

Technical Note

Project title	Trebanos Storm Outfall
Job number	275281
File reference	4.20
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Date	4 June 2024
Subject	Ground Investigation Technical Note

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1. Introduction

This Technical Note has been prepared as a summary interpretation of the ground investigation at Trebanos Wastewater Treatment Works for the purposes of a new stormwater outfall to the River Tawe.

The site is at National Grid Reference 271088, 202180 to the south-east of the village of Trebanos. The location is shown in Drawing 1.

The site is bounded by the Swansea Canal to the north and the River Tawe to the south.

The site is relatively flat and located within a flood plain, bounded by the Swansea Valley hills to the northwest and southeast. Online topographical mapping shows the site's elevation to be at around 24mAOD.

The site is currently used as farmland for livestock. Sections of the storm outfall lie within a wooded area adjacent to the River Tawe. The northern section of the outfall connects to the existing Trebanos Wastewater Treatment Works (WwTW).

The meander of the River Tawe has changed significantly over at least the past hundred years. As such, the ground that the storm outfall passes through is likely to be highly variable and composed of silts, clays, sands and gravels of a fluvial nature. There is possibility that Made Ground including material from industrial activities may have been used to raise the site levels following the construction of the WwTW.

The proposed development at the site includes:

- A storm outfall lying between 1.5-2.0mbgl running northeast to southwest approximately 310m in length.
- 3No. new storm manholes, some with flow monitors installed, and sealed access covers to a depth of 1.5m are also proposed along the alignment of the outfall.

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- A concrete 3m by 6m by 4m depth concrete flow diversion chamber is proposed where the new storm outfall aligns with the existing final effluent pipe.
- A new headwall is proposed where the storm outfall reaches the River Tawe. The invert is approximately 4m below existing ground levels.

The proposals are summarised in Drawing 1.

The key features and constraints at the site were firstly investigated by undertaking a preliminary review of features and constraints via a Desk Study (B16421-102503-XX-ZZ-RP-GB-GC6701). The key risks highlighted from this study were:

- Shallow groundwater.
- Hard digging due to the presence of fluvial deposits.
- Variable clays, silts sands, and gravels leading to potential settlement associated with infilled meander of the River Tawe.
- Contamination associated with Made Ground used to infill the historical meander of the River Tawe.
- Contamination associated with Trebanos WwTW and from grazing land for livestock.
- Soft and uneven ground associated with hummocky terrain.
- Low risk of UXO.
- Buried services.
- Poor access to certain areas of the site associated with woodland areas.
- Low risk of shallow mine workings.

Following this study, a Ground Investigation Specification was produced in order to quantify and inform the risks brought out of the Desk Study (Revision 2 - B16421-102503-ZZ-ZZ-SP-GB-GC6401, B1642-102503-ZZ-ZZ-SP-GB-GC6402, and B16421-102503-ZZ-ZZ-SP-GB-GC6403). The scope of this investigation is discussed in Section 2.

The purpose of this Ground Investigation Technical Note is to summarise the findings of the ground investigation, re-evaluate the risks highlighted in the Desk Study, and provide recommendations for further works.

2. Ground Investigation

The ground investigation was carried out by CC Ground Investigations Ltd (CCGI) on instruction and behalf of Morgan Sindall Construction and Infrastructure Ltd under technical direction of Ove Arup and Partners Ltd. The factual report for this ground investigation can be found in Appendix A

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Nine exploratory holes were carried out between 19th April – 21st April 2023. The locations of these holes are presented in Drawing 2. A summary of these exploratory holes is also presented in Table 1.

Table 1: Summary of exploratory holes

Hole ID	Type	Depth (m BGL)	Start Date	End Date	Easting	Northing	Elevation (mAOD)
BH01	DS	10.0	20/04/2023	21/04/2023	271049.21	202169.11	23.71
BH02	DS	10.0	19/04/2023	20/04/2023	270925.74	202144.09	22.40
TP01	TP	2.6	20/04/2023	20/04/2023	271156.31	202219.86	23.40
TP02	TP	2.7	20/04/2023	20/04/2023	271164.96	202258.84	23.52
TP03	TP	2.8	19/04/2023	19/04/2023	271096.89	202206.04	23.23
TP04	TP	2.8	19/04/2023	19/04/2023	271054.38	202162.99	23.35
TP05	TP	2.7	19/04/2023	19/04/2023	270994.38	202147.49	22.80
SPM01	IP	0.1	19/04/2023	19/04/2023	271083.87	202184.87	23.19
SPM02	IP	0.1	19/04/2023	19/04/2023	271082.80	202189.92	23.17

**DS=Dynamic Sampling Borehole, TP=Machine Dug Trial Pit, and IP=Inspection Pit.*

In situ testing comprised Standard Penetration Tests (SPTs) and variable head permeability testing in BH01 and BH02. Upon completion, combined gas and water monitoring standpipes were installed in BH01 and BH02.

Geotechnical and geo-environmental laboratory testing was carried out by Professional Soils Laboratory. Geotechnical testing comprised:

- 2no. Moisture Content tests;
- 2no. Atterberg Limit tests;
- 18no. Particle Size Distribution (PSD) tests (wet sieving method);
- 6no. Residual Shear Strength tests (300mm square specimen));
- 10no. BRE SD1 tests (chemical suite for soil and water – Suite D).

Geo-environmental testing comprised:

Soil and leachate sampling of the made ground and natural stratum.

- 17no. Suite E1 –Soil samples General
- 13no. Suite E2 –Soil samples Asbestos

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- 17no. Suite E3 –Soil samples TPHCWG
- 7no. Suite E4 –Soil samples PAH and BTEX
- 6no. Suite E5 –Soil samples VOC and SVOC
- 3no. Suite E6 –Soil samples PCB
- 10no. Suite E9 –Soil samples Hexavalent chromium
- 10no. Suite E16 - Soil samples - Other tests (Loss on ignition only)
- 10no. Suite H (WAC solids only)
- 10no. Suite I (WAC Leachate 2-stage)
- 10no. Suite J Leachate testing including General, PCB's, PAH and BTEX.

One round of groundwater sampling from the groundwater installations and River Tawe:

- 3no. Suite F1 –Water samples General
- 3no. Suite F2 –Water samples Speciated TPH
- 3no. Suite F3 –Water samples PAH and BTEX
- 3no. Suite F5 –Water samples PCB

Further information pertaining to the ground investigation can be found within the Factual Report produced by CC Ground Investigations Ltd (C7932 - Trebanos WwTW GI - Factual Report).

3. Ground Conditions

A summary of the encountered stratigraphy is generalised in Table 2. This has been interpreted by combining the log descriptions with the classification.

Stratum	Thickness (m)	Approximate depth to top of stratum (m BGL)	Description
Made Ground	2.10-4.00	0.00	Clay and SAND with anthropogenic inclusions
Alluvium	0.30	~3.5	Slightly Gravelly CLAY
Glacial Sands and Gravels	Not Proven	~3.00-4.00	SAND and GRAVEL with occasional COBBLES
Sandstone	Not proven	Not proven	Not encountered in BH01 nor BH02.

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3.1 Encountered Ground Conditions

A summary of the encountered ground conditions encountered in each exploratory hole of the investigation are presented in Table 2.

Hole ID	Encountered Ground Conditions
BH01	<u>Made Ground: 0.00-2.45m BGL.</u> 0.30m of slightly gravelly sandy CLAY underlain by 2.05m of dark brown gravelly to very gravelly, slightly clayey fine to coarse SAND. Gravel is sub-angular to sub-rounded with inclusions of glass, plastic, and siliceous material. Density increases from dense to very dense between 1.20m BGL and 2.00m BGL. One cobble of siliceous material was noted at 2.40m BGL. <u>Glacial Sands and Gravels: 2.45-10.00m BGL</u> 2.65m of light grey and reddish brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL of sandstone and siliceous material. Underlying 4.00m notes absence of fines, potentially due to drill flush. This material was recovered as sub-angular to rounded fine to coarse GRAVEL. Further underlying 2.00m of material noted as dense thinly laminated dark grey very gravelly fine to coarse SAND (density decreases to medium dense at 9.50m BGL).
BH02	<u>Made Ground: 0.00-4.00m BGL.</u> 0.10m of soft dark brown slightly gravelly slightly sandy CLAY underlain by 1.80m of dark brown to light brown fine to coarse SAND (very gravelly between 0.70-1.90m BGL) with low cobble content. Gravel is sub-angular to rounded. 1.90-3.70m BGL not noted as MADE GROUND, however due to description of medium dense dark brown very sandy sub-angular to rounded fine to coarse GRAVEL with low cobble content, this is likely attributed to the former gravel bank of the river. <u>Alluvium: 3.70-4.00</u> 0.30m of soft grey sandy slightly Gravelly CLAY with frequent fragments of black lignite (<2mm). A faint organic odour was noted, and the gravel was sub-angular to rounded. <u>Glacial Sands and Gravels: 4.00-10.00m BGL</u> 3.00m of very dense brown reddish orange and grey sub-angular to rounded fine to coarse GRAVEL (noted fines probably washed away by drill flush). Underlain by 2.4m of medium dense dark grey very gravelly fine to coarse SAND (Gravel is sub-angular to rounded. Noted no SPT recovery between 7.00-7.45m BGL). Further underlain by 0.60m of dense grey very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL.
TP01	<u>Made Ground: 0.00-2.45m BGL</u> 0.10m of soft dark brown sandy CLAY underlain by 2.35m of dark greyish brown sandy sub-angular to rounded fine to coarse Gravel and Cobbles. Inclusions of quartzite, brick, concrete and clinker. Concrete plinth encountered 0.30m BGL and geo-grid netting encountered 0.40m BGL. <u>Glacial Sands and Gravels: 2.45-2.60m BGL</u> 0.15m of brown sandy sub-rounded to rounded fine to coarse GRAVEL and COBBLES.
TP02	<u>Made Ground: 0.00-2.50m BGL</u> 0.10m of soft sandy Clay underlain by 2.40m of dark greyish brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL and COBBLES comprising brick, quartzite, and concrete with rare sub-rounded BOULDERS. Between 1.00-2.30m BGL, occasional pockets of stiff brownish grey very sandy CLAY were noted. <u>Glacial Sands and Gravels: 2.50-2.70m BGL</u> 0.20m of brown sandy fine to coarse sub-rounded and rounded GRAVEL and COBBLES.
TP03	<u>Made Ground: 0.00-2.10m BGL</u>

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Hole ID	Encountered Ground Conditions
	0.15m of concrete underlain by 0.10m of pinkish grey slightly angular to sub-angular fine to coarse GRAVEL. 0.25-2.10m BGL comprises dark brown slightly sandy angular to sub-angular fine to coarse GRAVEL of clinker, brick, concrete, limestone, and slag with low Cobble content. Cobbles are noted as sub-angular concrete and clinker, and SAND is noted as fine to coarse ash. Medium sub-angular to sub-rounded cobbles are noted at 1.80m BGL. <u>Glacial Sands and Gravels: 2.10-2.80m BGL</u> 0.70m of greyish brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL with medium sub-rounded cobble content.
TP04	<u>Made Ground: 0.00-2.40m BGL</u> 0.60m of firm brown slightly gravelly slightly sandy (ash) CLAY with low cobble content. Gravel is angular to sub-rounded and comprises siliceous material, sandstone, clinker, wood, concrete, glass, and brick. This is underlain by 1.80m of dark brown sandy angular to sub-rounded fine to coarse GRAVEL of siliceous material, porcelain, glass, sandstone, and clinker with medium cobble content. <u>Glacial Sands and Gravels: 2.40-2.80m BGL</u> 0.40m of greyish brown slightly sandy sub-rounded fine to coarse GRAVEL of siliceous material, quartzite, and sandstone with high cobble content. Cobbles are sub-rounded.
TP05	<u>Made Ground: 0.00-2.50m BGL</u> 0.35m of firm brown slightly gravelly slightly sandy CLAY, underlain by 0.75m of dark brown slightly gravelly SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, brick, clinker and concrete with occasional pockets of greyish brown mottled orange-brown sandy clay. 1.10-2.50m BGL comprises dark brown slightly gravelly SAND with medium cobble content. Gravel is angular to sub-rounded firm to coarse comprising siliceous material, coal, clinker plastic and sandstone, Cobbles are sub-angular to sub-rounded. <u>Glacial Sands and Gravels: 2.50m BGL-2.70m BGL</u> 0.20m of greyish brown slightly sandy angular to sub-rounded fine to coarse GRAVEL with medium cobble content.
SPM01	<u>Made Ground: 0.00-0.10m BGL</u> 0.10m of dark brown gravelly slightly sandy CLAY. Gravel is angular to subrounded fine to coarse brick, plastic, and siliceous material.
SPM02	<u>Made Ground: 0.00-0.10m BGL</u> 0.10m of slightly gravelly clayey SAND. Gravel is angular to sub-rounded fine to coarse brick and siliceous material.

3.1.1 Made Ground

Made Ground was encountered in all exploratory holes. PSD testing was conducted on 10 No Made Ground samples. The grading curves presented on Appendix B Figure 2 generally agree with the variation in cohesive and granular descriptions found within the logs, with percentage fines content ranging between ~0-30%. The grading curves correlate well with the shallow Glacial Sands and Gravels, with samples taken from BH01 at 3.50m BGL and 5.50m BGL are more granular, containing a higher gravel and cobble content.

SPT tests were conducted in BH01 and BH02. SPT N values increased from 31 to 79 between 1.50-2.2m BGL in BH01, and from 9 to 27 between 1.50-3.30m BGL in BH01 and BH02 respectively (Appendix B Figure 5).

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2No shear strength (total stress) by direct shear tests were undertaken on samples of Made Ground. The results of these tests are shown in Appendix B Figure 6. Samples from BH01 and BH02 gave angles of shearing resistances of 46° and 45°, and effective cohesions of 5kPa and 18kPa respectively.

3.1.2 Superficial Deposits

Alluvium

Alluvium was encountered in BH02 between 3.70-4.00m BGL. 1No Moisture Content and Atterberg Limit test was conducted on the Alluvium. Appendix B Figure 4 shows the Alluvium to have a liquid limit of 16% and plastic limit of 29%, resulting in a plasticity index of 13%. The natural moisture content of the sample was 27%. Appendix B Figure 3 shows that the Alluvium encountered in BH02 is considered a low plasticity CLAY.

Glacial Sands and Gravels

Glacial Sands and Gravels were encountered in all exploratory holes. The thickness of this unit was not confirmed by either borehole. 8No PSD tests were conducted on samples of Glacial Sands and Gravels, with percentage gravel fractions varying between ~2-57% BGL (Appendix B Figure 2). Percentage fines content varied between ~0-27%, however, this is likely not representative of the in situ condition of this strata as it is noted within the borehole logs that an absence of fines is attributed to the drill flush used on site.

SPT N values decrease with depth from ~75-95, 3.2-4.1m BGL, to ~12-21, 10.5m BGL (Appendix B Figure 5), however it is not expected that this is a consistent phenomenon beneath the site.

4No shear strength (total stress) by direct shear tests were undertaken on samples of Glacial Sands and Gravels. Angles of shearing resistance varied between 40-47°, with effective cohesions varying between 10-38kPa (BGL (Appendix B Figure 6).

3.2 Groundwater

No groundwater strikes were recorded during the construction of either borehole, due to the use of drilling flush necessary to penetrate the Glacial Sands and Gravels. Monitoring results show that groundwater was encountered between 2.13m BGL – 2.39m BGL at BH01 over the three return visits to site (27/04/2023, 05/05/2023, and 12/05/2023). Groundwater in BH02 was encountered between 2.08m BGL – 2.16m BGL. Ground water was encountered at all trial pit locations between 2.4m BGL – 2.50m BGL. All ground water strikes are presented in Appendix B Figure 1.

In TP03, rapid water seepage into the trial pit was recorded at 2.80m BGL, likely due to the presence of particularly granular material.

A hydrogeological assessment of the site is provided in Appendix C.

3.3 Characteristic geotechnical parameters

Table 2 provides a summary of characteristic geotechnical parameters for each stratum based on the results of the laboratory testing and site logs.

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Table 2: Characteristic geotechnical parameters

Strata	Unit Weight, γ'_k (kN/m ³)	Angle of Friction, $\phi'_{pk,k}$ (°)	Cohesion, c'_k (kPa)	Undrained Shear Strength, $c_{u,k}$ (kPa)	Young's Modulus, E'_k (MPa)
Made Ground	20	40	0	-	60
Alluvium	18	25	-	20	10
Glacial Sands and Gravels	20	40	0	-	60

3.4 Visual and olfactory evidence of contamination

During the ground investigation no visual or olfactory evidence of contamination was present at the exploratory holes. Made Ground did encounter anthropogenic material. This included:

- BH01: Occasional gravel sized plastic and glass fragments (0.3m BGL);
- BH02: Rare cobble sized plastic fragments (0.7m BGL);
- TP01: Brick and concrete fragments and clinker including concrete plinth (0.3m BGL) and geo-grid netting (0.4m BGL);
- TP02: Cobbles of brick fragments, quartzite and concrete (0.10m BGL);
- TP03: Clinker, brick fragments, concrete, limestone and slag (0.25m BGL);
- TP04: Porcelain, wood fragments, concrete and glass and brick fragments, sandstone and clinker (0.6m BGL);
- TP05: Brick fragments, clinker and concrete (0.35m BGL), coal, clinker, plastic and brick fragments and sandstone (1.1m BGL);
- SM01 and SM02: Brick and plastic fragments (GL – 1.10m BGL).

4. Contamination

4.1 Conceptual Site Model

4.1.1 Sources

A review of the current site uses, and site history identified potential contamination sources such as Made Ground formed during the construction of the Wastewater Treatment Works (WwTW). There is also potential for potentially contaminative material associated with the historical and current land use. The encountered ground conditions and potential contamination sources are summarised in the below:

Made Ground: Made Ground was encountered at all exploratory holes. No visual or olfactory evidence of contamination was noted. Anthropogenic materials were encountered at all exploratory

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holes. The materials encountered were predominately plastic, glass and brick fragments, with occasional porcelain, wood, concrete and clinker. Concrete plinth and geo-grid were also encountered at TP01. The materials encountered are indicative of demolition materials resulting in the potential for asbestos to be present. Generic contaminants associated with Made Ground include metals and hydrocarbons, however, based on the nature of Made Ground encountered the risk is considered to be low.

Site History: Typical contaminants associated with operation of WwTW include heavy metals, fuel oils, pesticides, nitrates, sulphates and sewage sludge. Asbestos may also be present associated with its historical use within buildings and pipe materials. Contamination within the ground and groundwater can arise through leakages from pipework/tanks as well as spillages/overflows as well as any historical redevelopment of the site.

Ground Gas: The scheme proposals do not intersect with any NRW active, or historic landfills however do lie within a Coal Authority reporting area with known shafts not far from the site. Historic mine shafts are a source of ground gas. BH02 was the only exploratory hole to encounter organic material. This was encountered as frequent fragments of black lignite (<2mm) and faint organic odour 0.3m in thickness.

4.1.2 Pathways

The potential pathways providing a pollutant linkage from any contamination to the identified receptors are as follows:

Construction and maintenance workers:

- Direct soil and dust ingestion;
- Dermal exposure to soils during excavations. Groundwater was encountered during the ground investigation between 20.4mOD and 21.02mOD within the proposed development excavation levels;
- Inhalation of particulates/fibres should they be disturbed;
- Inhalation of particulate matter/fibres and soil vapours;

Site workers post-development:

- Any contaminated Made Ground will not be allowed to remain at the site surface post development and the site will be capped with clean soils either through re-use or imported materials. On this basis the direct dermal and ingestion pathways are not considered substantial;
- The inhalation of soil vapour pathway may be operating, though based on the lack of volatile sources of contamination at the site, and there being no confined spaces proposed as part of the development meaning gasses and vapours are freely venting, the risk is very low.

