Hampshire Water Transfer and Water Recycling Project

Environmental Statement Appendix 11.2 Geotechnical and geo-environmental reports - 1 of 18 documents - Geo-environmental Interpretative Report for Ground Investigation at Tunnels and Shafts (Phase 0)

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WATER for LIFE

from Southern Water

Contents

1 Introduction and Objectives

1.1 Background and Scheme Overview

Water for Life Hampshire (WfLH) is a programme being undertaken by Southern Water Services Limited (hereafter referred to as 'the Applicant') to address the sustainability objectives of reduced abstractions on Hampshire's two main rivers, the River Test and River Itchen, and to ensure a resilient water supply for the Applicant's customers during times of drought. The Hampshire Water Transfer and Water Recycling Project (HWTWRP) (hereafter referred to as the 'Proposed Development') is the Strategic Resource Option project being delivered as part of the WfLH programme (Southern Water, 2024). An overview of the Proposed Development, at the time of this report production, is provided in the Southern Water HWTWRP Technical Document Terminology Guide (Southern Water, 2024).

1.2 Terms of Reference

Strategic Solutions Partner (SSP) has been instructed by the Applicant as part of the Proposed Development, to produce a Geo-environmental Interpretative Report for ground investigation (GI) completed for the Proposed Development within the Draft Order Limits (DoL). The Proposed Development has been divided into 12 Sections by the Applicant; these are referred to as Sections A to M (excluding I).

1.3 Ground Investigation Programme

The GI for the Proposed Development is being completed using a phased approach, as shown in **Table 1.1**. This document reports the geo-environmental conditions and findings of the GI works and monitoring completed during Phase 0 GI only.

Table 1.1: Ground Investigation Programme

GI Phase	Description
Phase 0	This, with Phases 1 and 3A, was completed between July 2022 and October 2023 by SOCOTEC for Clancy (Principal Contractor), and as specified by SSP (AECOM), primarily for the purpose of tunnel and shaft design (Sections B, C, D and M only), and comprised 11 boreholes.
Phase 1	This, with Phases 0 and 3A, was completed between July 2022 and October 2023 by SOCOTEC for Clancy (Principal Contractor), and as specified by SSP (AECOM), primarily for the purpose of tunnel and shaft design (Sections B, C, D, L and M only), and comprised 35 exploratory hole locations.
Phase 2	This is part of a wider phased GI conducted along the route between February 2023 and July 2023 by SOCOTEC for Clancy (Principal Contractor), and as specified by SSP, primarily for the purpose of investigating areas for non-pipeline infrastructure, trenchless crossings and potential sources of contamination (PSC). This phase comprised of 48 exploratory holes.
Phase 3A	This, with Phases 0 and 1, was completed between July 2022 and October 2023 by SOCOTEC for Clancy (Principal Contractor), and as specified by SSP (AECOM), primarily for the purpose of tunnel and shaft design (Sections B, C, D, L and M only) and comprised 14 exploratory hole locations.
Phase 3B/3C	This, with several Phase 2 GI locations was completed between May 2023 and May 2024 by SOCOTEC for Clancy (Principal Contractor), and as specified by SSP, primarily for the purpose of investigating areas for non-pipeline infrastructure, trenchless crossings, PSCs and the linear route. This phase comprised of 167 exploratory holes.

1.4 Phase 0 Ground Investigation

1.4.1 Objectives

The Phase 0 GI was primarily specified to investigate the geotechnical parameters required for shafts, tunnels or directional drilling within the proposed Water Recycling Plant (WRP) Site, land southeast of the WRP site, Budds Farm Wastewater Treatment Works (WTW) and a location south of Langstone Harbour.

The scheme requires a pipeline crossing under Hermitage Stream / Langstone Harbour. The pipe material has not been determined for the scheme and an assessment will be made at a later stage in the project. The Site location for the WRP Site and Budds Farm is presented in **Appendix A.1** The four site areas (WRP, Land southeast of WRP, Land south of Langstone Harbour and Budds Farm WTW) are shown in **Appendix A.2**

1.4.2 Scope and Specifications

SOCOTEC UK Limited (SOCOTEC) was commissioned by The Clancy Group Ltd (Clancy), on behalf of the Applicant to undertake the Phase 0 GI at the proposed shaft locations on (1) the proposed WRP site, (2) land to the southeast of the WRP site, (3) within Budds Farm WTW and (4) to the south of the proposed Langstone Harbour crossing. The scope of the Phase 0 GI was specified by SSP (AECOM) (SSP, 2022a).

Phase 0 GI works formed part of a wider GI covering shaft and tunnels required along the pipeline route (Phase 1 and Phase 3A). Phase 0 GI was completed ahead of Phase 1/3A GI works due to early land access permissions. Two borehole locations, BHRP01 and BHRP02, specified by SSP (AECOM) (SSP, 2022b) as part of the Phase 1 GI works were completed at the same time as the Phase 0 GI.

1.5 Report Format

This report comprises geo-environmental interpretation of data collated during the GI as outlined below:

Section 1 Introduction and objectives.

Section 2 Description and environmental setting referring to desk study information.

Section 3 Summary of existing information specific to the ground investigation referring to previous desk study and ground investigation information.

Section 4 Summary of the ground investigation (SOCOTEC, 2023).

Section 5 Geo-environmental Ground conditions.

Section 6 GI results, data interpretation and geo-environmental risk assessment, and geo-environmental considerations for the outline proposed works.

Section 7 Development of the contamination risk assessment model from the ground investigation.

Section 8 Conclusions and considerations based on the results of the ground investigation.

This geo-environmental interpretative report will provide information on the ground conditions encountered during the Phase 0 ground investigation works and subsequent field monitoring of boreholes. It includes interpretation of geo-environmental chemical analysis undertaken to inform on design, health and safety and excavated materials (waste) management.

This assessment will be focused on the geo-environmental issues of the proposed shafts located in the proposed areas of the WRP site and Budds Farm. Geo-environmental issues for the proposed site wide WRP development are presented in a separate report (SSP, 2024b).

2 Site Description

2.1 Site Location and Description

The investigation area is located in Brockhampton, Havant (nearest postcode PO9 1HS), approximately 6km northeast of Portsmouth; this forms part of the wider Hampshire Water Recycling and Water Transfer Scheme. The Site comprises four distinct areas described below and shown in **Appendix A.2**:

- Water Recycling Plant (WRP): A grassed area immediately north of Harts Farm Way and within a historic landfill site known to have accepted household waste.
- Land southeast of WRP.
- Land south of Langstone Harbour (Crossing Site).
- Budds Farm Wastewater Treatment Works (WTW): A grassed area west of existing structures at Budds Farm WTW. The area is recorded by the Environment Agency (EA) as an historic landfill having accepted household waste.

A geophysical survey was undertaken in Storehouse Lake**,** a water feature connecting Hermitage Stream to Langstone Harbour. Due to the lack of intrusive ground investigation and soil sampling, this has not been reviewed as part of this report.

Land use in the surrounding area is described as follows:

- **North**: The A27, beyond which is a former sewage works (demolished) or undeveloped agricultural land.
- **East**: The Site's eastern boundary is formed by woodland, beyond which is a public footpath adjacent to the Hermitage Stream. Beyond the stream is an aggregates wharf, a business centre and depot, Havant household waste recycling centre, and various commercial/light industrial units.
- **South**: Harts Farm Way, immediately beyond which are further restored landfill cells. Further south resides Langstone Harbour, an inlet of the English Channel.
- **West**: The A27 / A3(M) motorway and woodland are present.

2.2 Geological Setting

Table 2.1 presents a summary of the geology, hydrogeology, hydrology and flood risk. Further details are provided in the geo-environmental desk study incorporating the proposed WRP site (SSP, 2021), the geotechnical and geo-environmental desk study for the whole pipeline route (SSP, 2024a) and the geo-environmental ground investigation Interpretative report (SSP, 2024b) for the proposed WRP site.

Table 2.1: Geology, Hydrogeology, Hydrology and Flood Risk

Setting		WRP	Land Southeast of WRP	Land south of Langstone Harbour	Budds Farm WTW
Geology	Superficial Deposits	Raised Marine Deposits	Raised Marine Deposits	Alluvium	Alluvium River Terrace Deposits (east of Budds Farm WTW))
	Bedrock Geology	Chalk (Lewes Nodular Chalk, Seaford Chalk, Newhaven Chalk, Culver Chalk and Portsdown Chalk Formations)			
	Artificial/Made Ground	BGS Made Ground (undivided)	BGS Made Ground (undivided)	Not present	Not present
Hydrogeology	Bedrock Aquifer Classification	Chalk Principal Aquifer	Chalk Principal Aquifer	Chalk Principal Aquifer	Chalk Principal Aquifer
	Superficial Aquifer Classification	Raised Marine Deposits Secondary Aquifer (Undifferentiated)	Raised Marine Deposits Secondary Aquifer (Undifferentiated)	Alluvium Secondary A Aquifer	Alluvium and River Terrace Deposits Secondary A Aquifer
	Source Protection Zones (SPZs)	No SPZs have been identified within 250m of the site			
	Groundwater Abstractions	Approximately 420 m, 560 m and 700 m northeast of WRP at Bedhampton Springs (Portsmouth Water). All sites within 1 km of groundwater abstractions.			
Hydrology	Location	Hermitage Stream flows under the A27 dual carriageway and joins the Langstone and Chichester Harbours (south)			
	Surface Water Abstractions	No surface water abstractions within 1km of the Sites.			
	Designations	All Sites locations are located within Chichester, Langstone and Portsmouth Harbours Eutrophic Nitrate Vulnerable Zone (NVZ) - Eutrophic Water All Site locations are not located within a Surface Water Drinking Water Safeguard Zone (SWDWSZ) (MAGIC, 2023)			
Flooding	Risk for Surface Water	Very Low	Very Low	Low	Low
	Risk for Rivers and the sea	Very Low	Very Low	Very Low	Very Low
	Risk from Reservoirs	Unlikely	Unlikely	Unlikely	Unlikely

2.3 Site History

WRP and Land to the southeast of WRP

- From 1840s to 1960s, these areas were covered with marshland (Broad Marsh).
- Between 1960s to 1980s, these areas were used as a landfill (for disposal of domestic and commercial/industrial waste).
- The Site is currently vacant and comprises open grassland (restored former landfill) with a hardstanding area in the centre of the Site, connected to Harts Farm Way by an access road.
- The WRP area and Land to the Southeast of WRP Site were formerly part of Harts Farm Way landfill which accepted household waste.

Land south of Langstone Harbour and Budds Farm Wastewater Treatment Works (WTW)

- Between 1840s to 1910s, these areas were agricultural land (Budds Farm).
- From c.1913, these areas were transformed into an operational Wastewater Treatment Works known as Budds Farm WTW.
- The land south of Langstone Harbour and extending south and east is believed to have been the site of former sludge beds associated with Budds Farm WTW, and is an EA recorded historical landfill that accepted household waste. Made Ground up to 5.3m thick comprising potential WTW screening materials and household waste/sewage sludge deposits has been identified in the Land Parcel 72 report.

2.4 Environmentally Sensitive Areas

Langstone Harbour, located approximately 50m west of Budds Farm WTW, is a designated Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), Special Protection Area (SPA), a wetland of international importance designated under the RAMSAR Convention, and a Water Framework Directive (WFD) Safeguard Groundwater Dependent Terrestrial Ecosystem (GWDTE) (MAGIC, 2023).

The Solent Maritime SAC is located within 250m of all the Site areas (MAGIC, 2023).

The Site is not located within 1km of any National Nature Reserve (NNR) or designated area of ancient woodland (MAGIC, 2023).

3 Existing Ground Investigation Data

Ground investigation data is available for limited areas of the Site. Further information can be found in the following documents as stated below:

- Hampshire Water Transfer and Water Recycling Project Geo-Environmental Interpretative Report (SSP, 2024b) which provides existing ground investigation data for WRP.
- Hampshire Water Transfer and Water Recycling Project Geotechnical and Geo-Environmental Desk Study Version 4 (SSP, 2024a) which provides existing ground investigation data for the Proposed Development.
- Havant Water Recycling Plant (WRP) Geo-Environmental Desk Study (SSP, 2021) which provides existing ground investigation data for proposed WRP and Budds Farm WTW areas.

3.1 Summary of Soils Encountered in the Proposed WRP Site

The cover soils (restoration materials comprising inert waste) comprised of the following:

- Domestic and commercial/industrial landfill wastes including paper, wood, plastic, metal and glass;
- Incinerator residues;
- Superficial deposits comprising Alluvium and River Terrace, Head, and Raised Marine Deposits; and
- Chalk bedrock.

3.2 Budds Farm WTW

The proposed pipeline route at Budds Farm WTW is identified as a historical landfill that is reported to have accepted household wastes. The landfilling activities were part of the reclamation of land adjacent to Langstone Harbour. Several previous geotechnical ground investigations were completed in this area of Budds Farm WTW during the 1990s. Exploratory hole logs indicated up to 5.3m of Made Ground with deposits of possible screenings from the WTW, household landfill waste, and sewage sludge.

These investigations collected no data to assess soil or groundwater contamination and only limited gas data (SSP, 2021) (SSP, 2024a).

4 Ground Investigation

A ground investigation was carried out by SOCOTEC between 20th July 2022 and 22nd September 2022. The investigation scope was specified by SSP (AECOM) (SSP, 2022a) (SSP, 2022b) and comprised the following:

- Advancement of:
  - six boreholes (BHRP01, BHRP02, BHW001 to BHW004) by dynamic sampling with rotary coring follow on to depths of 30.20m to 65.25m below ground level (bgl);
  - one borehole (BHW005) by cable percussion to 46.8m bgl; and,
  - four dynamic sampler holes (WSW001-WSW004) to 0.80m and 6.45m bgl.
- In-situ tests including downhole geophysics, packer testing, hand vane measurements, in-situ geotechnical testing, and a falling head permeability test.
- Geotechnical and geo-environmental sampling, and groundwater and gas monitoring.
- A land based Multichannel Analysis of Surface Waves (MASW) geophysical survey across the Site
- A marine based side scan sonar survey and sub bottom profiling of a section of Storehouse Lake.

The details of the investigation, tests and laboratory analysis are presented in the Factual GI report (SOCOTEC, 2023).

4.1 Exploratory Holes and Monitoring Well Installations

The exploratory hole locations and borehole logs are presented in the Factual GI report (SOCOTEC, 2023). **Table 4.1** provides a summary of the locations and installation response zones. A plan showing the exploratory hole locations is presented in **Appendix A.3**.

Groundwater and gas monitoring wells were installed in all boreholes with the exception of WSW004.

Data loggers were installed in the following boreholes at depths as stated below:

- BHRP01 (1) 16.00m bgl
- BHRP02 (1) 16.00m bgl
- BHW001 (1) 10.30m bgl
- BHW002 (1) 10.00m bgl
- BHW003 (1) 10.40m bgl
- BHW004 (1) 10.50m bgl
- BHW005 (1) 10.50m bgl

Groundwater logger data was reported between the 18/01/2023 and 25/10/2023. Readings were taken every 15 minutes. Interpretation of data collected from data loggers installed in these monitoring wells is outside the scope of this geo-environmental interpretative report and the monitoring data has not been provided with this report.

Table 4.1: Summary of Groundwater and Ground Gas Monitoring

BH ID	Location	Dual Groundwater / Gas Installation	Response Zones (m bgl)(1)	Groundwater Monitoring Events (1)	Gas Monitoring Events	Groundwater Samples (1)
BHRP01	Water Recycling Plant (WRP)	✓	8.5-15.00 (2) 27.5-34.00 (1)	28 No (1), 12 No. (2) 09/11/2022 to 03/01/2024	12 No. (2) 24/01/2023 and 03/01/2024	1 No. (1) 16/02/2023
BHRP02		✓	4.0-10.00 (2) 22.5-29.00 (1)	28 No. (1), 14 No. (2) 09/11/2022 to 03/01/2024	12 No (2) 24/01/2023 and 03/01/2024	1 No. (1) 16/02/2023
BHW001		✓	1.50-8.20 (2) 14.50-21.50 (1)	29 No. (1), 14 No. (2) 09/11/2022 to 03/01/2024	12 No. (2) 24/01/2023 and 03/01/2024	1 No. (1) 16/02/2023
BHW002		✓	1.50-8.10 (2) 10.50-15.00 (1)	29 No. (1), 14 No. (2) 09/11/2022 to 10/03/2023	12No. (2) 24/01/2023 and 03/01/2024	1 No. (1) 16/02/2023
BHW003	Land Southeast of WRP Site.	✓	18.50-21.50 (2) 23.50-30.00 (1)	29 No. (1), 14 No. (2) 10/11/2022 to 03/01/2024	12 No. (2) 24/01/2023 and 03/01/2024.	1 No. (1) 16/02/2023
BHW004	Land South of Langstone Harbour	✓	11.70-16.70 (2) 20.00-25.00 (1)	29 No. (1), 14 No. (2) 10/11/2022 to 03/01/2024	12 No. (2) 25/01/2023 and 03/01/2024	1 No. (1) 17/02/2023
BHW005	Budds Farm WTW	✓	10.00-15.50 (2) 21.00-26.50 (1)	29 No. (1), 14 No. (2) 10/11/2022 to 03/01/2024	12 No. (2) 25/01/2023 and 03/01/2024	1 No. (1) 15/02/2023
WSW001		x	0.8-4.45 (1)	23 No. (1) 15/11/2022 to 03/01/2024	12 No. (1) 25/01/2023 and 03/01/2024	Borehole dry in all visits
WSW002		x	5.20-6.45 (1)	23 No. (1) 15/11/2022 to 03/01/2024	12 No. (1) 25/01/2023 and 03/01/2024	1 No. (1) 25/01/2023
WSW003		x	1.80-3.5 (1)	23 No. (1) 15/11/2022 to 03/01/2024	12 No. (1) 25/01/2023 and 03/01/2024	1 No. (1) 25/01/2023

Notes:
(1) Number in brackets is the SOCOTEC standpipe reference number.

Response zones depths taken from **Table D1** in the Factual GI Report (SOCOTEC, 2023)[1].

4.2 Geo-Environmental Testing

Geo-environmental laboratory testing was scheduled by SSP (AECOM) on selected soil samples recovered during the ground investigation works. The testing was carried out by SOCOTEC at their UKAS accredited environmental chemistry laboratory at Bretby, near Burton-on-Trent, in accordance with MCERTS accreditation (where applicable). The scope of testing is listed in **Table 4.2**. Waste Acceptance Criteria testing was not scheduled.

[1] It is noted that borehole logs and AGS data show some differences in the response zone depths; e.g., BHRP01 the shallow response zone is 8.5 – 15.0m bgl in Table D1 vs 9.0 – 14.9m bgl in the AGS file.

Table 4.2: Summary of Geo-environmental Laboratory Tests

Type	Quantity	Boreholes
Soil Polycyclic aromatic hydrocarbons (PAHs) by GCMS (17 No.), metals (As, B (water soluble), Cd, Cr (VI, total), Cu, Pb, Hg, Ni, Se, Zn), benzene, toluene, ethylbenzene, xylenes (BTEX), cyanide (complex, free, total), gasoline range organics (GRO) (>C6-C10), pH , total phenols, soil organic matter (%), sulphate as SO_4 (acid soluble), sulphide, total organic carbon (TOC), total Moisture (@ 35 °C and 105 °C), total petroleum hydrocarbons (TPH) (C8-C40) and banded TPH (>C8-C35) with silica clean up	16	BHW001, BHW002, BHW005, BHRP01, BHRP02, WSW001, WSW002, WSW003, and WSW004
Asbestos Stage 1 (identification)	13	BHRP01, BHRP02, BHW001 to BHW005, WSW001 to WSW004
Soil Leachate Analysis Speciated and total PAHs (16), metals (As, Al, B (water soluble), Cd, Cr (III and VI), Cu, Pb, Hg, Ni, Se, Zn), BTEX, GRO (C5-C10), pH, TPH (C8-C40), speciated TPH CWG (>C8-C35), total hardness as $CaCO_3$	1	BHRP01
Suite L3.2 Water Standard + add. Metals + inorganics [W][1] Metals (As, Al, Al, Cd, Cr (III, VI and total), Pb, Mn, Mo, Hg, Se, B, Cu, Ni, and Zn), cyanide (Free and Total), BTEX, sulphide, sulphate, sulphur as SO4, pH, GRO (>C5-C10), TPH (C8-C44) speciated including MTBE, total TPH >C8-C40 (ali / aro split), PAH Speciated (PAH17), polychlorinated biphenyls (PCBs WHO 7), phenols (total and speciated), chloride, fluoride, iron (total, ferric and ferrous), nitrate, nitrite, ammoniacal nitrogen as N / NH_3, phosphorus, phosphorus as P, orthophosphate, conductivity, hardness as $CaCO_3$.	2	WSW002 and WSW003
Groundwater Metals (As, Cd, Cr (III, VI and total), Pb, Mn, Mo, Hg, Se, B, Cu, Ni, and Zn), cyanide (Free and Total), sulphide, sulphate, pH, TPH (C8-C40) total and speciated including MTBE, speciated PAHs, volatile organic compounds (VOCs) including TICs, phenols (total and speciated) by HPLC, organochlorine pesticides and organophosphorus pesticides, chloride, fluoride, iron (total, ferric and ferrous), nitrate, nitrite, ammoniacal nitrogen as N, total and ortho phosphorus.	9	BHRP01, BHRP02, BHW001, BHW002, BHW003, BHW004, BHW005, WSW002, WSW003

Notes:
Summary based on laboratory results in SOCOTEC Ground Investigation Report (SOCOTEC, 2023) and AGS results.
[1] – Testing suite taken from Phase 1 Ground Investigation Specification and Bill of Quantities (by AECOM) during this investigation (SSP, 2022b).

5 Ground Conditions

5.1 Encountered Ground

A brief summary of the ground conditions encountered during the GI is provided in **Table 5.1**. Exploratory hole logs and more details are presented in the Factual GI Report (SOCOTEC, 2023).

Table 5.1: Summary of Encountered Ground Conditions

BH ID	Location	Artificial Deposits	Superficial Deposits	Bedrock
BHRP01	WRP	Predominately sand, gravel, and clay with landfill waste including ash, brick, concrete, ceramics, clinker, fabric, glass, leather, oil container, paper, plastic, rubber, macadam, and wood.	Absent	Chalk (White Chalk Subgroup – possible Newhaven Chalk) Unproven
BHRP02			Absent	
BHW001			Raised Marine Deposits (4.55m thick)	
BHW002			Raised Marine Deposits (5.80m thick)	
BHW003	Land southeast of WRP	Gravelly silty clay to sandy silty gravel with landfill waste including brick, chalk, chert, ceramics, clinker, concrete, flint, glass, plastic, textile, and wood.	Raised Marine Deposits (0.73m thick)	Chalk (White Chalk Subgroup – possible Newhaven Chalk) Unproven
BHW004	Land south of Langstone Harbour	Dark reddish brown slightly clayey fine to coarse sand. With frequent fragments of transparent glass and white glass, textile, clinker and silicone.	Alluvium	Chalk (White Chalk Subgroup – possible Newhaven Chalk) Unproven
BHW005	Budds Farm WTW	Gravel/clayey gravelly sand. Gravel includes limestone, macadam, concrete, brick, and flint	Alluvium (5.02m thick)	Chalk (White Chalk Subgroup – possible Newhaven Chalk) Unproven
WSW001		Sandy gravelly clay/ gravelly clayey sand. Gravel includes brick, glass, concrete, cement, chert, chalk, metal, slag, coal, tiles, and wood	Not encountered	Not encountered
WSW002			Alluvium (thickness unproven)	
WSW003			Alluvium (thickness unproven)	
WSW004			Alluvium (2.1m thick) River Terrace Deposits (thickness unproven)	

5.2 Groundwater Levels

Groundwater and ground gas monitoring took place in selected boreholes specified by SSP (AECOM). Monitoring was carried out by SOCOTEC during and after the main fieldwork period (SOCOTEC, 2023) (SOCOTEC, 2024). **Table 5.2** summarises the groundwater strikes, and groundwater level measurements collected at monitoring well locations. Tidal data (high / low tide) is not included with the groundwater monitoring data, therefore additional information would be needed to check for tidal influence on groundwater.

