.7	125		<lod< td=""><td></td><td></td><td></td><td>90.91010224</td></lod<>				90.91010224
VC12	2						1.08	0.051	1.62	1.99	0.14	1.88	2.5	5.35	<lod< td=""><td><lod< td=""><td><lod< td=""><td></td><td></td><td>4.376715633</td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td></td><td></td><td>4.376715633</td></lod<></td></lod<>	<lod< td=""><td></td><td></td><td>4.376715633</td></lod<>			4.376715633
VC12	3						4.54	0.116	14	10.4	0.14	15.3	11.9	48.6	<lod< td=""><td><lod< td=""><td><lod< td=""><td></td><td></td><td>35.40940118</td></lod<></td></lod<></td></lod<>	<lod< td=""><td><lod< td=""><td></td><td></td><td>35.40940118</td></lod<></td></lod<>	<lod< td=""><td></td><td></td><td>35.40940118</td></lod<>			35.40940118



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