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- Based on the groundwater conditions encountered during the investigation, it is unlikely that significant vertical or lateral migration is a plausible contaminant linkage due to the lack of continuity between leachate and groundwater exceedances identified on site;
- The majority of contaminants were identified as a natural background concentration within the groundwater or an infrequent exceedance passing through the site from an offsite source. The elevated contaminants were not reported in the soils, and it is not considered that they are from an onsite source;
- Leachate generation may potentially increase during the construction phase during excavation of made ground. A groundwater management plan should be prepared to specify groundwater control methods, discharge/disposal options and any treatment requirements;
- Soft landscaping will remain post development with grasses areas. The lack of exceeding contamination identified within the soils reduces the likelihood of potential contaminants leaching into underlying natural strata.

4.1.3 Receptors

The potential receptors to any contamination within the site soils and groundwater are as follows:

Human Health: The human receptors who could potentially be exposed to contamination are primarily GI contractors, construction workers and maintenance workers. All the above will be on site for short periods of time and therefore the exposure time is likely to be acute.

Environmental: The environmental receptors include the River Tawe, as well as the groundwater bodies within the superficial deposits and bedrock beneath the site, which are Secondary A aquifers.

4.2 Human health risk assessment

4.2.1 Methodology

To assess the risks posed by contaminated land to human health, a human health risk assessment has been undertaken.

To give an indication of potential risks posed to these short-term receptors, the chemical analyses results will be screened against conservative guideline values (S4UL¹) and Arup GACs (where relevant), including residential without plant uptake and commercial land use scenarios. The following assessment criteria/scenarios have been considered for the assessment, along with the justification for their use:

- Residential without Plant Uptake: Risk to site operatives and future maintenance workers (in the absence of acute-term exposure GACs) – ‘construction phase’; and,
- Commercial: To assess risks posed to users of WwTW post completion of the works.

Laboratory results corresponding to made ground and natural ground have been assessed separately, on account of the anticipated differences in chemistry, composition and subsequent potential

¹ The LQM /CIEH S4ULs for Human Health Risk Assessment, (2014) Version 1.0, Paul Nathanail et al. February 2014.

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contaminants of concern associated with these materials (averaging areas). No additional averaging areas have been considered.

A total of fourteen soil samples were taken in the Made Ground on site and a further three samples were taken in the underlying natural strata. Screened soil results are presented in Appendix D.

4.2.2 Results of Tier 1 Soil Screen

No soils in the Made Ground or natural strata exceeded the Commercial GACs; additionally no asbestos was identified from the laboratory analysis of the Made Ground.

Two exceedances were identified of the applied *Residential Without Plant Uptake* criteria within the Made Ground; TP02 at 0.5m bgl and TP04 at 0.2m bgl for heavy metal's arsenic and nickel.

Table 3 - Residential Criteria exceedances

Exploratory Hole	Analyte	Recorded concentration (mg/kg)	Residential GAC (mg/kg)	Commercial GAC (mg/kg)
TP02	Arsenic	40 mg/kg	39.9 mg/kg	79 mg/kg
TP04	Nickel	200 mg/kg	181.4 mg/kg	231 mg/kg

Both concentrations were exceeding the residential criteria but remained compliant within the commercial limits. Both exceedances were recorded in Made Ground which contained anthropogenic material including concrete and brick fragments however, no visual or olfactory evidence of contamination was noted. It is considered that with the use of suitable PPE, these exceedances will not pose a risk to human health for construction and maintenance workers.

4.2.3 Conclusions

From the findings of the soil screening assessment, the encountered materials are considered to be low risk to the identified human receptors.

While no asbestos was detected in any of the samples, it must still be considered a potential risk when undertaking works in un-investigated areas consisting of Made Ground.

4.2.4 Further recommendations

The Contractor should undertake their own health and safety risk assessments based on available information to ensure these risks are controlled and mitigated. As a minimum, these are to include provision of appropriate welfare facilities allowing for hands and face washing and application of appropriate PPE. Dust suppression measures should also be implemented where necessary.

No asbestos was detected in any of the samples tested as part of the ground investigation. However, there is a possibility of the presence of asbestos and asbestos containing materials within the subsurface elsewhere on site at the existing WwTW. Risks posed from asbestos will require consideration with respect to site construction workers who may be exposed to airborne dust during construction.

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Any excavated materials to be stored should be managed in an appropriate manner (e.g., plastic sheeting base and covered, and away from residential properties) in order to avoid creation of dust, leaching and surface run off.

Should materials different in nature to those encountered in the ground investigation or unforeseen contamination be encountered during the scheme construction the following is recommended:

- Works are halted;
- The encountered contamination is assessed by a suitably qualified and experienced person;
- Suitable risk assessments are undertaken to confirm the level of PPE required for site operatives;
- Materials exhibiting evidence of contamination are separated from other arisings and placed on plastic sheeting (for further sampling and analysis);
- In the case of suspected asbestos, a specialist asbestos contractor should be consulted in order to confirm the appropriate management and associated mitigation measures of any asbestos impacted materials or ACM should these be encountered.

All excavations should be backfilled with material that is known to be geotechnically and chemically appropriate; free from contaminants and asbestos (please refer to re-use section below).

4.3 Controlled waters risk assessment

4.3.1 Methodology

A total of ten soil samples were subject to leachate analysis in line with BS EN 12457 – 3² guidance. Nine samples were analysed from the made ground and one from the underlying natural strata. Two groundwater monitoring wells were installed into BH01 and BH02 within the Gravels, and an additional surface water sample (SW1) was taken along the River Tawe.

The site does not lie Source Protection Zone (SPZ), and the underlying groundwater body is classified as a Secondary A aquifer. A surface watercourse, the River Tawe runs adjacent to the site to the east. Considering the above, Freshwater Environmental Quality Standards (EQS) values have been prioritised as the appropriate screening criteria. Where EQS values are not available relevant Drinking Water Standards (DWS) or World Health Organisation (WHO) values have been prioritised.

It is noted that the applied freshwater EQSs for copper, nickel, manganese, and zinc pertain to bioavailable concentrations of the substances. The calculation of the bioavailable concentrations was undertaken using the BA Assessment Tool (M-BAT) produced by UKTAG³, this requires the analysis of pH, Dissolved Organic Carbon (DOC) and calcium in the receiving water receptor.

² BS EN 12457 - Characterisation of waste. Leaching. Compliance test for leaching of granular waste materials and sludges

³ Water Framework Directive, (2014) - United Kingdom Technical Advisory Group (WFD-UKTAG), "Metal Bioavailability Assessment Tool (M-BAT),"

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4.3.2 Results

Leachate

Leachate samples exceeding relevant criteria are identified in Table 4 and the results from the leachate screen are presented in **Appendix D**.

Table 4 - Leachate concentration exceedances

Exploratory Hole	Analyte	Recorded concentration (mg/l)	EQS Criteria (mg/l)
TP02	Fluoride	6.8 mg/l	1.0 mg/l
TP03	Arsenic	0.014 mg/l	0.005 mg/l
	Chromium	0.026 mg/l	0.0047 mg/l
	Fluoride	2.6 mg/l	1.0 mg/l
TP04	Nickel	0.031 mg/l	0.004 mg/l
	Lead	0.0069 mg/l	0.0012 mg/l
All Exploratory Holes	Copper	0.0012 mg/l to 0.05mg/l	0.001 mg/l

The soil quality assessment indicates that leachable copper exceeds the EQS in all samples of Made Ground and natural strata. Soil descriptions do not indicate a source of copper, and it is considered that the copper exceedances within the natural strata reflect natural background concentrations of metals in the soil and will not pose a risk to groundwater or nearby surface water courses.

Nickel, zinc, chromium, lead and fluoride also exceeded the relevant criteria. Made Ground is likely the source of these exceedances where anthropogenic inclusions included concrete, clinker, brick fragments and slag. Made Ground exceedances were recorded within the upper 0.7m. The underlying strata at 2.0m bgl identified significantly lower concentrations and nickel and lead are below Limits of Detection (LoD). It is considered that the exceeding metals are isolated to the Made Ground and not within in the natural strata.

On the basis of the above, the risk of leachable contaminants impacting controlled waters on the site is considered to be low.

Groundwater:

One round of groundwater and surface water sampling was undertaken 27th March 2023. The response zones of BH01 and BH02 were installed within the gravel strata and the surface water sample was taken from the River Tawe downstream of the site.

Groundwater samples exceeding criteria are identified in Table 5 and the results of the groundwater and surface water screening are present in **Appendix D**.

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Table 5 - Groundwater and Surface water Exceedances

Exploratory Hole	Analyte	Recorded concentration (ug/l)	EQS Criteria (ug/l)
BH01	Cadmium	0.38 ug/l	0.08 ug/l
	Bioavailable Manganese	156.97 ug/l	123 ug/l
	Bioavailable Nickel	2.82 ug/l	1.2 ug/l
BH02	Antimony	0.5 ug/l	0.005 ug/l (DWS)
	Cadmium	2.9 ug/l	0.08 ug/l
	Bioavailable Manganese	191.18 ug/l	123 ug/l
	Bioavailable Nickel	14.62 ug/l	1.2 ug/l
	Bioavailable Zinc	49.6 ug/l	12.3 ug/l
SW1	Antimony	0.9 ug/l	0.005 ug/l (DWS)
	Bioavailable Nickel	2.7 ug/l	1.2 ug/l
	Ammoniacal Nitrogen	5900 ug/l	300 ug/l

Cadmium and manganese are recorded in both groundwater samples exceeding EQS criteria. The heavy metals do not exceed EQS criteria within the surface water nor exceed assessment criteria in the soils or leachates. It is unlikely both cadmium and manganese have been generated from a site-specific source, or a contamination event within the site area. It is likely that both contaminants are naturally occurring in the groundwater.

Heavy metals including antimony and zinc exceed relevant DWS and EQS criteria in BH02 only. No exceeding concentrations were recorded in the soil or leachate samples. Groundwater on site is travelling from northeast to southwest with the upgradient borehole BH01 and the downgradient surface water SW1 remaining below the assessment criteria. No source of contamination can be identified at BH02 within the soils or leachates, therefore the anomalous antimony and zinc concentrations within the groundwater will not be considered further as contaminants of concern.

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Nickel was recorded in both groundwater samples and the surface water sample. No nickel exceedances were identified at BH01 or BH02 in the soil or leachate analysis. It is noted in the 2022 Desk Study⁴ several ceased mine entrances are recorded for exploitation of coal seams in the hillsides to the northwest of the site. It is likely that the nickel concentrations in the groundwater and surface water are derived from offsite land use.

Ammoniacal Nitrogen in SW1 recorded a concentration of 5900ug/l. This is an exceptionally high concentration which is assumed to be an error in recording. Groundwater concentrations were recorded at 66ug/l and 28ug/l in BH01 and BH02. The SW1 concentration has been queried with the laboratory but no response has been received to date.

4.3.3 Conclusions

The leachate and groundwater results on site have indicated no potential contaminants of concern. It is not anticipated that the proposed works will impact the quality of groundwater and nearby surface waters. During the construction phase exceeding leachate levels recorded in the made ground in TP03 and TP04 will be within the excavated depth for the proposed development reducing the risk to controlled water receptors.

Should there be any Made Ground identified during the works that has not previously been encountered, the risk of leachable contaminants should be reassessed through appropriate testing. The Contractor should ensure that the works do not negatively impact the quality of adjacent watercourses. This should be done by following best practice guidelines as shown in the Guidance for Pollution Prevention (GPPs).

4.4 Ground Gas Monitoring

Three fortnightly rounds of ground gas monitoring were undertaken on site. Both ground gas well response zones were installed within the gravel. The results of the monitoring can be reviewed in **Appendix D**. Only two ground gas readings were undertaken in BH02 due to access restrictions.

Both well response zones are located within the gravels contains a shallow groundwater body. BH02 recorded a flooded response zone over both monitoring rounds limiting the reliance of the recorded gas readings.

No significant visual or olfactory evidence of organic material was encountered during the ground investigation with exception of BH02 which recorded a thin band of soft grey gravelly clay with faint organic odour at 3.7m bgl. The proposed development includes a 4m deep concrete flow diversion chamber and a new headwall, it is likely any organic material identified at BH02 will be removed during construction reducing the risk of a ground gas source.

Flow rates within BH01 were recorded at 0.0l/hr while BH02 recorded 0.0l/hr and 0.6l/hr. The flooded response zone and elevated groundwater level in BH02 cause a pressure increase to give a brief elevated peak flow. Given this, the recordings have not identified significant flow readings reducing the potential risk from ground gas.

⁴ Arup 2022 Trebanos WwTW Desk Study (B16421-102503-XX-ZZ-RP-GB-GC6701)

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There is a negligible risk to construction and maintenance workers from ground gas due to the low flow rates and lack of generative source. Organic material encountered in BH02 will be removed during the construction phase mitigating the risk during the operation phase. The site will be predominately soft landscaping as grassed areas post development allowing free venting soil. There will be limited enclosed spaces for entry for maintenance workers post development therefore the risk to ground gas on site is low.

4.5 Waste Disposal

Re-use as opposed to disposal should be considered for all materials arising as part of the works, including the Made Ground and natural ground that are the subject of this waste assessment.

The potential for re-use has already been assessed with regards to geotechnical and geo-environmental criteria and this is presented in the GITN. There will be a requirement to have a well-defined scope for the intended use of the materials prior to their re-use. If this is not the case, the re-use of materials may not be permissible under the jurisdiction of the relevant authorities and environmental agencies (e.g. Natural Resources Wales).

If re-use is not appropriate, treatment or recycling may be considered, prior to landfill disposal. Landfill disposal is the last resort, in accordance with the hierarchy of waste. The operators of such facilities should be consulted and supplied with a copy of the chemical analyses results prior to the removal of the materials from the site, to confirm acceptance.

During construction, it is imperative that there is no mixing of different waste streams and these materials should always be kept separate and segregated, e.g. made ground should be kept separate from natural materials in case made ground materials of different nature to those analysed and characterised are encountered during the earthworks, which may contain higher concentrations of contaminants and be classified differently. This will facilitate materials characterisation and prevent cross contamination.

No asbestos fibres or asbestos containing materials were identified within the analysed samples. However, based on the nature of the made ground present within the scheme area, the presence of asbestos cannot be excluded. Should evidence of asbestos be encountered during the construction works, further testing and assessments will be required. Asbestos contaminated waste would require a separate management.

Any materials encountered during the construction works that differ in nature, consistency and/or colour to those sampled and tested as part of the recent GI or exhibiting visual and/or olfactory evidence of contamination (e.g., asbestos or hydrocarbons) will require separate management and additional sampling and analyses to confirm off-site disposal options.

This waste assessment has been undertaken and reviewed by competent and trained staff in accordance with current regulatory guidance and using available approved software. Additionally, this waste assessment has used available GI information provided by CC Ground Engineering Ltd. The assessments and advice given are specific to the waste streams to be generated during the site works as currently understood at the time of writing, however appropriate disposal of the soils to landfill is reliant on appropriate management of the waste streams generated during the site works. It is assumed that the management of wastes, and compliance with the findings of the assessments,

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to ensure that materials are disposed of to the appropriate landfill, lies with the Contractor and their site operatives.

Further information regarding waste disposal can be found within Appendix E - Waste Assessment.

5. Engineering Considerations

5.1 Materials re-use

5.1.1 Geo-environmental considerations

Made ground and engineered fill from within the existing WwTW's is considered suitable for reuse on site within the proposed development respect to human health, subject to the removal of concrete and or other anthropogenic material.

The leachate and groundwater results on site have indicated no potential contaminants of concern. It is not anticipated that the proposed works will impact the quality of groundwater and nearby surface waters. Therefore, the analysed materials are considered suitable for reuse with respect to controlled waters receptors.

The natural stratum on site is considered chemically suitable for reuse across the scheme.

It is noted that materials exhibiting visual and/or olfactory evidence of contamination (including ACM) should not be reused. If unidentified contamination or materials of different nature to those assessed, is encountered during the construction phase, additional testing will be required on the material to understand whether it is suitable for reuse.

5.1.2 Geotechnical suitability of material re-use

In terms of material re-use, this would comprise using excavated material to backfill over the buried pipeline surround fill. The scheme requires backfill material to be obtained from selected excavated material where possible, provided that this material complies with Clause 2.50 of CESWI (7th Edition).

Based on Clause 2.50 of CESWI (7th Edition) is likely that the excavated natural material could be used as backfill. Clause 2.50 states that the fill shall be free of "building rubbish" and as such the Made Ground is unlikely to be suitable.

Any cohesive strata (i.e., soft clays within the Made Ground and Glaciofluvial Deposits) are considered to be unsuitable for re-use, due to the potentially soft and compressible nature of the arisings and risk of differential settlement. This material should be excavated and replaced with compacted competent backfill.

Reuse may rely on the excavated material being segregated into granular and cohesive components to limit mixing of the material types and potential breakdown of larger clay clumps.

5.2 Buried concrete classification

BRE Suite C (Brownfield site – pyrite absent) tests were undertaken on samples of Made Ground and Glacial Sands and Gravels in the locations of proposed concrete to be used in construction. The

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below table summarises the tests and determines the ACEC class following guidance from BRE Special Digest 1.

Table 6: Buried concrete classification.

Strata	No. of Samples	Depth (m BGL)	Sulphate as SO ₄ (mg/l)	Design Sulphate Class	pH	ACEC Class
Made Ground	8	0.00 – 4.00	53.5	DS-1	7.7	AC-1
Glacial Sands and Gravels	2	4.00 (BH01)	<10		8.3	
		10.00 (BH02)	91		8.0	

5.3 Buildability

The buildability considerations for the scheme are as follows:

Pipeline:

- Variable ground conditions with depth and laterally along the excavation alignment resulting in excavation within cohesive and granular material.
- Based on trial pit excavation records, the excavations will need to be battered or actively supported in order to remain stable. Groundwater in any excavations will need to be controlled by pumping, and the high permeability of the glacial deposits may require additional control measures in extreme circumstances such as embedded walls, drawdown wells, or grouting.
- Localised areas of Made Ground may be variable and could cause instability of the excavation or necessitate additional dig and replace if not suitable as a founding material. Localised increases in excavation extent may occur.
- Potential for cobbles and boulders that cause obstruction or cause enlargement of the excavation due to removal to form a level base.

Headwall:

- Headwalls for discharge to the River Tawe would traditionally take the form of precast units with integral shear keys, however no ground investigation was able to be undertaken on the river edge slope of the River Tawe or in the river channel itself.
- It is anticipated that soils in the river will include soft compressible bed deposits overlying the deeper Glacial Sand and Gravel deposits. These bed deposits over the GSG should be considered to conservatively be of low strength and stiffness.
- The potential for low strength/stiffness bed deposits are likely to preclude the use of standardised precast units, and therefore calculations for bespoke sizing of a headwall would be required.

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- It is understood that the alignment of the River Tawe is to be maintained, and as such a 3-4m high headwall is likely to require a base structure of similar breadth, necessitating a substantial excavation distance back into the existing riverbank.
- It is therefore anticipated that a different form of headwall is likely to be necessary, probably comprising an embedded retaining wall. An economical form of embedded retaining wall would be a king post wall, where drilled piles are spaced along the headwall geometry, with concrete or timber lagging between to support the retained ground.
- Drilled piles to support the king post elements of the wall could be constructed using either continuous flight auger (CFA) or cased rotary boring techniques, both of which could be suitable for use at the site.
- CFA piling would be preferable in providing positive support to the ground and negating the potential for water inflow during the piling process, however this would necessitate larger piling rigs to be used, together with more substantial temporary works such as piling mats.
- Open rotary bored piling could be undertaken provided the following aspects are able to be addressed by the Contractor's methods of working:
 - Temporary casings would be essential to support the Glacial Sands and Gravels underlying the site, and taken to full-depth of the pile hole;
 - Traditional auger tooling would be suitable to loosen the gravels, which could then be subsequently collected using a gravel or cleaning bucket type tool;
 - Groundwater pressure inside the casing would need to be kept balanced or positive relative to the surrounding ground water, to avoid base instability during drilling of each pile hole;
 - Concrete would need to be tremied into the pile hole, to displace the water within, and may require the maximum gravel size of the concrete mix to be limited.