Table 5.2: Summary of Groundwater Strikes and Spot Monitoring Records

Exploratory Hole	Response Zone (m bgl)	Strike during Drilling – Depth and Elevation	Stratum within which Strike was Recorded	Spot Monitoring – Depth and Elevation[1]	Data Logger – Minimum/ Maximum Depth and Elevation[1]
BHRP01 (1)	27.5 – 34.0	11/08/2022 13.60m bgl -0.20m AOD	Landfill Waste	10.78 to 12.13 m bgl 2.62 to 1.27 m AOD	10.94m to 12.69m bgl 2.46m to 0.71m AOD
BHRP01 (2)	8.50 – 15.0			9.26 to 10.77 m bgl 4.14 to 2.63m AOD	N/A
BHRP02 (1)	22.5 – 29.0	15/08//2022 8.50m bgl 1.77m AOD	Landfill Waste	7.19 to 9.32m bgl 3.08 to 0.95 m AOD	7.11 to 8.86m bgl 3.16m to 1.41m AOD
BHRP02 (2)	4.00 – 10.0			7.00 to 8.07 m bgl 3.27 to 2.20 m AOD	N/A
BHW001 (1)	14.50 – 21.5	26/07/2022 7.20m bgl 0.92m AOD	Landfill Waste	5.70 to 7.08 m bgl 2.42 to 1.04 m AOD	5.42 to 7.01m bgl 2.70 to 1.11m AOD
BHW001 (2)	1.50 – 8.20			5.77 to 6.85 m bgl 2.35 to 1.27 m AOD	N/A
BHW002 (1)	10.50 – 15.0	22/07/2022 7.30m bgl 1.13m AOD	Landfill Waste	0.00 to 7.32m bgl 8.43 to 1.11 m AOD	6.18 to 7.41m bgl 2.25 to 1.02m AOD
BHW002 (2)	1.50 – 8.10			6.49 to 7.11 m bgl 1.94 to 1.32 m AOD	N/A
BHW003 (1)	23.5 – 30.0	20/09/2022 29.90m bgl -20.14m AOD	White Chalk Subgroup (Newhaven Chalk Formation)	7.51 to 9.10 m bgl 2.25 to 0.66 mAOD	7.16 to 10.08m bgl 2.60 to -0.32m AOD
BHW003 (2)	18.5 – 21.5			7.54 to 9.10 m bgl 2.22 to 0.66 m AOD	N/A
BHW004 (1)	20.0 – 25.0	01/09/2022 24.9m bgl -19.71m AOD	White Chalk Subgroup (Newhaven Chalk Formation)	3.10 to 5.27m bgl 2.09 to -0.08 m AOD	2.92 to 5.38m bgl 2.27 to -0.19m AOD

Exploratory Hole	Response Zone (m bgl)	Strike during Drilling – Depth and Elevation	Stratum within which Strike was Recorded	Spot Monitoring – Depth and Elevation[1]	Data Logger – Minimum/ Maximum Depth and Elevation[1]
BHW004 (2)	11.7 – 16.7			3.64 to 5.13m bgl 1.55 to 0.06 m AOD	N/A
BHW005 (1)	21.0 – 26.5	01/09/2022 26.4m bgl -22.98m AOD	White Chalk Subgroup (Newhaven Chalk Formation)	1.12 to 2.58 m bgl 2.30 to 0.84 m AOD	1.34 to 3.18 m bgl 2.08 to 0.24m AOD
BHW005 (2)	10.0 – 15.5			1.54 to 2.44m bgl 2.14 to 0.98 m AOD	N/A
WSW001	0.80 to 4.45	03/08/2022 Dry	N/A	Dry	N/A
WSW002	5.20 – 6.45	03/08/2022 5.8m bgl 0.73m AOD	Alluvium	4.37 to 4.80 m bgl 2.16 to 1.73 m AOD	N/A
WSW003	1.80 – 3.50	04/08/2022 3.10m bgl 0.05m AOD	Alluvium	0.34 to 1.55 m bgl 2.81 to 1.6 m AOD	N/A
WSW004	N/A	05/08/2022 Dry	N/A	No Installation	No Installation

Note – Exploratory Hole (1) and (2) SOCOTEC standpipe reference number

[1] –Spot monitoring depths to January 2024, data logger depth up to July 2023. Difference in levels may be due to seasonal variation.

5.3 Visual and/or Olfactory Contamination

A summary of visual (free product) and/or olfactory contamination recorded on Site in the borehole logs is presented in **Table 5.3**.

Table 5.3: Visual and/or Olfactory Contamination

BH ID	Location	Visual Contamination	Olfactory Contamination
BHRP01	WRP	Not recorded	Slight putrid odour (1.50 m bgl) Slight organic odour (3.20 m bgl) Moderate organic odour (10.60 m bgl) Putrid and organic odour in landfill. Strong organic odour (13.7 m bgl)
BHRP02		Not recorded	Not recorded
BHW001		Black staining (8.0 – 8.3m bgl)	Moderate hydrocarbon odour (2.0 – 2.1 m bgl). Organic odour (7.0 – 7.1 m bgl)
BHW002		Not recorded	Not recorded
BHW003	Land southeast of WRP	Not recorded	Not recorded
BHW004	Land South of Langstone Harbour	Not recorded	2.5 m bgl – 2.9 m bgl Strong organic odour.
BHW005	Budds Farm WTW	Not recorded	Organic odour in Made Ground (1.2 – 2.18 m bgl) Organic odour in Alluvium (2.18 – 2.98 m bgl)
WSW001		Not recorded	Strong hydrocarbon odour (3.0 – 3.7 m bgl)
WSW002		Not recorded	Moderate organic odour was encountered in Alluvium (5.0 – 6.45 m bgl)
WSW003		Not recorded	Slight organic odour (1.6 – 2.5 m bgl) / Strong organic (2.5 – 3.7 m bgl) in Alluvium
WSW004		Not recorded	Not recorded

Harts Farm Way landfill is known to be a dilute and disperse landfill given planning permission in the 1950s (i.e., it was not lined and; therefore, did not retain liquid waste or leachate generated within the landfill). Free product from waste may have migrated vertically out of the landfill and there are few visual signs of free product. Land west of Budds Farm WTW does not appear to have been lined and; therefore, contamination may have migrated out of the landfill over time.

6 Geo-Environmental Testing Results and Generic Quantitative Risk Assessment (GQRA)

In accordance with the guidance given in 'Land Contamination Risk Management' (LCRM) (Environment Agency, 2023) the results of the geo-environmental laboratory testing undertaken on the samples of soil and groundwater recovered during the 2022 ground investigation have been compared to appropriate published generic assessment criteria (GAC) to identify potential hazards to the plausible receptors.

6.1 Soil Results

Generic Assessment Criteria (GAC)

To evaluate potential risks to human health receptors, including future Site users, the soil analytical results have been assessed against the following Generic Assessment Criteria (GAC):

- Suitable for Use Values (S4ULs) for commercial land use (Nathanail et al, 2015) adopting a 1% soil organic matter (SOM) value.
- Lead was compared against the Defra Category 4 Screening Level (C4SL) for a commercial end use, (Defra, 2014) because a S4UL for lead has not been published, also adopting a 1% SOM value.
- Cyanide (free) was compared to the Society of Brownfield Risk Assessment (SoBRA) Acute Generic Risk Assessment criterion for assessing risks to human health from contaminants in soil (Society of Brownfield Risk Assessment (SoBRA), 2020) since there are currently no C4SLs or S4ULs for cyanide. The assessment criterion used evaluates potential for acute harm to a child by inhalation of free cyanide. This is a conservative assessment criterion used as generic assessment criteria as allows the criteria to be adjusted if the site-specific conditions are suitable.

Further details on the selection of soil assessment criteria protective of human health is provided in **Appendix F**.

6.1.1 Assessment of Potential Risk to Human Health Receptors

There are no recorded exceedances of the human health GAC (commercial land use).

The sample recovered from BHW001 at 2.1m reported a dibenzo(a,h)anthracene concentration of <8.53 mg/kg; this is equal to this sample's method detection limit which is well in excess of the limit for other similar samples. A review of the laboratory's report for this sample indicates that "a non-standard volume or mass has been used for this test which has resulted in a raised detection limit". On this basis, it is considered that the 8.53 mg/kg concentration recorded in this sample is a not a 'true' detection.

6.1.2 Notable Soil Concentrations

Generic assessment criteria are not available for all determinands analysed. A subjective list of chemical concentrations which appear to be elevated compared to other chemical results recorded during the ground investigation are included in **Table 6.1**. Due to the variable nature of landfill, elevated chemical concentrations can occur randomly; therefore, the concentrations do not indicate a specific point source of contamination but assist in identifying concentrations which might pose a health and safety risk when compared to other concentrations found.

Table 6.1: Notable Soil Concentrations

BH ID	Location	Depth (m bgl)	Determinand	Concentration (mg/kg)	Notes
BHRP01	WRP	13.8	Total TPH >C8-C40	4,500	BHRP01 (13.8m) C21-C35 (aromatic and aliphatic) band is 3580 mg/kg. All remaining results are below 505 mg/kg.
			Sulphate (total) as SO_4	4,270	Concentrations typically below 1,000 mg/kg (6 out of 10 results).
BHRP02		0.3	Total PAH	185.0	Individual PAH concentrations are below GAC. Apart from BHW001 2.1m bgl, Total PAH is <14.9 mg/kg.
BHRP02		0.3	Sulphate (total) as SO_4	50,300	Concentrations typically below 1,000 mg/kg (6 out of 10 results). Concentration of 4270 mg/kg recorded in BHRP01 (13.8m) sample.
BHW001		2.1	Total TPH >C8-C40	1,040	Apart from BHRP01 13.8m bgl, all other TPH results are below 505 mg/kg.
BHW001		2.1	Total PAH	158.0	Individual PAH concentrations are below GAC. Apart from BHRP02 0.3m bgl, the cumulative PAH concentration is elevated compared to other locations.
BHW002		1.2	Total Cyanide	3.5	All locations apart from WSW002 (0.5m) are below the detection limit for total cyanide.
WSW002	Budds Farm	0.5	Total Cyanide	3.2	All locations apart from BHW002 (1.2m) are below the detection limit for total cyanide.

6.1.3 Soil Sample Deviations

Soil sample deviations were recorded for samples stated in **Appendix B**. This was due to the acceptable (holding) time between the sampling date and laboratory analysis being exceeded.

Holding times are derived based on ‘stability’; the ability of a property to remain unchanged, within a stated uncertainty, under given storage conditions and a specific timeframe. If a reported result is within the holding time it is known that the degree of change (if it occurs) is not statistically meaningful. If the sample result is reported as ‘deviating’ the degree of change is unknown and therefore, may have affected the result the result must; therefore, be treated as potentially indicative.

6.2 Soil Leachate and Groundwater Results

6.2.1 Generic Assessment Criteria

To evaluate potential risks to human health and controlled waters receptors (surface waters and groundwater aquifers) the leachate analysis results and groundwater analysis results were assessed against Saltwater Environmental Quality Standards (EQS). Further details on the selection of water assessment criteria protective of human health and of aquatic ecosystems (controlled waters) is provided in **Appendix F**.

6.2.2 Comparison of Soil Leachate Results Against GAC

Soil leachate (2:1 ratio) analysis was undertaken on one sample taken from the proposed WRP site (historic landfill). The exceedances compared to the selected GAC are shown in **Table 6.2**.

Table 6.2: Soil Leachate Sample Exceedances

BH ID	Depth (m bgl)	Geology	Determinand	Concentration (µg/l)	Generic Assessment Criteria (µg/l)
BHRP01	13.8	Made Ground (landfill)	Arsenic	26	25
			Cadmium	2.32	0.2
			Zinc	27	6.8

Determinands for which the method detection limit exceeded the corresponding GAC are presented in **Appendix B**. Listed determinands include several PAH compounds. It is noted that testing with a method detection limit lower than the environmental quality standards for the PAHs listed in the table below is typically not offered by standard commercial laboratories.

6.2.3 Comparisons of Groundwater Results Against GAC

Exceedances of the groundwater EQS are shown in **Table 6.3.** Results with a limit of detection greater than the saltwater EQS used for the assessment are shown in **Appendix B**. While the laboratory did not detect the determinand in the sample, it may be present at a concentration above the Saltwater GAC; however, in the absence of detected concentrations, these are not considered true exceedances.

Table 6.3: Groundwater Sample Exceedances

Location	BH ID	Sample Depth (m bgl)	Determinand	Concentration (µg/l)	Generic Assessment Criteria (µg/l)
WRP	BHRP02	8.35	Iron	**3,450**	1,000
			TPH (C8 – C40)	**30**	No GAC[1]
	BHW001	6.70	Nickel	**10**	8.6
	BHW001		Zinc	**10**	6.8
			TPH (C8 – C40 Aro)	**20**	No GAC[1]
	BHW002	7.70	Nickel	**25**	8.6
Land Southeast of WRP	BHW003	8.50	Nickel	**9**	8.6
			TPH (C8 – C40)	**30**	No GAC[1]
Land south of Langstone Harbour	BHW004	1.44	Mercury	**0.08**	0.03
Budds Farm WTW	BHW005	2.50	Zinc	**7.00**	6.8
			TPH (C8 – C40)	**30**	No GAC[1]
	WSW002	5.70	Cadmium	**0.81**	0.2
			Copper	**12**	3.76
			Lead	**4**	1.3
			Nickel	**14**	8.6
			Zinc	**150**	6.8
			Ammoniacal Nitrogen as NH3	**4,250**	21
			Anthracene	**5.24**	0.1
			Fluoranthene	**47.7**	0.0063
			Benzo(b)fluoranthene	**33**	0.017
			Benzo(k)fluoranthene	**14.3**	0.017
			Benzo(a)pyrene	**29.3**	0.00017
			Benzo(g,h,i)perylene	**15.3**	0.00082
			TPH (C8 – C40)	**1,190**	No GAC[1]

Table 6.3: Groundwater Sample Exceedances (Continued)

Location	BH ID	Sample Depth (m bgl)	Determinand	Concentration (µg/l)	Generic Assessment Criteria (µg/l)
Budds Farm WTW	WSW003	2.70	Cadmium	**0.72**	0.2
			Nickel	**10**	8.6
			Zinc	**29**	6.8
			Ammoniacal Nitrogen as NH3	**1,460**	21
			Fluoranthene	**0.15**	0.0063
			Benzo(b)fluoranthene	**0.14**	0.017
			Benzo(k)fluoranthene	**0.06**	0.017
			Benzo(a)pyrene	**0.11**	0.00017
			TPH (C8 – C40)	**560**	No GAC[1]

Notes
All samples taken from SOCOTEC borehole standpipe reference (1) in the chalk aquifer.
[1] no GAC, TPH concentrations noted exceeding 10µg/l

6.3 Excavated Materials (Waste) Management

6.3.1 Hazardous Properties

Soil analytical results for the 16 soil samples have been screened for hazardous properties as identified in Technical Guidance WM3 - Waste Classification - Guidance on the Classification and Assessment of Waste First Edition Version 1.2 (Environment Agency, 2021). This screen was carried out using Hazwasteonline (HazWasteOnline, 2023). The results are provided in **Appendix D**.

The results show that the soil samples listed in **Table 6.4** were determined to possess hazardous properties, and; therefore, classified as hazardous for waste disposal purposes.

Table 6.4: Waste Classification – Hazardous Soils

Location	BH ID	Sample Depth (m bgl)	Geology	Determinand	Concentration (mg//kg)	Hazardous Properties
WRP	BHRP01	13.8	Made Ground (landfill)	TPH	4,500	HP7, HP11
	BHW001	2.1	Made Ground (landfill)	TPH	1,040	HP7, HP11

Notes: HP7 – Carcinogenic, HP11 - Mutagenic

The remaining soil samples did not show hazardous properties; therefore, these soil samples are classified as non-hazardous for waste disposal purposes.

6.3.2 Waste Acceptance Criteria (WAC)

No WAC results are available to report.

6.4 Ground Gas Monitoring

Ground gas monitoring results are tabulated in the Factual GI Report (SOCOTEC, 2023) and Addendum Monitoring Report (SOCOTEC, 2024). An extract of these tables are provided in **Appendix E**. Two gas monitoring events were completed on 24 January 2023 and 14 February 2023.

It is noted that: (1) WSW003 had less than 1.0m depth between the top of the standpipe and the water level on three occasions reducing the volume of ground gas available for analysis, and (2) BHW005 had a minimum depth to groundwater of 1.12m on the 22/12/22. In these instances, the reliability of the recorded ground gas concentrations may be reduced due to a smaller volume of accumulated gas.

Maximum concentrations (minimum for oxygen) are presented in the summary **Table 6.5**.

An assessment and interpretation of the spot and continuous gas monitoring data collected during 2021 from other monitoring wells across the WRP Site are presented in the HWTWRP Geo-Environmental Interpretative Report for the proposed WRP (SSP, 2024b).

6.4.1 Gas Thresholds

Maximum concentrations recorded in monitoring wells have been compared to the following gas threshold concentrations.

- BSI (The British Standards Institution) Health and Safety in tunnelling in the construction industry-Code of Practice [BS 6164:2019] (BSI, 2019).
- EH40/2005 (fourth edition 2020) Workplace Exposure Limits (HSE, 2020).

Exceedances of these thresholds are shown in **Table 6.6**.

Table 6.5: Ground Gas Monitoring Results Summary

	Maximum Gas Concentrations (minimum for Oxygen)						
Location	**CH_4 %vol**	**CO_2 %vol**	**O_2 %vol**	**CO ppm**	**H_2S ppm**	**VOC ppmv**	**Max Gas Flow Rate (pk) l/hr**
WRP	84.3 BHRP01 (2) – Made Ground (landfill)	32.3 BHRP02 (2) – Made Ground – (landfill)	<0.1 BHRP01 (2) – Made Ground (landfill)	5.0 BHRP01 (2) – Made Ground (landfill)	9.9 BHRP01 (2) – Made Ground (landfill)	41 BHRP01 (2) - Made Ground – (landfill)	0.4 BHRP01 (2) – Made Ground (landfill)
Land southeast of WRP	0.1 BHW003 (2) – Chalk	11.2 BHW003 (2) – Chalk	9.5 BHW003 (2) – Chalk	<1.0 BHW003 (2) – Chalk	1.0 BHW003 (2) – Chalk	0.4 BHW003 (1) – Chalk	0.1 BHW003 (1) – Chalk
Land south of Langstone Harbour	0.2 BHW004 (2) - Chalk	18.1 BHW004 (2) - Chalk	3.2 BHW004 (2) - Chalk	1.0 BHW004 (2) - Chalk	<1.0 BHW004 (2) - Chalk	4.6 BHW004 (2) - Chalk	0.1 BHW004 (2) - Chalk
Budds Farm WTW	0.2 BHW005 – Chalk, WSW001, WSW002 - Made Ground (landfill).	12.4 WSW003 - Made Ground (landfill)	10.4 WSW001- Made Ground (landfill)	1.0 BHW005 - Chalk, WSW001, WSW002, WSW003 - Made Ground (landfill)	1.0 BHW005 - Chalk, WSW001, WSW002, WSW003 - Made Ground (landfill)	34.9 WSW001 - Made Ground (landfill)	10.0 WSW003 - Made Ground (landfill)

Notes:
- CH_4 - Methane, CO_2 – Carbon Dioxide, O_2 – Oxygen, CO – Carbon Monoxide, H_2S – Hydrogen Sulphide, VOC – Volatile Organic Compounds, ppmv - part per Million Volume. - (1)/(2) – Installation pipe number (boreholes only)

- Results based on SOCOTEC Factual Report and SOCOTEC AGS data file 'G2034-22 Phase 0 Monitoring FINAL October 24.ags'. Where results differ between the Factual Report and AGS file, the highest concentration (lowest for oxygen) has been reported.

Table 6.6: Gas Exceedances of Maximum Recorded Concentrations

Area	CH_4	CO_2	O_2	CO	H_2S	VOC
Location/ Substance (threshold)	**4.4% (LEL) to 17% (UEL)**	**5000 ppm / 0.5% (LTL) 15000 ppm / 1.5% (STL)**	**<19% by volume**	**20 ppm (LTL) 100 ppm (STL)**	**5 ppm (LTL) 10 ppm (STL)**	**Approx. 1.0%[1] (lower explosive limit)[1]**
WRP[3]	No	**Yes**	**Yes**	No	**Long Term Only[4]**	No
Land to the Southeast of WRP Site	No	**Yes**	**Yes**	No	No	No
Land south of Langstone Harbour	No	**Yes**	**Yes**	No	No	No
Budds Farm WTW	No	**Yes**	**Yes**	No	No	No

Notes: LEL – Lower explosive limit; UEL – Upper explosive limit; STL – Short Term Limit; LTL – Long Term Limit
[1] – Dependant on constituents
[2] – Response zone in the chalk aquifer
[3] – Locations had concentrations of methane in excess of 17%v/v (UEL) hence 'No' being stated
4 – H_2S concentration 9.9 ppm is 0.1 ppm below the HSE EH40/2005 Workplace Exposure short-term limit of 10 ppm.

7 Land Contamination Risk Assessment Model

7.1 Approach and outline Conceptual Site Model

The land contamination risk assessment presented in this section is a Tier 1 Preliminary Risk Assessment (PRA). A summary of the guidance for the assessment of land contamination and the approach developed and adopted by SSP Stantec is presented in **Appendix H**.

A conceptual model identifies the types and locations of potential contamination sources, the identification of potential receptors and the identification of potential transport/migration pathways.

Guidance requires a risk assessment to include the following steps:

- Identify the hazard - establish contaminant sources.
- Assess the hazard - use a source-pathway-receptor (S-P-R) contaminant linkage approach to find out if there is the potential for unacceptable risk.
- Estimate the risk - predict what degree of harm or pollution might result and how likely it is to occur.
- Evaluate the risk - decide whether a risk is unacceptable.

The information presented in this report has been collated and evaluated to develop a preliminary Conceptual Site Model (CSM) for the study are. The aim of the preliminary CSM is to identify potential contaminant linkages on Site and in the surrounding areas. This has been undertaken in accordance with the procedures outlined in LCRM published by the EA (Environment Agency, 2023).

For a risk of pollution or environmental harm to occur because of ground contamination, all the following elements must be present to form a potential contaminant linkage:

- Source; a substance that is capable of causing pollution of harm;
- Pathway; a route by which the contaminant can reach a receptor; and
- Receptor; something which could be adversely affected by the contaminant including human health, properties, and controlled waters.

The preliminary CSM will allow for recommendations to be made based on the identification and assessment of potential contaminant linkages.

7.2 Potential Sources of Contamination

A summary of the identified on-site and off-site potential sources of contamination (PSCs) and associated potential contaminants of concern (PCOC) is presented in **Table 7.1.** PSCs identified within the surrounding area are presented in **Appendix G.**

Off-Site potential sources of contamination such as the nearby former incinerator, depots, electricity substation, household waste recycling centre, have not been included in this assessment as the Site's historical use as a domestic, commercial, and industrial waste landfill is considered likely to supersede any contamination migrating from the off-site sources.

Table 7.1: Potential Sources of Contamination (PSCs)

PSC*	Description	Potential Contaminants of Concern (PCOC)
466 (1 and 2)	Landfill waste within former (now closed and restored) received domestic, commercial and industrial wastes between 1969 and 1987 before being restored to grassland. PSC is both an on-Site and off-Site source.	Metals, inorganics (including cyanide), asbestos, petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) (including phenols), per-and polyfluorinated alkyl substances (PFAS). Ground gas (methane, carbon dioxide, carbon monoxide, hydrogen sulphide).
388 (3)	Former sewage works located approximately 50 m north of the Site. Constructed by 1930, demolished by 1972. Comprised four filter beds and a row of tanks. Off-Site source.	Metals, inorganics (including cyanide), asbestos, petroleum hydrocarbons, PAHs, benzene, toluene, ethylbenzene (BTEX), phenols polychlorinated biphenyls (PCBs), PFAS and pathogens.
378, 379, and 460	Budds Farm WTW PSC is both an onsite and off-Site Source	Metals, inorganics (including cyanide), asbestos, petroleum hydrocarbons, (PAHs), VOCs, SVOCs (including phenols), (PFAS), BTEX, PCBs, pathogens. Ground gas (methane, carbon dioxide, carbon monoxide, hydrogen sulphide).

* PSC numbers taken from the HWTWRP Geotechnical and Geo-Environmental Desk Study (SSP, 2024a).
(1) – (3) – PSC numbers used in HWTWRP Geo-Environmental Interpretative Report for Proposed Water Recycling Plant (SSP, 2024b).

7.3 Identification of Potential Pathways

To determine whether the identified hazards pose a risk it is necessary to identify the presence of potential pathways by which these receptors can be exposed to the hazard.

Potential hazards require a pathway connecting the source (if present) to potential receptors to impact upon the receptors. These pathways are capable of conveying the potential contaminants identified. Pathways may be anthropogenic (artificial) or natural.

Anthropogenic pathways are artificial routes capable of conveying contaminants and include such routes as surface water drains, high permeability backfill materials, poorly consolidated Made Ground, mine workings, mining induced fissures from subsidence, foundations, and persons disturbing contamination sources in such a way as to liberate contaminants.

Natural pathways are naturally occurring routes capable of conveying contaminants such as permeable strata, fractures and fissures, boundaries between different geological strata, transport with surface water and with wind.

During and post construction of the proposed scheme (Shafts and tunnels), the following potential pathways are considered and presented in **Table 7.2**.

Table 7.2: Relevant Potential Pathways

Potential Pathways	Potential Receptors
Ingestion of soil / dust indoors, e.g., in site cabins	Human health
Ingestion of soil / dust outdoors	
Inhalation of particles (dust / soil) – outdoor	
Inhalation of particles (dust / soil) – indoor	
Inhalation of gases and vapours (confined spaces)	
Vapours – outdoor – migration via natural or anthropogenic pathways	
Dermal absorption via direct contact with soil	
Leaching / permeation of granular soils	Groundwater
Groundwater migrating via anthropogenic routes e.g., boreholes, landfill waste mass etc.	
Runoff or discharges to surface water via existing drainage network, e.g., historical land drains, highway drainage	Surface Water
Recharge of surface water via contaminated groundwater	
Deposition of wind-blown dust	
Direct contact – Sulphate attack on concrete, hydrocarbon corrosion of / permeation into plastic pipes	Buildings
Migration of gases / vapours through permeable natural strata, fissures or fractures etc. Migration of gases / vapours through permeable backfill materials, buried service corridors, cracks in floor slabs, shaft / tunnel linings.	
Runoff or discharges to surface water via existing drainage network, e.g., historical land drains, highway drainage.	Ecologically Sensitive Sites
Deposition of wind-blown dust	
Recharge of surface water via contaminated groundwater	

7.4 Identification of Potential Receptors

Potential receptors identified by this assessment are presented in **Table 7.3**. Receptors are identified at the baseline phase (i.e., the current situation, pre-construction), the construction phase of the development, and the operational phase of the development. The operational phase includes future property (building and buried services, including drinking water supply pipes).

Table 7.3: Relevant Potential Receptors

Receptors	Baseline Phase	Construction Phase	Operational Phase	Comments
Human Health On-site	×	✓	✓	Baseline: Eliminated. Site is vacant with no public footpaths. Construction: Ground workers constructing the Proposed Development. Operational: Workers at proposed WRP. Maintenance workers undertaking below ground works.
Human Health Off-site	×	✓	×	Baseline and Operational: Eliminated - unlikely to be impacted if soils are not disturbed. Construction: Workers at adjacent businesses including industrial estates, yard, aggregates wharf, and sewage treatment works.
Groundwater (resource)	×	×	×	Baseline, Construction and Operational: Eliminated. Potable abstractions not identified within 250m of the Site. The Site is located on reclaimed land containing an unlined landfill with saline groundwater conditions which are likely to make potable abstraction unviable.
Groundwater (biodiversity)	✓	✓	✓	Baseline and Operational: The EA's Catchment Data Explorer indicates that the groundwater beneath the Site received an WFD classification of Poor in 2019 for chemical quality. Construction: Activities to construct the tunnels have the potential to impact groundwater biodiversity through creation of a pathway for contamination.
Surface Water (resource)	×	×	×	Baseline, Construction and Operational: Eliminated. Surface water abstractions have not been identified within 250 m of the Site. Both Langstone Harbour and Hermitage Stream are tidal (saline).
Surface Water (biodiversity)	✓	✓	×	Baseline and Construction: Hermitage Stream and Langstone Harbour may be impacted by Baseline or Construction activities. Operational: No further ground disturbance envisaged by Site operation to impact receptors.
Ecologically Sensitive Sites	✓	✓	×	Baseline, Construction: Langstone Harbour, is a designated SSSI, SAC, SPA, wetland of international importance designated under the Ramsar Convention and a WFD safeguarded Groundwater Dependent Terrestrial Ecosystem (GWDTE). Operational: Shaft operation should not impact ecologically sensitive sites.

Table 7.3: Relevant Potential Receptors (Continued)

Receptors	Baseline Phase	Construction Phase	Operational Phase	Comments
Geodiversity	×	×	×	Baseline, Construction and Operational: The Site is not located within 1 km of a geological SSSI or Regionally Important Geological Site (RIGS).
Property – Buildings	×	✓	✓	Baseline: The closest building to the Site is Budds Farm WTW. This has been built on an area of known landfill. Construction: Ground disturbance may expose temporary or permanent structures to contamination or ground gas. Operation: Infiltration of contaminants or ground gas into shafts and tunnels.

7.5 Potential Geo-Environmental Hazards at Proposed Shaft and Crossing Locations

The location, requirements and construction technique for the tunnel sections and shafts is currently under review. This section provides an assessment of potential hazards at the exploratory hole locations completed as part of the Phase 0 Ground Investigation in 2022 (SOCOTEC, 2023; SOCOTEC, 2024) for the possible construction areas. This information should be read in conjunction with the HWTWRP Geo-Environmental Interpretative Report for the proposed Water Recycling Plant (WRP) which includes additional ground investigation data and risk assessment in the proposed WRP location.

Table 7.4: Potential Geo-environmental Hazards

Location	Soil	Leachate	Ground-water	Hazardous Properties	Ground gas	Comments
WRP	✖/✓	✓	✓	✓	✓	Soils: Concentrations below GACs. Some elevated concentrations noted in **Table 6.1**. Asbestos/PAHs encountered and recorded in landfill material during previous GI. Gas: CO_2 , O_2 and VOC concentrations (response zone Made Ground/landfill) exceed thresholds. CH_4 concentrations above 17% (upper explosive limit).
Land to the Southeast of WRP Site	✖	N/A	✓	✖	✓	Leachate: testing not undertaken during ground investigation. Gas: CO_2 and O_2 concentrations (response zone chalk) exceed thresholds.
Land south of Langstone Harbour	✖	N/A	✓	✖	✓	Leachate: testing not undertaken during ground investigation. Gas: CO_2 and O_2 concentrations exceed HSE EH40/2005 thresholds (response zone chalk).
Budds Farm WTW	✖	N/A	✓	✖	✓	Leachate: testing not undertaken during ground investigation. Gas: CO_2, O_2 and VOC exceed the HSE EH40/2005 threshold concentrations.

This assessment will require updating following any alterations to the scheme design.

7.6 Risk Assessment

The above CSM has been used to undertake a qualitative risk assessment. The method of risk evaluation adopted is consistent with LCRM (Environment Agency, 2023). Risk estimation involves predicting the likely consequence (what degree of harm the receptor might suffer) and the probability that the consequences will arise (how likely the outcome is given the likely scale of contamination and the probability of exposure). Hence, risk is considered to be a function of both the probability (likelihood) of contamination occurring and also the potential severity (consequence) of the impacts associated with this contamination. This has been carried out in accordance with CIRIA C552 (CIRIA C552, 2001). Further details regarding the risk assessment methodology used are included in **Appendix H.**

Preliminary risk estimation is based on the evaluation of both desk study information collated for the pipeline route (including the shafts) (SSP, 2024a) and the WRP Site (SSP, 2021) and together with the 2022 GI data incorporating information obtained from the geo-environmental interpretation of previous GIs completed across the whole of the proposed WRP Site (SSP, 2024b) where relevant.

7.6.1 Risk Estimation Tables

The estimated risk for each of the receptors is summarised in **Appendix H.** This should be read in conjunction with the tables in **Appendix I** which set out the classification of risk which is a combination of consequence and probability for each potential contaminant linkage identified for the sources in **Table 7.1**. Definitions for probability and consequence are in **Table A** and **Table B** of **Appendix I** (respectively).

7.6.2 Risk Estimation Summary

A summary of identified risks during Construction/operation phase has been included in **Table 7.5**.

Table 7.5: Risk Category Summary

Location / Risk	Very High	High	Moderate	Low / Moderate	Comments
WRP	Surface Water (biodiversity) Human Heath (ground gas) Property (ground gas)	Groundwater (biodiversity) Surface water (biodiversity)	Human Health (on-site) Groundwater (resource) Ecologically Sensitive Sites Property – Buildings	Human Health (off-site)	No 'Low' risks found. See risk assessment for: PSC 466 Harts Farm Way Landfill in Appendix H
Land to the Southeast of WRP Site					
Land south of Langstone Harbour	Human Heath (ground gas) Property (ground gas)	Surface Water (biodiversity)	Human Health (on-site) Groundwater (biodiversity) Surface water (biodiversity) Ecologically Sensitive Sites	Human Health (off-site) Groundwater (resource) Property (buildings)	No 'Low' risks found. See Risk assessments for: PSC 379 Sludge lagoon; PSC 378 Budds Farm WTW; PSC 460 Land south of Budds Farm Landfill in Appendix H.

7.6.3 Risk Estimation Conclusions

A number of possible contaminant linkages have been identified across the Site area with an unacceptable risk associated to each. Possible contaminant linkages are determined using professional judgement. A linkage is considered potentially complete with some associated risk, even if estimated to be low, it is considered that this may represent a potentially 'unacceptable risk' and therefore requires further consideration **Table 7.5** shows risk assessment identified potentially complete contaminant linkages based on the analysis of samples taken during the Phase 0 ground investigation which pose a significant risk to human health, surface waters, groundwater and property (current, proposed or future) at the Site. Risk assessment tables are included in **Appendix H**. Risks will need to be addressed as part of any future construction / site operation to reduce the risk from contaminants in soil, groundwater or ground gas.

A summary of the CIRIA C552 risks categories are as follows:

- Low risk: it is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would normally be mild.
- Moderate risk: it is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer-term.
- High risk: is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
- Very high risk: there is a high probability that severe harm could arise to a designated receptor from an identified hazard. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation is likely to be required in the short term.

8 Conclusions and Further Considerations

8.1 Summary and Conclusions

A ground investigation was conducted to help with the construction methodology for shaft locations and tunnelling associated with a pipeline crossing between WRP and Budds Farm WTW (beneath Hermitage Stream and Langstone Harbour). The investigation included five boreholes in the former Harts Farm Way landfill, and two boreholes and four dynamic sample holes west of Budds Farm WTW. Soil, leachate, and groundwater samples were analysed in the laboratory. The Phase 0 investigation was specified to investigate the ground conditions for shafts, tunnels, and trenchless crossing techniques such as directional drilling.

Olfactory and occasional visual signs of contamination were encountered during ground investigation and included organic or petroleum odours and black soils.

Soil samples did not exceed the generic assessment criteria for human health and asbestos was not found in any of the soil samples. Some soil samples had concentrations of contaminants that appeared to be elevated compared to surrounding soil samples. These concentrations may pose risks to human health or the environment if not managed.

Limited leachate sampling was undertaken at BHRP01, 13.8m bgl; this reported three exceedances. There was no leachate sampling south of Langstone Harbour or at Budds Farm WTW so it is not possible to assess possible risks.

Groundwater samples exceeded generic assessment criteria across all areas of the Site for a variety of determinands including metals (cadmium, copper, iron, mercury, nickel, zinc), petroleum hydrocarbons, PAHs and ammoniacal nitrogen. Groundwater levels were measured between 2.30m AOD and -8.44m AOD across the four areas.

Ground gas monitoring found carbon dioxide concentrations exceeded the thresholds across the Site. Methane was recorded within and above the explosive limits at WRP, with a maximum of 84.3% v/v. A number of detected concentrations are significantly in excess of 17% v/v Upper Explosive Limit (UEL) and monitoring consistently yielded values above this threshold across the 12 gas monitoring rounds carried out at WRP. Whilst the concentrations in excess of the UEL are considered “too rich” to burn, it suggests the landfill is still actively producing significant methane.

Methane was not found at elevated concentrations southeast of WRP, south of Langstone Harbour or at Budds Farm WTW. Reduced concentrations of oxygen (<19%) were recorded across the Site with values <0.1 % v/v at WRP and 12.3% at Budds Farm WTW.

Elevated concentrations of VOCs were encountered at the WRP site (41ppm) and Budds Farm WTW (34.9ppm) . It should be noted that ground gas south of Langstone Harbour and at Budds Farm was taken from the Chalk bedrock in all but 1 exploratory hole (WSW001), therefore the elevated gas concentrations may indicate a risk working in the chalk bedrock as well as the landfill material. Flow rates were typically below 0.2 litres per hour (l/hr) apart from WSW003 in Budds Farm WTW which was 10.0 l/hr.

Soils from WRP (BHRP01) were identified as containing hazardous waste properties due to elevated concentrations of petroleum hydrocarbons in the soils. Soils samples south of Langstone Harbour and Budds Farm WTW were typically shallow (up to 0.5m bgl), with landfill extending up to 7.5m in BHW004. Therefore, the current waste classification is unlikely to provide an accurate assessment.

A wider ground investigation has been undertaken at the WRP site with a greater number of ground investigation locations, sample analysis, and groundwater/gas monitoring. The interpretative report covering this GI for WRP identifies asbestos and polycyclic aromatic hydrocarbon generic assessment criteria exceedances which were not encountered during the Phase 0 ground investigation. The risk assessment for the landfill at WRP also has higher risk ratings (High / Very High) based on the findings in that report. It is recommended that this information be considered along with the findings in this report, including remedial measures for completing groundworks at the Site.

The GI in the Land south of Langstone Harbour and Budds Farm WTW is limited in information on the landfill material with samples typically in the top 0.5m whilst the landfill extended up to 7.5m bgl. Therefore, the results from the Phase 0 ground investigation may understate the concentrations in the main body of the landfill. The limited number of investigation locations across the land south of Langstone Harbour and Budds Farm WTW, may not provide sufficient information if directional drilling is undertaken through the landfill material and under Hermitage Stream.

8.2 Geo-environmental Considerations and Recommendations

The Phase 0 ground investigation provides limited information on the risks from the landfill for geo-environmental purposes. Additional information is available on the geo-environmental risks in the WRP Geo-environmental Interpretative Report for Proposed Water Recycling Plant (SSP, 2024b). This includes an outline remedial strategy for the WRP with initial guidance on addressing the following potential contaminant linkage risks which are identified in the report:

- Health and Safety (construction and operations phases).
- Construction Environmental Management.
- Discovery Strategy (unexpected ground conditions).
- Service Trenches.
- Aggressive Ground Conditions.
- Landfill Gas Protection Measures.
- Clean Cover System.
- Soil Excavation, Re-use and Disposal.
- Selection of Shaft/Tunnel Construction Methodology

The outline strategy only provides relevant geo-environmental considerations for the WRP site including excavations into landfill. However, many of these will be common to the proposed construction of shafts and reception pits in this area, it is likely that additional refinement will be required depending on the construction and tunnelling technique chosen.

There is significantly less geo-environmental GI data both spatially (across the site) and at depths for land to the south of Langstone Harbour and Budds Farm WTW. This limits the understanding of the risks posed from the landfill waste and the waste classification. Additional ground investigation is needed during subsequent stages of the design to help assess the risks and provide an update to the waste classification if needed.

Additional ground investigation in Land south of Langstone Harbour and Budds Farm WTW would need to include:

- Additional soil samples at different depths in the landfill. Current samples are approximately 0.5 m bgl and do not provide suitable information on the landfill materials which extend up to 7.5 m bgl in BHW004. Lack of information may lead to incorrect assessment of human health, surface water, controlled water, ecological risks and waste classification.
- Undertake pathogen testing of soil samples to assess whether sewage sludge may be present, which poses a health and safety risk.
- Installation of additional ground gas standpipes in the landfill material for more accurate ground gas data, especially methane which was not recorded and VOCs which were found at similar concentrations to WRP (41 ppm VOC) in the landfill material at Budds Farm WSW001 (34.9 ppm).
- Install groundwater monitoring in the landfill material at Land south of Langstone Harbour and potentially Budds Farm WTW. This should be monitored and sampling during high tide to check whether surface water from Hermitage Stream / Langstone Harbour is infiltrating the landfill and causing additional leaching of contaminants.

The ground investigation would likely be needed to provide information for the environmental statement, construction environmental management planning and risk assessment method statements (RAMS) covering construction and working in confined spaces. This is particularly prudent given the high concentrations of methane located beneath the WRP location and the elevated VOCs detected beneath the WRP and Budds Farm WTW which are likely to pose a higher risk to human health receptors identified to come into contact with the site during either the construction or operational phases.

Additional groundwater and gas monitoring is likely to be required as part of the pre-construction phase establishing baseline conditions and may be a requirement of the Environment Agency given the proximity to the environmentally sensitive sites at Langstone Harbour.

Following the additional GI, a remedial strategy could be developed for the Budds Farm WTW area encompassing the same elements as those at WRP site once the tunnelling technique and shaft locations have been further determined.

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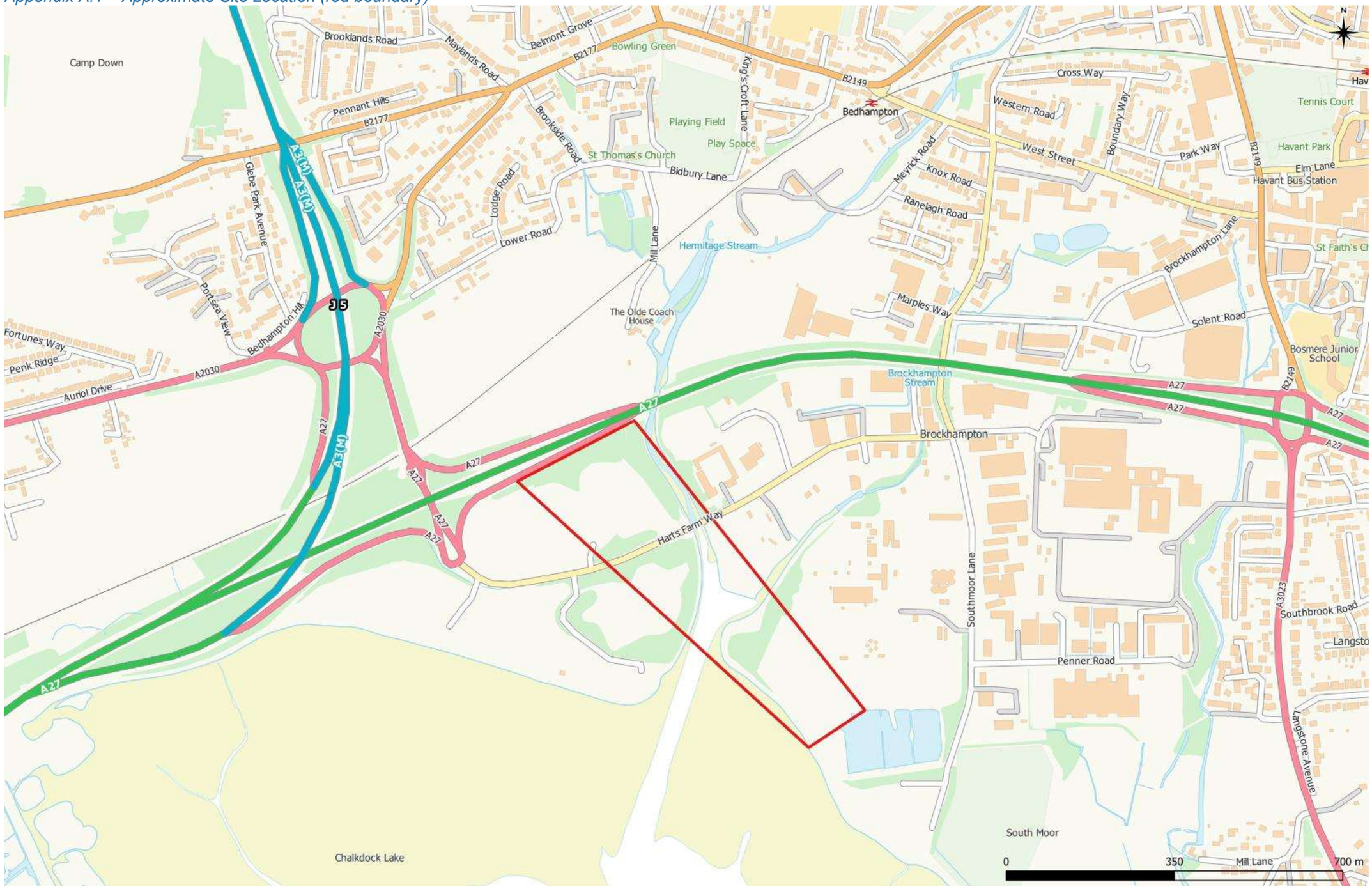
Appendices

Appendix A: Phase 0 GI - Site Location Plans and Borehole Location Plan

Appendix A.1 – Approximate Site Location (red boundary)



Appendix A.2 – Site Areas

Sources: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community 2023

Appendix A.3 – Borehole Location Plan

Appendix B: Soil Results Deviations and Limits of Detection

Sample Deviations for Phase 0

Sample Deviation analysis type included in SOCOTEC Factual Report

Sample Reference	Method Code	Holding Time
BHW005-12-ES-2.50-2.60	PHSOIL	✓
BHW005-4-ES-0.30-0.35	GROHSA	✓
BHW005-4-ES-0.30-0.35	PHSOIL	✓
BHW005-4-ES-0.30-0.35	SFAPI	✓
BHW005-4-ES-0.30-0.35	SFAPI	✓
BHW005-4-ES-0.30-0.35	SFAPI	✓
BHW005-4-ES-0.30-0.35	TPHCALC	✓
BHW005-4-ES-0.30-0.35	VOCHSAS	✓
BHW001-10-ES-2.10	SFAPI	✓
BHW001-10-ES-2.10	SFAPI	✓
BHW001-10-ES-2.10	SFAPI	✓
BHW002-6-ES-1.20-1.30	SFAPI	✓
BHW002-6-ES-1.20-1.30	SFAPI	✓
BHW002-6-ES-1.20-1.30	SFAPI	✓
BHW001-26-ES-12.40-12.50	PAHMSUS	✓
BHW001-26-ES-12.40-12.50	SFAPI	✓
BHW001-26-ES-12.40-12.50	SFAPI	✓
BHW001-26-ES-12.40-12.50	SFAPI	✓
BHW001-26-ES-12.40-12.50	TPHCALC	✓
BHW001-26-ES-12.40-12.50	TPHFIDUS (SCU)	✓
BHW001-26-ES-12.40-12.50	TPHCALC	✓
BHW001-26-ES-12.40-12.50	TPHFIDUS (SCU)	✓
BHW002-17-ES-9.60-9.80	PAHMSUS	✓
BHW002-17-ES-9.60-9.80	SFAPI	✓
BHW002-17-ES-9.60-9.80	SFAPI	✓
BHW002-17-ES-9.60-9.80	SFAPI	✓
BHW002-17-ES-9.60-9.80	TPHCALC	✓
BHW002-17-ES-9.60-9.80	TPHFIDUS (SCU)	✓
BHRP01-5-ES-0.50-0.60	SFAPI	✓
BHRP01-5-ES-0.50-0.60	SFAPI	✓
BHRP01-5-ES-0.50-0.60	SFAPI	✓
WSW004-3-ES-0.50-0.50	SFAPI	✓
WSW004-3-ES-0.50-0.50	SFAPI	✓
WSW004-3-ES-0.50-0.50	SFAPI	✓
WSW001-2-ES-0.50	GROHSA	✓
WSW001-2-ES-0.50	PAHMSUS	✓
WSW001-2-ES-0.50	PHSOIL	✓
WSW001-2-ES-0.50	SFAPI	✓
WSW001-2-ES-0.50	SFAPI	✓
WSW001-2-ES-0.50	SFAPI	✓
WSW001-2-ES-0.50	TPHCALC	✓
WSW001-2-ES-0.50	VOCHSAS	✓
WSW002-2-ES-0.50	GROHSA	✓
WSW002-2-ES-0.50	PAHMSUS	✓
WSW002-2-ES-0.50	PHSOIL	✓
WSW002-2-ES-0.50	SFAPI	✓
WSW002-2-ES-0.50	SFAPI	✓
WSW002-2-ES-0.50	SFAPI	✓
WSW002-2-ES-0.50	TPHCALC	✓
WSW002-2-ES-0.50	VOCHSAS	✓
WSW003-3-ES-0.50	GROHSA	✓