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Drawings

Drawing 1 - Features & Constraints Plan

Drawing 2 – Ground Investigation Locations

Appendices

Appendix A - Factual report

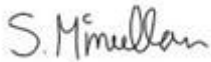
Appendix B - Geotechnical plots

Appendix C – Hydrogeological Assessment

Appendix D - Chem Screening Tables

Appendix E - Waste Assessment

DOCUMENT CHECKING

	Prepared by	Checked by	Approved by
Name	Richard Cottrell Shannon McMullan	Melanie Thrush	Scott Reid
Signature	 		

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Date 4 June 2024

Drawings



Storm Outfall Exploratory Holes

A3

Type

 BH

 SPM

 TP

Coordinate System: British National Grid

Metres

0

12.5

25

50

1	27/04/2023	RC/TD	SR	--	--
Rev	Date	By	Chkd	Appd	Authd

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Client
Dwr Cymru Welsh Water

Project Name
Trebanos Storm Outfall

Drawing Title
Exploratory Hole Location Plan

Scale at A3
1:1,000

Role
Ground Investigation Report

Suitability
Issue

Project Number
275291

Rev
1

Drawing Number
Drawing 2

bing

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C:\Users\Richard-J.Cottrell\Documents\ArcGIS\Projects\Trebanos\Trebanos.aprx

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Appendix A – Factual Report



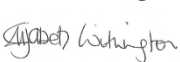
CC Ground Investigations Ltd

FACTUAL REPORT

Site: Trebanos Storm Outfall

Client: Morgan Sindall Construction & Infrastructure Ltd

Report ref: C7932

Status	Revision	Date	Author	Checker
Draft	A01	14 th June 2023	Richard Tucker	Elizabeth Withington
Final	A02	29 th June 2023	Richard Tucker 	Elizabeth Withington 



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APPENDIX F GAS AND GROUNDWATER MONITORING

APPENDIX G SPT CALIBRATION CERTIFICATE

1 INTRODUCTION

1.1 Instruction

This investigation was carried out by CC Ground Investigations Ltd (CCGI) on the instruction and on behalf of Morgan Sindall Construction & Infrastructure Ltd (The Client) under the technical direction of Ove Arup & Partners Ltd (the Engineer).

1.2 Objectives

The purpose of the ground investigation was to provide information to assist in the in the design of:

- A storm outfall lying between 1.5-2.0mbgl running northeast to southwest approximately 310m in length.
- 3No. new storm manholes, some with flow monitors installed, and sealed access covers to a depth of 1.5m are also proposed along the alignment of the outfall.
- A 3m by 6m by 4m depth concrete flow diversion chamber is proposed where the new storm outfall aligns with the existing final effluent pipe.
- A new twin pipe headwall is proposed where the storm outfall (5m in height) reaches the River Tawe.

This report describes the work carried out by CCGI and presents a factual account of the findings.

1.3 Scope of Works

The scope of the ground investigation was defined in the Engineer's specifications: AMP 7 GI Framework: Trebanos Storm Outfall, Part B Particular Requirements, reference: B16421-102503-ZZ-ZZ-SP-GB-GC6403, Issue 2022 & Trial pit Ground Investigation Specification, reference: B16421-102503-ZZ-ZZ-SP-GB-GC6401, dated 26th January 2023.

All information, comments and opinions given in this report are based on the ground conditions encountered during the site work and on the results of laboratory and field tests performed during the investigation. There may however be conditions at or adjacent to the site which have not been considered, such as unpredictable soil strata and water conditions between or below exploratory holes. A careful watch should be maintained during any future groundworks and the comments of this report reviewed as necessary.

This report has been prepared for Morgan Sindall Construction & Infrastructure Ltd. This report shall not be relied upon or transferred to other parties without the written consent of CCGI. Should any information contained within this report be used by any unauthorised third party it is done so at their own risk and shall not be the responsibility of CCGI.

2 SITE INFORMATION

2.1 Site Description

The site is at National Grid Reference 271088, 202180 within the village of Trebanos, Pontardawe.

The site is bounded by the Swansea Canal to the north and the River Tawe to the south.

The site is relatively flat and located within a flood plain, bounded by the Swansea Valley hills to the northwest and southeast.

The site is currently used as pasture farmland. Sections of the storm outfall lie within a wooded area adjacent to the River Tawe. The northern section of the outfall connects to the existing Trebanos Wastewater Treatment Works (WwTW).

Access to the site is via the existing WwTW. The general location of the site is presented in Appendix A.

2.2 Geology

Geological Records (British Geological Survey (BGS), England and Wales Sheet 230, Ammanford 1: 50,000 scale) and the online BGS Geology of Britain Viewer, indicate the site to be underlain by superficial deposits of Alluvium. The underlying solid geology is recorded as the Hughes Member - Sandstone.

3 GROUND INVESTIGATION

3.1 Introduction

Nine exploratory holes were carried out between 19th April and 21st April 2023. All exploratory hole locations are shown on the site plan (Appendix A) and summarised in Table 1. The exploratory hole locations were set out by CCGI as directed by the Client on site.

Table 1 Exploratory Hole Summary

Exploratory Hole Reference	Type	Depth (m bgl)	Start Date	End Date	Easting	Northing	Level (mAOD)
BH01	DS	10.00	20/04/2023	21/04/2023	271049.21	202169.11	23.71
BH02	DS	10.00	19/04/2023	20/04/2023	270925.74	202144.09	22.4
TP01	TP	2.60	20/04/2023	20/04/2023	271156.31	202219.86	23.4
TP02	TP	2.70	20/04/2023	20/04/2023	271164.96	202258.84	23.52
TP03	TP	2.80	19/04/2023	19/04/2023	271093.89	202206.04	23.23
TP04	TP	2.80	19/04/2023	19/04/2023	271054.38	202162.99	23.35
TP05	TP	2.70	19/04/2023	19/04/2023	270994.38	202147.49	22.8
SPM01	IP	0.10	19/04/2023	19/04/2023	271083.87	202184.87	23.19
SPM02	IP	0.10	19/04/2023	19/04/2023	271082.8	202189.92	23.17

Key: DS = Dynamic Sampling Borehole, TP = Machine dug trial pit and IP = Inspection pit.

All fieldworks were carried out in general accordance with BS5930: 2015+A1:2020.

3.2 Rotary Boreholes

Two boreholes referenced BH01 and BH02 (Appendix B) were formed using a track mounted Fraste PL(G) multi-purpose drilling rig. Following CAT scanning hand tools were used to excavate inspection pits to a maximum depth of 1.20m to check for the presence of buried services. Bulk, small disturbed and environmental soil samples were taken and retained from the inspection pits. The boreholes were then advanced using percussive sampling techniques to produce continuous disturbed samples ranging between 112mm and 98mm diameter.

A water flush was used to advance temporary casing to support the borehole during percussive sampling.

Soil samples were retained in semi-rigid plastic liners and where appropriate, liners were capped or taped on site to prevent moisture loss.

3.3 Groundwater Monitoring

Boreholes were monitored for groundwater ingress as they were advanced. Water levels were recorded at the start and finish of each shift/on completion of the borehole and are presented on the relevant log.

3.4 Installations

On completion combined gas and water monitoring standpipes were installed in BH01 and BH02. Each installation consisted of a 50mm ID HDPE slotted tube set in a filter response zone of granular filter medium. The installations were sealed above and below with a bentonite pellet seal and accessed via a valve assembly. The installations were protected at the surface by a lockable stopcock cover set in concrete. Installation details are given on the relevant borehole log.

3.5 In-situ Testing

Standard penetration tests (SPTs) were carried out in general accordance with BS EN ISO 22476-3:2011. A split barrel or a solid cone was used depending upon the materials encountered and the split barrel samples retained as small, disturbed samples. The SPT N-value was taken as the number of blows to penetrate the 300mm test drive following a 150mm seating drive. Where low penetration was recorded the seating drive was terminated at 25 blows and the test drive completed after a further 50 blows. SPT results are summarised as uncorrected N-values on the borehole logs and in the summary table included in Appendix B. SPT hammer calibration data is presented in Appendix E.

Variable head permeability testing was attempted in BH01 and BH02 installations post fieldwork in general accordance with the procedures given in BS EN ISO 22282 Parts 1 and 2: 2012. Coefficients of permeability were unable to be calculated and test was aborted, as noted in the post fieldwork monitoring results presented in Appendix F.

3.6 Trial Pits

Following CAT scanning, five trial pits, referenced TP01 to TP05, (Appendix B) were excavated using a JCB 3CX mechanical excavator with a 0.60m wide backactor bucket.

Two shallow inspection pits referenced SPM01 and SPM02, (Appendix B) were excavated using hand digging tools in existing stockpiled material on site.

Representative bulk, small disturbed and environmental soil samples were retained where required, in airtight containers.

On completion all trial pits were backfilled with compacted arisings. The ground surface was reinstated.

3.7 Surveying and Sample Storage

After fieldwork, all exploratory hole positions were surveyed. National Grid co-ordinates and levels are presented on the relevant log.

On completion of fieldwork all samples were brought to CCGI's office for storage.

3.8 Logging

Soil samples from the exploratory holes were logged by an engineering geologist in general accordance with BS5930: 2015+A1:2020, BS EN ISO 14688 [Parts 1 and 2] and BS EN ISO 14689:2017.

Soil descriptions are presented in the borehole logs together with details of sampling, in-situ testing and relevant comments on drilling/trial pitting techniques. The exploratory hole logs are presented in Appendix B.

3.9 Geotechnical and Geo-environmental Laboratory Testing

The following laboratory tests were carried out by [Professional Soils Laboratory (UKAS No. 4043) in accordance with BS1377:1990, Parts 1 to 8/BS EN ISO 17892 and [BRE SD1:2005], unless otherwise stated. The results are presented in Appendix D and summarised in the table below.

Table 2 Geotechnical testing

Test type	No. of tests	Remarks
Water Content	2	The results are included on the summary of soil classification tests.
Liquid and Plastic Limits	2	The results are shown on the plasticity chart and summary of soil classification tests.
Particle Size Distribution (wet sieving method)	18	The results are presented as a grading curve.
Residual shear strength of a 300mm square specimen by direct shear, test duration not exceeding 4 days	6	No extra over days were required to complete
BRE SD1 chemical testing suite for soil and water – Suite D	10	Testing carried out by Derwentside Environmental Testing Services (UKAS No. 2139) in accordance with BRE Special Digest 1.

A range of chemical tests were carried out on soil and water samples by Derwentside Environmental Testing Services Ltd (UKAS no. 2139). Testing was carried out in accordance with ISO 17025: 2017. The results are tabulated and presented in Appendix E.

3.10 Gas and Groundwater Monitoring

Three return visits have been made by CCGI to monitor gas and groundwater and take water samples at all installed boreholes. A surface water sample was taken from the River Tawe adjacent to the site (reference: SW1).

The installations were monitored for methane, carbon dioxide, oxygen and hydrogen sulphide using a Gas Analyser GA5000 with internal flow meter. Installations were also monitored for gas flow, reported as gas flow in litres/hour. Readings were taken in general accordance with CIRIA 665 and BS 8485:2015+A1:2019.

Groundwater sampling was carried out in accordance with BS EN ISO 22475-1:2006. Prior to sampling the standpipes were developed and purged a total of 3 times the well volume. Groundwater samples were taken and stored in temperature-controlled conditions. Remarks on development, purging and sampling are included in Appendix F.

Gas and groundwater monitoring data is presented in Appendix F.

4 REFERENCES

British Geological Survey, Solid and Drift Sheet 230, Ammanford, 1: 50,000 scale

BRE Special Digest 1:2005, Concrete in aggressive ground.

BS 1377 Parts 1 to 9: (1990), Methods of Tests for Soils for Civil Engineering Purposes.

BS5930: 2015+A1:2020, Code of Practice for Ground Investigations. BS 8485:2015+A1:2019, Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

BS 10175: (2011) +A2: (2017), Investigation of potentially contaminated sites – code of practice.

BS EN ISO 14688-1:2018 Geotechnical investigation and testing. Identification and classification of soil. Part 1: Identification and description.

BS EN ISO 14688-2:2018 Geotechnical investigation and testing. Identification and classification of soil. Part 2: Principles for a classification.

BS EN ISO/IEC 14689:2017 Geotechnical investigation and testing. Identification, description and classification of rock.

BS EN ISO 17025:2017, General requirements for the competence of testing and calibration laboratories.

BS EN ISO 17892 Geotechnical investigation and testing. Laboratory testing of soil.

BS EN ISO 22282-1:2012 Geotechnical investigation and testing. Geohydraulic testing. General Rules.

BS EN ISO 22282-2:2012, Geotechnical investigation and testing. Geohydraulic testing. Water permeability tests in a borehole using open systems.

BS EN ISO 22475-1:2006, Geotechnical investigation and testing. Sampling methods and groundwater measurements. Technical principles for execution

BS EN ISO 22476-3:2005+A1:2011 Geotechnical Investigation and Testing – Field Testing - Part 3: Standard Penetration Test.

CIRIA C665: (2007), Assessing risks posed by hazardous ground gases to buildings.

APPENDIX A

Site Plan



Google Earth

KEY:

-  Boreholes
-  Spoil Mound samples
-  Trial Pits

Notes:

Reproduced from base plan provided by Client/Engineer.

Locations indicative only.



CC Ground Investigations Ltd

Site Plan

Trebanos Storm Outfall

Morgan Sindall (Welsh Water Capitol Delivery Alliance)

Appendix A

Contract No: C7939

Drawn by:

AK

Scale:

NTS

APPENDIX B

Exploratory Hole Data

KEY TO EXPLORATORY HOLE LOGS

The logging of soils and rocks has been carried out in general accordance with BS5930: 2015+A1:2020 and BS EN ISO 14688 [Parts 1 and 2]. Where appropriate logging to CIRIA C570 or CIRIA C574 has been adopted.

Sample type

B	Large disturbed sample
C	Core run
CS	Rotary core sub-sample
D	Small disturbed sample
ES	Environmental sample
SPT	Standard penetration test carried out using split spoon (split spoon sample retained)
SPT C	Standard penetration test carried out using solid cone (no sample retained)
U70 or U100	Undisturbed sample followed by nominal dia. of sample. (Using thick-walled open-tube sampler – OS-TK/W)
UT100	Undisturbed sample followed by nominal dia. of sample. (Using thin-walled open-tube sampler – OS-T/W)
W	Water sample

Water levels

		3.00m/Dry
Initial Water Strike	Level after monitoring	Standing Level/No groundwater encountered

In situ Testing

S 30	Denotes SPT undertaken using split spoon followed by N Value (EN ISO 22476-3:2005+A1:2011)
C 30	Denotes SPT undertaken using solid cone followed by N Value (EN ISO 22476-3:2005+A1:2011)
*240	Denotes SPT where full test drive has not been completed and linearly extrapolated N value reported
**	Denotes no effective penetration (Linearly extrapolated N value > 1000)
H 30	Hand shear vane. Direct reading in kPa

Sample range

	Undisturbed sample		Core run		U(T)100 Undisturbed Samples		Rotary core sub-sample
--	--------------------	--	----------	--	-----------------------------	--	------------------------

Strata Boundaries

	Solid boundary
	Estimated boundary
	Gradational boundary

Installation Details

	Porous Tip		Screened Standpipe		Bentonite seal
	Plain standpipe		Granular response zone		Concrete
	Grout		Backfill with arisings		

Revision history

Version	Date	Author	Reviewed by	Reason for revision
V1	19/08/20	E. Withington	M. Atherton	First issue (new format)

ROTARY BOREHOLE LOG



Borehole No.

BH01

Sheet 1 of 2

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 271049 N 202169	Hole Type DS
Location: Trebanos	Level: 23.71mAOD	Scale 1 : 37.50	
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)	Dates: Start: 20/04/2023 End: 20/04/2023	Logged By AK	

(m)	Water Levels	Core Run, Samples & Testing			Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		No/Type	Depth (m)	Result							
1		B D ES	0.00 - 0.30 0.10					MADE GROUND: Soft dark brown slightly gravelly sandy CLAY with frequent roots and rootlets (<3mm). Gravel is sub-angular to rounded fine to coarse of siliceous material.	(0.30)	23.41	
		B D ES	0.40 - 0.70 0.50					MADE GROUND: Dark brown very gravelly slightly clayey SAND. Gravel is sub-angular to sub-rounded fine to coarse of siliceous material and occasional gravel sized plastic and glass fragments with occasional roots and rootlets (<3mm).	(0.40)		
		B D ES	1.00 - 1.20 1.10					MADE GROUND: Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	0.70		
		SPT C	1.20 - 1.65	C 31				1.20m: Dense.	(1.75)		
		B	1.70 - 2.00								
		D ES SPT C	2.00 2.00 - 2.32	C*79				2.00m: Very dense.			
2		EW	2.39					2.40m: 1No sub-rounded cobble of siliceous material.	2.45	21.26	
		D ES SPT C	3.00 3.00 - 3.35	C*75				Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel.			
		B	3.50 - 4.00					3.00m: Very dense.			
		B D ES SPT C	4.00 - 5.00 4.00 4.00 - 4.37	C*83				4.00-5.00m: Absence of fines possibly washed out by drill flush. Recovered as sub-angular to rounded fine to coarse gravel of sandstone and siliceous material.			
		SPT C	5.00 - 5.45	C 46				5.00-6.90m: Absence of fines, possibly washed out by drill flush.	(5.55)		
		B	5.50 - 6.50					5.50m: Becoming high cobble content.			
3											
4											
5											
6											

EQUIPMENT: Hand digging tools. Fraste Multi-drill PL(G) track mounted rig.

METHOD: Hand dug inspection pit: 0.00-1.20m. Dynamic sampling using 128mm and 113mm sample barrels: 1.20-10.00m.

CASING: SW to 3.00m and PW to 9.50m.

GROUNDWATER: None encountered prior to using water flush.

INSTALLATION: Bentonite pellet backfill: 4.50-10.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 3.00-4.50m. 50mm ID HDPE plain pipe with bentonite pellet seal: 0.20-3.00m. Flush 150mm steel cover set in concrete: 0.00-0.20m. Gas valve fitted.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
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Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
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ROTARY BOREHOLE LOG



Borehole No.

BH01

Sheet 2 of 2

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 271049 N 202169	Hole Type DS
Location: Trebanos	Level: 23.71mAOD	Scale 1 : 37.50	
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)	Dates: Start: 20/04/2023 End: 20/04/2023	Logged By AK	

(m)	Water Levels	Core Run, Samples & Testing			Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result							
7		SPT C	6.50 - 6.95	C 48				Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. (continued from previous sheet)			
		B	7.00 - 8.00								
8		SPT C	8.00 - 8.45	C 33				8.00m: Dense. Dense thinly laminated dark grey very gravelly clayey SAND. Gravel is sub-angular to sub-rounded fine to coarse of sandstone and siliceous material.	8.00	15.71	
		B	8.50 - 9.50								
9									(2.00)		
		SPT	9.50 - 9.95	S 15				9.50m: Medium dense.			
10								Borehole completed at 10.00m	10.00	13.71	
11											
12											
13											

Groundwater:

Date Strike Depth (m) Casing Depth (m) Depth After Observation (m)

Hole Progress:

Date Hole Depth (m) Casing Depth (m) Water Depth (m)
20/04/2023 17:00 10.00 9.50 2.31

ROTARY BOREHOLE LOG



Borehole No.

BH02

Sheet 1 of 2

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 270926 N 202144	Hole Type DS
Location: Trebanos	Level: 22.40mAOD	Scale 1 : 37.50	
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)	Dates: Start: 19/04/2023 End: 20/04/2023	Logged By AK	

(m)	Water Levels	Core Run, Samples & Testing			Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAD)	Legend
		No/Type	Depth (m)	Result							
1		B D ES	0.20 - 0.50 0.20					MADE GROUND: Grass over soft dark brown slightly gravelly slightly sandy CLAY with frequent roots and rootlets (<5mm). Gravel is sub-rounded fine of siliceous material.	0.10	22.30	
		B D ES	0.70 - 1.00 0.70					MADE GROUND: Dark brown gravelly clayey SAND with occasional roots and rootlets (<3mm) and low cobble content. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material. Cobbles are sub-rounded of siliceous material.	(0.60) 0.70	21.70	
		B D ES	1.00 1.00					MADE GROUND: Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare cobble sized plastic fragments.	(1.20)		
		SPT	1.20 - 1.65	S 9				1.20m: Loose.			
2		B	1.70 - 2.00								
		D ES	2.00 2.00	C 19				Medium dense dark brown very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL of siliceous material with low cobble content. Cobbles are sub-rounded of siliceous material.	1.90	20.50	
		SPT C EW	2.00 - 2.45 2.16								
3		B	2.50 - 3.00						(1.80)		
		D ES	3.00 3.00	C 26							
		SPT C	3.00 - 3.45								
4								Soft grey sandy slightly gravelly CLAY with frequent fragments of black lignite (<2mm) and faint organic odour. Gravel is sub-angular to rounded fine to medium of sandstone and siliceous material.	3.70 (0.30)	18.70	
		C D ES	4.00 - 5.50 4.00	C*94		67% 0% 0%		Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush).	4.00	18.40	
		SPT C	4.00 - 4.26								
		B	4.50 - 5.50								
5											
		C D ES	5.50 - 7.00 5.50	C*83		27% 0% 0%			(3.00)		
		SPT C	5.50 - 5.78								
6											

EQUIPMENT: Hand digging tools. Fraste Multi-drill PL(G) track mounted rig.

METHOD: Hand dug inspection pit: 0.00-1.20m. Dynamic sampling using 128mm and 113mm sample barrels: 1.20-4.00m and 7.00-10.00m. Waterflush rotary coring using T6-116 coring barrel: 4.00-7.00m.

CASING: SW to 4.40m and PW to 10.00m.

GROUNDWATER: None encountered prior to using water flush.

INSTALLATION: Bentonite pellet backfill: 3.50-10.00m. 50mm ID HDPE slotted pipe with washed gravel response zone: 2.50-3.50m. 50mm ID HDPE plain pipe with bentonite pellet seal: 0.20-2.50m. Flush 150mm steel cover set in concrete: 0.00-0.20m. Gas valve fitted.

Groundwater:

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
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Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
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ROTARY BOREHOLE LOG



Borehole No.

BH02

Sheet 2 of 2

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 270926 N 202144	Hole Type DS
Location: Trebanos		Level: 22.40mAOD	Scale 1 : 37.50
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)		Dates: Start: 19/04/2023 End: 20/04/2023	Logged By AK

(m)	Water Levels	Core Run, Samples & Testing			Core Run & Sample	TCR SCR RQD	Install	Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result							
7		SPT	7.00 - 7.45	S 13				Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush). (continued from previous sheet)	7.00	15.40	
		B	7.50 - 8.50					Medium dense dark grey very gravelly SAND. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material. 7.00-7.45m: SPT = No recovery.			
		D	7.70								
8									(2.40)		
		B	8.50 - 9.40					Dense dark grey very sandy clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material.			
		SPT	8.80 - 8.95	S 12							
		D	9.00								
9								Dense dark grey very sandy clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material.	9.40	13.00	
		B	9.40 - 10.00						(0.60)		
10		D SPT	10.00 10.00 - 10.45	S 21				Borehole completed at 10.00m	10.00	12.40	
11											
12											
13											

Groundwater:

Date Strike Depth (m) Casing Depth (m) Depth After Observation (m)

Hole Progress:

Date	Hole Depth (m)	Casing Depth (m)	Water Depth (m)
19/04/2023 17:30	8.80	8.50	2.31
20/04/2023 08:00	8.80	8.50	3.98
20/04/2023 17:00	10.00	10.00	2.07

STANDARD PENETRATION TEST

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk



CC Ground Investigations Ltd

Client:	Morgan Sindall (Welsh Water Capital Delivery Alliance)	Contract:	C7932
Site:	Trebanos Storm Outfall	Checked:	RT

Notes:

- 1 Test carried out in general accordance with BS EN ISO 22476: Part 3 (2005)+A1: 2011
- 2 N values have not been subjected to any correction.
- 3 Test carried out using split spoon S, solid cone C.

- 4 Where full test drive not completed, linearly extrapolated N value reported.
- 5 <1 Denotes hammer self weight penetration (sank under own weight).
- 6 ** Denotes no effective penetration.

BH	Top Depth (m)	Type	Seating Blows	Blows Main Test	Total Penetration (mm)	Casing Depth (m)	Water Depth (m)	Self-Weight Penetration (mm)	Blows 1	Blows 2	Blows 3	Blows 4	Blows 5	Blows 6	Pen 1 (mm)	Pen 2 (mm)	Pen 3 (mm)	Pen 4 (mm)	Pen 5 (mm)	Pen 6 (mm)	Spt 'N' Value	SPT Reported Result	Hammer Serial Number	Hammer Energy Ratio (%)
BH01	1.20	C	10	31	450			0	3	7	8	8	8	7	75	75	75	75	75	75	31	C 31	CC21	60
BH01	2.00	C	24	50	320			0	12	12	16	20	14		75	55	75	75	40		50	C*79	CC21	60
BH01	3.00	C	24	50	350	3.00	0.07	0	10	14	15	20	15		75	75	75	75	50		50	C*75	CC21	60
BH01	4.00	C	17	50	330	4.00	1.32	0	7	10	16	18	16		75	75	75	75	30		50	C*83	CC21	60
BH01	5.00	C	17	46	450	5.00	1.51	0	7	10	12	10	12	12	75	75	75	75	75	75	46	C 46	CC21	60
BH01	6.50	C	15	48	450	6.50	1.63	0	6	9	10	13	12	13	75	75	75	75	75	75	48	C 48	CC21	60
BH01	8.00	C	6	33	450	8.00	1.68	0	3	3	5	9	9	10	75	75	75	75	75	75	33	C 33	CC21	60
BH01	9.50	S	5	15	450	9.50	1.74	0	2	3	3	4	3	5	75	75	75	75	75	75	15	S 15	CC21	60
BH02	1.20	S	3	9	450			0	2	1	2	2	3	2	75	75	75	75	75	75	9	S 9	CC15	63
BH02	2.00	C	10	19	450			0	5	5	5	5	4	5	75	75	75	75	75	75	19	C 19	CC15	63
BH02	3.00	C	16	26	450	3.00	0.91	0	6	10	12	8	3	3	75	75	75	75	75	75	26	C 26	CC15	63
BH02	4.00	C	25	50	260	4.00	0.62	0	15	10	18	22	10		75	25	75	75	10		50	C*94	CC15	63
BH02	5.50	C	25	50	280	5.30	1.57	0	12	13	18	18	14		75	25	75	75	30		50	C*83	CC15	63
BH02	7.00	S	9	13	450	7.00	1.42	0	5	4	4	3	3	3	75	75	75	75	75	75	13	S 13	CC15	63
BH02	8.80	S	6	12	450	8.50	2.31	0	3	3	2	3	4	3	75	75	75	75	75	75	12	S 12	CC15	63
BH02	10.00	S	8	21	450	10.00	2.07	0	3	5	5	5	4	7	75	75	75	75	75	75	21	S 21	CC21	60

TRIAL PIT LOG



Pit No
TP01
Sheet 1 of 1

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 271156 N 202220 Level: 23.40mAOD	Date 20/04/2023
Location: Trebanos	Dimensions: 2.50m Depth 2.60m 0.60m		Scale 1 : 37.5
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)			Logged By SPM

(m)	Water Levels	Samples & In Situ Testing			Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result				
1		B ES	0.10 - 0.30 0.10		MADE GROUND: Wood chippings and vegetation over soft dark brown sandy CLAY with occasional rootlets (<2mm).	0.10	23.30	
		B ES	0.50 - 0.70 0.50		MADE GROUND: Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded to rounded boulders of quartzite, brick and concrete fragments and clinker.			
		B ES	1.10 - 1.30 1.10		0.30m: Concrete plinth, not-insitu. 0.40m: Geo-grid netting.	(2.35)		
2		B D ES	1.90 - 2.10 1.90					
		B	2.40 - 2.65		Brown sandy sub-rounded to rounded fine to coarse GRAVEL and sub-rounded COBBLES of siliceous material. Trial pit completed at 2.60m	2.45 2.60	20.95 20.80	
3								
4								
5								
6								

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pits excavated using 0.60m bucket.

GROUNDWATER: Groundwater encountered at 2.50m, no rise recorded.

STABILITY: Trial pit generally unstable and collapsing from 2.60m.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: Trial pit terminated at 2.60m due to instability and groundwater ingress.

TRIAL PIT LOG



Pit No
TP02
Sheet 1 of 1

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 271165 N 202259 Level: 23.52mAOD	Date 20/04/2023
Location: Trebanos	Dimensions: 2.20m	Depth 2.70m	Scale 1 : 37.5
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)			Logged By SPM

(m)	Water Levels	Samples & In Situ Testing			Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result				
1		B ES	0.10 - 0.30 0.10		MADE GROUND: Grass over soft sandy CLAY with dark brown frequent rootlets (<2mm).	0.10	23.42	
		B ES	0.50 - 0.70 0.50		MADE GROUND: Dark greyish brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL and COBBLES of brick fragments, quartzite and concrete with rare sub-rounded boulders of quartzite and siliceous material.			
		B D ES	1.00 - 1.20 1.00		1.00-2.30m: Occasional pockets of stiff brownish grey very sandy clay.	(2.40)		
2		B ES	2.10 - 2.30 2.10					
3		B	2.70 - 2.75		Brown very sandy slightly clayey sub-rounded and rounded fine to coarse GRAVEL and sub-rounded COBBLES of siliceous material.	2.50	21.02	
					Trial pit completed at 2.70m	2.70	20.82	
4								
5								
6								

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pits excavated using 0.60m bucket.

GROUNDWATER: Groundwater encountered at 2.50m, no rise recorded.

STABILITY: Trial pit generally unstable and collapsing from 2.70m.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: Trial pit terminated at 2.70m due to instability and groundwater ingress.

TRIAL PIT LOG



Pit No
TP03
Sheet 1 of 1

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 271094 N 202206 Level: 23.23mAOD	Date 19/04/2023
Location: Trebanos	Dimensions: 3.20m	Depth 2.80m	Scale 1 : 37.5
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)			Logged By SB

(m)	Water Levels	Samples & In Situ Testing			Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result				
					MADE GROUND: Concrete.			
		B ES	0.20		MADE GROUND: Pinkish grey slightly sandy angular to sub-angular fine to coarse GRAVEL of limestone.	0.15 0.25	23.08 22.98	
		ES	0.50		MADE GROUND: Dark brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of clinker, brick fragments, concrete, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.			
1		B D ES	1.00 - 1.50 1.00			(1.85)		
		ES	1.50					
2					1.80m: Medium cobble content. Cobbles are sub-angular to sub-rounded of siliceous material.			
		B ES	2.50 - 3.00 2.50		Greyish brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of siliceous material with medium cobble content. Cobbles are sub-rounded of siliceous material.	2.10 (0.70)	21.13	
3					Trial pit completed at 2.80m	2.80	20.43	
4								
5								
6								

EQUIPMENT: Floor saw, JCB 3CX Mechanical Excavator and breaker.

METHOD: Trial pits excavated using 0.60m bucket.

GROUNDWATER: Rapid water seepage at 2.80m. Becoming damp at 2.40m.

STABILITY: Trial pit generally unstable and collapsing from 2.80m.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: Strata 0.25-0.65m very compact and required JCB breaker to penetrate. Terminated at 2.80m due to instability.

TRIAL PIT LOG



Pit No
TP04
Sheet 1 of 1

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 271054 N 202163 Level: 23.35mAOD	Date 19/04/2023
Location: Trebanos	Dimensions: 2.80m	Scale 1 : 37.5	Logged By SB
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)	Depth 2.80m		

(m)	Water Levels	Samples & In Situ Testing			Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result				
1		ES	0.20		MADE GROUND: Firm brown slightly gravelly slightly sandy CLAY with occasional roots and rootlets (<3mm) and low cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete fragments. Sand is of ash.	(0.60)	22.75	
		B ES	0.50 - 1.00 0.50			0.60		
		B ES	1.00 - 1.50 1.00		MADE GROUND: Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, porcelain and glass fragments, sandstone and clinker with medium cobble content. Cobbles are sub-rounded of siliceous material. Sand is of ash.	(1.80)		
		B D	1.50 - 2.00					
2		ES	2.00					
3		B ES	2.50 - 2.80 2.50		Greyish brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material, quartzite and sandstone with high cobble content. Cobbles are sub-rounded of siliceous material.	2.40 (0.40)	20.95	
					Trial pit completed at 2.80m	2.80	20.55	
4								
5								
6								

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pits excavated using 0.60m bucket.

GROUNDWATER: Seepage at 2.40m. No rise recorded.

STABILITY: Trial pit generally unstable and collapsing from 2.80m.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: Terminated at 2.80m, due to instability.

TRIAL PIT LOG



Pit No
TP05
Sheet 1 of 1

Telephone: 01452 739165, Fax: 01452 739220, Email: info@ccground.co.uk

Project Name: Trebanos Storm Outfall	Project No: C7932	Co-ords: E 270994 N 202147 Level: 22.80mAOD	Date 19/04/2023
Location: Trebanos	Dimensions: 3.00m	Depth 2.70m	Scale 1 : 37.5
Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)			Logged By SB

(m)	Water Levels	Samples & In Situ Testing			Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result				
1		ES	0.20		MADE GROUND: Grass over firm brown slightly gravelly slightly sandy CLAY with frequent rootlets (<1mm). Gravel is angular to sub-rounded fine to coarse of siliceous material and brick fragments.	(0.35)	22.45	
		B ES	0.50 - 1.00 0.50		MADE GROUND: Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, brick fragments, clinker and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm). Cobbles are sub-rounded of siliceous material.	0.35 (0.75)		
		B D ES	1.00 - 1.50 1.00		MADE GROUND: Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	1.10 (1.40)		
2		B ES	2.00 - 2.50 2.00					
3		B ES	2.50 2.50 - 2.70 2.50		Greyish brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material with medium cobble content. Cobbles are sub-rounded of siliceous material.	2.50	20.30	
						2.70	20.10	
					Trial pit completed at 2.70m			
4								
5								
6								

EQUIPMENT: JCB 3CX Mechanical Excavator.

METHOD: Trial pits excavated using 0.60m bucket.

GROUNDWATER: Seepage at 2.40m, no rise recorded.

STABILITY: Trial pit generally unstable and collapsing from 2.70m.

BACKFILL: Trial pit backfilled with arisings and compacted with excavator bucket.

REMARKS: Terminated at 2.70m, due to instability.

INSPECTION PIT LOG

Pit No
SPM01
Sheet 1 of 1

Telephone: , Fax: , Email:

Project Name: Trebanos Storm Outfall

Project No:

C7932

Co-ords: E 271084 N 202185

Level: 23.19mAOD

Date
19/04/2023

Location: Trebanos

Dimensions: m

Depth
0.10m

E

Scale
1 : 6.25

Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)

Logged By
AK

(m)	Water Levels	Samples & In Situ Testing			Description	Depth (m)	Level (mAOD)	Legend
		No/Type	Depth (m)	Result				
1		B	0.00 - 0.10		MADE GROUND: Vegetation over dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick and plastic fragments and with frequent roots and rootlets (<10mm).	(0.10)	23.09	
		D ES	0.10		Inspection pit completed at 0.10m	0.10		

EQUIPMENT: Hand digging tools.

METHOD: Hand dug inspection pit: 0.00-0.10m.

GROUNDWATER: None encountered.

REMARKS: Sample taken in existing stockpiled material.

INSPECTION PIT LOG

Pit No
SPM02
Sheet 1 of 1

Telephone: , Fax: , Email:

Project Name: Trebanos Storm Outfall

Project No:

C7932

Co-ords: E 271083 N 202190

Level: 23.17mAOD

Date
19/04/2023

Location: Trebanos

Dimensions: m

Depth
0.10m

E

Scale
1 : 6.25

Client: Morgan Sindall (Welsh Water Capital Delivery Alliance)

Logged By
AK

(m)	Water Levels	Samples & In Situ Testing			Description	Depth (m)	Level (mAD)	Legend
		No/Type	Depth (m)	Result				
1		B	0.00 - 0.10		MADE GROUND: Vegetation over gravelly clayey SAND with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.	(0.10)	23.07	
		D ES	0.10		Inspection pit completed at 0.10m	0.10		

EQUIPMENT: Hand digging tools.

METHOD: Hand dug inspection pit: 0.00-0.10m.

GROUNDWATER: None encountered.

REMARKS: Sample taken in existing stockpiled material.

APPENDIX C

Photographs

Core Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Contract Name:

Trebanos Storm Outfall

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Borehole ID:

BH01

Box No:

Depth:

0.00-1.20m

Core Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Borehole ID:

BH01

Contract Name:

Trebanos Storm Outfall

Box No:

1

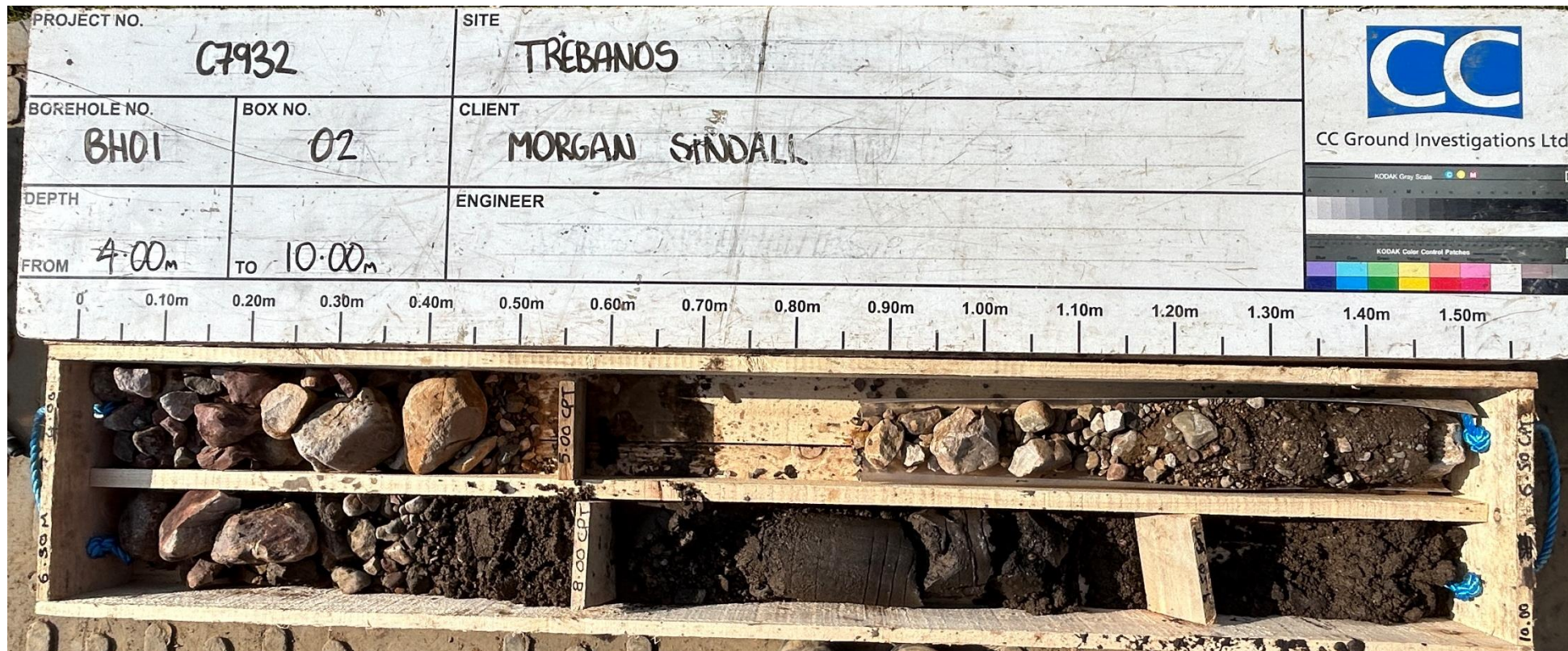
Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Depth:

1.20-4.00m

Core Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Borehole ID:

BH01

Contract Name:

Trebanos Storm Outfall

Box No:

2

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Depth:

4.00-10.00m

Core Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Borehole ID:

BH02

Contract Name:

Trebanos Storm Outfall

Box No:

Client:

Morgan Sindall (Welsh Water
Capital Delivery Alliance)

Depth:

0.00-1.20m

Core Photograph

PROJECT NO. C7932		SITE TREBANOS WWTW		 CC Ground Investigations Ltd  
BOREHOLE NO. BH02	BOX NO. 01	CLIENT MORGAN SINDALL		
DEPTH FROM 1.20m	TO 4.00m	ENGINEER		




CC Ground Investigations Ltd

Contract ID:

C7932

Contract Name:

Trebanos Storm Outfall

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Borehole ID:

BH02

Box No:

1

Depth:

1.20-4.00m

Core Photograph

PROJECT NO. C7932		SITE TREBANOS WWTW		 CC Ground Investigations Ltd KODAK Gray Scale KODAK Color Control Patches
BOREHOLE NO. BH02	BOX NO. 02	CLIENT MORGAN SINDALL		
DEPTH FROM 4.00m	TO 8.50m	ENGINEER		




CC Ground Investigations Ltd

Contract ID:

C7932

Contract Name:

Trebanos Storm Outfall

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Borehole ID:

BH02

Box No:

2

Depth:

4.00-8.50m

Core Photograph

PROJECT NO. C7932		SITE TREBANOS WWTW		 CC Ground Investigations Ltd 
BOREHOLE NO. BH02	BOX NO. 03	CLIENT MORGAN SINDALL		
DEPTH FROM 8.50m	TO 10.00m	ENGINEER		




CC Ground Investigations Ltd

Contract ID:

C7932

Contract Name:

Trebanos Storm Outfall

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Borehole ID:

BH02

Box No:

3

Depth:

8.50-10.00m

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP01

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP01

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP01

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP02

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP02

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP02

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP03

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.80m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP03

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.80m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP03

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.80m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP04

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.80m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP04

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.80m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP04

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.80m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP05

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Hole ID:

TP05

Contract Name:

Trebanos Storm
Outfall

Depth:

0.00-2.70m

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Trial Pit Photograph



CC Ground Investigations Ltd

Contract ID:

C7932

Contract Name:

Trebanos Storm
Outfall

Client:

Morgan Sindall (Welsh Water Capital Delivery Alliance)

Hole ID:

TP05

Depth:

0.00-2.70m

APPENDIX D

Geotechnical Laboratory Test Results



LABORATORY REPORT



Contract Number: PSL23/3488

Report Date: 06 June 2023
Client's Reference: C7932
Client Name: CC Ground Investigations Ltd
Unit A2 Innsworth Technology Park.
Innsworth Lane
Gloucester
GL3 1DL

For the attention of: Richard Tucker

Contract Title: Trebanos Storm Outfall
Date Received: 11/5/2023
Date Commenced: 11/5/2023
Date Completed: 6/6/2023

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

L Knight
(Assistant Laboratory Manager)

R Berriman
(Associate Director)

S Royle
(Laboratory Manager)

A Watkins
(Managing Director)

S Eyre
(Senior Technical Coordinator)

A Fry
(Section Manager)

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
BH01		B	1.70	2.00	Dark brown very sandy silty GRAVEL.
BH01		B	3.50	4.00	Dark brown very sandy silty clayey GRAVEL.
BH01		B	5.50	6.50	Brown mottled grey slightly sandy GRAVEL with cobbles.
BH01		B	8.50	9.50	Dark brown silty SAND and GRAVEL.
BH02		B	1.00	1.20	Dark brown silty SAND and GRAVEL.
BH02		B	2.50	3.00	Dark brown very sandy slightly silty GRAVEL.
BH02		D	4.00		Brown very sandy CLAY.
BH02		B	4.50	5.50	Brown mottled grey slightly sandy GRAVEL with cobbles.
BH02		B	9.40	10.00	Brown silty SAND and GRAVEL.
SPM01		B	0.00	0.10	Dark brown very sandy very clayey GRAVEL.
SPM02		B	0.00	0.10	Dark brown gravelly very sandy CLAY
TP01		B	1.90	2.10	Brown very sandy slightly silty GRAVEL.
TP02		B	1.00	1.20	Brown silty clayey SAND and GRAVEL.
TP02		B	2.70	2.75	Brown very sandy silty GRAVEL.
TP03		B	1.00	1.50	Dark brown very sandy silty GRAVEL.
TP03		B	2.50	3.00	Brown very sandy slightly silty GRAVEL.
TP04		B	1.50	2.00	Brown very sandy slightly silty GRAVEL.
TP05		B	1.00	1.50	Dark brown very gravelly silty SAND.
TP05		B	2.50	2.70	Dark brown very sandy slightly silty GRAVEL.



Trebanos WwTw

Contract No:

PSL23/3488

Client Ref:

C7932

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

[illegible]

SYMBOLS : NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**



Trebanos WwTw

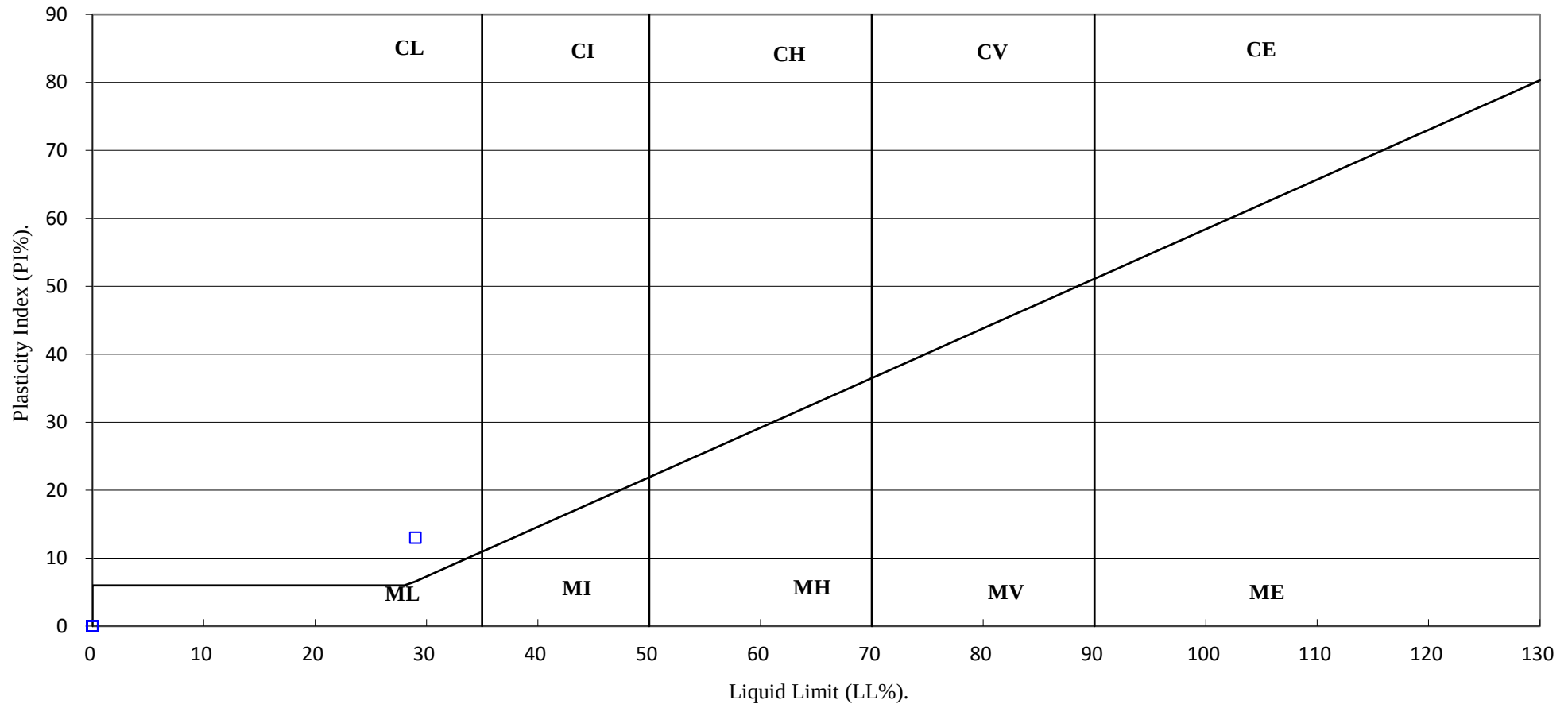
Contract No:

PSL23/3488

Client Ref:

C7932

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



Trebanos WwTw

Contract No:

PSL23/3488

Client Ref:

C7932

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

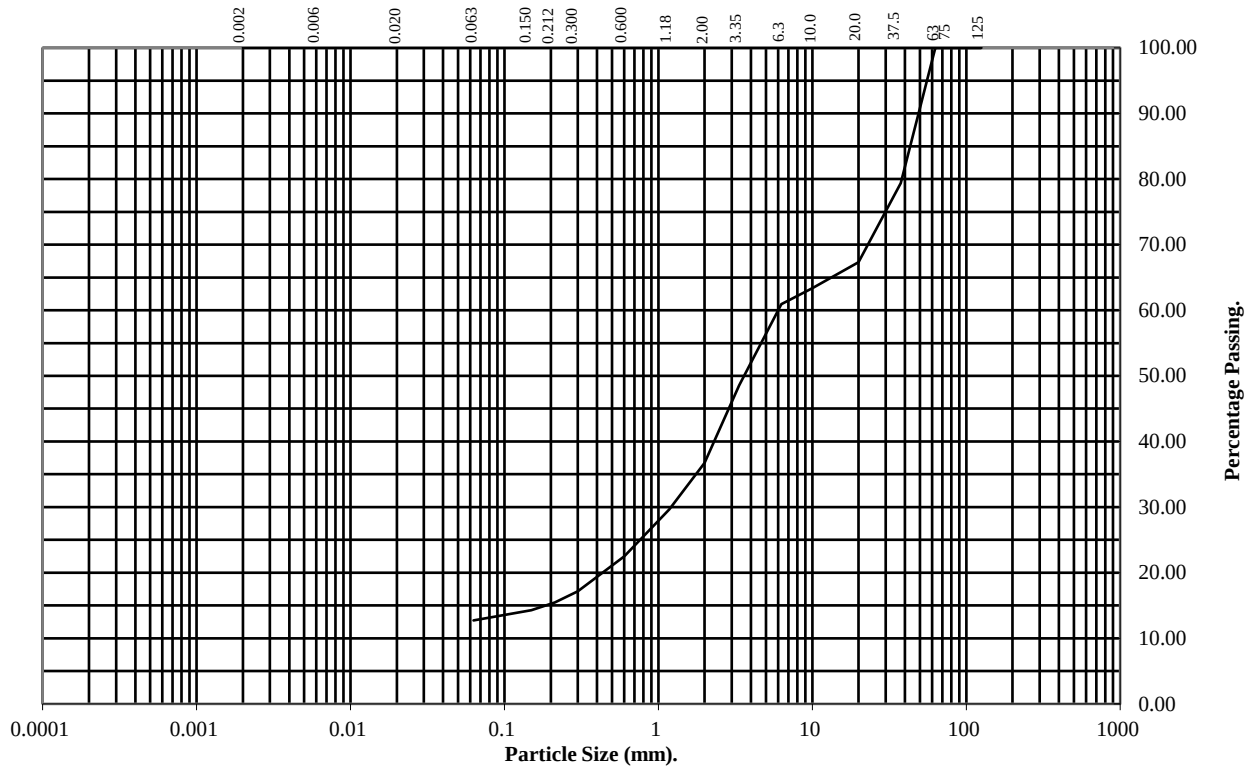
Hole Number: BH01

Top Depth (m): 1.70

Sample Number:

Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	79
20	67
10	63
6.3	61
3.35	49
2	37
1.18	30
0.6	22
0.3	17
0.212	15
0.15	14
0.063	13

Soil Fraction	Total Percentage
Cobbles	0
Gravel	63
Sand	24
Silt/Clay	13

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

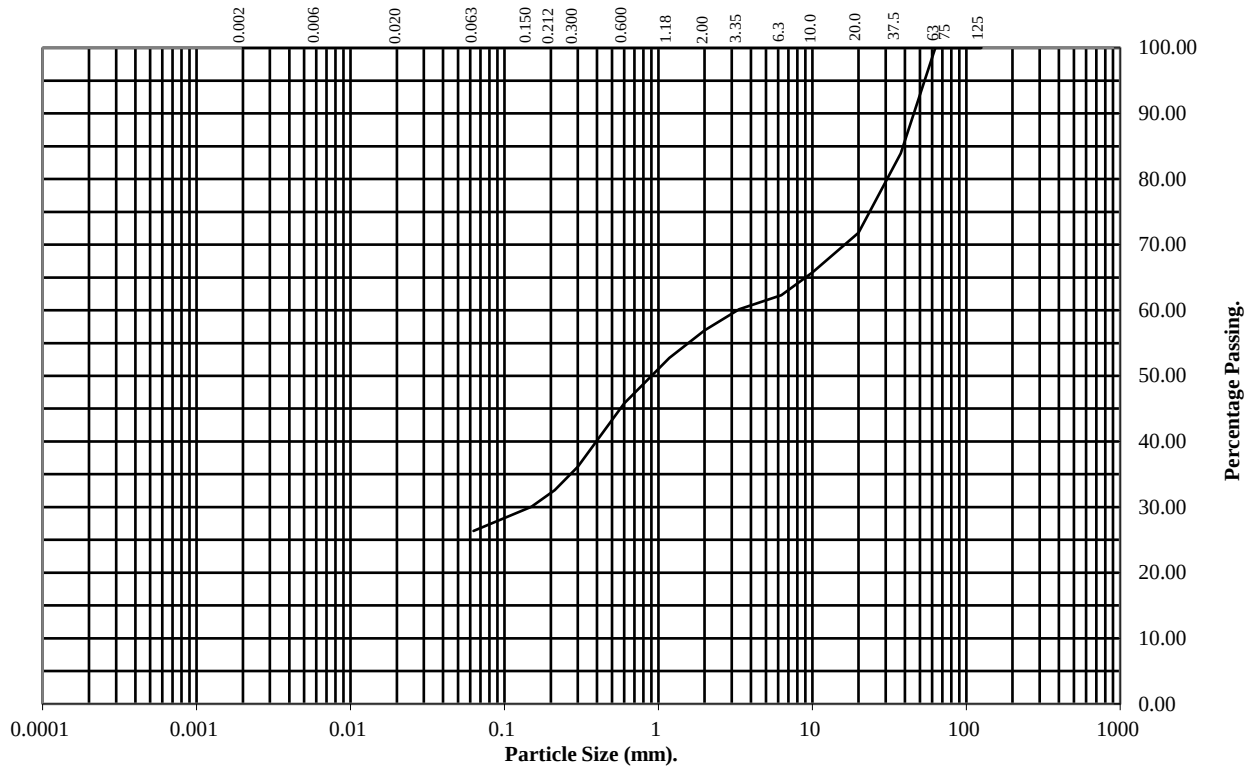
Hole Number: BH01

Top Depth (m): 3.50

Sample Number:

Base Depth(m): 4.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	84
20	72
10	66
6.3	62
3.35	60
2	57
1.18	53
0.6	46
0.3	36
0.212	33
0.15	30
0.063	26

Soil Fraction	Total Percentage
Cobbles	0
Gravel	43
Sand	31
Silt/Clay	26

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

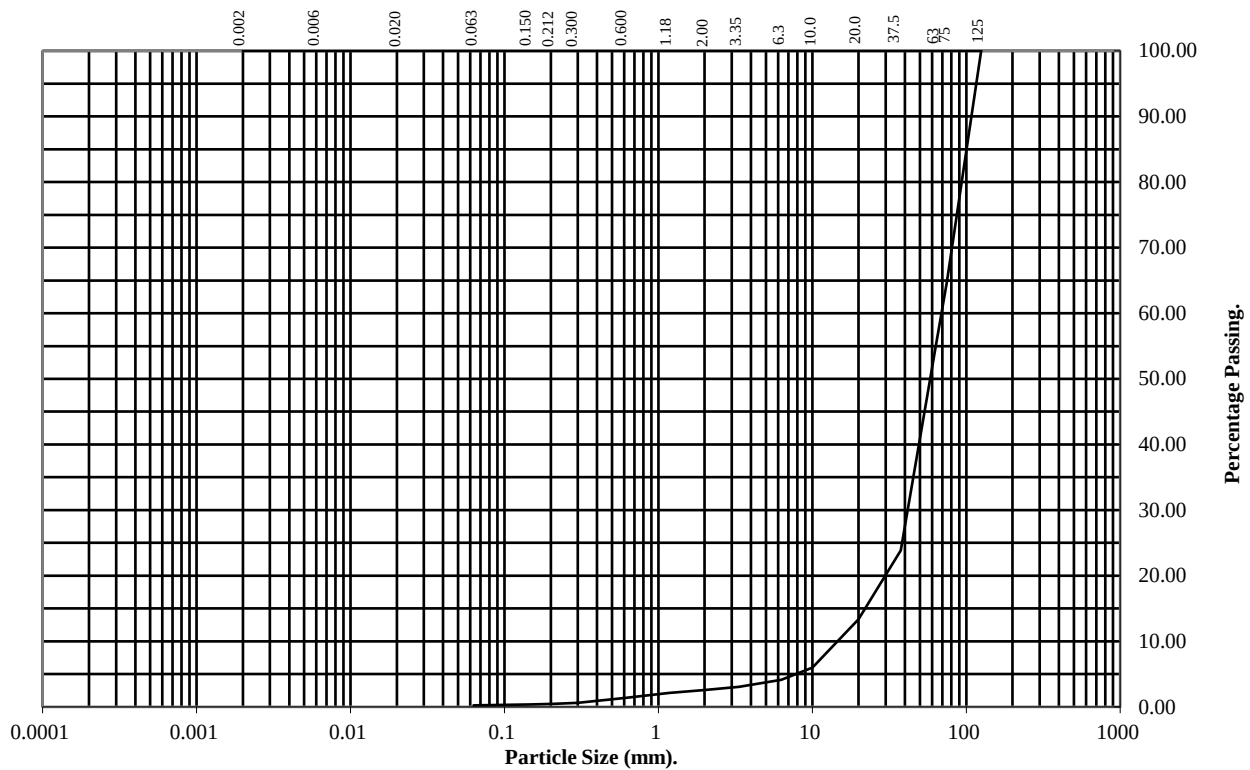
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH01 Top Depth (m): 5.50

Sample Number: Base Depth(m): 6.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	65
63	55
37.5	24
20	13
10	6
6.3	4
3.35	3
2	3
1.18	2
0.6	1
0.3	1
0.212	0
0.15	0
0.063	0