Method Codes	Determinands	State
CLANDPREP	DW35 - CLand Prep and Dry Weight Correction to 35°C	As Received
GROHSA	GRO (>C6-C10) Total	As Received
ICPACIDS	Sulphate as SO4 (Acid Soluble)	Air Dried and Ground
ICPBOR	Boron (Water Soluble) by ICPOES	Air Dried and Ground
ICPMSS	Arsenic in Solids by ICPMS	Air Dried and Ground
ICPMSS	Cadmium in Solids by ICPMS	Air Dried and Ground
ICPMSS	Chromium in Solids by ICPMS	Air Dried and Ground
ICPMSS	Copper in Solids by ICPMS	Air Dried and Ground
ICPMSS	Lead in Solids by ICPMS	Air Dried and Ground
ICPMSS	Mercury in Solids by ICPMS	Air Dried and Ground
ICPMSS	Nickel in Solids by ICPMS	Air Dried and Ground
ICPMSS	Selenium in Solids by ICPMS	Air Dried and Ground
ICPMSS	Zinc in Solids by ICPMS	Air Dried and Ground
KONENS	Chromium VI (Hexavalent) by Colorimetry	Air Dried and Ground
PAHMSUS	17 PAHs (inc. Coronene) by GCMS	As Received
PHEHPLCUV	Phenols Suite by HPLC UV	As Received
PHSOIL	pH (2.5:1)	As Received
SFAPI	Cyanide (Complex) by SFA	As Received
SFAPI	Cyanide (Free) by SFA	As Received
SFAPI	Cyanide (Total) by SFA	As Received
SFAPI	Sulphide by SFA	As Received
SUB002	Asbestos Stage 1	(with Stage 2+3 Trigger)
SUB020	Asbestos Stage 1	(with Stage 2+3 Trigger)
TMSS	Total Moisture @ 105°C	As Received
TPHCALC	TPH (>C6-C40) Total (Calc)	As Received TPHFIDUS
(SCU)	TPH (>C8-C35) Banded plus (>C8-C40) Total with SCU	As Received VOCHSAS
BTEX by GCMS	Benzene, Toluene, Ethylbenzene, Xylene	As Received
WSLM59	SOM: Soil Organic Matter (%) (Calc)	Air Dried and Ground
WSLM59	TOC: Total Organic Carbon	Air Dried and Ground

WSW003-3-ES-0.50	PAHMSUS	✓
WSW003-3-ES-0.50	PHSOIL	✓
WSW003-3-ES-0.50	SFAPI	✓
WSW003-3-ES-0.50	SFAPI	✓
WSW003-3-ES-0.50	SFAPI	✓
WSW003-3-ES-0.50	TPHCALC	✓
WSW003-3-ES-0.50	VOCHSAS	✓
BHRP01-24-ES-13.80-14.00	PAHMSW	✓
BHRP01-24-ES-13.80-14.00	PHEHPLCUV	✓
BHRP01-24-ES-13.80-14.00	SFAPI	✓
BHRP01-24-ES-13.80-14.00	SFAPI	✓
BHRP01-24-ES-13.80-14.00	SFAPI	✓
BHRP02-20-ES-14.00-14.20	SFAPI	✓
BHRP02-20-ES-14.00-14.20	SFAPI	✓
BHRP02-20-ES-14.00-14.20	SFAPI	✓

Sample Deviations for Phase 0

Sample Deviation recorded by DETS and included in SOCOTEC Factual Report

Lab	Lab ID	Sample ID	Date Sampled	Container received	Holding time exceeded for tests	Inappropriate container for test
DETS	2112770	BHRP01 13.70-1415 SOIL			Sample date not supplied, Organic Matter (Manual) (28 days)	
DETS	2085822	BHRP01 2.20 SOIL		No containers logged	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	Cannot evaluate
DETS	2079827	BHRP02 1.90-2.00 SOIL	11/08/2022	PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079828	BHRP02 14.20-14.35 SOIL	11/08/2022	PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079829	BHRP02 22.60-22.70 SOIL	11/08/2022	PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079830	BHRP02 31.70-31.90 SOIL	11/08/2022	P(other)	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2067504	BHW001 1.40-1.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2067505	BHW001 3.17-4.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2067506	BHW001 20.90-21.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2067507	BHW002 0.30-1.00 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2067508	BHW002 9.25 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2067509	BHW002 13.10-13.20 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2067510	BHW002 16.00-16.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2067511	BHW002 21.50-21.60 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH +	
DETS	2090619	BHW004 2.60-2.70 SOIL	01/09/2022	PT 1L	Organic Matter (Manual) (28 days)	
DETS	2090620	BHW005 2.60-2.70 SOIL	01/09/2022	PT 1L	Organic Matter (Manual) (28 days)	
DETS	2061523	WS001 0.20-0.30 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days),	
DETS	2061524	WS001 2.00-2.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days),	
DETS	2061525	WS002 2.30 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days),	
DETS	2061526	WS002 5.30-5.50 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days),	
DETS	2061527	WS003 1.65-1.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days),	
DETS	2061528	WS003 2.00-2.45 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days),	
DETS	2061529	WS003 3.65-3.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days),	
DETS	2067022	WSW003 3.00-3.45 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	
DETS	2079769	BHRP01 1.00-1.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079770	BHRP01 5.20-5.65 SOIL		PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079771	BHRP01 9.20-9.65 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079772	BHRP01 15.20-15.60 SOIL		PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079773	BHRP01 18.95-19.10 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079774	BHRP01 21.40-21.60 SOIL		PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079775	BHRP01 27.45-27.55 SOIL		PT 1L	Anions 2:1 (30 days), pH + Conductivity (7 days)	
DETS	2079776	BHRP01 29.60-29.70 SOIL		PT 1L	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
DETS	2083918	BHRP01 2.20 SOIL	08/08/2022	PT 1L	Organic Matter (Manual) (28 days)	
DETS	2112770	BHRP01 13.70-1415 SOIL		PT 1L	Sample date not supplied, Organic Matter (Manual) (28 days)	

Soils		
Determinand	**Limit of Detection Concentration (mg/kg)**	**Generic Assessment Criteria (mg/kg)**
Not Applicable - None recorded		
Leachate		
Determinand	**Limit of Detection Concentration (µg/l)**	**Generic Assessment Criteria (µg/l)**
Copper	3	0.6
Lead	10	1.3
Mercury	0.3	0.07
Nickel	10	8.6
Fluoranthene	0.03	0.0063
Benzo(b)fluoranthene	0.03	0.017
Benzo(k)fluoranthene	0.03	0.017
Benzo(a)pyrene	0.03	0.00017
Benzo(g,h,i)perylene	0.03	0.00082
Groundwater		
Determinand	**Limit of Detection Concentration (µg/l)**	**Generic Assessment Criteria (µg/l)**
Benzo(a)pyrene	0.01	0.00017
Benzo(g,h,i)perylene	0.01	0.00082
Chromium (VI)	3	0.6
Cyanide	20	1
Fluoranthene	0.01	0.0063
Lead	1	1.3
Mercury	0.03	0.07
Phenol	100	7.7
Trichloromethane (chloroform)	5	2.5
Trichlorobenzene	10	0.4

Appendix C: Geo-Environmental Laboratory Analysis Summary Screening Table

TABLE SUMMARISING SOIL RESULTS AND HIGHLIGHTING EXCEEDANCES ABOVE SOIL ASSESSMENT CRITERIA
WFL HAVANT THICKET

SOM 1%			Assessment Criteria		Strata				No. of Exceedances			Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Made Ground	Natural Stratum	Made Ground	Made Ground	Natural Stratum	Made Ground	Natural Stratum	Made Ground	Made Ground	Made Ground	Made Ground
												BHRP01	BHRP01	BHRP02	BHRP02	BHW001	BHW001	BHW001	BHW002	BHW002	BHW002	BHW005	BHW005	WSW001	WSW002	WSW003	WSW004
Analyte	Units	LOD	Commercial	Commercial	Commercial	No. of Tests	Min	Max	Commercial	Commercial	Commercial	0.50	13.80	0.30	14.00	0.30	2.10	12.40	0.30	1.20	9.60	0.30	2.50	0.50	0.50	0.50	0.50
Stones Content	%		-	-	-																						
Arsenic*	mg/kg	0.3	640	640	640	16	0.7	21				12.3	9.5	3.5	4.3	4.7	6.8	2.3	10.2	0.7	2.6	5.8	21	8.5	7.5	6.8	8.2
Cadmium*	mg/kg	0.2	190	190	190	16	0.2	6.8				0.3	*0.2*	0.5	*0.2*	*0.2*	1.8	*0.2*	0.4	0.6	*0.2*	1	*0.2*	6.8	5.7	0.5	1.2
Chromium Trivalent	mg/kg		8600	8600	8600																						
Chromium Hexavalent*	mg/kg	0.1	33	33	33	15	0.1	0.3				*0.1*	*0.1*	*0.1*	*0.1*	0.3	*0.1*	*0.1*	*0.1*		0.2	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
Copper	mg/kg	1.6	68000	68000	68000	16	6.6	287.8				17.3	23.4	9.4	6.6	10.1	80	9.6	21.1	52.2	10.2	25.1	16.1	145.5	287.8	17.4	30
Lead*	mg/kg	0.7	2300	2300	2300	16	2.4	884.1				17.2	20.1	13.9	2.4	11.4	108.3	2.7	38.7	189.3	884.1	34.5	28.9	77.1	104.7	20.8	32.8
Mercury	mg/kg	0.5	1100	1100	1100	16	0.5	1.2				*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	0.7	1.2	*0.5*	*0.5*
Nickel	mg/kg	2	980	980	980	16	7.9	26.2				15.6	19.8	8.8	13	7.9	26.2	19.2	17.6	13.6	10.9	10.9	19.3	22.8	23.3	10.7	14.7
Selenium	mg/kg	0.5	12000	12000	12000	16	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*
Zinc	mg/kg	16	730000	730000	730000	16	16	433.6				92	222.8	39.1	31.7	19.4	217.6	*16*	80.8	246.1	17.2	91.8	62.7	294.4	433.6	77.2	83
Beryllium	mg/kg		12	12	12																						
Boron	mg/kg	0.5	240000	240000	240000	16	0.5	12.3				0.6	2	1.4	0.6	0.7	1.3	*0.5*	0.8	4.1	1	1.3	12.3	4.5	3.8	1	1.1
Vanadium	mg/kg		9000	9000	9000																						
Cyanide (Total)	mg/kg	0.5	-	-	-	16	0.5	3.5				0.6	0.7	*0.5*	0.6	*0.5*	*0.5*	*0.5*	*0.5*	3.5	0.6	*0.5*	0.7	0.6	3.2	*0.5*	*0.5*
Organic matter	mg/kg	0.04	-	-	-	15	0.25	6.16				1.3	3.19	0.83	0.32	0.52	6.16	0.25	1.76		0.74	1.24	1.43	5.46	6.12	1.25	1.71
Phenol, Total	mg/kg	0.4	440	440	440	16	0.36	3				0.41	1.05	0.36	0.47	0.43	0.74	*0.4*	0.43	3	0.44	0.36	0.49	0.45	*0.4*	*0.4*	*0.4*
Sulphate (Total) as SO4	mg/l	20	-	-	-	16	116	50300				187	4270	50300	304	125	1620	116	363	2360	259	663	378	1050	1110	1270	2050
pH	pH Units	1	-	-	-	16	7.1	10.3				8.3	10.3	8.6	7.1	7.5	7.8	9.2	8.3	8.2	10.2	9.1	8	8	7.5	8.8	8.9
>C5 to C6 Aliphatic	mg/kg		3200	3200	3200																						
>C6 to C8 Aliphatic	mg/kg		7800	7800	7800																						
>C8 to C10 Aliphatic	mg/kg	4	2000	2000	2000	16	4	181				4.43	**181**	*4*	9.57	4.09	4.26	4.31	4.34	6.84	4.66	4.24	5.34	4.57	4.41	4.18	4.19
>C10 to C12 Aliphatic	mg/kg	4	9700	9700	9700	16	4	235				4.43	**235**	*4*	15.2	4.09	6.14	4.31	4.34	7.79	4.66	4.24	5.34	4.57	4.41	4.18	4.19
>C12 to C16 Aliphatic	mg/kg	4	59000	59000	59000	16	4	95.8				6.99	**35**	*4*	**95.8**	7.05	**39.1**	10.7	4.34	19.5	5.12	4.24	5.34	4.57	4.41	4.18	4.19
>C16 to C21 Aliphatic	mg/kg	4	-	-	-	16	4.09	420				14.2	420	6.27	15.3	4.09	158	13.6	14.7	119	9.84	6.8	5.46	30.7	38.9	8.7	25.2
>C21 to C35 Aliphatic	mg/kg	10	-	-	-	16	14	3580				98.8	3580	22.1	76.6	14.2	714	19.6	73.7	305	23.2	42.8	14	354	427	153	206
>C16 to C35 Aliphatic	mg/kg	14	1600000	1600000	1600000	16	18.29	4000				113	4000	28.37	91.9	18.29	872	33.2	88.4	424	33.04	49.6	19.46	384.7	465.9	161.7	231.2
>C35 to C44 Aliphatic	mg/kg		1600000	1600000	1600000																						
Total Aliphatic C5-C35	mg/kg		-	-	-																						
>C5 to C7 Aromatic	mg/kg		26000	26000	26000																						
>C7 to C8 Aromatic	mg/kg		56000	56000	56000																						
>C8 to C10 Aromatic	mg/kg	4	3500	3500	3500	16	4	181				4.43	181	*4*	9.57	4.09	4.26	4.31	4.34	6.84	4.66	4.24	5.34	4.57	4.41	4.18	4.19
>C10 to C12 Aromatic	mg/kg	4	16000	16000	16000	16	4	235				4.43	235	*4*	15.2	4.09	6.14	4.31	4.34	7.79	4.66	4.24	5.34	4.57	4.41	4.18	4.19
>C12 to C16 Aromatic	mg/kg	4	36000	36000	36000	16	4	95.8				6.99	35	*4*	95.8	7.05	39.1	10.7	4.34	19.5	5.12	4.24	5.34	4.57	4.41	4.18	4.19
>C16 to C21 Aromatic	mg/kg	4	28000	28000	28000	16	4.09	420				14.2	420	6.27	15.3	4.09	158	13.6	14.7	119	9.84	6.8	5.46	30.7	38.9	8.7	25.2
>C21 to C35 Aromatic	mg/kg	10	28000	28000	28000	16	14	3580				98.8	3580	22.1	76.6	14.2	714	19.6	73.7	305	23.2	42.8	14	354	427	153	206
>C35 to C44 Aromatic	mg/kg		28000	28000	28000																						
Total Aromatic C5-C35	mg/kg		-	-	-																						
TPH Ali/Aro	mg/kg		-	-	-																						
EPH (C10-C40)	mg/kg		-	-	-																						
Hazard Index - Commercial	-	-	-	-	-	16	0.0	0.3				0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hazard Index - Commercial	-	-	-	-	-	16	0.0	0.3				0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hazard Index - Commercial	-	-	-	-	-	16	0.0	0.3				0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benzene*	mg/kg	0.001	27	27	27	16	0.001	0.01				*0.001*	0.01	*0.001*	*0.001*	*0.001*	0.002	*0.001*	0.002	0.002	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*
Ethylbenzene	mg/kg	0.002	5700	5700	5700	16	0.002	0.07				*0.002*	0.07	*0.002*	0.003	*0.002*	*0.002*	*0.002*	*0.002*	0.003	*0.002*	*0.002*	0.003	*0.002*	*0.002*	*0.002*	*0.002*
Toluene	mg/kg	0.005	56000	56000	56000	16	0.005	0.011				*0.005*	0.011	*0.005*	0.007	*0.005*	*0.005*	*0.005*	*0.005*	0.009	0.006	*0.005*	0.006	0.006	*0.005*	*0.005*	*0.005*
Xylene	mg/kg		6600	6600	6600																						
M- & P-Xylene	mg/kg	0.004	-	-	-	16	0.004	0.108				*0.004*	0.108	*0.004*	0.005	*0.004*	*0.004*	*0.004*	*0.004*	0.007	0.005	*0.004*	0.005	0.005	*0.004*	*0.004*	*0.004*
O-Xylene	mg/kg	0.002	-	-	-	16	0.002	0.039				*0.002*	0.039	*0.002*	0.003	*0.002*	*0.002*	*0.002*	*0.002*	0.005	*0.002*	*0.002*	0.003	*0.002*	*0.002*	*0.002*	*0.002*
Total Xylene (M, P & O)	mg/kg	0.006	6600	6600	6600	16	0.006	0.147				*0.006*	0.147	*0.006*	0.008	*0.006*	*0.006*	*0.006*	*0.006*	0.012	0.007	*0.006*	0.008	0.007	*0.006*	*0.006*	*0.006*
MTBE	mg/kg		-	-	-																						
Naphthalene	mg/kg	0.08	190	190	190	16	0.08	8.53				0.09	0.76	1.42	0.1	*0.08*	8.53	0.09	0.09	0.26	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Acenaphthylene	mg/kg	0.08	83000	83000	83000	16	0.08	8.53				0.09	0.11	1.04	0.1	*0.08*	8.53	0.09	0.09	0.14	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Acenaphthene	mg/kg	0.08	84000	84000	84000	16	0.08	8.53				0.09	0.77	2.9	0.1	*0.08*	8.53	0.09	0.27	0.14	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Fluorene	mg/kg	0.08	63000	63000	63000	16	0.08	8.53				0.09	0.87	2.57	0.1	*0.08*	8.53	0.09	0.19	0.22	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Phenanthrene	mg/kg	0.08	22000	22000	22000	16	0.08	17.2				0.09	3.09	17.2	0.1	*0.08*	8.99	0.09	0.7	0.74	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Anthracene	mg/kg	0.08	520000	520000	520000	16	0.08	8.53				0.09	0.6	7.7	0.1	*0.08*	8.53	0.09	0.26	0.14	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Fluoranthene	mg/kg	0.08	23000	23000	23000	16	0.08	35.3				0.09	2.39	35.3	0.1	*0.08*	17.2	0.09	1.29	0.72	0.09	0.12	0.11	0.09	0.09	0.12	*0.08*
Pyrene	mg/kg	0.08	54000	54000	54000	16	0.08	31.6				0.09	2.04	31.6	0.1	*0.08*	18	0.09	1.16	0.63	0.09	0.11	0.11	0.09	0.09	0.12	*0.08*
Benzo(a)anthracene	mg/kg	0.08	170	170	170	16	0.08	16				0.09	0.71	16	0.1	*0.08*	8.53	0.09	0.74	0.32	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Chrysene	mg/kg	0.08	350	350	350	16	0.08	12.3				0.09	0.89	12.3	0.1	*0.08*	8.56	0.09	0.76	0.38	0.09	0.11	0.11	0.09	0.09	0.09	*0.08*
Benzo(b)fluoranthene	mg/kg	0.08	44	44	44	16	0.08	16				0.09	0.8	16	0.1	*0.08*	9.8	0.09	0.85	0.56	0.09	0.1	0.11	0.09	0.09	0.15	*0.08*
Benzo(k)fluoranthene	mg/kg	0.08	1200	1200	1200	16	0.08	8.53				0.09	0.34	5.65	0.1	*0.08*	8.53	0.09	0.36	0.22	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Benzo(a)pyrene (BaP)	mg/kg	0.08	35	35	35	16	0.08	16				0.09	0.68	16	0.1	*0.08*	10	0.09	0.87	0.33	0.09	0.11	0.11	0.09	0.09	0.13	*0.08*
Indeno(1,2,3-c,d)pyrene	mg/kg	0.08	500	500	500	16	0.08	9.5				0.09	0.31	9.5	0.1	*0.08*	8.53	0.09	0.58	0.22	0.09	*0.08*	0.11	0.09	0.09	0.12	*0.08*
Dibenzo(a,h)anthracene	mg/kg	0.08	3.5	3.5	3.5	16	0.08	8.53	1	1	1	0.09	0.11	2.04	0.1	*0.08*	8.53	0.09	0.14	0.14	0.09	*0.08*	0.11	0.09	0.09	*0.08*	*0.08*
Benzo(g,h,i)perylene	mg/kg	0.08	3900	3900	3900	16	0.08	8.53				0.09	0.39	7.8	0.1	*0.08*	8.53	0.09	0.51	0.26	0.09	0.09	0.11	0.09	0.09	0.13	*0.08*
Total PAH	mg/kg	1.28	-	-	-	16	1.31	185				1.42	14.9	185	1.56	1.31	158	1.38	8.85	5.39	1.49	1.47	1.71	1.46	1.41	1.6	1.34
Coal Tar (BaP as surrogate)	mg/kg	0.08	15	15	15	16	0.08	16	1	1	1	0.09	0.68	16	0.1	*0.08*	10	0.09	0.87	0.33	0.09	0.11	0.11	0.09	0.09	0.13	*0.08*
BaP* (as surrogate for PAH)	mg/kg	0.08	35	35	35	16	0.08	16				0.09	0.68	16	0.1	*0.08*	10	0.09	0.87	0.33	0.09	0.11	0.11	0.09	0.09	0.13	*0.08*
PCB (sum of x Aroclors)	mg/kg		-	-	-																						
1,2 Dichloroethane	mg/kg		270	270	270																						
1,1,1 Trichloroethane (TCA)	mg/kg		660	660	660																						
1,1,1,2 Tetrachloroethane	mg/kg		110	110	110																						
1,1,2,2 Tetrachloroethane	mg/kg		270	270	270																						
Tetrachloroethene (PCE)*	mg/kg		19	19	19																						
Carbon Tetrachloride	mg/kg		2.9	2.9	2.9																						
Trichloroethene (TCE)*	mg/kg		1.2	1.2	1.2																						
Trichloromethane (Chloroform)	mg/kg		99	99	99																						
Vinyl Chloride (Chloroethene)*	mg/kg		0.059	0.059	0.059																						
Asbestos (Presence of)	TEXT		-	-	-	13						NAIIS		NAIIS		NAIIS	NAIIS	NAIIS	NAIIS	NAIIS	NAIIS	NAIIS		NAIIS	NAIIS	NAIIS	NAIIS
Asbestos Analysts Comments	TEXT		-	-	-																						
Asbestos Fibre Count	%																										

Assessment Criteria are the Suitable for Use Levels (S4ULs) punlished by LQM/CIEH (Copyright Land Quality Management Limited Reproduced with Permission; Publication Number S4UL3202. All Rights Reserved) unless the analyte is marked with *. Analytes identified with * the Assessment Criteria are Category 4 Screening Levels (C4SL)

This is a summary table and it is possible that not all analytical results are reproduced. Whilst we endeavour to present the data accurately errors can occur during transcribing. The laboratory certificate should be referred to as the authenticated and complete source of results

Land-use Scenarios - RwHP = Residential with Home Grown Produce, RwoHP = Residential without Home Grown Produce, POSresi = Public Open Space within residential, POSpark = Public Open Space not associated with residential

LOD = Limit of Detection. Results in italics are equal to or less than the LOD

This table should be read in conjunction with the accompanying guide on the selection of evaluation crtieria and the project specific note presenting the justification for selection.