Soil Fraction	Total Percentage
Cobbles	45
Gravel	52
Sand	3
Silt/Clay	0

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

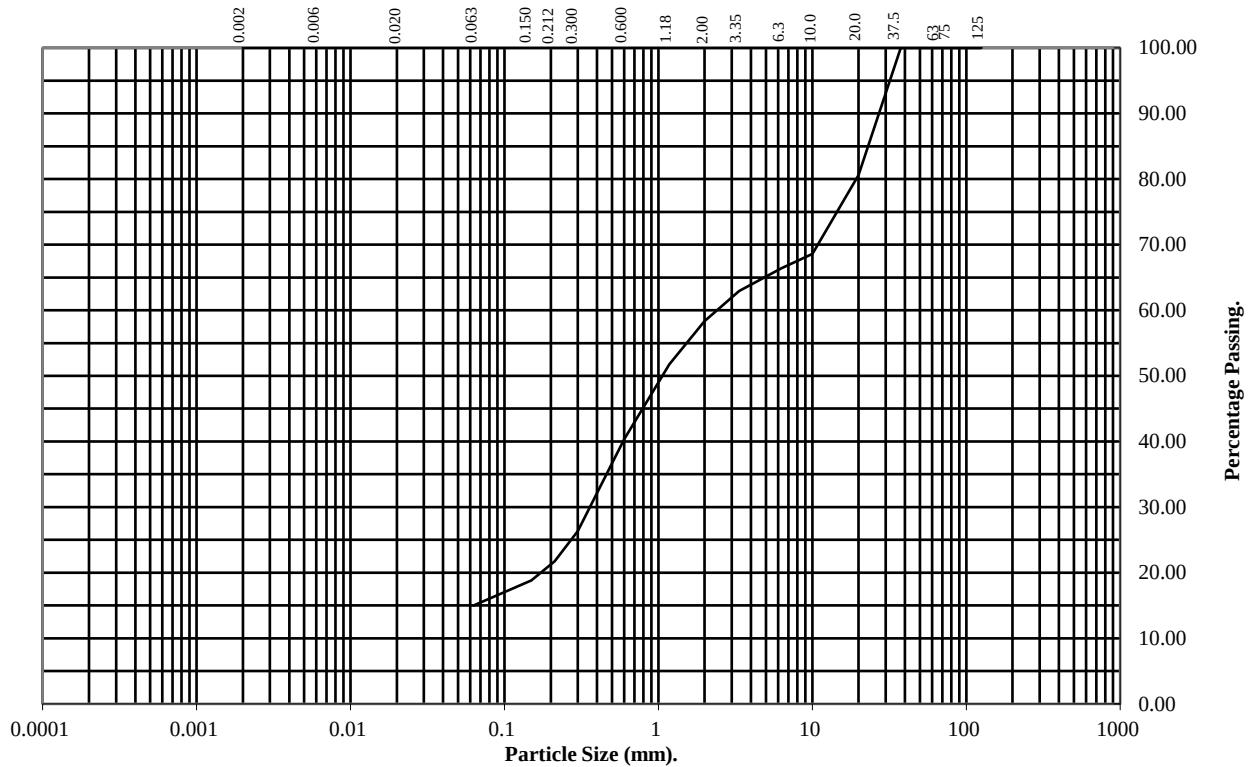
Hole Number: BH01

Top Depth (m): 8.50

Sample Number:

Base Depth(m): 9.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	81
10	69
6.3	66
3.35	63
2	58
1.18	52
0.6	40
0.3	26
0.212	22
0.15	19
0.063	15

Soil Fraction	Total Percentage
Cobbles	0
Gravel	42
Sand	43
Silt/Clay	15

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

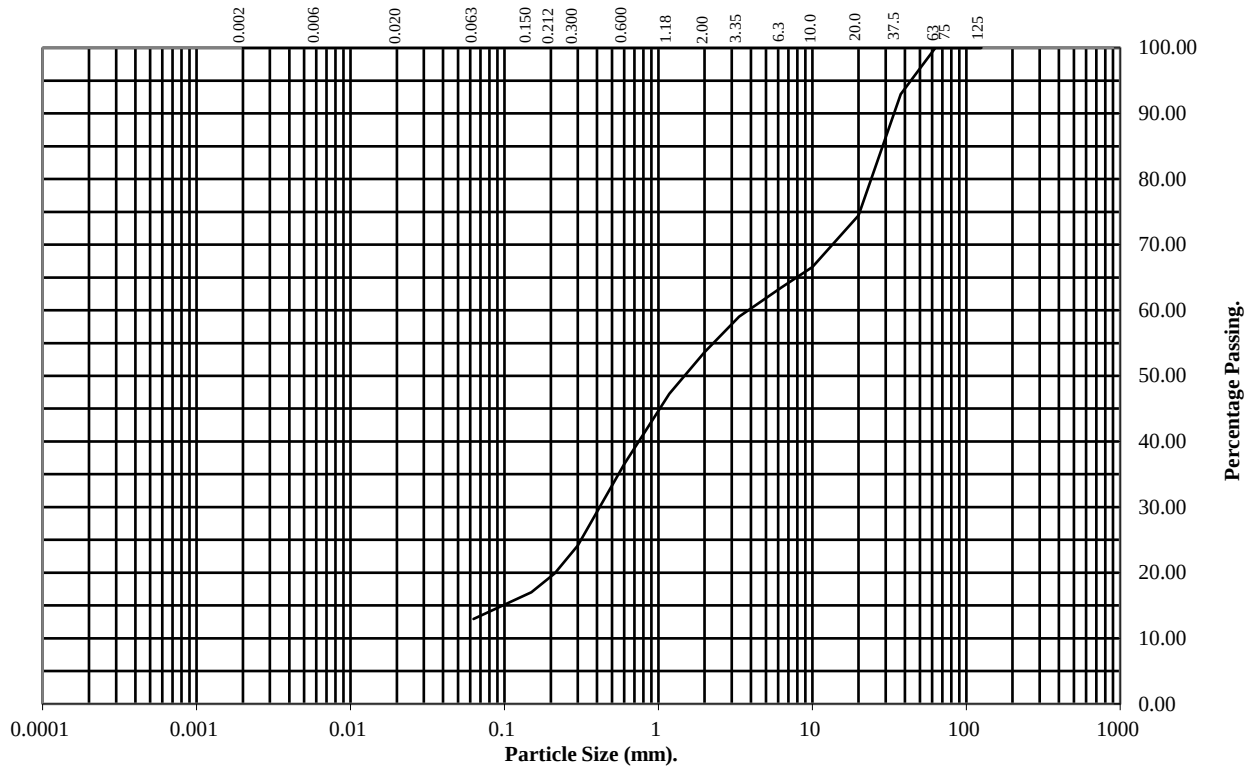
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH02 Top Depth (m): 1.00

Sample Number: Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	93
20	74
10	67
6.3	63
3.35	59
2	54
1.18	47
0.6	37
0.3	24
0.212	20
0.15	17
0.063	13

Soil Fraction	Total Percentage
Cobbles	0
Gravel	46
Sand	41
Silt/Clay	13

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

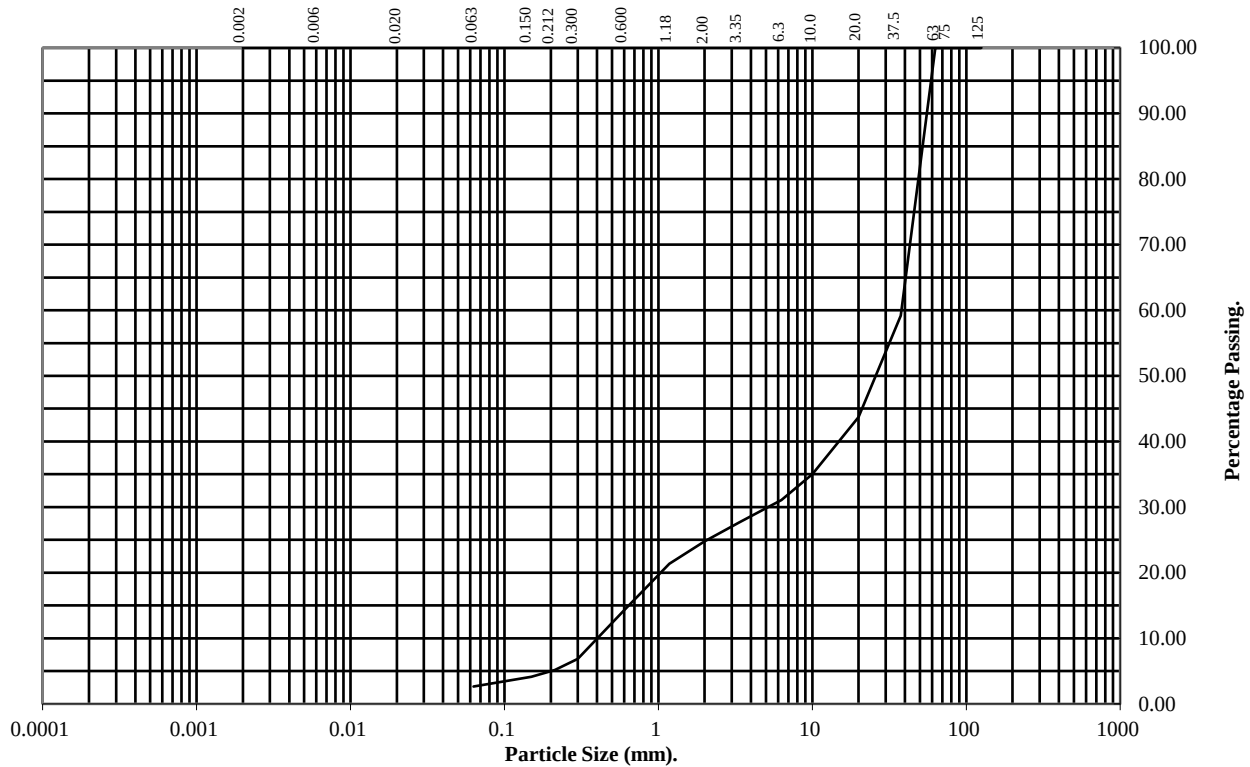
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH02 Top Depth (m): 2.50

Sample Number: Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	59
20	44
10	35
6.3	31
3.35	28
2	25
1.18	21
0.6	14
0.3	7
0.212	5
0.15	4
0.063	3

Soil Fraction	Total Percentage
Cobbles	0
Gravel	75
Sand	22
Silt/Clay	3

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

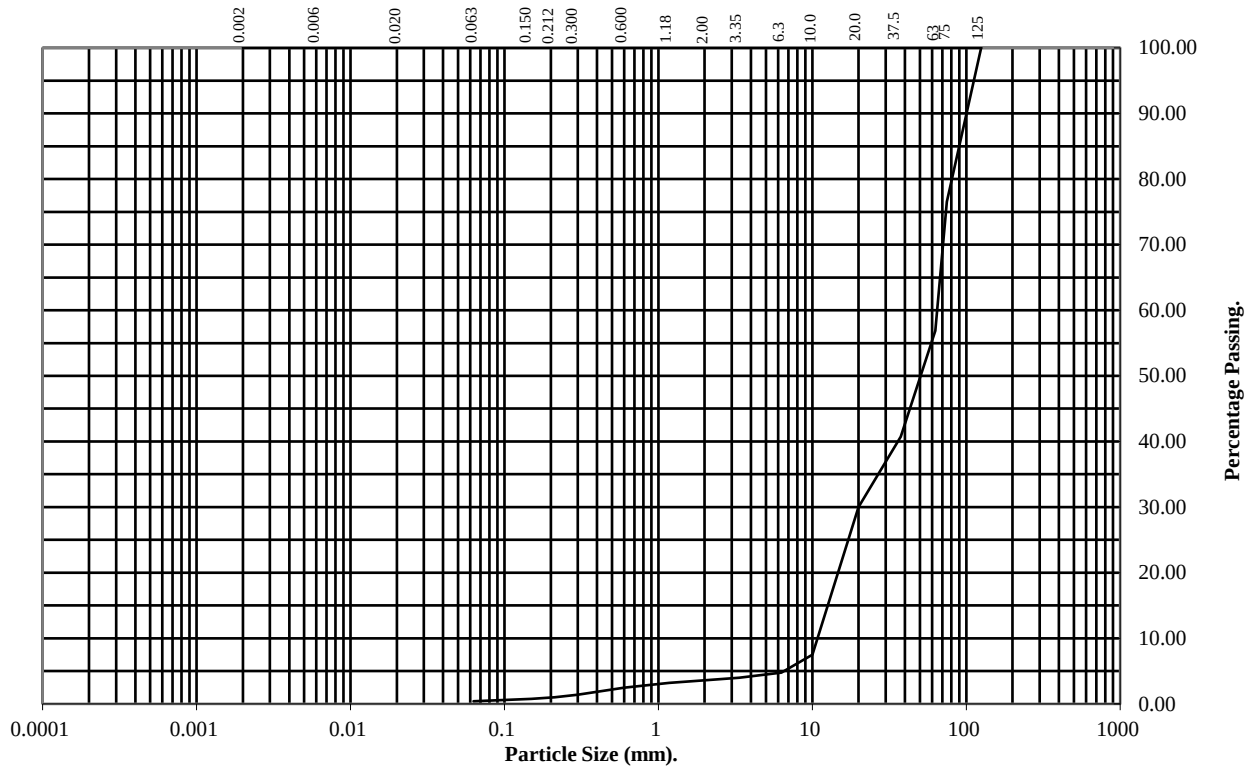
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: BH02 Top Depth (m): 4.50

Sample Number: Base Depth(m): 5.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	77
63	57
37.5	41
20	30
10	8
6.3	5
3.35	4
2	4
1.18	3
0.6	2
0.3	1
0.212	1
0.15	1
0.063	0

Soil Fraction	Total Percentage
Cobbles	43
Gravel	53
Sand	4
Silt/Clay	0

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

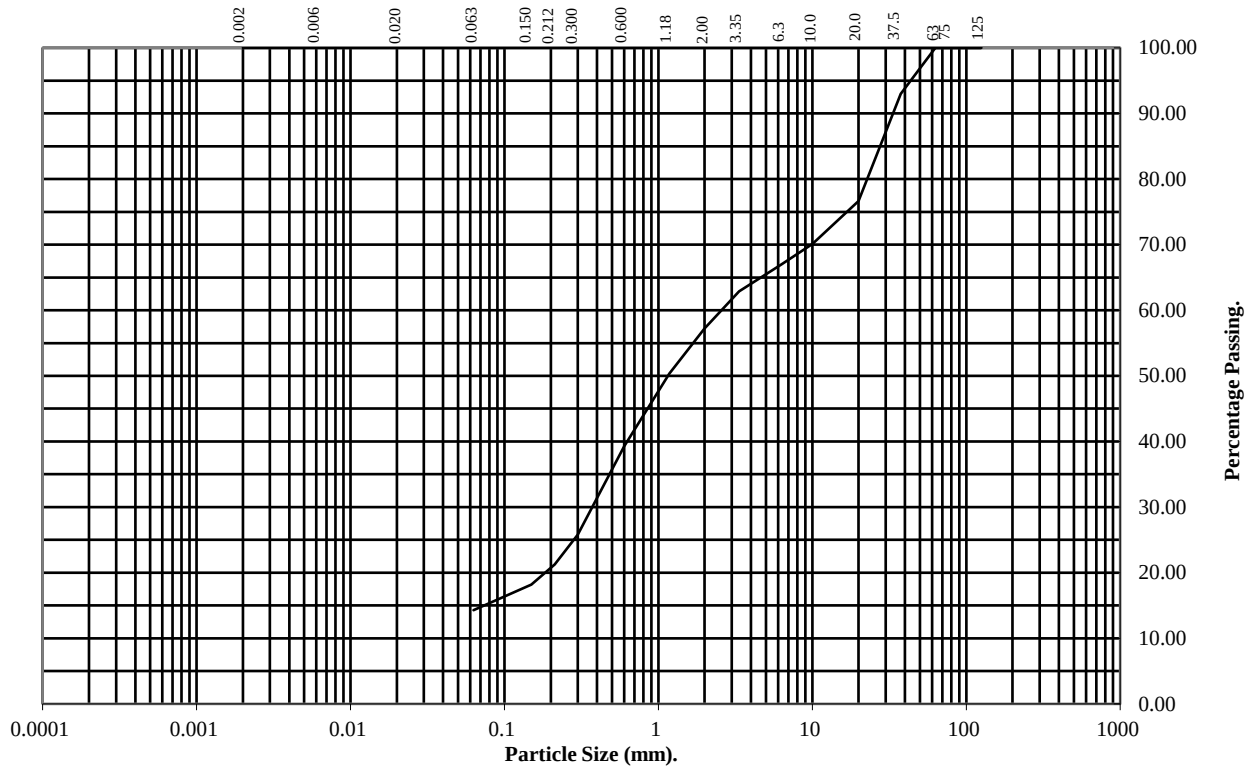
Hole Number: BH02

Top Depth (m): 9.40

Sample Number:

Base Depth(m): 10.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	93
20	77
10	70
6.3	67
3.35	63
2	57
1.18	50
0.6	39
0.3	26
0.212	21
0.15	18
0.063	14

Soil Fraction	Total Percentage
Cobbles	0
Gravel	43
Sand	43
Silt/Clay	14

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

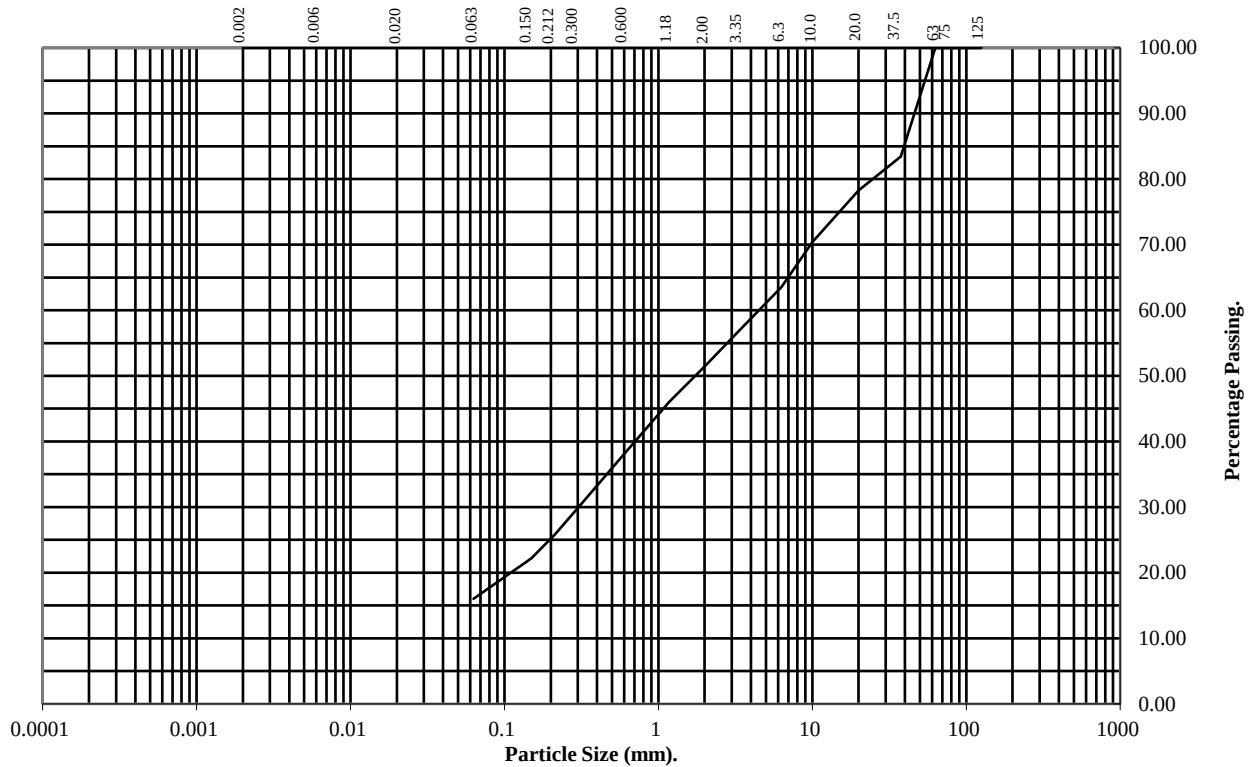
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: SPM01 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.10

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	83
20	78
10	70
6.3	64
3.35	57
2	51
1.18	46
0.6	38
0.3	30
0.212	26
0.15	22
0.063	16