TABLE SUMMARISING WATER RESULTS AND HIGHLIGHTING EXCEEDANCES ABOVE WATER ASSESSMENT CRITERIA
WFL HAMPSHIRE WATER TRANSFER AND WATER RECYCLING PROJECT

			Assessment Criteria		Summary				BHRP01	BHRP02	BHW001	BHW002	BHW003	BHW004	BHW005	WSW002	WSW003	
Analyte	Units	LOD	Fresh Water	ChemCode ↓	No. of Tests	Min	Max	No. > Limit	16/02/2023	16/02/2023	16/02/2023	16/02/2023	16/02/2023	17/02/2023	15/02/2023	25/01/2023	25/01/2023	
Alkalinity as $CaCO_3$	µg/l		-	P1335														
Arsenic	µg/l	1	50	7440-38-2	9	1	2		*1*	*1*	*1*	*1*	*1*	*1*	*1*	2	2	
Boron	µg/l	10	-	7440-42-8	9	10	1930		20	*10*	160	520	30	40	40	1930	750	
Cadmium	µg/l	0.02	0.08	7440-43-9	9	0.02	0.81	**2**	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	*0.02*	0.81	0.72	
Chromuim (Total)	µg/l	1	-	7440-47-3	9	1	1		*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	*1*	
Chromium Trivalent	µg/l	3	4.7	16065-83-1	9	3	3		*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	
Chromium Hexavalant	µg/l	3	3.4	18540-29-9	9	3	3		*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	*3*	
Copper	µg/l	1	1	7440-50-8	9	1	12	**1**	*1*	*1*	*1*	*1*	*1*	*1*	*1*	12	*1*	
Iron	µg/l	10	1000	7439-89-6	8	10	3450	**1**	920	3450	*10*		790	280	400	50	190	
Lead	µg/l	1	1.2	7439-92-1	9	1	4	**1**	*1*	*1*	*1*	*1*	*1*	*1*	*1*	4	*1*	
Mercury	µg/l	0.03	0.07	7439-97-6	9	0.03	0.08	**1**	*0.03*	*0.03*	*0.03*	*0.03*	*0.03*	0.08	*0.03*	*0.03*	*0.03*	
Manganese	µg/l	2	123	7439-96-5	9	2	2020	**4**	*2*	*2*	18	2020	646	*2*	*2*	860	1020	
Nickel	µg/l	1	4	7440-02-0	9	1	25	**5**	*1*	*1*	10	25	9	*1*	*1*	14	10	
Selenium	µg/l	1	-	7782-49-2	9	1	5		*1*	*1*	*1*	*1*	*1*	*1*	*1*	5	*1*	
Zinc	µg/l	2	10.9	7440-66-6	9	2	150	**2**	4	*2*	10	3	3	5	7	150	29	
Ammoniacal Nitrogen as NH_4	µg/l		260	P1001														
Ammoniacal Nitrogen as NH_3	µg/l	20	-	P1000	2	1460	4250									4250	1460	
Chloride	µg/l	1000	-	16887-00-6	9	19000	244000		20000	19000	124000	244000	43000	46000	77000	127000	72000	
Chlorine	µg/l		2	7782-50-5														
Cyanide	µg/l	20	1	57-12-5	9	20	20	**9**	20	20	20	20	20	20	20	20	20	
Nitrate as NO_3	µg/l	900	-	P1348	7	900	784000			28900	16700		24800	17000	12900	784000	*900*	
Nitrite as NO_2	µg/l	40	-	P1349	7	40	1470			*40*	1110		*40*	*40*	*40*	1470	*40*	
Phenol	µg/l	20	7.7	108-95-2	2	100	100	**2**								100	100	
Pentachlorophenol	µg/l	50	0.4	87-86-5	2	250	250	**2**								250	250	
PCBs	µg/l		-	1336-36-3														
Sodium	µg/l		-	7440-23-5														
Sulphate	µg/l	3000	-	14808-79-8	9	4000	964000		13000	13000	21000	4000	10000	16000	20000	964000	460000	
pH	pH Units	1	-	P1334	9	7	7.5		7.5	7.5	7.2	7.1	7.5	7.4	7.5	7	7.1	
Dichloromethane	µg/l		-	75-09-2														
1,2 Dichloroethane	µg/l	1	10	107-06-2	7	1	1		*1*	*1*	*1*	*1*	*1*	*1*	*1*			
Trichloroethene (PCE)	µg/l	5	10	79-01-6	7	5	5		*5*	*5*	*5*	*5*	*5*	*5*	*5*			
1,1,1 Trichloroethane	µg/l	1	-	71-55-6	7	1	1		*1*	*1*	*1*	*1*	*1*	*1*	*1*			
1,1,2 Trichloroethane	µg/l	1	-	79-00-5	7	1	1		*1*	*1*	*1*	*1*	*1*	*1*	*1*			
Trichloromethane (Chloroform)	µg/l	5	2.5	67-66-3	7	5	5	**7**	5	5	5	5	5	5	5			
1,2,3 Trichlorobenzene	µg/l	5	-	87-61-6	7	5	5		*5*	*5*	*5*	*5*	*5*	*5*	*5*			
1,2,4 Trichlorobenzene	µg/l	5	-	120-82-1	7	5	5		*5*	*5*	*5*	*5*	*5*	*5*	*5*			
Trichlorobenzene (1,2,3 & 1,2,4)	µg/l	10	0.4	xxx	7	10	10	**7**	10	10	10	10	10	10	10			
Tetrachloroethene	µg/l	5	10	127-18-4	7	5	5		*5*	*5*	*5*	*5*	*5*	*5*	*5*			
Tetrachloromethane	µg/l	1	12	56-23-5	7	1	1		*1*	*1*	*1*	*1*	*1*	*1*	*1*			
1,1,1,2 Tetrachloroethane	µg/l	1	140	630-20-6	7	1	1		*1*	*1*	*1*	*1*	*1*	*1*	*1*			
Vinyl Chloride (Chloroethene)	µg/l	1	-	75-01-4	7	1	1		*1*	*1*	*1*	*1*	*1*	*1*	*1*			
>C5 to C6 Aliphatic	µg/l	100	-	P1407	2	100	100									*100*	*100*	
>C6 to C8 Aliphatic	µg/l	100	-	P1408	2	100	100									*100*	*100*	
>C8 to C10 Aliphatic	µg/l	10	-	P1409	8	10	100		*10*	*10*	*10*		*10*	*10*	*10*	100	100	
>C10 to C12 Aliphatic	µg/l	10	-	P1410	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	40	
>C12 to C16 Aliphatic	µg/l	10	-	P1411	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	40	
>C16 to C21 Aliphatic	µg/l	10	-	P1412	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	40	
>C21 to C35 Aliphatic	µg/l	10	-	P1413	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	320	
>C35 to C44 Aliphatic	µg/l	10	-	P1415	2	40	470									470	40	
Total Aliphatic C5-35	µg/l		-	P1418														
>C5 to C7 Aromatic	µg/l	5	-	P1441	2	5	5									*5*	*5*	
>C7 to C8 Aromatic	µg/l	5	-	P1355	2	5	5									*5*	*5*	
>C8 to C10 Aromatic	µg/l	10	-	P1356	8	10	20		*10*	*10*	*10*		*10*	*10*	*10*	20	20	
>C10 to C12 Aromatic	µg/l	10	-	P1357	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	40	
>C12 to C16 Aromatic	µg/l	10	-	P1358	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	40	
>C16 to C21 Aromatic	µg/l	10	-	P1359	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	40	
>C21 to C35 Aromatic	µg/l	10	-	P1360	8	10	400		*10*	*10*	*10*		*10*	*10*	*10*	400	90	
>C35 to C44 Aromatic	µg/l	10	-	P1362	2	190	400									400	190	
Total Aromatic C5-C35	µg/l		-	P2097														
TPH Ali/Aro	µg/l		-	P2096														
Benzene	µg/l	1	10	71-43-2	9	1	5		*1*	*1*	*1*	*1*	*1*	*1*	*1*	5	5	
Ethylbenzene	µg/l	0.5	-	100-41-4	9	0.5	5		*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	*0.5*	5	5	
Toluene	µg/l	1	74	108-88-3	9	1	5		*1*	*1*	*1*	*1*	*1*	*1*	*1*	5	5	
Xylene	µg/l		30	1330-20-7														
M- & P-Xylene	µg/l	1	-	P1374	9	1	10		*1*	*1*	*1*	*1*	*1*	*1*	*1*	10	10	
O-Xylene	µg/l	1	-	95-47-6	9	1	5		*1*	*1*	*1*	*1*	*1*	*1*	*1*	5	5	
Total Xylene (M, P & O)	µg/l	2	-	xxx	9	2	15		2	2	2	2	2	2	2	15	15	
MTBE	µg/l	1	-	1634-04-4	9	1	10		*1*	*1*	*1*	*1*	*1*	*1*	*1*	10	10	
naphthalene	µg/l	5	2	91-20-3	9	0.02	5	**6**	5	5	5	0.02	5	5	5	0.4	0.04	
acenaphthylene	µg/l	0.01	-	208-96-8	9	0.01	1.73		*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	1.73	0.04	
acenaphthene	µg/l	0.01	-	83-32-9	9	0.01	0.84		*0.01*	*0.01*	*0.01*	0.04	*0.01*	*0.01*	*0.01*	0.84	0.04	
fluorene	µg/l	0.01	-	86-73-7	9	0.01	2.17		*0.01*	*0.01*	*0.01*	0.02	*0.01*	*0.01*	*0.01*	2.17	0.04	
phenanthrene	µg/l	0.01	-	85-01-8	9	0.01	15		*0.01*	*0.01*	*0.01*	0.03	*0.01*	*0.01*	*0.01*	15	0.06	
anthracene	µg/l	0.01	0.1	120-12-7	9	0.01	5.24	**1**	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	5.24	0.04	
fluoranthene	µg/l	0.01	0.0063	206-44-0	9	0.01	47.7	**9**	0.01	0.01	0.01	0.02	0.01	0.01	0.01	47.7	0.15	
pyrene	µg/l	0.01	-	129-00-0	9	0.01	41.4		*0.01*	*0.01*	*0.01*	0.03	*0.01*	*0.01*	*0.01*	41.4	0.14	
benzo(a)anthracene	µg/l	0.01	-	56-55-3	9	0.01	25.4		*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	25.4	0.06	
chrysene	µg/l	0.01	-	218-01-9	9	0.01	27.7		*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	27.7	0.09	
benzo(b)fluoranthene	µg/l	0.01	0.017	205-99-2	9	0.01	33	**2**	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	33	0.14	
benzo(k)fluoranthene	µg/l	0.01	0.017	207-08-9	9	0.01	14.3	**2**	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	14.3	0.06	
benzo(a)pyrene	µg/l	0.01	0.00017	50-32-8	9	0.01	29.3	**9**	0.01	0.01	0.01	0.01	0.01	0.01	0.01	29.3	0.11	
benzo(g,h,i)perylene	µg/l	0.01	0.0082	193-39-5	9	0.01	19.3	**9**	0.01	0.01	0.01	0.01	0.01	0.01	0.01	19.3	0.1	
dibenzo(ah)anthracene	µg/l	0.01	-	53-70-3	9	0.01	3.85		*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	3.85	0.04	
indeno(1,2,3-c,d)pyrene	µg/l	0.01	-	191-24-2	9	0.01	15.3		*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	*0.01*	15.3	0.04	
Sum (benzo b, k, ghi & indeno123cd)	µg/l	0.04	-	xxx	9	0.04	81.9		*0.04*	*0.04*	*0.04*	*0.04*	*0.04*	*0.04*	*0.04*	81.9	0.34	
Total PAH	µg/l	0.16	-	P1874	9	0.16	283		*0.16*	*0.16*	*0.16*	0.26	*0.16*	*0.16*	*0.16*	283	1.2	

Stantec

Appendix D: HazwasteOnline™ Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

H27ID-KW7SR-F2E82

Job name

WfL Phase 0 GIR

Description/Comments

Waste classification of soils to be excavated for proposed tunnels and water recycling plant in Havant Hampshire.

Boreholes BHRP01 and 02 and BHW001 to BHW003 are part of the historic Harts Farm Way EA landfill north / west of Langstone Harbour. Waste accepted includes household waste although industrial waste also suspected. Input dates are between the 1950s to approximately the 1990s. This was a dilute and disperse landfill.

Boreholes BHW005, WSW001 to WSW004 are located on 'Land South of Budds Farm sewage works' EA historic landfill. Waste accepted includes household waste although sewage sludge may have also been deposited. Sludge lagoons were also identified in the this area from historical maps.

Project

Hampshire Water Transfer Water Recycling Scheme

Site

Phase 0 - WRP to Budds Farm

Classified by

Name:
Jason Hoyte
Date:
18 Sep 2023 10:32 GMT
Telephone:
01494 557643

Company:
Stantec UK Ltd
Buckingham Court
Frederick Place
High Wycombe
HP11 1JU

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	22 Nov 2019
Most recent 3 year Refresher	04 Oct 2022

Next 3 year Refresher due by Oct 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Harts Farm Way **Post Code** N/A

SIC for the process giving rise to the waste

42910 Construction of water projects

Description of industry/producer giving rise to the waste

Water industry

Description of the specific process, sub-process and/or activity that created the waste

Excavation of shafts and tunnels.

Description of the waste

Mainly Made Ground as silty gravelly SAND or silty, gravelly, CLAY (landfill) including ash, brick, concrete, ceramics, clinker, fabric, glass, leather, oil container, paper, plastic, rubber, macadam, wood. Three samples were taken from the natural stratum, this comprised of sandy gravel; form sandy silty; and firm sandy clay and are part of the underlying chalk bedrock formation.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BHRP01[3]	0.5	Non Hazardous		3
2	BHRP01[4]	13.8	Hazardous	HP 7, HP 11	6
3	BHRP02[3]	0.3	Non Hazardous		9
4	BHRP02[4]	14	Non Hazardous		12
5	BHW001[4]	0.3	Non Hazardous		15
6	BHW001[5]	2.1	Hazardous	HP 7, HP 11	18
7	BHW001[6]	12.4	Non Hazardous		21
8	BHW002[4]	0.3	Non Hazardous		24
9	BHW002[5]	1.2	Non Hazardous		27
10	BHW002[6]	9.6	Non Hazardous		30
11	BHW005[3]	0.3	Non Hazardous		33
12	BHW005[4]	2.5	Non Hazardous		36
13	WSW001[2]	0.5	Non Hazardous		39
14	WSW002[2]	0.5	Non Hazardous		42
15	WSW003[2]	0.5	Non Hazardous		45
16	WSW004[2]	0.5	Non Hazardous		48

Related documents

#	Name	Description
1	GAC Tool Template v3	waste stream template used to create this Job

Report

Created by: Jason Hoyte

Created date: 18 Sep 2023 10:32 GMT

Classification of sample: BHRP01[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHRP01[3]
Sample Depth:
0.5 m
Moisture content:
9.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12.3 mg/kg	1.32	16.24 mg/kg	0.00162 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.343 mg/kg	0.0000343 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18.8 mg/kg	1.462	27.477 mg/kg	0.00275 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		**<LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17.3 mg/kg	1.126	19.478 mg/kg	0.00195 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	17.2 mg/kg		17.2 mg/kg	0.00172 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		**<LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		15.6 mg/kg	2.637	41.132 mg/kg	0.00411 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		92 mg/kg	2.469	227.175 mg/kg	0.0227 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.6 mg/kg	3.22	1.932 mg/kg	0.000193 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.6 mg/kg	1.884	1.13 mg/kg	0.000113 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
13		asbestos									
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14		pH				8.3 pH		8.3 pH	8.3 pH		
				PH							
15		phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2							
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]									
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.41 mg/kg		<0.41 mg/kg	<0.000041 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9							
18		benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2							
19		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3							
20		ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4							
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]									
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<**LOD**
22		naphthalene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3							
23		acenaphthylene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			205-917-1	208-96-8							
24		acenaphthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			201-469-6	83-32-9							
25		fluorene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			201-695-5	86-73-7							
26		phenanthrene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			201-581-5	85-01-8							
27		anthracene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			204-371-1	120-12-7							
28		fluoranthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			205-912-4	206-44-0							
29		pyrene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			204-927-3	129-00-0							
30		benzo[a]anthracene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3							
31		chrysene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9							
32		benzo[b]fluoranthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2							
33		benzo[k]fluoranthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9							
34		benzo[a]pyrene; benzo[def]chrysene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8							
35		indeno[123-cd]pyrene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			205-893-2	193-39-5							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-883-8	191-24-2									
38		coronene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				183	mg/kg		183	mg/kg	0.0183 %		
				TPH									
										Total:	0.0539 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0183%)

Classification of sample: BHRP01[4]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
BHRP01[4]
Sample Depth:
13.8 m
Moisture content:
28.3%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.45%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.45%)

Determinands

Moisture content: 28.3% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9.5 mg/kg	1.32	12.543 mg/kg	0.00125 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19.8 mg/kg	1.462	28.939 mg/kg	0.00289 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		<**LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		23.4 mg/kg	1.126	26.346 mg/kg	0.00263 %		

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	20.1	mg/kg		20.1	mg/kg	0.00201 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5	mg/kg	1.353	<0.677	mg/kg	<0.0000677 %		<**LOD**
9		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		19.8	mg/kg	2.637	52.206	mg/kg	0.00522 %		
10		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		222.8	mg/kg	2.469	550.159	mg/kg	0.055 %		
11		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		2	mg/kg	3.22	6.44	mg/kg	0.000644 %		
12		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.7	mg/kg	1.884	1.319	mg/kg	0.000132 %		
13		pH			PH		10.3	pH		10.3	pH	10.3 pH		
14		phenol	604-001-00-2	203-632-7	108-95-2		0.41	mg/kg		0.41	mg/kg	0.000041 %		
15		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]	604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.12	mg/kg		<0.12	mg/kg	<0.000012 %		<**LOD**
16		Phenols, C9-11; Distillate Phenols	648-127-00-6	293-435-2	91079-47-9	H, J, M	1.05	mg/kg		1.05	mg/kg	0.000105 %		
17		benzene	601-020-00-8	200-753-7	71-43-2		0.01	mg/kg		0.01	mg/kg	0.000001 %		
18		toluene	601-021-00-3	203-625-9	108-88-3		0.011	mg/kg		0.011	mg/kg	0.0000011 %		
19		ethylbenzene	601-023-00-4	202-849-4	100-41-4		0.07	mg/kg		0.07	mg/kg	0.000007 %		
20		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.255	mg/kg		0.255	mg/kg	0.0000255 %		
21		naphthalene	601-052-00-2	202-049-5	91-20-3		0.76	mg/kg		0.76	mg/kg	0.000076 %		
22		acenaphthylene		205-917-1	208-96-8		<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
23		acenaphthene		201-469-6	83-32-9		0.77	mg/kg		0.77	mg/kg	0.000077 %		
24		fluorene		201-695-5	86-73-7		0.87	mg/kg		0.87	mg/kg	0.000087 %		
25		phenanthrene		201-581-5	85-01-8		3.09	mg/kg		3.09	mg/kg	0.000309 %		
26		anthracene		204-371-1	120-12-7		0.6	mg/kg		0.6	mg/kg	0.00006 %		
27		fluoranthene		205-912-4	206-44-0		2.39	mg/kg		2.39	mg/kg	0.000239 %		
28		pyrene		204-927-3	129-00-0		2.04	mg/kg		2.04	mg/kg	0.000204 %		
29		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.71	mg/kg		0.71	mg/kg	0.000071 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
30		chrysene				0.89	mg/kg		0.89	mg/kg	0.000089 %		
		601-048-00-0	205-923-4	218-01-9									
31		benzo[b]fluoranthene				0.8	mg/kg		0.8	mg/kg	0.00008 %		
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
		601-036-00-5	205-916-6	207-08-9									
33		benzo[a]pyrene; benzo[def]chrysene				0.68	mg/kg		0.68	mg/kg	0.000068 %		
		601-032-00-3	200-028-5	50-32-8									
34	•	indeno[123-cd]pyrene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
			205-893-2	193-39-5									
35		dibenz[a,h]anthracene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
36	•	benzo[ghi]perylene				0.39	mg/kg		0.39	mg/kg	0.000039 %		
			205-883-8	191-24-2									
37	•	coronene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			205-881-7	191-07-1									
38		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	0.68	mg/kg		0.68	mg/kg	0.000068 %		
		648-081-00-7	232-361-7	8007-45-2									
39	•	TPH (C6 to C40) petroleum group				4500	mg/kg		4500	mg/kg	0.45 %		
				TPH									
										Total:	0.522 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinands:

benzene: (conc.: 1.0e-06%)
toluene: (conc.: 1.1e-06%)
ethylbenzene: (conc.: 7.0e-06%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 0.00002%)
TPH (C6 to C40) petroleum group: (conc.: 0.45%)

Classification of sample: BHRP02[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHRP02[3]
Sample Depth:
0.3 m
Moisture content:
10%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		3.5 mg/kg	1.32	4.621 mg/kg	0.000462 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.571 mg/kg	0.0000571 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.5 mg/kg	1.462	9.5 mg/kg	0.00095 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		**<LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.4 mg/kg	1.126	10.583 mg/kg	0.00106 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	13.9 mg/kg		13.9 mg/kg	0.00139 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		**<LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		8.8 mg/kg	2.637	23.203 mg/kg	0.00232 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		39.1 mg/kg	2.469	96.549 mg/kg	0.00965 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.4 mg/kg	3.22	4.508 mg/kg	0.000451 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5 mg/kg	1.884	0.942 mg/kg	0.0000942 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
13		asbestos									
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14		pH				8.6 pH		8.6 pH	8.6 pH		
				PH							
15		phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2							
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]									
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.36 mg/kg		<0.36 mg/kg	<0.000036 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9							
18		benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2							
19		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3							
20		ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4							
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]									
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<**LOD**
22		naphthalene				1.42 mg/kg		1.42 mg/kg	0.000142 %		
		601-052-00-2	202-049-5	91-20-3							
23		acenaphthylene				1.04 mg/kg		1.04 mg/kg	0.000104 %		
			205-917-1	208-96-8							
24		acenaphthene				2.9 mg/kg		2.9 mg/kg	0.00029 %		
			201-469-6	83-32-9							
25		fluorene				2.57 mg/kg		2.57 mg/kg	0.000257 %		
			201-695-5	86-73-7							
26		phenanthrene				17.2 mg/kg		17.2 mg/kg	0.00172 %		
			201-581-5	85-01-8							
27		anthracene				7.7 mg/kg		7.7 mg/kg	0.00077 %		
			204-371-1	120-12-7							
28		fluoranthene				35.3 mg/kg		35.3 mg/kg	0.00353 %		
			205-912-4	206-44-0							
29		pyrene				31.6 mg/kg		31.6 mg/kg	0.00316 %		
			204-927-3	129-00-0							
30		benzo[a]anthracene				16 mg/kg		16 mg/kg	0.0016 %		
		601-033-00-9	200-280-6	56-55-3							
31		chrysene				12.3 mg/kg		12.3 mg/kg	0.00123 %		
		601-048-00-0	205-923-4	218-01-9							
32		benzo[b]fluoranthene				16 mg/kg		16 mg/kg	0.0016 %		
		601-034-00-4	205-911-9	205-99-2							
33		benzo[k]fluoranthene				5.65 mg/kg		5.65 mg/kg	0.000565 %		
		601-036-00-5	205-916-6	207-08-9							
34		benzo[a]pyrene; benzo[def]chrysene				16 mg/kg		16 mg/kg	0.0016 %		
		601-032-00-3	200-028-5	50-32-8							
35		indeno[123-cd]pyrene				9.5 mg/kg		9.5 mg/kg	0.00095 %		
			205-893-2	193-39-5							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				2.04	mg/kg		2.04	mg/kg	0.000204 %		
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				7.8	mg/kg		7.8	mg/kg	0.00078 %		
			205-883-8	191-24-2									
38		coronene				1.79	mg/kg		1.79	mg/kg	0.000179 %		
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	16	mg/kg		16	mg/kg	0.0016 %		
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				33.4	mg/kg		33.4	mg/kg	0.00334 %		
				TPH									
										Total:	0.0403 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00334%)

Classification of sample: BHRP02[4]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHRP02[4]
Sample Depth:
14 m
Moisture content:
17.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4.3	mg/kg	1.32	5.677	mg/kg	0.000568 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		2.6	mg/kg	1.462	3.8	mg/kg	0.00038 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1	mg/kg	1.923	<0.192	mg/kg	<0.0000192 %		<LOD
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5	mg/kg	1.405	0.703	mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6.6	mg/kg	1.126	7.431	mg/kg	0.000743 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	2.4	mg/kg		2.4	mg/kg	0.00024 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5	mg/kg	1.353	<0.677	mg/kg	<0.0000677 %		<LOD
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		13	mg/kg	2.637	34.277	mg/kg	0.00343 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		31.7	mg/kg	2.469	78.277	mg/kg	0.00783 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.6	mg/kg	3.22	1.932	mg/kg	0.000193 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.6	mg/kg	1.884	1.13	mg/kg	0.000113 %		
13	pH			PH		7.1	pH		7.1	pH	7.1 pH		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		phenol				<0.12	mg/kg		<0.12	mg/kg	<0.000012 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
15		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]				<0.12	mg/kg		<0.12	mg/kg	<0.000012 %		<**LOD**
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]									
16		Phenols, C9-11; Distillate Phenols			H, J, M	<0.47	mg/kg		<0.47	mg/kg	<0.000047 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9									
17		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
18		toluene				<0.007	mg/kg		<0.007	mg/kg	<0.0000007 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
19		ethylbenzene				<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
20		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
21		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
22		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-917-1	208-96-8									
23		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-469-6	83-32-9									
24		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
25		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
26		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-371-1	120-12-7									
27		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
28		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
29		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
30		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
31		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
33		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
34		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
35		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
36		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-883-8	191-24-2									
37		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-881-7	191-07-1									
38		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex			H	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
		combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]									
		648-081-00-7	232-361-7	8007-45-2							
39		TPH (C6 to C40) petroleum group				224 mg/kg		224 mg/kg	0.0224 %		
				TPH							
								Total:	0.0363 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0224%)

Classification of sample: BHW001[4]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHW001[4]
Sample Depth:
0.3 m
Moisture content:
2.8%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 2.8% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4.7 mg/kg	1.32	6.206 mg/kg	0.000621 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10.9 mg/kg	1.462	15.931 mg/kg	0.00159 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		0.3 mg/kg	1.923	0.577 mg/kg	0.0000577 %		
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		10.1 mg/kg	1.126	11.371 mg/kg	0.00114 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	11.4 mg/kg		11.4 mg/kg	0.00114 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		<**LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		7.9 mg/kg	2.637	20.83 mg/kg	0.00208 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		19.4 mg/kg	2.469	47.904 mg/kg	0.00479 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	2.254 mg/kg	0.000225 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5 mg/kg	1.884	0.942 mg/kg	0.0000942 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
13		asbestos									
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14		pH									
				PH		7.5 pH		7.5 pH	7.5 pH		
15		phenol									
		604-001-00-2	203-632-7	108-95-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]									
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M						
		648-127-00-6	293-435-2	91079-47-9		0.43 mg/kg		0.43 mg/kg	0.000043 %		
18		benzene									
		601-020-00-8	200-753-7	71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
19		toluene									
		601-021-00-3	203-625-9	108-88-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
20		ethylbenzene									
		601-023-00-4	202-849-4	100-41-4		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<**LOD**
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]									
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<**LOD**
22		naphthalene									
		601-052-00-2	202-049-5	91-20-3		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
23		acenaphthylene									
			205-917-1	208-96-8		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
24		acenaphthene									
			201-469-6	83-32-9		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
25		fluorene									
			201-695-5	86-73-7		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
26		phenanthrene									
			201-581-5	85-01-8		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
27		anthracene									
			204-371-1	120-12-7		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
28		fluoranthene									
			205-912-4	206-44-0		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
29		pyrene									
			204-927-3	129-00-0		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
30		benzo[a]anthracene									
		601-033-00-9	200-280-6	56-55-3		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
31		chrysene									
		601-048-00-0	205-923-4	218-01-9		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
32		benzo[b]fluoranthene									
		601-034-00-4	205-911-9	205-99-2		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
33		benzo[k]fluoranthene									
		601-036-00-5	205-916-6	207-08-9		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
34		benzo[a]pyrene; benzo[def]chrysene									
		601-032-00-3	200-028-5	50-32-8		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**
35		indeno[123-cd]pyrene									
			205-893-2	193-39-5		<0.08 mg/kg		<0.08 mg/kg	<0.000008 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-883-8	191-24-2									
38		coronene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				29.3	mg/kg		29.3	mg/kg	0.00293 %		
				TPH									
										Total:	0.015 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous property to non hazardous because Concentrations are below 0.002% of the waste and are unlikely to pose an oxidizing risk.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00005%)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00293%)

Classification of sample: BHW001[5]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
BHW001[5]
Sample Depth:
2.1 m
Moisture content:
7.6%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.104%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.104%)

Determinands

Moisture content: 7.6% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.8 mg/kg	1.32	8.978 mg/kg	0.000898 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.8 mg/kg	1.142	2.056 mg/kg	0.000206 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		30.8 mg/kg	1.462	45.016 mg/kg	0.0045 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		<**LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		80 mg/kg	1.126	90.071 mg/kg	0.00901 %		

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	108.3	mg/kg		108.3	mg/kg	0.0108 %		
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5	mg/kg	1.353	<0.677	mg/kg	<0.0000677 %		<LOD
9		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		26.2	mg/kg	2.637	69.081	mg/kg	0.00691 %		
10		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		217.6	mg/kg	2.469	537.319	mg/kg	0.0537 %		
11		boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.3	mg/kg	3.22	4.186	mg/kg	0.000419 %		
12		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5	mg/kg	1.884	0.942	mg/kg	0.0000942 %		
13		asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
14		pH			PH		7.8	pH		7.8	pH	7.8 pH		
15		phenol	604-001-00-2	203-632-7	108-95-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]	604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		0.36	mg/kg		0.36	mg/kg	0.000036 %		
17		Phenols, C9-11; Distillate Phenols	648-127-00-6	293-435-2	91079-47-9	H, J, M	0.74	mg/kg		0.74	mg/kg	0.000074 %		
18		benzene	601-020-00-8	200-753-7	71-43-2		0.002	mg/kg		0.002	mg/kg	0.0000002 %		
19		toluene	601-021-00-3	203-625-9	108-88-3		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
20		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<LOD
22		naphthalene	601-052-00-2	202-049-5	91-20-3		<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
23		acenaphthylene		205-917-1	208-96-8		<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
24		acenaphthene		201-469-6	83-32-9		<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
25		fluorene		201-695-5	86-73-7		<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
26		phenanthrene		201-581-5	85-01-8		8.99	mg/kg		8.99	mg/kg	0.000899 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
27		anthracene				<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
			204-371-1	120-12-7									
28		fluoranthene				17.2	mg/kg		17.2	mg/kg	0.00172 %		
			205-912-4	206-44-0									
29		pyrene				18	mg/kg		18	mg/kg	0.0018 %		
			204-927-3	129-00-0									
30		benzo[a]anthracene				<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				8.56	mg/kg		8.56	mg/kg	0.000856 %		
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				9.8	mg/kg		9.8	mg/kg	0.00098 %		
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				10	mg/kg		10	mg/kg	0.001 %		
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
			205-893-2	193-39-5									
36		dibenz[a,h]anthracene				<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
			205-883-8	191-24-2									
38		coronene				<8.53	mg/kg		<8.53	mg/kg	<0.000853 %		<LOD
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	10	mg/kg		10	mg/kg	0.001 %		
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				1040	mg/kg		1040	mg/kg	0.104 %		
				TPH									
										Total:	0.209 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

benzene: (conc.: 2.0e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.104%)

Classification of sample: BHW001[6]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHW001[6]
Sample Depth:
12.4 m
Moisture content:
6.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.3 mg/kg	1.32	3.037 mg/kg	0.000304 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<**LOD**
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10.1 mg/kg	1.462	14.762 mg/kg	0.00148 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		<**LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.6 mg/kg	1.126	10.809 mg/kg	0.00108 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	2.7 mg/kg		2.7 mg/kg	0.00027 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		<**LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		19.2 mg/kg	2.637	50.624 mg/kg	0.00506 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		16 mg/kg	2.469	39.509 mg/kg	0.00395 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.5 mg/kg	3.22	<1.61 mg/kg	<0.000161 %		<**LOD**
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5 mg/kg	1.884	0.942 mg/kg	0.0000942 %		

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
13		asbestos									
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
14		pH				9.2 pH		9.2 pH	9.2 pH		
				PH							
15		phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2							
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]									
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.4 mg/kg		<0.4 mg/kg	<0.00004 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9							
18		benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2							
19		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3							
20		ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4							
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]									
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<**LOD**
22		naphthalene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3							
23		acenaphthylene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			205-917-1	208-96-8							
24		acenaphthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			201-469-6	83-32-9							
25		fluorene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			201-695-5	86-73-7							
26		phenanthrene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			201-581-5	85-01-8							
27		anthracene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			204-371-1	120-12-7							
28		fluoranthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			205-912-4	206-44-0							
29		pyrene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			204-927-3	129-00-0							
30		benzo[a]anthracene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3							
31		chrysene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9							
32		benzo[b]fluoranthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2							
33		benzo[k]fluoranthene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9							
34		benzo[a]pyrene; benzo[def]chrysene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8							
35		indeno[123-cd]pyrene				<0.09 mg/kg		<0.09 mg/kg	<0.000009 %		<**LOD**
			205-893-2	193-39-5							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-883-8	191-24-2									
38		coronene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				57.5	mg/kg		57.5	mg/kg	0.00575 %		
				TPH									
										Total:	0.0186 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00575%)

Classification of sample: BHW002[4]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHW002[4]
Sample Depth:
0.3 m
Moisture content:
8.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10.2 mg/kg	1.32	13.467 mg/kg	0.00135 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.457 mg/kg	0.0000457 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		31.8 mg/kg	1.462	46.477 mg/kg	0.00465 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		<**LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		21.1 mg/kg	1.126	23.756 mg/kg	0.00238 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	38.7 mg/kg		38.7 mg/kg	0.00387 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		<**LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		17.6 mg/kg	2.637	46.406 mg/kg	0.00464 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		80.8 mg/kg	2.469	199.519 mg/kg	0.02 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.8 mg/kg	3.22	2.576 mg/kg	0.000258 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5 mg/kg	1.884	0.942 mg/kg	0.0000942 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos											
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14		pH				8.3	pH		8.3	pH	8.3 pH		
				PH									
15		phenol				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]									
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.43	mg/kg		<0.43	mg/kg	<0.000043 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9									
18		benzene				0.002	mg/kg		0.002	mg/kg	0.0000002 %		
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20		ethylbenzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
22		naphthalene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-917-1	208-96-8									
24		acenaphthene				0.27	mg/kg		0.27	mg/kg	0.000027 %		
			201-469-6	83-32-9									
25		fluorene				0.19	mg/kg		0.19	mg/kg	0.000019 %		
			201-695-5	86-73-7									
26		phenanthrene				0.7	mg/kg		0.7	mg/kg	0.00007 %		
			201-581-5	85-01-8									
27		anthracene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
			204-371-1	120-12-7									
28		fluoranthene				1.29	mg/kg		1.29	mg/kg	0.000129 %		
			205-912-4	206-44-0									
29		pyrene				1.16	mg/kg		1.16	mg/kg	0.000116 %		
			204-927-3	129-00-0									
30		benzo[a]anthracene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				0.76	mg/kg		0.76	mg/kg	0.000076 %		
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				0.85	mg/kg		0.85	mg/kg	0.000085 %		
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				0.36	mg/kg		0.36	mg/kg	0.000036 %		
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				0.87	mg/kg		0.87	mg/kg	0.000087 %		
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				0.58	mg/kg		0.58	mg/kg	0.000058 %		
			205-893-2	193-39-5									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				0.51	mg/kg		0.51	mg/kg	0.000051 %		
			205-883-8	191-24-2									
38		coronene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	0.87	mg/kg		0.87	mg/kg	0.000087 %		
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				109	mg/kg		109	mg/kg	0.0109 %		
				TPH									
										Total:	0.0493 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

benzene: (conc.: 2.0e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0109%)

Classification of sample: BHW002[5]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHW002[5]
Sample Depth:
1.2 m
Moisture content:
58.5%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 58.5% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		0.7 mg/kg	1.32	0.924 mg/kg	0.0000924 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10.2 mg/kg	1.462	14.908 mg/kg	0.00149 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		10.2 mg/kg	1.923	19.616 mg/kg	0.00196 %		
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		52.2 mg/kg	1.126	58.771 mg/kg	0.00588 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	189.3 mg/kg		189.3 mg/kg	0.0189 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		**<LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		13.6 mg/kg	2.637	35.859 mg/kg	0.00359 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		246.1 mg/kg	2.469	607.694 mg/kg	0.0608 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		4.1 mg/kg	3.22	13.201 mg/kg	0.00132 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				3.5 mg/kg	1.884	6.594 mg/kg	0.000659 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos											
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14		pH											
				PH		8.2	pH		8.2	pH	8.2 pH		
15		phenol											
		604-001-00-2	203-632-7	108-95-2		<0.16	mg/kg		<0.16	mg/kg	<0.000016 %		<**LOD**
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]											
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		1.2	mg/kg		1.2	mg/kg	0.00012 %		
17		Phenols, C9-11; Distillate Phenols			H, J, M	3	mg/kg		3	mg/kg	0.0003 %		
		648-127-00-6	293-435-2	91079-47-9									
18		benzene											
		601-020-00-8	200-753-7	71-43-2		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
19		toluene											
		601-021-00-3	203-625-9	108-88-3		<0.009	mg/kg		<0.009	mg/kg	<0.0000009 %		<**LOD**
20		ethylbenzene											
		601-023-00-4	202-849-4	100-41-4		<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<**LOD**
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		0.005	mg/kg		0.005	mg/kg	0.0000005 %		
22		naphthalene											
		601-052-00-2	202-049-5	91-20-3		0.26	mg/kg		0.26	mg/kg	0.000026 %		
23		acenaphthylene											
			205-917-1	208-96-8		<0.14	mg/kg		<0.14	mg/kg	<0.000014 %		<**LOD**
24		acenaphthene											
			201-469-6	83-32-9		<0.14	mg/kg		<0.14	mg/kg	<0.000014 %		<**LOD**
25		fluorene											
			201-695-5	86-73-7		0.22	mg/kg		0.22	mg/kg	0.000022 %		
26		phenanthrene											
			201-581-5	85-01-8		0.74	mg/kg		0.74	mg/kg	0.000074 %		
27		anthracene											
			204-371-1	120-12-7		<0.14	mg/kg		<0.14	mg/kg	<0.000014 %		<**LOD**
28		fluoranthene											
			205-912-4	206-44-0		0.72	mg/kg		0.72	mg/kg	0.000072 %		
29		pyrene											
			204-927-3	129-00-0		0.63	mg/kg		0.63	mg/kg	0.000063 %		
30		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		0.32	mg/kg		0.32	mg/kg	0.000032 %		
31		chrysene											
		601-048-00-0	205-923-4	218-01-9		0.38	mg/kg		0.38	mg/kg	0.000038 %		
32		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		0.56	mg/kg		0.56	mg/kg	0.000056 %		
33		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		0.22	mg/kg		0.22	mg/kg	0.000022 %		
34		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		0.33	mg/kg		0.33	mg/kg	0.000033 %		
35		indeno[123-cd]pyrene											
			205-893-2	193-39-5		0.22	mg/kg		0.22	mg/kg	0.000022 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.14	mg/kg		<0.14	mg/kg	<0.000014 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				0.26	mg/kg		0.26	mg/kg	0.000026 %		
			205-883-8	191-24-2									
38		coronene				<0.14	mg/kg		<0.14	mg/kg	<0.000014 %		<LOD
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	0.33	mg/kg		0.33	mg/kg	0.000033 %		
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				470	mg/kg		470	mg/kg	0.047 %		
				TPH									
										Total:	0.143 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous property to non hazardous because Concentrations are below 0.002% of the waste and are unlikely to pose an oxidizing risk.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00196%)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 5.0e-07%)
TPH (C6 to C40) petroleum group: (conc.: 0.047%)

Classification of sample: BHW002[6]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHW002[6]
Sample Depth:
9.6 m
Moisture content:
30.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 30.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.6	mg/kg	1.32	3.433	mg/kg	0.000343 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9.8	mg/kg	1.462	14.323	mg/kg	0.00143 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		0.2	mg/kg	1.923	0.385	mg/kg	0.0000385 %		
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5	mg/kg	1.405	0.703	mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		10.2	mg/kg	1.126	11.484	mg/kg	0.00115 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	884.1	mg/kg		884.1	mg/kg	0.0884 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5	mg/kg	1.353	<0.677	mg/kg	<0.0000677 %		<LOD
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		10.9	mg/kg	2.637	28.74	mg/kg	0.00287 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		17.2	mg/kg	2.469	42.472	mg/kg	0.00425 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1	mg/kg	3.22	3.22	mg/kg	0.000322 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.6	mg/kg	1.884	1.13	mg/kg	0.000113 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos											
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14		pH											
				PH		10.2	pH		10.2	pH	10.2 pH		
15		phenol											
		604-001-00-2	203-632-7	108-95-2		<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]											
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.44	mg/kg		<0.44	mg/kg	<0.000044 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9									
18		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20		ethylbenzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		naphthalene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-917-1	208-96-8									
24		acenaphthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			201-469-6	83-32-9									
25		fluorene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			201-695-5	86-73-7									
26		phenanthrene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			201-581-5	85-01-8									
27		anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			204-371-1	120-12-7									
28		fluoranthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-912-4	206-44-0									
29		pyrene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			204-927-3	129-00-0									
30		benzo[a]anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-893-2	193-39-5									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-883-8	191-24-2									
38		coronene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				48.1	mg/kg		48.1	mg/kg	0.00481 %		
				TPH									
										Total:	0.104 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 2: Oxidizing "waste which may, generally by providing oxygen, cause or contribute to the combustion of other materials"
Force this Hazardous property to non hazardous because Concentrations are below 0.002% of the waste and are unlikely to pose an oxidizing risk.

Hazard Statements hit:

Ox. Sol. 1; H271 "May cause fire or explosion; strong oxidiser."

Because of determinand:

chromium(VI) oxide: (compound conc.: 0.00003%)

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00481%)

Classification of sample: BHW005[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHW005[3]
Sample Depth:
0.3 m
Moisture content:
4%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 4% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.8 mg/kg	1.32	7.658 mg/kg	0.000766 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1 mg/kg	1.142	1.142 mg/kg	0.000114 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14.2 mg/kg	1.462	20.754 mg/kg	0.00208 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		**<LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25.1 mg/kg	1.126	28.26 mg/kg	0.00283 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	34.5 mg/kg		34.5 mg/kg	0.00345 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		**<LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		10.9 mg/kg	2.637	28.74 mg/kg	0.00287 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		91.8 mg/kg	2.469	226.681 mg/kg	0.0227 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.3 mg/kg	3.22	4.186 mg/kg	0.000419 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5 mg/kg	1.884	0.942 mg/kg	0.0000942 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
14		pH				9.1	pH		9.1	pH	9.1 pH		
				PH									
15		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]									
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.36	mg/kg		<0.36	mg/kg	<0.000036 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9									
18		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20		ethylbenzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
22		naphthalene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-917-1	208-96-8									
24		acenaphthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-469-6	83-32-9									
25		fluorene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-695-5	86-73-7									
26		phenanthrene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-581-5	85-01-8									
27		anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			204-371-1	120-12-7									
28		fluoranthene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			205-912-4	206-44-0									
29		pyrene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			204-927-3	129-00-0									
30		benzo[a]anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-893-2	193-39-5									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			205-883-8	191-24-2									
38		coronene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	0.11	mg/kg		0.11	mg/kg	0.000011 %		
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				65	mg/kg		65	mg/kg	0.0065 %		
				TPH									
										Total:	0.0422 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0065%)

Classification of sample: BHW005[4]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BHW005[4]
Sample Depth:
2.5 m
Moisture content:
26.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 26.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		21 mg/kg	1.32	27.727 mg/kg	0.00277 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		33.9 mg/kg	1.462	49.547 mg/kg	0.00495 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		<LOD
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16.1 mg/kg	1.126	18.127 mg/kg	0.00181 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	28.9 mg/kg		28.9 mg/kg	0.00289 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		<LOD
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		19.3 mg/kg	2.637	50.888 mg/kg	0.00509 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		62.7 mg/kg	2.469	154.825 mg/kg	0.0155 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		12.3 mg/kg	3.22	39.604 mg/kg	0.00396 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.7 mg/kg	1.884	1.319 mg/kg	0.000132 %		
13	pH			PH		8 pH		8 pH	8pH		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		phenol				<0.12	mg/kg		<0.12	mg/kg	<0.000012 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
15		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]				<0.12	mg/kg		<0.12	mg/kg	<0.000012 %		<LOD
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]									
16		Phenols, C9-11; Distillate Phenols			H, J, M	<0.49	mg/kg		<0.49	mg/kg	<0.000049 %		<LOD
		648-127-00-6	293-435-2	91079-47-9									
17		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
18		toluene				<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
19		ethylbenzene				<0.003	mg/kg		<0.003	mg/kg	<0.0000003 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
20		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
21		naphthalene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
22		acenaphthylene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			205-917-1	208-96-8									
23		acenaphthene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			201-469-6	83-32-9									
24		fluorene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			201-695-5	86-73-7									
25		phenanthrene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			201-581-5	85-01-8									
26		anthracene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			204-371-1	120-12-7									
27		fluoranthene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			205-912-4	206-44-0									
28		pyrene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			204-927-3	129-00-0									
29		benzo[a]anthracene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
30		chrysene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
31		benzo[b]fluoranthene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
33		benzo[a]pyrene; benzo[def]chrysene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
34		indeno[123-cd]pyrene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			205-893-2	193-39-5									
35		dibenz[a,h]anthracene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
36		benzo[ghi]perylene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			205-883-8	191-24-2									
37		coronene				<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD
			205-881-7	191-07-1									
38		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex			H	<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
		combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]									
		648-081-00-7	232-361-7	8007-45-2							
39		TPH (C6 to C40) petroleum group				33.5 mg/kg		33.5 mg/kg	0.00335 %		
				TPH							
								Total:	0.0409 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00335%)

Classification of sample: WSW001[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WSW001[2]
Sample Depth:
0.5 m
Moisture content:
15.4%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15.4% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.5 mg/kg	1.32	11.223 mg/kg	0.00112 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		6.8 mg/kg	1.142	7.768 mg/kg	0.000777 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		137 mg/kg	1.462	200.233 mg/kg	0.02 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		**<LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		145.5 mg/kg	1.126	163.817 mg/kg	0.0164 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	77.1 mg/kg		77.1 mg/kg	0.00771 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.7 mg/kg	1.353	0.947 mg/kg	0.0000947 %		
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		22.8 mg/kg	2.637	60.116 mg/kg	0.00601 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		294.4 mg/kg	2.469	726.961 mg/kg	0.0727 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		4.5 mg/kg	3.22	14.489 mg/kg	0.00145 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.6 mg/kg	1.884	1.13 mg/kg	0.000113 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos											
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14		pH											
				PH		8	pH		8	pH	8pH		
15		phenol											
		604-001-00-2	203-632-7	108-95-2		<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]											
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.11	mg/kg		<0.11	mg/kg	<0.000011 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M								
		648-127-00-6	293-435-2	91079-47-9		<0.45	mg/kg		<0.45	mg/kg	<0.000045 %		<**LOD**
18		benzene											
		601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
19		toluene											
		601-021-00-3	203-625-9	108-88-3		<0.006	mg/kg		<0.006	mg/kg	<0.0000006 %		<**LOD**
20		ethylbenzene											
		601-023-00-4	202-849-4	100-41-4		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
22		naphthalene											
		601-052-00-2	202-049-5	91-20-3		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
23		acenaphthylene											
			205-917-1	208-96-8		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
24		acenaphthene											
			201-469-6	83-32-9		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
25		fluorene											
			201-695-5	86-73-7		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
26		phenanthrene											
			201-581-5	85-01-8		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
27		anthracene											
			204-371-1	120-12-7		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
28		fluoranthene											
			205-912-4	206-44-0		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
29		pyrene											
			204-927-3	129-00-0		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
30		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
31		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
32		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
33		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
34		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
35		indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-883-8	191-24-2									
38		coronene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				409	mg/kg		409	mg/kg	0.0409 %		
				TPH									
										Total:	0.168 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0409%)

Classification of sample: WSW002[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WSW002[2]
Sample Depth:
0.5 m
Moisture content:
13.2%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13.2% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.5	mg/kg	1.32	9.902	mg/kg	0.00099 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		5.7	mg/kg	1.142	6.511	mg/kg	0.000651 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		76.6	mg/kg	1.462	111.955	mg/kg	0.0112 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1	mg/kg	1.923	<0.192	mg/kg	<0.0000192 %		<**LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5	mg/kg	1.405	0.703	mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		287.8	mg/kg	1.126	324.031	mg/kg	0.0324 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	104.7	mg/kg		104.7	mg/kg	0.0105 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.2	mg/kg	1.353	1.624	mg/kg	0.000162 %		
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		23.3	mg/kg	2.637	61.435	mg/kg	0.00614 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		433.6	mg/kg	2.469	1070.687	mg/kg	0.107 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		3.8	mg/kg	3.22	12.236	mg/kg	0.00122 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				3.2	mg/kg	1.884	6.029	mg/kg	0.000603 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos											
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14		pH				7.5	pH		7.5	pH	7.5 pH		
				PH									
15		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]											
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.4	mg/kg		<0.4	mg/kg	<0.00004 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9									
18		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20		ethylbenzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<**LOD**
22		naphthalene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-917-1	208-96-8									
24		acenaphthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			201-469-6	83-32-9									
25		fluorene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			201-695-5	86-73-7									
26		phenanthrene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			201-581-5	85-01-8									
27		anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			204-371-1	120-12-7									
28		fluoranthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-912-4	206-44-0									
29		pyrene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			204-927-3	129-00-0									
30		benzo[a]anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-893-2	193-39-5									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-883-8	191-24-2									
38		coronene				<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	<0.09	mg/kg		<0.09	mg/kg	<0.000009 %		<**LOD**
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				504	mg/kg		504	mg/kg	0.0504 %		
				TPH									
										Total:	0.222 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0504%)

Classification of sample: WSW003[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WSW003[2]
Sample Depth:
0.5 m
Moisture content:
4.6%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 4.6% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.8 mg/kg	1.32	8.978 mg/kg	0.000898 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5 mg/kg	1.142	0.571 mg/kg	0.0000571 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14.2 mg/kg	1.462	20.754 mg/kg	0.00208 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1 mg/kg	1.923	<0.192 mg/kg	<0.0000192 %		**<LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5 mg/kg	1.405	0.703 mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17.4 mg/kg	1.126	19.59 mg/kg	0.00196 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	20.8 mg/kg		20.8 mg/kg	0.00208 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5 mg/kg	1.353	<0.677 mg/kg	<0.0000677 %		**<LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		10.7 mg/kg	2.637	28.213 mg/kg	0.00282 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		77.2 mg/kg	2.469	190.63 mg/kg	0.0191 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1 mg/kg	3.22	3.22 mg/kg	0.000322 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5 mg/kg	1.884	0.942 mg/kg	0.0000942 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
14		pH				8.8	pH		8.8	pH	8.8 pH		
				PH									
15		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]									
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.4	mg/kg		<0.4	mg/kg	<0.00004 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9									
18		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20		ethylbenzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
22		naphthalene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-917-1	208-96-8									
24		acenaphthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-469-6	83-32-9									
25		fluorene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-695-5	86-73-7									
26		phenanthrene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-581-5	85-01-8									
27		anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			204-371-1	120-12-7									
28		fluoranthene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			205-912-4	206-44-0									
29		pyrene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			204-927-3	129-00-0									
30		benzo[a]anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %		
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			205-893-2	193-39-5									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37	●	benzo[ghi]perylene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			205-883-8	191-24-2									
38	●	coronene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	0.13	mg/kg		0.13	mg/kg	0.000013 %		
		648-081-00-7	232-361-7	8007-45-2									
40	●	TPH (C6 to C40) petroleum group				187	mg/kg		187	mg/kg	0.0187 %		
				TPH									
										Total:	0.0485 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0187%)