Soil Fraction	Total Percentage
Cobbles	0
Gravel	49
Sand	35
Silt/Clay	16

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

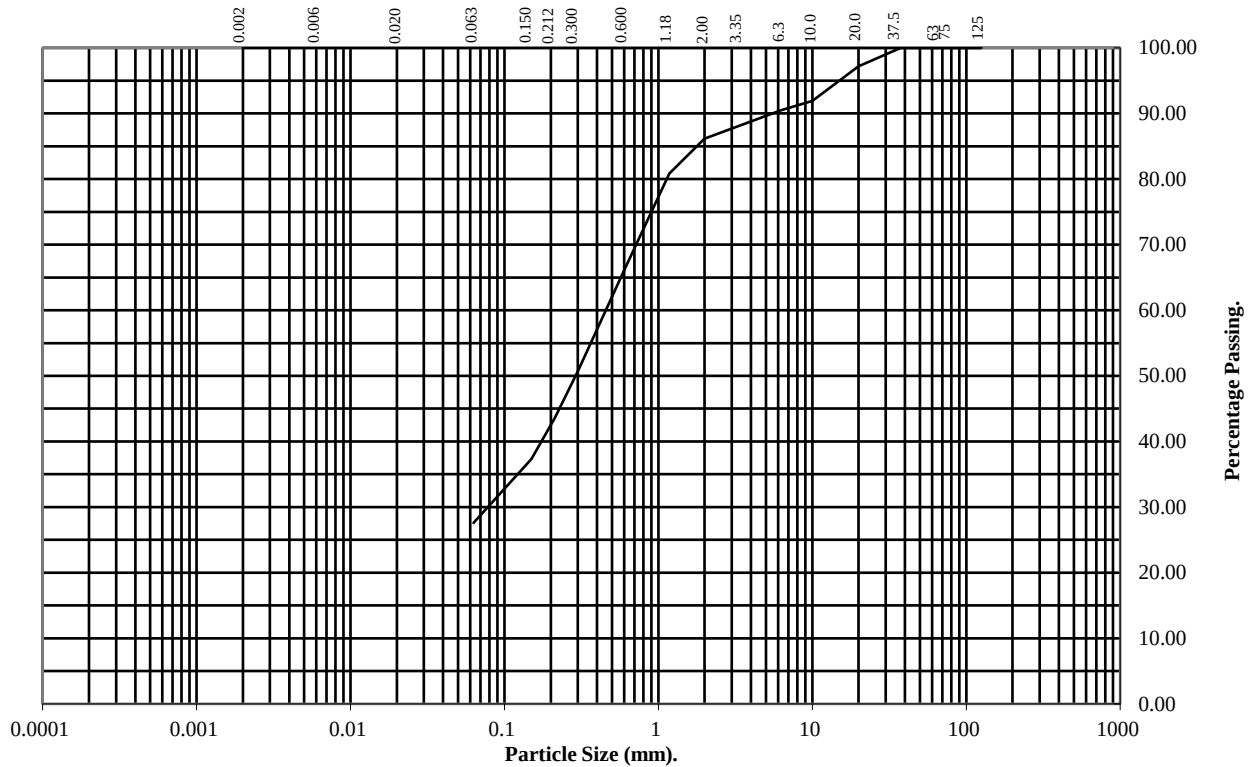
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: SPM02 Top Depth (m): 0.00

Sample Number: Base Depth(m): 0.10

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	97
10	92
6.3	90
3.35	88
2	86
1.18	81
0.6	66
0.3	51
0.212	44
0.15	37
0.063	28

Soil Fraction	Total Percentage
Cobbles	0
Gravel	14
Sand	58
Silt/Clay	28

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

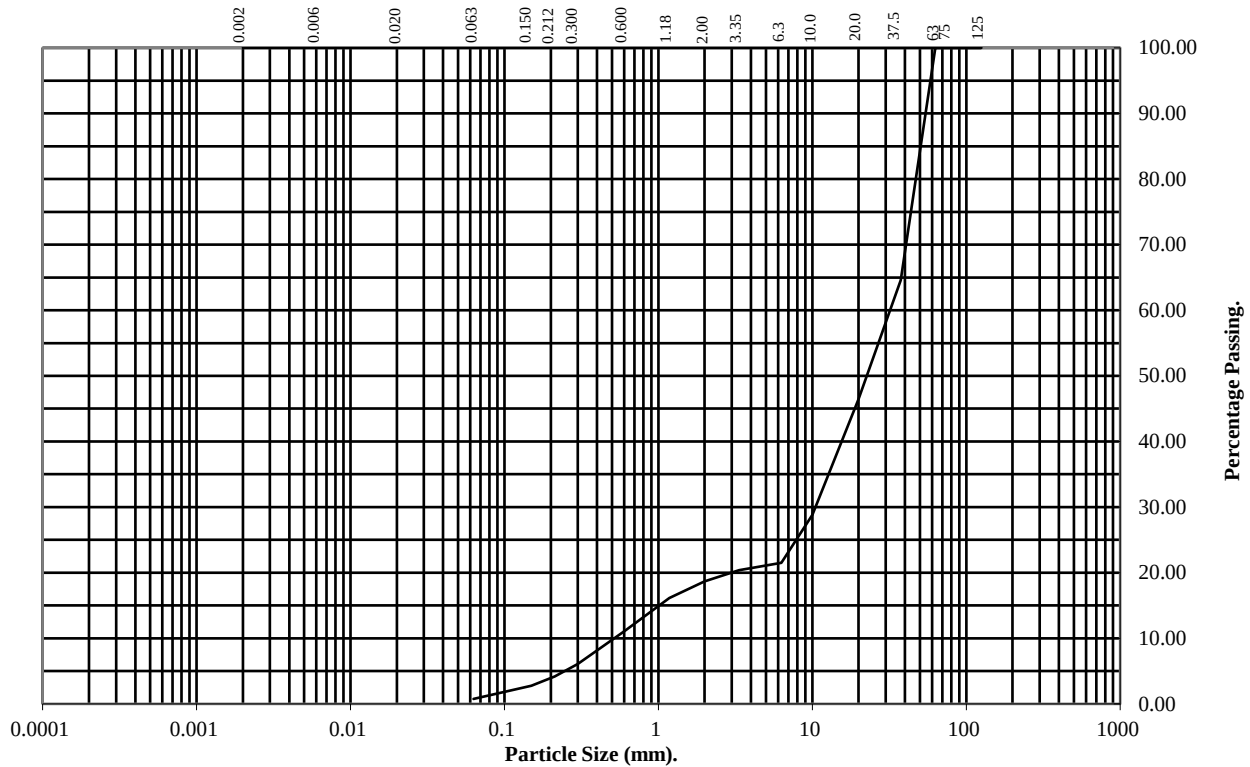
Hole Number: TP01

Top Depth (m): 1.90

Sample Number:

Base Depth(m): 2.10

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	65
20	46
10	29
6.3	22
3.35	20
2	19
1.18	16
0.6	11
0.3	6
0.212	4
0.15	3
0.063	1

Soil Fraction	Total Percentage
Cobbles	0
Gravel	81
Sand	18
Silt/Clay	1

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

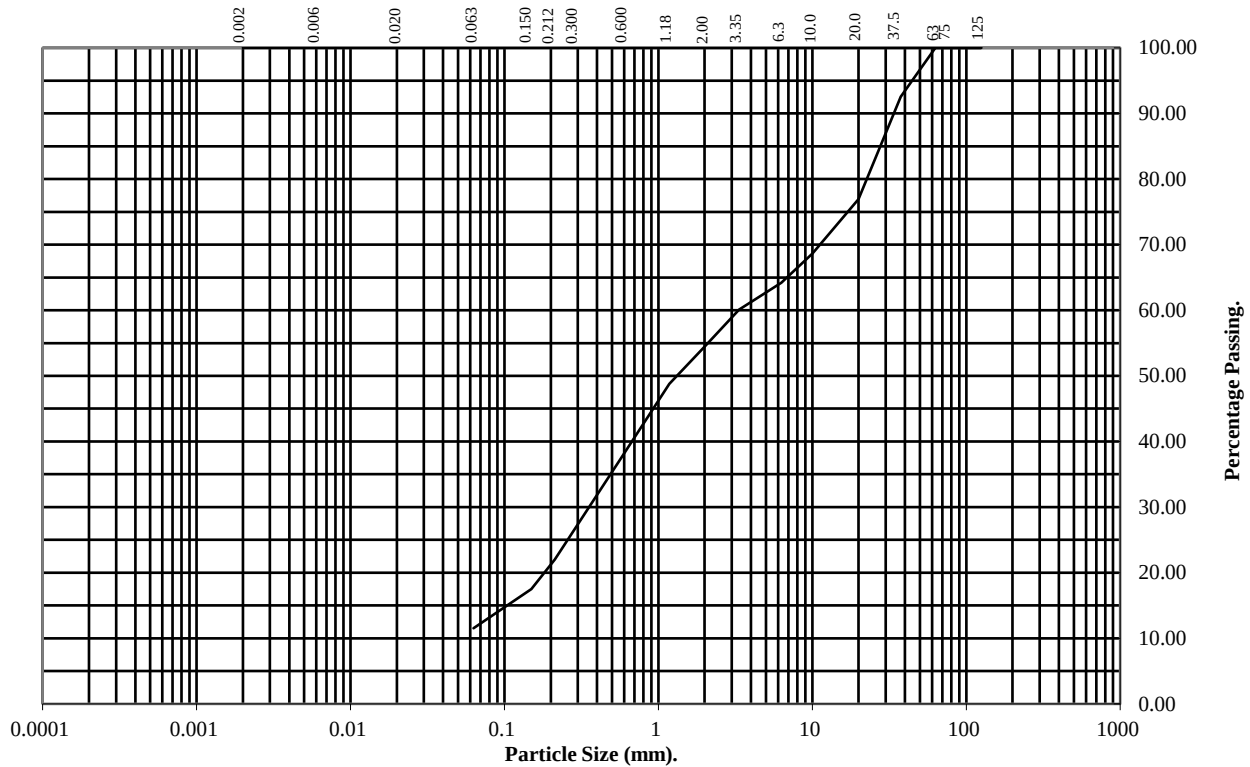
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP02 Top Depth (m): 1.00

Sample Number: Base Depth(m): 1.20

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	93
20	77
10	69
6.3	64
3.35	60
2	54
1.18	49
0.6	38
0.3	27
0.212	22
0.15	18
0.063	12

Soil Fraction	Total Percentage
Cobbles	0
Gravel	46
Sand	42
Silt/Clay	12

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

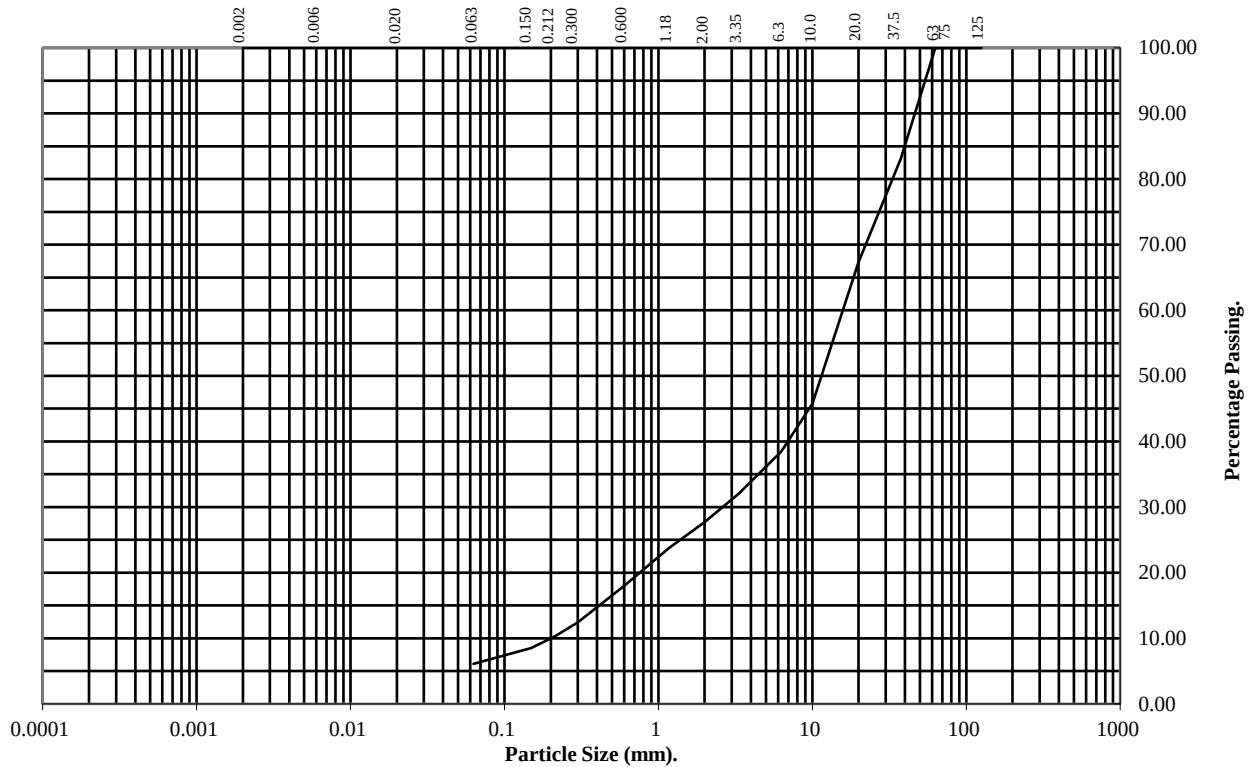
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP02 Top Depth (m): 2.70

Sample Number: Base Depth(m): 2.75

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	83
20	67
10	46
6.3	38
3.35	32
2	28
1.18	24
0.6	18
0.3	12
0.212	10
0.15	9
0.063	6

Soil Fraction	Total Percentage
Cobbles	0
Gravel	72
Sand	22
Silt/Clay	6

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

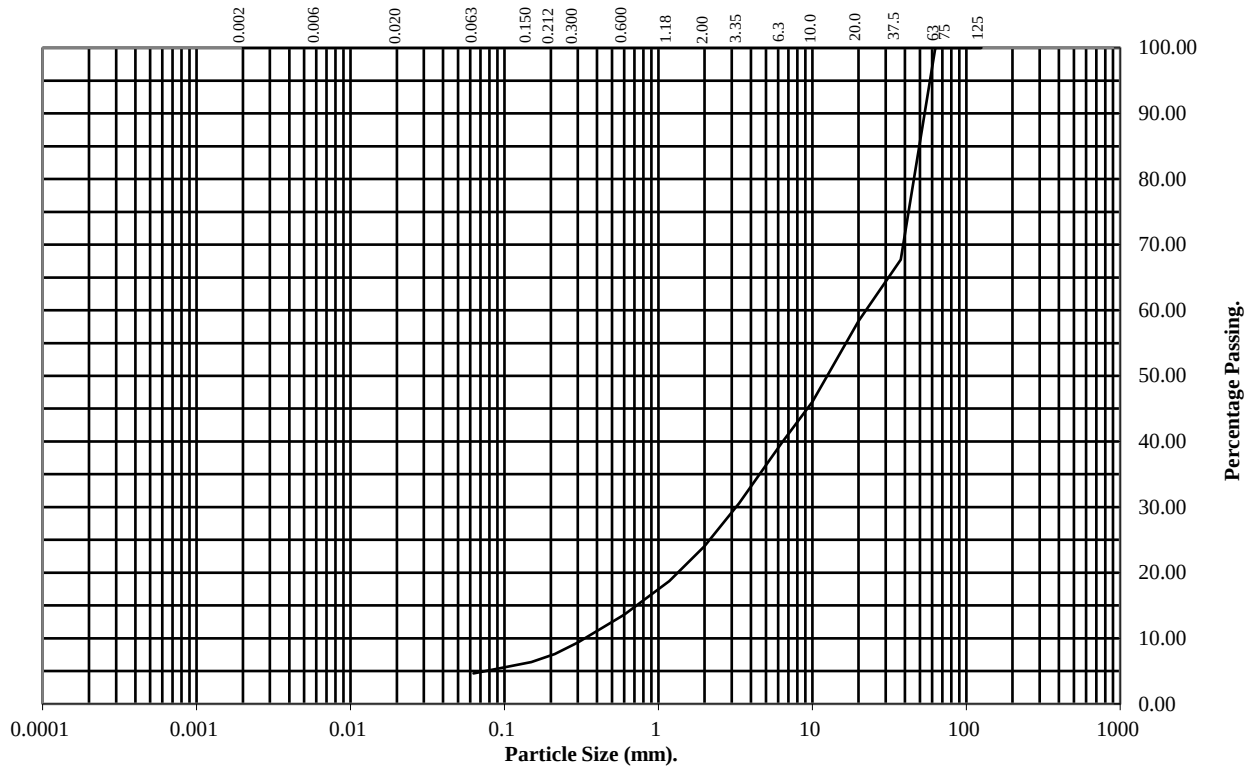
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP03 Top Depth (m): 1.00

Sample Number: Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	68
20	58
10	46
6.3	40
3.35	31
2	24
1.18	19
0.6	14
0.3	9
0.212	8
0.15	6
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	76
Sand	19
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

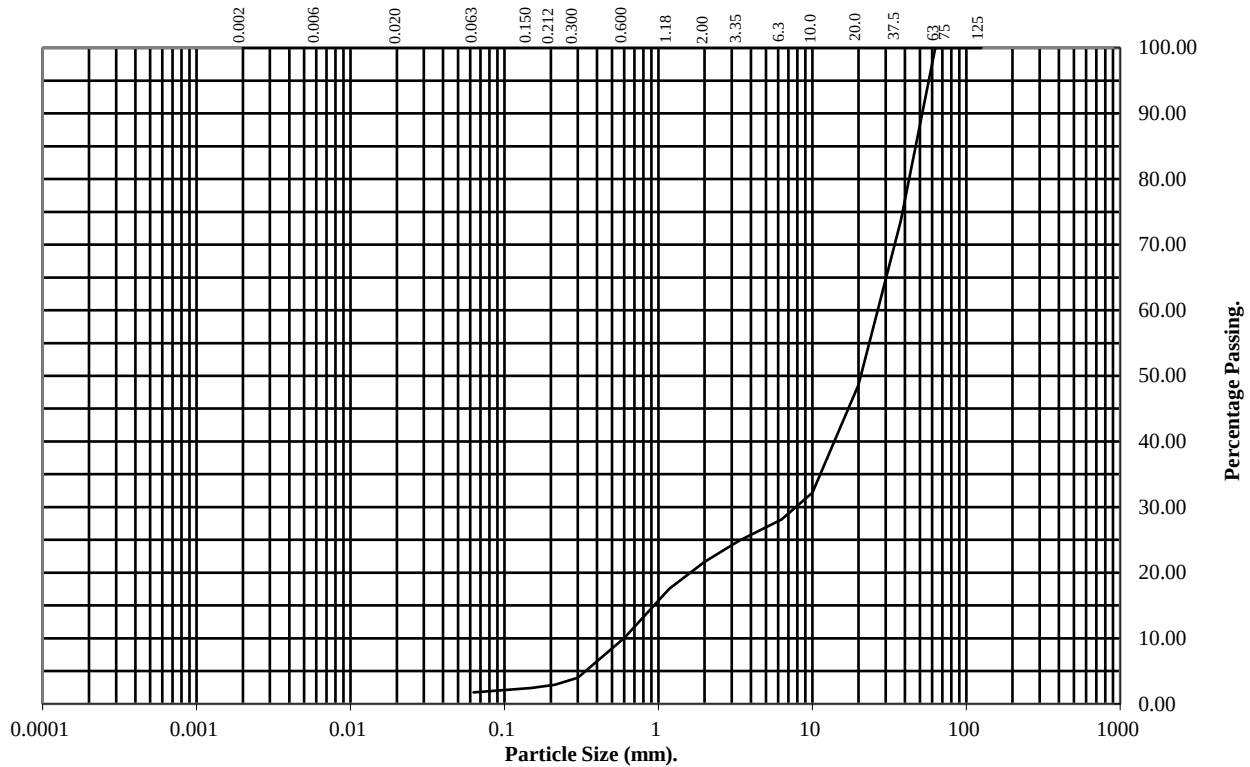
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP03 Top Depth (m): 2.50

Sample Number: Base Depth(m): 3.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	74
20	49
10	32
6.3	28
3.35	25
2	22
1.18	18
0.6	10
0.3	4
0.212	3
0.15	2
0.063	2