Classification of sample: WSW004[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WSW004[2]
Sample Depth:
0.5 m
Moisture content:
5.7%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.7% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.2	mg/kg	1.32	10.827	mg/kg	0.00108 %		
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.2	mg/kg	1.142	1.371	mg/kg	0.000137 %		
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		28.5	mg/kg	1.462	41.654	mg/kg	0.00417 %		
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.1	mg/kg	1.923	<0.192	mg/kg	<0.0000192 %		<**LOD**
5	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.5	mg/kg	1.405	0.703	mg/kg	0.0000703 %		
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		30	mg/kg	1.126	33.777	mg/kg	0.00338 %		
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	32.8	mg/kg		32.8	mg/kg	0.00328 %		
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.5	mg/kg	1.353	<0.677	mg/kg	<0.0000677 %		<**LOD**
9	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		14.7	mg/kg	2.637	38.759	mg/kg	0.00388 %		
10	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		83	mg/kg	2.469	204.952	mg/kg	0.0205 %		
11	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.1	mg/kg	3.22	3.542	mg/kg	0.000354 %		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5	mg/kg	1.884	0.942	mg/kg	0.0000942 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		asbestos											
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
14		pH				8.9	pH		8.9	pH	8.9 pH		
				PH									
15		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
16		3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7]											
		604-006-00-X	202-439-5 [1] 202-461-5 [2] 203-321-6 [3] 208-395-3 [4] 209-400-1 [5] 215-089-3 [6] 276-245-4 [7]	95-65-8 [1] 95-87-4 [2] 105-67-9 [3] 526-75-0 [4] 576-26-1 [5] 1300-71-6 [6] 71975-58-1 [7]		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		Phenols, C9-11; Distillate Phenols			H, J, M	<0.4	mg/kg		<0.4	mg/kg	<0.00004 %		<**LOD**
		648-127-00-6	293-435-2	91079-47-9									
18		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
19		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
20		ethylbenzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004	mg/kg		<0.004	mg/kg	<0.0000004 %		<**LOD**
22		naphthalene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
23		acenaphthylene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-917-1	208-96-8									
24		acenaphthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-469-6	83-32-9									
25		fluorene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-695-5	86-73-7									
26		phenanthrene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			201-581-5	85-01-8									
27		anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			204-371-1	120-12-7									
28		fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-912-4	206-44-0									
29		pyrene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			204-927-3	129-00-0									
30		benzo[a]anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
31		chrysene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
32		benzo[b]fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
33		benzo[k]fluoranthene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
34		benzo[a]pyrene; benzo[def]chrysene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
35		indeno[123-cd]pyrene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-893-2	193-39-5									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		dibenz[a,h]anthracene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
37		benzo[ghi]perylene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-883-8	191-24-2									
38		coronene				<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
			205-881-7	191-07-1									
39		Tar, coal; Coal tar; [The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.]			H	<0.08	mg/kg		<0.08	mg/kg	<0.000008 %		<**LOD**
		648-081-00-7	232-361-7	8007-45-2									
40		TPH (C6 to C40) petroleum group				251	mg/kg		251	mg/kg	0.0251 %		
				TPH									
										Total:	0.0623 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification
CLP: Note H	Known incomplete entry, should not be used as is

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No liquid phase present. Insufficient concentration to produce a liquid phase. Substances contained in soil matrix which includes a moisture content between 2% (20,000 mg/kg) to 58%, reducing the risk of flammability.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0251%)

Appendix A: Classifier defined and non GB MCL determinands

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

lead compounds with the exception of those specified elsewhere in this Annex

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2; H371

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Insufficient chromium to generate lead chromate.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight.

nickel {nickel sulfate}

Insufficient chromium for nickel chromate species.

zinc {zinc sulphate}

Insufficient chromium to generate zinc chromate.

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide].

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.237.5731.10565 (25 Aug 2023)
HazWasteOnline Database: 2023.237.5731.10565 (25 Aug 2023)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021

Appendix E: Gas Monitoring Results

Gas Monitoring Summary

Notes: Peak gas concentrations, flow rates and differential pressures represent the interpreted highest values (or lowest gas concentration value for oxygen) recorded during the monitoring period. Steady state values are taken as the end of monitoring values. Values below the limit of detection (LoD) of the monitoring equipment are recorded as the LoD value preceded by '<' (eg <0.1).

Project WFL Hampshire Water Transfer and Water Recycling Project (Phase 0)
Project No. G2034-22
Carried out for Clancy Docwra on behalf of Southern Water

Table A3

Location	Date	Air Temp, oC	Baro Press, mbar	CO2, %vol	CO, ppm	O2, %vol	CH4, %vol	Diff Press, Pa	VOC, ppmv	H2S, ppm	Gas Flow Rate, l/hr	Balance, %vol	Equipment	Remarks
BHRP01 (2)														
	24 Jan 2023	2.6	1037	23.8	2	<0.1	77.4	<1	<0.1	9	0.1	<0.1	Equipment:GA5000. Cal:31-May-22	
	14 Feb 2023	7.5	1032	22.7	5	0.2	76.5	<1	<0.1	<1	<0.1	0.6	Equipment:GA5000. Cal:31-May-22	
	30 Mar 2023	10.7	1007	18.1	3	4.3	58.8	<1	<0.1	<1	<0.1	18.9	Equipment:GA5000. Cal:27-Mar-23	
	12 Apr 2023	10.1	994	22.6	4	0.5	75.8	<1	<0.1	<1	0.1	1.2	Equipment:GA5000. Cal:27-Mar-23	
	19 May 2023	16.3	1027	22.4	5	<0.1	77.2	<1	<0.1	6	0.1	0.5	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	31.7	1024	22.7	5	<0.1	77.8	<1	<0.1	9	0.4	<0.1	Equipment:GA5000. Cal:22-Jun-23	
	21 Jul 2023	21	1014	22.9	5	<0.1	77.5	<1	<0.1	9	0.1	<0.1	Equipment:GA5000. Cal:27-Sep-23	CH4 LEL too high for machine to record
	14 Aug 2023	19.4	1013	23.6	4	<0.1	77.4	<1	<0.1	8	0.1	<0.1	Equipment:GA5000. Cal:27-Mar-23	
	18 Sep 2023	20.5	1025	23.9	4	<0.1	75.3	<1	<0.1	9	<0.1	0.8	Equipment:GA5000. Cal:27-Mar-23	
	12 Oct 2023	13.4	1020	23.6	5	<0.1	74.4	<1	<0.1	8	<0.1	1.9	Equipment:GA5000. Cal:27-Mar-23	
	16 Nov 2023	9	1014	12.3	3	0.4	83.2	<1	9.9	<1	0.1	4.1	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	13.7	990	24.9	3	<0.1	79.3	<1	<0.1	3	0.1	<0.1	Equipment:GA5000. Cal:27-Mar-23	
BHRP02 (2)														
	24 Jan 2023	2.8	1037	12.2	<1	14	21.7	<1	<0.1	<1	<0.1	52.2	Equipment:GA5000. Cal:31-May-22	
	14 Feb 2023	7.5	1032	31.1	1	0.1	59.3	<1	<0.1	<1	<0.1	9.5	Equipment:GA5000. Cal:31-May-22	
	30 Mar 2023	11.2	1007	30.1	1	0.1	58.1	<1	<0.1	<1	<0.1	11.7	Equipment:GA5000. Cal:27-Mar-23	
	12 Apr 2023	9.4	994	30.1	1	0.4	56.9	<1	<0.1	<1	0.1	12.6	Equipment:GA5000. Cal:27-Mar-23	
	19 May 2023	16.6	1027	29.2	2	<0.1	62.1	<1	<0.1	<1	<0.1	8.7	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	20	1023	27.7	4	<0.1	67.4	<1	<0.1	<1	-5.3	4.9	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	19	1015	27.7	1	0.1	67.3	<1	<0.1	1	-0.1	4.8	Equipment:GA5000. Cal:27-Mar-23	CH4 LEL too high for machine to record
	14 Aug 2023	18.3	1014	27.4	1	0.1	70.6	5	<0.1	<1	0.2	1.9	Equipment:GA5000. Cal:27-Mar-23	
	18 Sep 2023	18.9	1003	26.4	3	0.1	72	4	<0.1	<1	<0.1	1.5	Equipment:GA5000. Cal:27-Mar-23	
	12 Oct 2023	17.9	1012	26.3	1	0.3	68.2	3	<0.1	<1	<0.1	3.8	Equipment:GA5000. Cal:27-Mar-23	
	16 Nov 2023	8.7	1013	30.8	<1	1.2	56.1	3	4.3	<1	<0.1	11.8	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	13.7	990	32.3	<1	0.5	61.6	2	<0.1	<1	0.2	5.4	Equipment:GA5000. Cal:27-Mar-23	
BHW001 (2)														
	24 Jan 2023	3.1	1038	26.5	<1	<0.1	75	<1	<0.1	1	<0.1	<0.1	Equipment:GA5000. Cal:31-May-22	
	14 Feb 2023	7	1032	26.3	<1	<0.1	69.5	<1	<0.1	<1	<0.1	4.2	Equipment:GA5000. Cal:31-May-22	CH4 LEL exceeds max readings on GA5000
	30 Mar 2023	12.6	1007	19.1	<1	<0.1	77.7	<1	<0.1	<1	<0.1	3.2	Equipment:GA5000. Cal:27-Mar-23	
	12 Apr 2023	8.6	997	23.2	<1	<0.1	76.1	<1	<0.1	1	<0.1	0.7	Equipment:GA5000. Cal:27-Mar-23	
	18 May 2023	17.8	1027	25.5	1	<0.1	72	<1	<0.1	3	<0.1	2.5	Equipment:GA5000. Cal:27-Mar-02	
	21 Jun 2023	17.8	1027	24	1	0.3	6.8	<1	<0.1	<1	-0.1	69	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	22.4	1015	25.9	2	<0.1	52.6	<1	<0.1	3	<0.1	21.5	Equipment:GA5000. Cal:27-Sep-23	CH4 LEL too high for machine to record

Gas Monitoring Summary

Notes: Peak gas concentrations, flow rates and differential pressures represent the interpreted highest values (or lowest gas concentration value for oxygen) recorded during the monitoring period. Steady state values are taken as the end of monitoring values. Values below the limit of detection (LoD) of the monitoring equipment are recorded as the LoD value preceded by '<' (eg <0.1).

Project WFL Hampshire Water Transfer and Water Recycling Project (Phase 0)
Project No. G2034-22
Carried out for Clancy Docwra on behalf of Southern Water

Table A3

Location	Date	Air Temp, oC	Baro Press, mbar	CO2, %vol	CO, ppm	O2, %vol	CH4, %vol	Diff Press, Pa	VOC, ppmv	H2S, ppm	Gas Flow Rate, l/hr	Balance, %vol	Equipment	Remarks
	14 Aug 2023	20.5	1013	25.8	1	<0.1	55.4	<1	<0.1	5	<0.1	18.8	Equipment:GA5000. Cal:27-Mar-23	
	20 Sep 2023	20	1002	27.2	1	<0.1	65.8	-7	<0.1	5	<0.1	6.9	Equipment:GA5000. Cal:27-Mar-23	
	11 Oct 2023	19.3	1013	26.7	1	<0.1	64.3	<1	<0.1	4	<0.1	8.9	Equipment:GA5000. Cal:27-Mar-23	
	17 Nov 2023	9	1021	16.3	<1	<0.1	70.4	<1	<0.1	1	<0.1	13.3	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	8.9	992	15.8	<1	0.1	81.9	<1	<0.1	1	0.2	2.3	Equipment:GA5000. Cal:27-Mar-23	
BHW002 (2)														
	24 Jan 2022	2.3	1037	17.4	3	<0.1	35	<1	<0.1	3	<0.1	47.6	Equipment:GA5000. Cal:31-May-22	
	14 Feb 2023	5.2	1032	21.5	1	0.3	29.8	<1	<0.1	1	<0.1	48.4	Equipment:GA5000. Cal:31-May-22	CH4 LEL exceeds max reading level on GA5000
	30 Mar 2023	11.1	1008	19.9	1	<0.1	31.3	<1	<0.1	1	<0.1	48.9	Equipment:GA5000. Cal:27-Mar-23	
	12 Apr 2023	11.1	997	20.8	1	<0.1	33.3	<1	<0.1	3	<0.1	45.9	Equipment:GA5000. Cal:27-Mar-23	
	19 May 2023	18.3	1025	19.5	1	<0.1	29.8	<1	<0.1	3	<0.1	50.6	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	21.6	1017	19.7	1	<0.1	20.1	<1	<0.1	4	<0.1	60.2	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	22	1015	21.5	2	<0.1	13.6	<1	0.5	5	<0.1	64.9	Equipment:GA5000. Cal:27-Mar-23	CH4 LEL exceeds max reading level on GA5000
	14 Aug 2023	18.5	1011	27.4	1	0.1	70.6	5	<0.1	<1	0.2	1.9	Equipment:GA5000. Cal:27-Mar-23	
	20 Sep 2023	17.1	999	22.5	1	<0.1	31	<1	<0.1	4	<0.1	46.4	Equipment:GA5000. Cal:27-Mar-23	
	12 Oct 2023	18.3	1013	22.1	1	<0.1	35.5	<1	<0.1	4	<0.1	42.4	Equipment:GA5000. Cal:27-Mar-23	
	17 Nov 2023	9.2	1021	21.4	<1	<0.1	44.8	<1	2.9	4	<0.1	33.8	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	8.7	992	18.1	<1	<0.1	36.2	<1	<0.1	7	0.1	45.8	Equipment:GA5000. Cal:27-Mar-23	
BHW003 (2)														
	24 Jan 2023	2	1039	0.2	<1	21	0.1	<1	<0.1	<1	<0.1	78.7	Equipment:GA5000. Cal:31-May-22	
	13 Feb 2023	7.4	1030	0.5	<1	21.1	0.1	<1	<0.1	<1	0.1	78.3	Equipment:GA5000. Cal:31-May-22	
	30 Mar 2023	11.9	1007	0.6	<1	21	<0.1	<1	<0.1	<1	<0.1	78.3	Equipment:GA5000. Cal:27-Mar-23	Test concluded after 5 minutes as readings stable throughout.
	12 Apr 2023	8.1	997	1	<1	20.4	<0.1	<1	<0.1	<1	<0.1	78.6	Equipment:GA5000. Cal:27-Mar-23	Test concluded after 5 minutes as readings stable throughout.
	19 May 2023	14.4	1027	1.4	<1	14.7	<0.1	<1	<0.1	<1	<0.1	83.9	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	22.1	1023	2.5	<1	18.9	<0.1	<1	<0.1	1	-8.3	78.6	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	17.2	1014	2.9	<1	17.6	<0.1	<1	<0.1	<1	<0.1	79.5	Equipment:GA5000. Cal:27-Sep-23	Screw missing from cover
	14 Aug 2023	18.6	1012	1.9	<1	9.5	<0.1	<1	<0.1	<1	<0.1	78.9	Equipment:GA5000. Cal:27-Mar-23	
	20 Sep 2023	18.5	1005	5.5	<1	15.8	<0.1	<1	0.1	<1	-0.5	78.6	Equipment:GA5000. Cal:27-Mar-23	
	12 Oct 2023	17	1011	4.1	<1	15.4	<0.1	<1	<0.1	<1	<0.1	80.5	Equipment:GA5000. Cal:27-Mar-23	
	16 Nov 2023	9.9	1012	1	<1	20.5	0.1	<1	<0.1	<1	0.1	78.4	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	9.8	990	0.5	<1	22.1	0.1	<1	<0.1	<1	-4.9	77.3	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 6 minutes. Test complete
BHW004 (2)														
	25 Jan 2023	3.2	1032	4.5	<1	18.4	0.1	<1	1	<1	<0.1	77.1	Equipment:GA5000. Cal:31-May-22	
	13 Feb 2023	8.5	1034	3.5	<1	19	0.1	<1	<0.1	<1	0.1	77.4	Equipment:GA5000. Cal:31-May-22	

Gas Monitoring Summary

Notes: Peak gas concentrations, flow rates and differential pressures represent the interpreted highest values (or lowest gas concentration value for oxygen) recorded during the monitoring period. Steady state values are taken as the end of monitoring values. Values below the limit of detection (LoD) of the monitoring equipment are recorded as the LoD value preceded by '<' (eg <0.1).

Project WFL Hampshire Water Transfer and Water Recycling Project (Phase 0)
Project No. G2034-22
Carried out for Clancy Docwra on behalf of Southern Water

Table A3

Location	Date	Air Temp, oC	Baro Press, mbar	CO2, %vol	CO, ppm	O2, %vol	CH4, %vol	Diff Press, Pa	VOC, ppmv	H2S, ppm	Gas Flow Rate, l/hr	Balance, %vol	Equipment	Remarks
	30 Mar 2023	12.1	1008	6.9	<1	13.5	<0.1	<1	<0.1	<1	<0.1	79.7	Equipment:GA5000. Cal:27-Mar-23	
	12 Apr 2023	7.7	995	18.1	<1	3.2	0.1	<1	2.4	<1	<0.1	78.6	Equipment:GA5000. Cal:27-Mar-23	
	19 May 2023	14.9	1027	4.2	<1	18.5	0.1	<1	1.8	<1	<0.1	77.2	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	19.6	1026	0.2	1	21.3	<0.1	<1	1.9	<1	<0.1	78.5	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	18.6	1015	4.1	<1	18.6	<0.1	<1	1	<1	0.1	77.3	Equipment:GA5000. Cal:27-Sep-23	
	14 Aug 2023	18.6	1011	4	<1	18.2	0.1	-1	2.1	<1	<0.1	77.7	Equipment:GA5000. Cal:27-Mar-23	
	20 Sep 2023	18.7	1000	7.1	<1	13.4	<0.1	<1	0.1	<1	<0.1	79.5	Equipment:GA5000. Cal:27-Mar-23	
	12 Oct 2023	16.9	1012	4.5	<1	17.3	0.1	<1	<0.1	<1	<0.1	78.2	Equipment:GA5000. Cal:27-Mar-23	
	15 Nov 2023	10.6	1019	6	<1	16	0.1	<1	<0.1	<1	<0.1	77.9	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	9.1	991	10.2	<1	11.6	0.2	<1	<0.1	<1	0.1	78	Equipment:GA5000. Cal:27-Mar-23	Test failed due to water intake.
BHW005 (2)														
	25 Jan 2023	6	1034	0.2	<1	21.5	0.1	<1	0.8	<1	<0.1	78.3	Equipment:GA5000. Cal:31-May-22	
	13 Feb 2023	8.1	1035	0.1	<1	21.8	0.1	<1	<0.1	<1	<0.1	78	Equipment:GA5000. Cal:31-May-22	
	30 Mar 2023	11	1007	0.1	<1	20.8	<0.1	<1	<0.1	<1	<0.1	79.2	Equipment:GA5000. Cal:27-Mar-23	Test stopped after 5 minutes due to no changes
	12 Apr 2023	11	994	0.1	<1	22	0.1	<1	1.8	<1	<0.1	77.8	Equipment:GA5000. Cal:27-Mar-23	Readings stable throughout. Test concluded after 5 minutes
	18 May 2023	21	1029	<0.1	1	20.6	<0.1	<1	<0.1	1	<0.1	79.4	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	21	1029	<0.1	1	21	<0.1	<1	1.7	1	<0.1	79	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	22.1	1015	<0.1	1	20.3	<0.1	<1	1.5	1	<0.1	79.6	Equipment:GA5000. Cal:27-Sep-23	
	14 Aug 2023	18.2	1012	<0.1	<1	21.5	0.1	<1	1.8	<1	<0.1	78.4	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 5 minutes. Test complete
	15 Sep 2023	26.5	1015	<0.1	1	20.1	<0.1	<1	<0.1	1	<0.1	79.9	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 7 minutes. Test complete
	06 Oct 2023	16	1033	0.1	<1	21.1	0.1	<1	<0.1	<1	<0.1	78.7	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 5 minutes. Test complete
	17 Nov 2023	21.1	1021	0.1	<1	21.3	0.1	<1	<0.1	<1	<0.1	78.5	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	9.3	991	0.1	<1	21.1	0.1	<1	<0.1	<1	<0.1	78.7	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 3 minutes. Test complete
WSW001 (1)														
	25 Jan 2023	3.5	1035	7.3	<1	12.5	0.1	<1	1.1	<1	<0.1	80.1	Equipment:GA5000. Cal:31-May-22	
	13 Feb 2023	9.9	1034	4	<1	17.1	0.1	<1	<0.1	<1	<0.1	78.8	Equipment:GA5000. Cal:31-May-22	
	30 Mar 2023	10.2	1006	1.4	<1	20.7	<0.1	<1	<0.1	<1	<0.1	77.9	Equipment:GA5000. Cal:27-Mar-23	
	12 Apr 2023	7.6	992	2.4	<1	21.3	0.1	<1	<0.1	<1	<0.1	76.3	Equipment:GA5000. Cal:27-Mar-23	Reading stable throughout initial 5 minutes. Test concluded.
	18 May 2023	16.4	1023	3.7	<1	19.2	<0.1	<1	<0.1	<1	<0.1	77.1	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	25.3	1026	2.2	1	19.5	<0.1	<1	1.2	1	-1.1	78.2	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	20.3	1015	2.9	1	18.4	0.1	<1	3.9	<1	<0.1	78.7	Equipment:GA5000. Cal:27-Sep-23	
	14 Aug 2023	18.5	1011	2.9	<1	19.1	0.1	<1	1	<1	-1.1	78	Equipment:GA5000. Cal:27-Mar-23	
	20 Sep 2023	18.2	1009	2.5	<1	19.1	<0.1	-7	0.2	<1	<0.1	78.4	Equipment:GA5000. Cal:27-Mar-23	

Gas Monitoring Summary

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Project WFL Hampshire Water Transfer and Water Recycling Project (Phase 0)
Project No. G2034-22
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Table A3

Location	Date	Air Temp, oC	Baro Press, mbar	CO2, %vol	CO, ppm	O2, %vol	CH4, %vol	Diff Press, Pa	VOC, ppmv	H2S, ppm	Gas Flow Rate, l/hr	Balance, %vol	Equipment	Remarks
	06 Oct 2023	18.5	1011	3.6	<1	17.8	<0.1	<1	<0.1	<1	<0.1	78.7	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 5 minutes. Test complete
	17 Nov 2023	10.8	1020	8.4	<1	10.6	0.1	<1	3.4	<1	<0.1	80.9	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	11	991	4.3	1	17.9	0.2	<1	<0.1	<1	0.1	77.6	Equipment:GA5000. Cal:27-Mar-23	
WSW002 (1)														
	25 Jan 2023	3.4	1034	5.3	<1	17.8	0.1	<1	1.5	<1	<0.1	76.9	Equipment:GA5000. Cal:31-May-22	
	13 Feb 2023	7.8	1034	5.2	<1	17.5	0.1	<1	0.5	<1	<0.1	77.2	Equipment:GA5000. Cal:31-May-22	
	30 Mar 2023	12.5	1007	5.5	<1	15.1	<0.1	<1	0.5	<1	<0.1	79.4	Equipment:GA5000. Cal:27-Mar-23	Stable readings for 5 minutes. Test complete
	12 Apr 2023	12.5	1007	6.1	<1	16	0.1	<1	2	<1	<0.1	77.5	Equipment:GA5000. Cal:27-Mar-23	Stable readings for 5 minutes. Test complete
	18 May 2023	17.3	1023	3.8	<1	19	<0.1	<1	0.2	<1	<0.1	77.2	Equipment:GA5000. Cal:27-Mar-23	
	21 Jun 2023	18.3	1021	2.4	1	19	<0.1	<1	1.2	1	-0.8	78.6	Equipment:GA5000. Cal:27-Mar-23	
	21 Jul 2023	18.9	1015	4.9	1	17.1	<0.1	<1	2.5	<1	<0.1	78	Equipment:GA5000. Cal:27-Mar-23	
	14 Aug 2023	18.1	1011	4.8	<1	17.6	0.1	<1	1	<1	<0.1	77.5	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 5 minutes. Test complete
	20 Sep 2023	17.7	1010	5.1	<1	16.7	<0.1	<1	0.2	<1	<0.1	78.2	Equipment:GA5000. Cal:27-Mar-23	
	06 Oct 2023	15.6	1032	4.7	<1	17.9	0.1	<1	1	<1	<0.1	77.4	Equipment:GA5000. Cal:27-Mar-23	Readings stable after 5 minutes. Test complete
	17 Nov 2023	9.4	1020	6.3	<1	12.4	0.1	<1	0.5	<1	<0.1	81.2	Equipment:GA5000. Cal:27-Mar-23	
	03 Jan 2024	9.5	991	8.4	<1	15.5	0.2	<1	<0.1	<1	0.1	76	Equipment:GA5000. Cal:27-Mar-23	
WSW003 (1)														
	25 Jan 2023	3.4	1035	10.9	<1	17.3	0.1	-34	1.7	<1	-4.1	71.7	Equipment:GA5000. Cal:31-May-22	Pump stopped due to high water level
	13 Feb 2023	8.5	1035	9.9	1	18.4	0.1	21	0.3	<1	5.6	71.7	Equipment:GA5000. Cal:31-May-22	Pump failed - High water level upon initial removal of bung
	30 Mar 2023	12.5	1007	11.1	1	16.5	<0.1	-3	0.7	<1	<0.1	72.4	Equipment:GA5000. Cal:27-Mar-23	
	12 Apr 2023	7.6	993	12.4	<1	15.4	<0.1	-3	0.7	<1	<0.1	72.2	Equipment:GA5000. Cal:27-Mar-23	Water level too high caused pump to fail.
	18 May 2023	17.2	1028	4	1	20	<0.1	-28	1.5	<1	<0.1	76	Equipment:GA5000. Cal:27-Mar-23	Pump failed. Water level too high, began to enter tubing
	21 Jun 2023	20.1	1028	2.3	1	20	<0.1	<1	2.9	1	-5.5	77.7	Equipment:GA5000. Cal:27-Mar-23	Pump flow failed. Test aborted
	21 Jul 2023	21.2	1015	1.7	1	19.7	<0.1	-12	2	1	-3.4	78.7	Equipment:GA5000. Cal:27-Sep-23	Pump failed during recordings, water level high inside installation when bung was
	14 Aug 2023	18.9	1025	1.4	<1	20.8	0.1	<1	2.1	<1	6.9	77.7	Equipment:GA5000. Cal:27-Mar-23	Pump flow failed. Test aborted
	15 Sep 2023	28.9	1021	0.5	1	19.7	<0.1	<1	0.1	1	-0.3	19.8	Equipment:GA5000. Cal:27-Mar-23	Pump flow failed. Test failed
	06 Oct 2023	16.6	1030	1.4	<1	20.8	<0.1	-14	<0.1	<1	-9.4	77.8	Equipment:GA5000. Cal:27-Mar-23	
	17 Nov 2023	10	1020	8.9	<1	17.5	0.1	49	8.9	<1	10	73.5	Equipment:GA5000. Cal:27-Mar-23	Pump failed at 4 minutes into monitoring - water level high inside installation when
	03 Jan 2024	9	1008	11.8	<1	13	0.1	15	<0.1	<1	<0.1	75	Equipment:GA5000. Cal:27-Mar-23	Water entered tubing at 4 minutes. Test aborted

Appendix F: Guidance for the Assessment of Land Contamination

Selection of Soil Assessment Criteria Protective of Human Health

Generic Assessment Criteria (GAC)

The results of the soil testing have been compared to the Suitable 4 Use Levels (S4UL) (Nathanail et al, 2015) and the Category 4 Screening Level (C4SL) for lead, prepared under the auspices of Defra (CL:AIRE, 2014).

The GAC for a Commercial/industrial end-use have been selected as these are considered to be the most appropriate for the protection of construction workers undertaking the development and the Applicant's workers who will be present at the Site during its operational phase. The GAC have been generated assuming short exposure periods over a long timescale.

The GAC have been generated using assumptions regarding soil characteristics. Where the published GAC are dependent upon Soil Organic Matter (SOM), a value of 1% has been used to provide a conservative assessment. Consideration of the default soil properties used to generate the soil GAC for protection of human health is important as these influence the fate, transport and behaviour of contaminants.

- Soil type – the model default is set as Sandy Loam and assumes a dry and relatively porous soil. The default is considered sufficiently similar to the cover/restoration soils which are variably clayey/ sandy. The waste mass is not a soil type and comparison to the GAC are provided for information.

- pH – pH influences the cation exchange capacity and the portioning behaviour of a chemical between soil and water. The default is pH 7. The cover soils have been found to have a pH of typically between 7.5 and 9.1, with four samples of the cover soils (between 0.3 to 0.5m bgl) recording a pH outside of this range (maximum 9.1).

Selection of Water Assessment Criteria Protective of Human Health

WRP is located over a superficial Secondary A aquifer (Raised Marine Deposits / River Terrace Deposits) and a bedrock Principal Aquifer (Lewes Nodular Chalk Formation).

Groundwater levels beneath the Site appear to be tidally influenced and the Site is located within reclaimed former marine land; therefore saline conditions are likely to be prevalent and it is considered that potable abstraction is highly unlikely to be a future consideration. On this basis, an assessment of these aquifers as a potential resource in case of future abstraction and use as a drinking water resource has not been undertaken. This is consistent with the EA's view in an earlier consultation[2] where the EA stated, in regard to the chalk "*While it is notionally a principal aquifer, we recognise that given the site setting, it is unlikely to have significant resource potential*".

[2] Email from Tom Wickens (EA) to David Jackson (DS) dated 12th January 2021

When assessing ground condition data and the potential to harm Controlled Waters, Stantec uses the approach presented in Groundwater Protection Policy and Practice (GP3) (EA, 2017).

Selection of Water Assessment Criteria Protective of Aquatic Ecosystems (Controlled Waters)

The Site is located immediately west of the re-aligned Hermitage Stream. The Hermitage Stream flows southwards into Langstone Harbour, a tidal inlet of the English Channel located approximately 200 m south of the Site. Langstone Harbour is a designated SSSI, SAC, SPA, a wetland of international importance designated under the Ramsar Convention and a WFD safeguarded Groundwater Dependent Terrestrial Ecosystem (GWDTE).

The original course of the Hermitage Stream flowed through the Site before being truncated by the construction of the bund wall and landfills, A27 and associated slip roads, and Harts Farm Way. A review of historical aerial imagery and reports suggests that the former channel may have been culverted beneath Harts Farm Way and an outlet/sluice to Langstone Harbour may have been present in the bund wall to the south of the Site. The outlet may have been sealed in the late 1970s, and there is no visual evidence of such a feature remaining today.

The landfill waste at the site has been deposited directly upon either the predominantly granular superficial Raised Marine Deposits / River Terrace Deposits, or onto the underlying Chalk bedrock. The superficial deposits directly overlie the chalk. There is therefore a direct pathway for potential contamination within the landfill to enter the underlying aquifers.

The results of the testing undertaken on the samples of groundwater and landfill leachate have therefore been compared to saltwater Environmental Quality Standards (EQS).

Bioavailable Environmental Quality Standards (EQS)

Bioavailable Environmental Quality Standards (EQS) have been developed for UK Specific Pollutants copper, zinc and manganese and the EU priority substances lead and nickel. An EQS is the concentration of a chemical in the environment below which there is not expected to be an adverse effect on the specific endpoint being considered, e.g., the protection of aquatic life.

The bioavailability of a metal depends on a number of physico-chemical factors which govern both metal behaviour and the interactions of the toxic forms of the metals with a biological receptor.

The EQS bioavailable corresponds to the bioavailable fraction (BioF) of dissolved metal in a sample, as determined by the physico-chemical characteristics of the water and can be calculated using a biotic ligand model (BLM) or other calculation method. To assess compliance, the bioavailable fraction of dissolved metal can be compared to the EQS bioavailable. However, bioavailable metal is not the same metric as dissolved metal as only a fraction of the dissolved metal will usually be bioavailable.

It is very difficult to measure the bioavailable concentration of a metal directly. Biotic Ligand Models (BLMs) are a predictive tool that can take account of water quality parameters such as pH, and calcium to determine the amount of bioavailable metal present. However, the complexity of the models, the runtime per sample, input data requirements and level of operator skill needed to interpret the model outputs mean that few regulatory organisations have adopted the full BLMs. The UK has developed simplified Metal Bioavailability Assessment Tool (M-BAT) for copper, zinc, nickel, and manganese.

Geo-environmental laboratory analyses required to generate site-specific Predicted No Effect Concentrations (PNEC) suitable for the protection of the identified receptors has not been undertaken. On this basis, to provide a conservative assessment the results have been compared against the EQS for copper, zinc, manganese, lead and nickel without a correction for bioavailability.

Limit of Detection vs. Generic Assessment Criteria

Where the concentration of a determinand is below the limits of detection and the limits of detection are below the relevant threshold criterion, the concentrations recorded are not considered to present a hazard to human health or controlled waters.

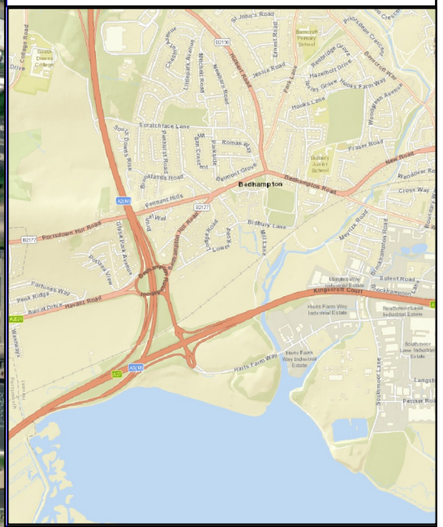
Where the concentration of a determinand is below the limit of detection and the limit of detection is greater than the relevant threshold criterion, analysis using methods that can detect the determinands at or below the GAC concentrations or further Detailed Quantitative Risk Assessment would be required to robustly conclude that these can be eliminated as hazards.

Appendix G: PSC Plan

Legend

Potential Sources of Contamination

- Infilled Land
- PSC



Hampshire Water Transfer and Water Recycling Project

Geo-environmental Interpretative Report Tunnels and Shafts (Phase 0)

Notes:
Report Number:
710166-SWS-XX-XX-RP-GE-00002
Version: P01.1

WATER for LIFE from Southern Water

Page 1 of 1	**Sept 2023**

Author	Check	Review	Date Drawn	Scale
AP	JAH	SP	14/09/2023	1:5000

0 100 200 m

Appendix H: Risk Assessment Tables

PSC 466	Harts Farm Way Landfill (Landfill Site Reference FHA15, 1760/1/13/6)					
Potential Source of Contamination	**Potential Contaminants of Concern**	**Potential Receptors**	**Potential Pathways**	**Potential Consequence of Contaminant Linkage**	**Probability of Contaminant Linkage**	**Risk (without mitigation measures)**
Household, commercial and industrial waste types. The depth to the base of the waste material (where encountered) ranges between 5.5m bgl to 13.9m bgl (east area) and 8.2-11.5m bgl (west area).	Metals, inorganics, asbestos, petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) (including phenols), per- and polyfluorinated alkyl substances (PFAS).	**Human Health – On-site:** Construction workers during excavations/construction of WRP and associated shafts and infrastructure. Operational staff working in shafts and tunnels.	Direct dermal contact, ingestion and inhalation of dusts.	Medium	Likely	Moderate
		Human Health – Off-site: Workers at adjacent business park, yard, aggregates wharf etc during construction.	Ingestion and inhalation of dusts and particles	Medium	Low	Low / Moderate
		Groundwater (resource): Raised Marine Deposits (Secondary Undifferentiated Aquifer) over Chalk (Principal Aquifer). Alluvium (land immediately east of the landfill) (Secondary A Aquifer). Potable abstractions have not been identified within 250 m of the Site. The Site is located within reclaimed former marine land where saline groundwater conditions are likely to be prevalent and potable abstraction is unlikely to be viable.	Groundwater within permeable natural strata as a pathway allowing migration of mobile contamination leached from contaminated soils. Groundwater migrating via anthropogenic routes e.g., shaft / tunnel construction or operation, boreholes, landfill waste mass etc.	Severe	Low (Unlikely aquifer will be utilised)	Moderate
		Groundwater (biodiversity): The EA's Catchment Data Explorer indicates that the groundwater beneath the Site received an WFD classification of Poor in 2019 for chemical quality.		Medium	High	High
		Surface Water (resource): Not Applicable as surface water abstractions have not been identified within 250 m of the Site.	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		Surface Water (biodiversity): Hermitage Stream, located immediately east of the Site, received a WFD classification of Moderate for Ecological Quality in 2019.	Runoff or discharges to surface water via existing drainage network, e.g., historical land drains, highway drainage. Deposition of wind-blown dust Recharge of surface water via contaminated groundwater. Runoff or discharges from construction works.	Medium	High	High
		Ecologically Sensitive Sites: Langstone Harbour (Special Protected Area, Ramsar and SSSI) located approximately 200 m to the south of the Site.	Runoff or discharges to surface water via existing drainage network, e.g., historical land drains, highway drainage. Deposition of wind-blown dust during construction Recharge of surface water via contaminated groundwater	Medium	Likely	Moderate
		Geodiversity: Not Applicable as the site is not located within 1.0 km of any geologically designated SSSI or geologically designated Local Site (RIGS).	Not Applicable	Not Applicable	Not Applicable	Not Applicable

PSC 466	Harts Farm Way Landfill (Landfill Site Reference FHA15, 1760/1/13/6)					
Potential Source of Contamination	**Potential Contaminants of Concern**	**Potential Receptors**	**Potential Pathways**	**Potential Consequence of Contaminant Linkage**	**Probability of Contaminant Linkage**	**Risk (without mitigation measures)**
		Property – Buildings: Shafts and tunnels. Nearby buildings including Budds Farm WTW.	Direct contact – Sulphate attack on concrete, hydrocarbon corrosion / permeation of plastic pipes.	Medium	Likely	Moderate
	Ground gas (methane, carbon dioxide, carbon monoxide, hydrogen sulphide)	**Human Health – On-site:** Construction workers during excavations/construction of WRP and associated shafts and infrastructure. Operational staff working in shafts and tunnels	Inhalation of gases and vapours within excavations, site cabins, temporary buildings, shafts and tunnels.	Severe	High	Very High
		Property – Buildings: Shafts and tunnels.	Migration of ground gas into shafts and tunnels.	Severe	High	Very High

PSC 388	Former Sewage Works (off-site, approximately 130 m to the north)					
Potential Source of Contamination	**Potential Contaminants of Concern**	**Potential Receptors**	**Potential Pathways**	**Potential Consequence of Contaminant Linkage**	**Probability of Contaminant Linkage**	**Risk (without mitigation measures)**
Former sewage works, infrastructure no longer shown apart from circular tank bases. Area is shown as green on aerial mapping and potentially overgrown. Mature vegetation on boundary	Metals, inorganics, asbestos, petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethylbenzene (BTEX), total phenols polychlorinated biphenyls (PCBs), PFAS and pathogens.	**Human Health – On-site:** Construction workers during excavations/construction of WRP and associated shafts and infrastructure.	Ingestion and inhalation of dusts and particles.	Medium	Low	Low / Moderate
		Groundwater (resource): River Terrace Deposits (Secondary A Aquifer) over Chalk (Principal Aquifer). Potable abstractions have not been identified within 250 m of the Site. The Site is located within reclaimed former marine land where saline groundwater conditions are likely to be prevalent and potable abstraction is unlikely to be viable.	Groundwater within permeable natural strata as a pathway allowing migration of mobile contamination leached from contaminated soils. Groundwater migrating via anthropogenic routes e.g., boreholes, landfill waste mass etc.	Medium	Low Contaminant concentrations in groundwater are likely to be reduced due to dilution / dispersion.	Low / Moderate
		Groundwater (biodiversity): The EA's Catchment Data Explorer indicates that the groundwater beneath the Site received an WFD classification of Poor in 2019 for chemical quality.		Medium	Low Contaminant concentrations in groundwater are likely to be reduced due to dilution / dispersion.	Low / Moderate
		Property – Buildings: WRP and associated infrastructure.	Direct contact – Sulphate attack on concrete, hydrocarbon corrosion / permeation of plastic pipes.	Medium	Low (Contaminant concentrations migrating onto site in groundwater are likely to be reduced due to dilution / dispersion.	Low / Moderate
	Ground gas (methane, carbon dioxide, carbon monoxide, hydrogen sulphide)	**Human Health – On-site:** Construction workers during excavations/construction of WRP and associated shafts and infrastructure.	Inhalation of gases and vapours within excavations, site cabins, temporary buildings, shafts and tunnels.	Severe	Low	Moderate
		Property – Buildings: Shafts and tunnels.	Migration of ground gas into shafts and tunnels.	Severe	Low	Moderate
Note: This table only includes assessment of the risk presented by the off-site source to the on-site receptors. Assessment of the risk presented by the off-site source to the off-site receptors is beyond the scope of this assessment.						

PSC 379, 378, 460	Sludge Lagoon (379), Budds Farm WTW (378), Land south of Budds Farm Landfill (460) (Landfill Site Reference FHA10 HAV4, 1700/1304)					
Potential Source of Contamination	**Potential Contaminants of Concern**	**Potential Receptors**	**Potential Pathways**	**Potential Consequence of Contaminant Linkage**	**Probability of Contaminant Linkage**	**Risk (without mitigation measures)**
Household and inert waste types encountered during GI. Possible sewage sludge from former lagoons. **Budds Farm WTW:** The depth to the base of the waste material ranges between 1.60m bgl (WSW003) to 5.0m bgl (WSW002) **Land south of Langstone Harbour (PSC 379)** (BHW004) Made Ground/Fill material to 7.5m bgl (-2.31m AOD).	Metals, inorganics, asbestos, petroleum hydrocarbons, (PAHs), VOCs, SVOCs (including phenols), (PFAS), BTEX, PCBs, pathogens.	**Human Health – On-site:** Construction workers during excavations/construction of shafts and infrastructure.	Direct dermal contact, ingestion and inhalation of dusts.	Medium	Likely	Moderate
		Human Health – Off-site: Workers at adjacent Budds Farm WTW	Ingestion and inhalation of dusts and particles	Medium	Low (soil GACs not exceeded at GI locations)	Low / Moderate
		Groundwater (resource): Alluvium (Secondary A Aquifer) over Chalk (Principal Aquifer). Potable abstractions have not been identified within 250 m of the Site. The Site is located within reclaimed former marine land where saline groundwater conditions are likely to be prevalent and potable abstraction is unlikely to be viable.	Groundwater within permeable natural strata as a pathway allowing migration of mobile contamination leached from contaminated soils. Groundwater migrating via anthropogenic routes e.g. shafts, tunnels, boreholes, landfill waste mass etc.	Medium	Low (unlikely aquifer will be used)	Low / Moderate
		Groundwater (biodiversity): The EA's Catchment Data Explorer indicates that the groundwater beneath the Site received an WFD classification of Poor in 2019 for chemical quality.		Medium	Likely	Moderate
		Surface Water (resource): Not Applicable as surface water abstractions have not been identified within 250 m of the Site.	Not Applicable	Not Applicable	Not Applicable	Not Applicable
		Surface Water (biodiversity): Langstone harbour adjacent to the landfill and pipeline route. Surface water flows into an ecologically sensitive site.	Runoff or discharges to surface water via existing drainage network, e.g., historical land drains, highway drainage. Deposition of wind-blown dust Recharge of surface water via contaminated groundwater.	Medium	Likely	Moderate
		Ecologically Sensitive Sites: Langstone Harbour (Special Protected Area, Ramsar and SSSI) located adjacent to the Site.	Runoff or discharges to surface water via existing drainage network, e.g., historical land drains, highway drainage. Deposition of wind-blown dust Recharge of surface water via contaminated groundwater	Medium	Likely	Moderate
		Geodiversity: Not Applicable as the site is not located within 1.0 km of any geologically designated SSSI or geologically designated Local Site (RIGS).	Not Applicable	Not Applicable	Not Applicable	Not Applicable

PSC 379, 378, 460	Sludge Lagoon (379), Budds Farm WTW (378), Land south of Budds Farm Landfill (460) (Landfill Site Reference FHA10 HAV4, 1700/1304)					
Potential Source of Contamination	**Potential Contaminants of Concern**	**Potential Receptors**	**Potential Pathways**	**Potential Consequence of Contaminant Linkage**	**Probability of Contaminant Linkage**	**Risk (without mitigation measures)**
		Property – Buildings: WRP and associated infrastructure, alongside off-site receptors.	Direct contact – Sulphate attack on concrete, hydrocarbon corrosion / permeation of plastic pipes.	Medium	Low	Low / Moderate
	Ground gas (methane, carbon dioxide, carbon monoxide, hydrogen sulphide)	**Human Health – On-site:** Construction workers during excavations/construction of associated shafts and infrastructure. Operational staff working in shafts and tunnels	Inhalation of gases and vapours within excavations, site cabins, temporary buildings, shafts and tunnels.	Severe	High	Very High
		Property – Buildings: Shafts and tunnels. Nearby buildings including Budds Farm WTW.	Migration of ground gas into shafts and tunnels.	Severe	High	Very High

Appendix I - Risk Assessment Methodology

Risk Assessment Methodology

Risk Classification Methodology

The method of risk evaluation adopted in this document is consistent with CIRIA C552 (2001). Hence, risk is considered to be a function of both the probability (likelihood) of contamination occurring at the study site and also the potential severity (consequence) of the environmental impacts associated with this contamination.

The classification system used to define contaminant probability, consequence and risk is described in the following tables.

Table A: Classification of probability

Classification	Definition
High Likelihood	There is a contaminant linkage and an event that appears either very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a contaminant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term, and likely over the long term.
Low Likelihood	There is a contaminant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would takeplace and is less likely in the shorter term.
Unlikely	There is contaminant linkage but circumstances are such that it is improbable that an event would occur even in the long term.

Table B: Classification of consequence

Classification	Receptor	Definition	Examples
Severe	Humans	Short-term (acute) risk to human health likely to result in "significantharm" as defined in the Environmental Protection Act 1990, Part 2a.	High concentrations of cyanide on the surface of an informal recreation area
	Controlled waters	Short-term risk of pollution (note: Water Resources Act contains noscope for considering significanceof pollution) of sensitive water resource	Major spillage of contaminants from siteinto controlled water
	Property	Catastrophic damage to buildings/property	Explosion, causing building collapse (can also equate to an acute human health risk if buildings are occupied)
	Ecology	A short-term risk to a particular ecosystem, or organism formingpart of such eco-system	Potentially long-term derogation of a designated site or protected species
Medium	Humans	Chronic damage to human health ("significant harm" as defined in the Environmental Protection Act 1990, Part 2a.)	Concentrations of a contaminant from a residential site exceed the site-specific assessment criteria
	Controlled waters	Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution)	Leaching of contaminants from a site toa principal or secondary aquifer
	Property	Significant damage to crops, buildings, structures and services	Damage to building rendering it unsafeto occupy (e.g. foundation damage resulting in instability).
	Ecology	A significant change in a particular ecosystem	Death of a species within a designated nature reserve
Mild	Humans	Contamination present although unlikely to constitute a significantchronic health risk	Concentrations of a contaminant from a public access site moderately exceed the generic assessment criteria
	Controlled waters	Pollution of non-water resources	Pollution of non-classified groundwater
	Property	Damage to sensitive. buildings/structures/services	Aggressive ground conditions leading to potential for long term degradation of buried concrete
	Ecology	Damage to the environment	Localised damage to aquatic habitat causing temporary relocation of certain species
Minor	Humans	Non-permanent health effects to human health (easily prevented bymeans such as personal protectiveclothing etc.)	The presence of contaminants at such concentrations that protective equipment is required during site works.
	Controlled waters	Potential minor release of contamination to local waterfeatures	Short term or low volume release of potentially polluting material to a secondary surface water course of lowexisting quality
	Property	Easily reparable effects of damageto buildings, structures and services. Harm which may result in a financialloss, or expenditure to resolve.	The loss of plants in a landscaping scheme. Discolouration of concrete
	Ecology	Short term, localised damage may occur; consequences are spatially and temporally limited	Short term or localised disruption to insitu flora or fauna; no lasting effects

Table C: Risk classification (comparison of consequence and probability)

Probability (likelihood)		Consequence (severity)			
		Severe	***Medium***	***Mild***	***Minor***
	High likelihood	Very high risk	High risk	Moderate risk	Moderate/low risk
	Likely	High risk	Moderate risk	Moderate/low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/low risk	Low risk	Very low risk	Very low risk