Soil Fraction	Total Percentage
Cobbles	0
Gravel	78
Sand	20
Silt/Clay	2

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

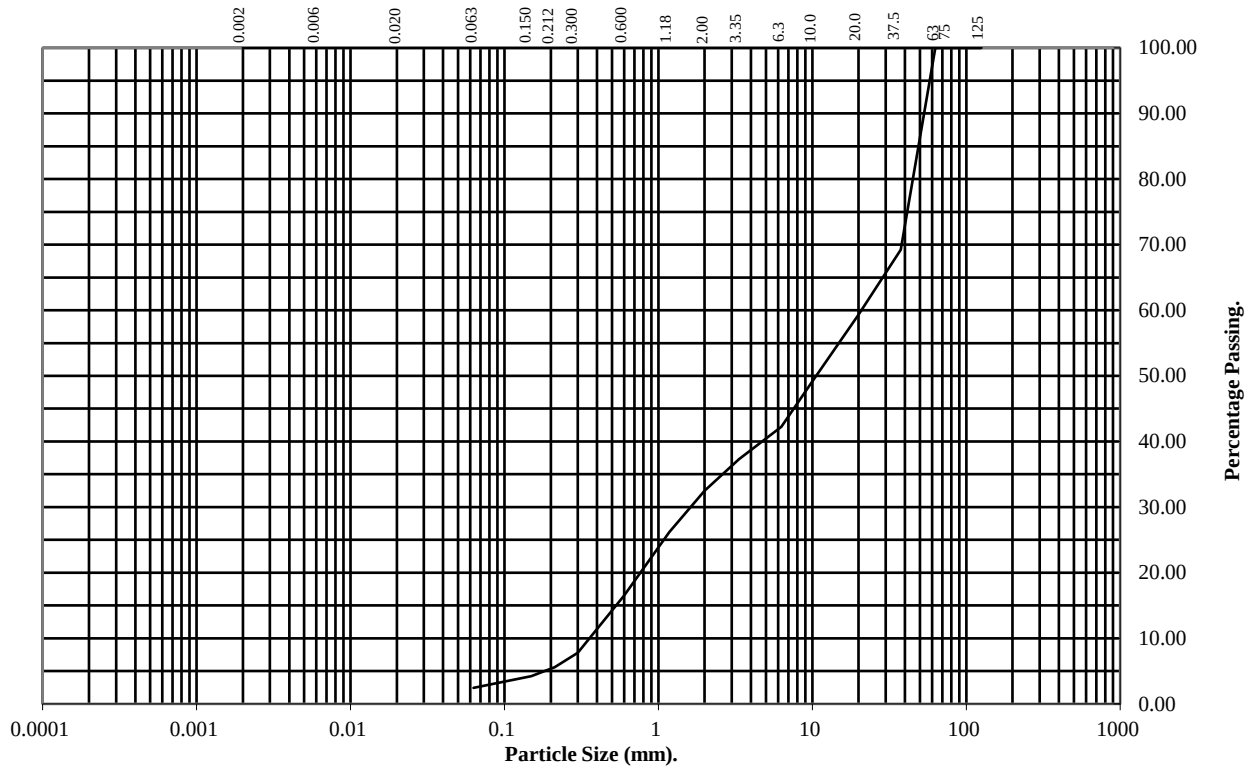
Hole Number: TP04

Top Depth (m): 1.50

Sample Number:

Base Depth(m): 2.00

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	69
20	59
10	49
6.3	42
3.35	37
2	32
1.18	26
0.6	17
0.3	8
0.212	6
0.15	4
0.063	2

Soil Fraction	Total Percentage
Cobbles	0
Gravel	68
Sand	30
Silt/Clay	2

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

PARTICLE SIZE DISTRIBUTION TEST

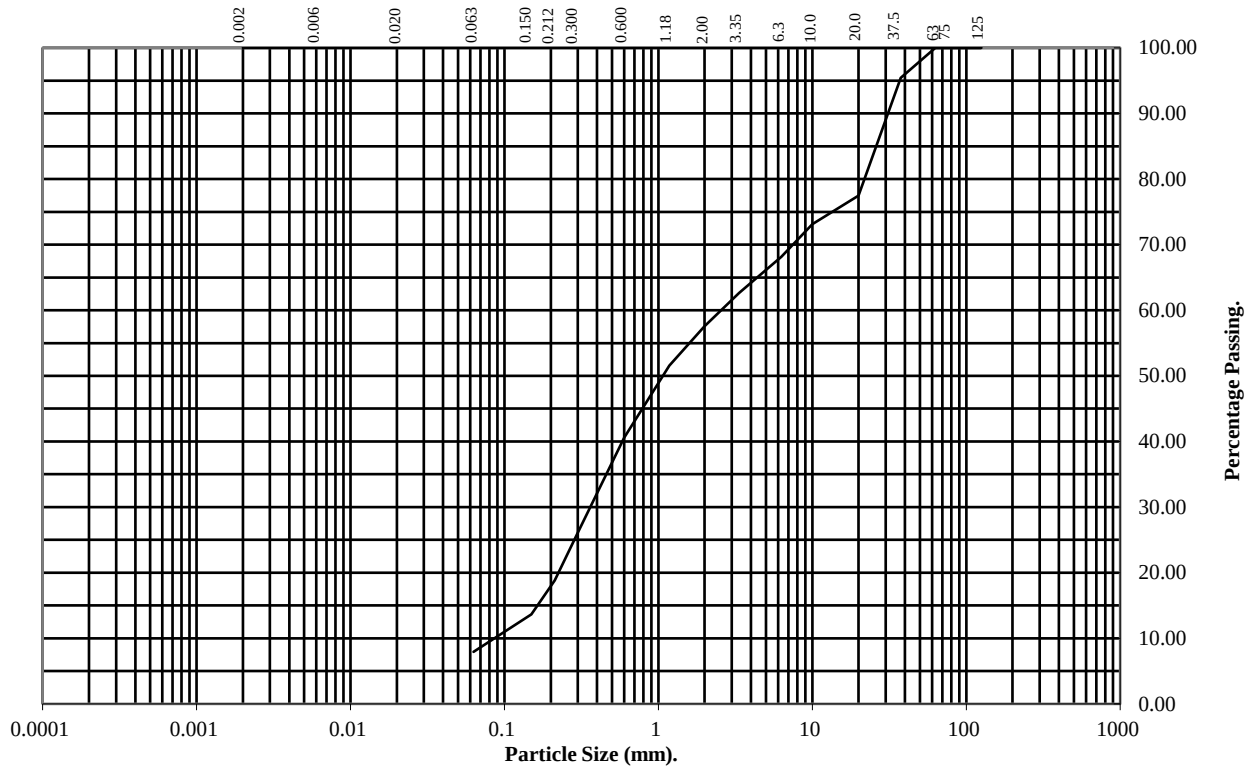
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP05 Top Depth (m): 1.00

Sample Number: Base Depth(m): 1.50

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	95
20	77
10	73
6.3	68
3.35	63
2	58
1.18	52
0.6	41
0.3	26
0.212	19
0.15	14
0.063	8

Soil Fraction	Total Percentage
Cobbles	0
Gravel	42
Sand	50
Silt/Clay	8

Remarks:

See Summary of Soil Descriptions



Trebanos WwTw

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Client Ref:
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PARTICLE SIZE DISTRIBUTION TEST

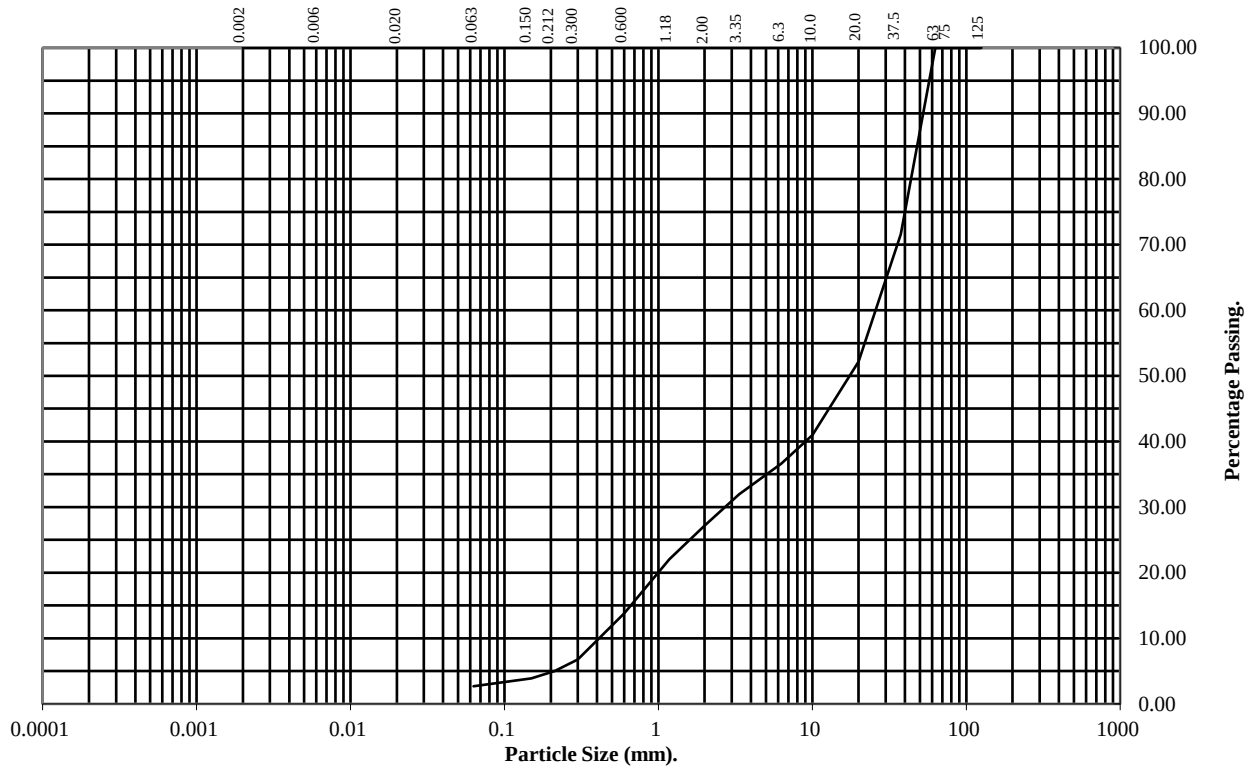
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP05 Top Depth (m): 2.50

Sample Number: Base Depth(m): 2.70

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	72
20	52
10	41
6.3	37
3.35	32
2	27
1.18	22
0.6	14
0.3	7
0.212	5
0.15	4
0.063	3

Soil Fraction	Total Percentage
Cobbles	0
Gravel	73
Sand	24
Silt/Clay	3

Remarks:

See Summary of Soil Descriptions



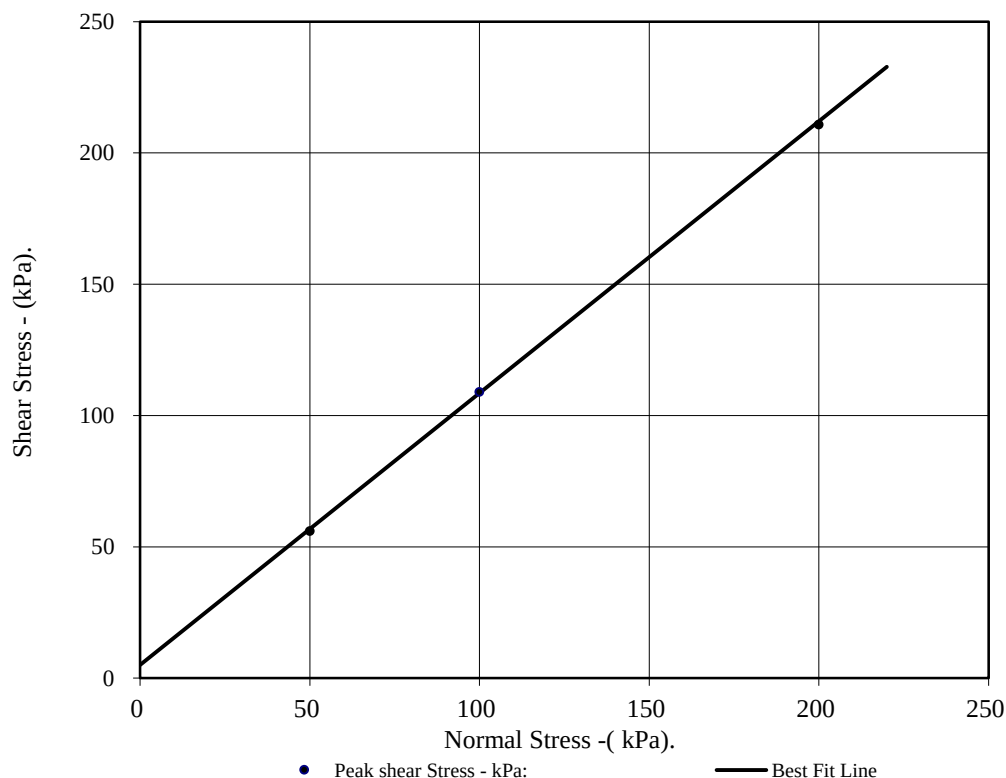
Trebanos WwTw

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH01		Top Depth:	1.70	
Sample Number:			Base Depth:	2.00	
Sample Conditions:	Dry		Sample Type	B	
Particle Density - Mg/m3:	2.65	Assumed	Remarks:		
Sample Preparation:	Material tested passing 20mm sieve Recompacted using hand tamped effort				
Sample Description:	See summary of soil descriptions				
STAGE			1	2	3
Initial Conditions					
Height - mm:			150	150	150
Length - mm:			300	300	300
Moisture Content - %:			9.4	9.4	9.4
Bulk Density - Mg/m3:			1.79	1.79	1.79
Dry Density - Mg/m3:			1.63	1.63	1.63
Voids Ratio:			0.622	0.622	0.622
Normal Pressure- kPa			50	100	200
Consolidation Stage					
Consolidated Height - mm:			145.90	145.72	144.60
Shearing Stage					
Rate of Strain (mm/min)			1.00	1.00	1.00
Displacement at peak shear stress (mm)			49.00	50.00	50.00
Peak shear Stress - kPa:			56	109	211
Final Consolidated Conditions					
Moisture Content - %:			9.2	8.9	8.8
Bulk Density - Mg/m3:			1.82	1.87	1.88
Dry Density - Mg/m3:			1.66	1.72	1.73
Peak					
Angle of Shearing Resistance:(θ)			46		
Effective Cohesion - kPa:			5		



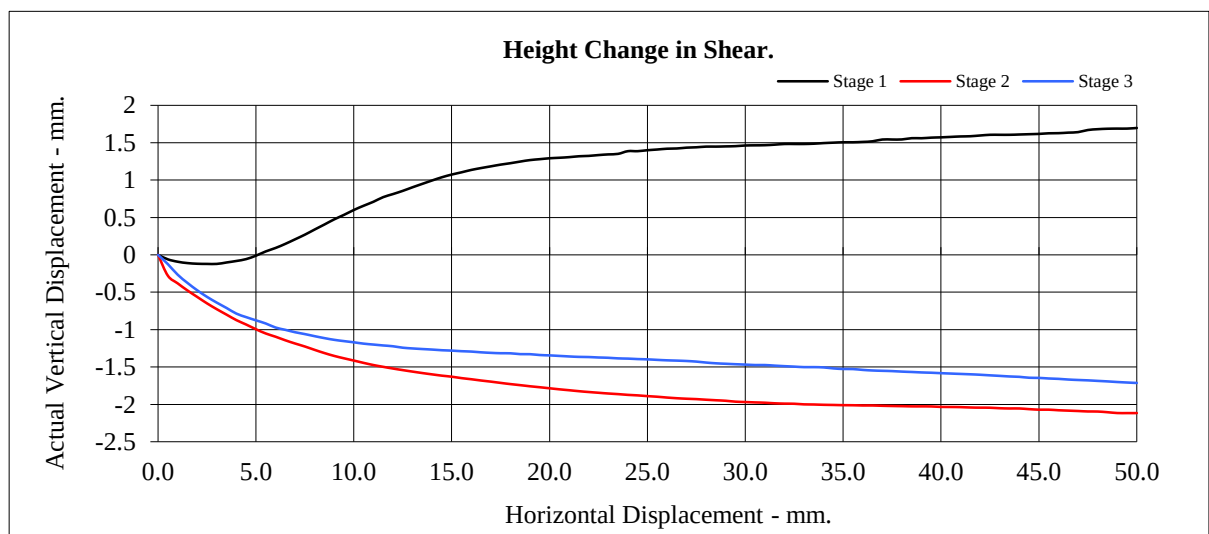
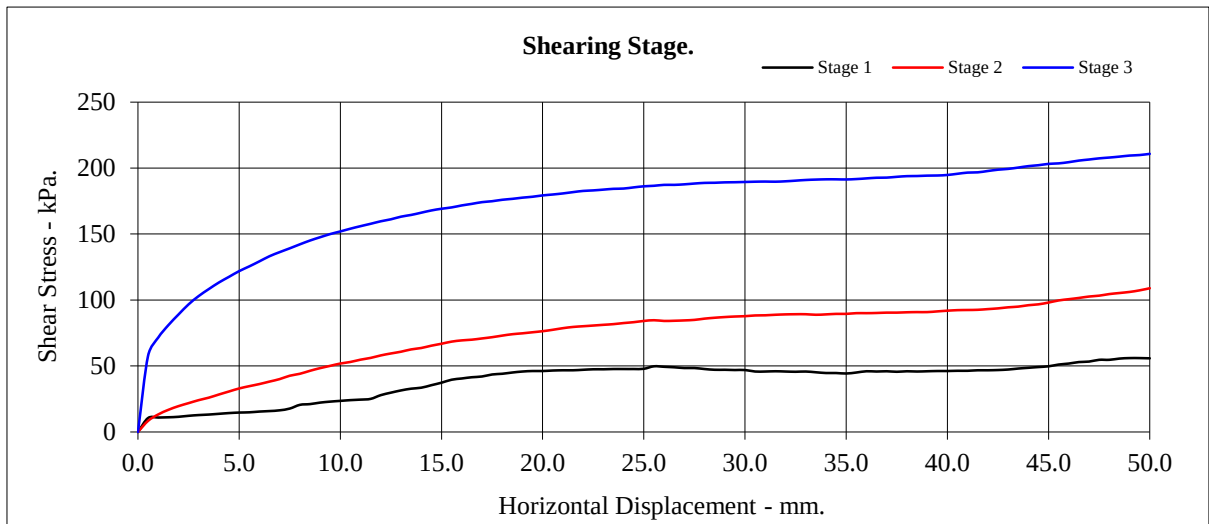
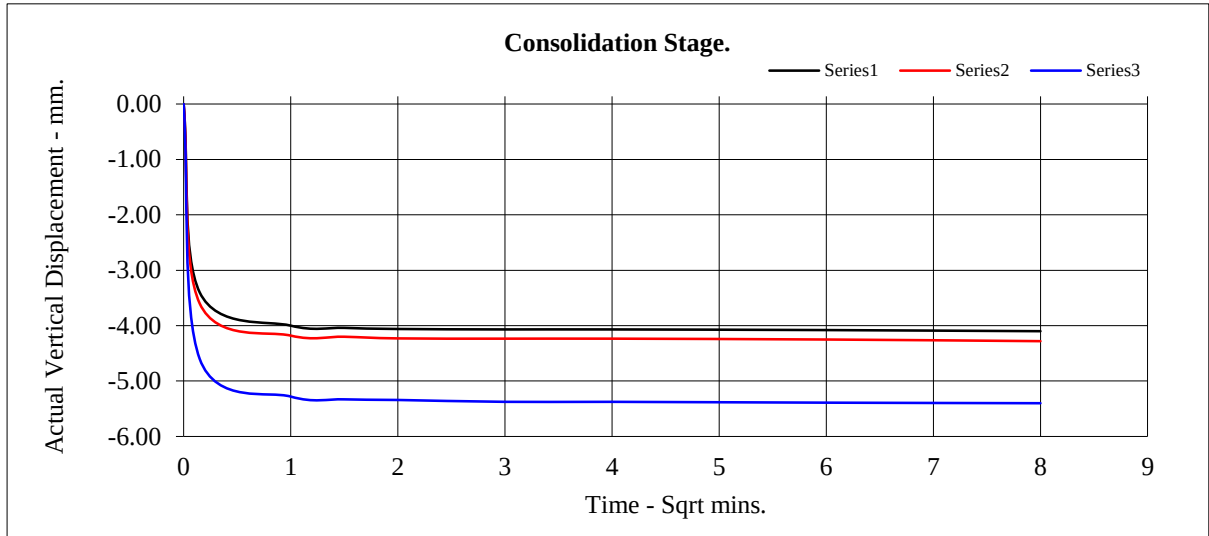
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH01	Top Depth:	1.70
Sample Number:		Base Depth:	2.00



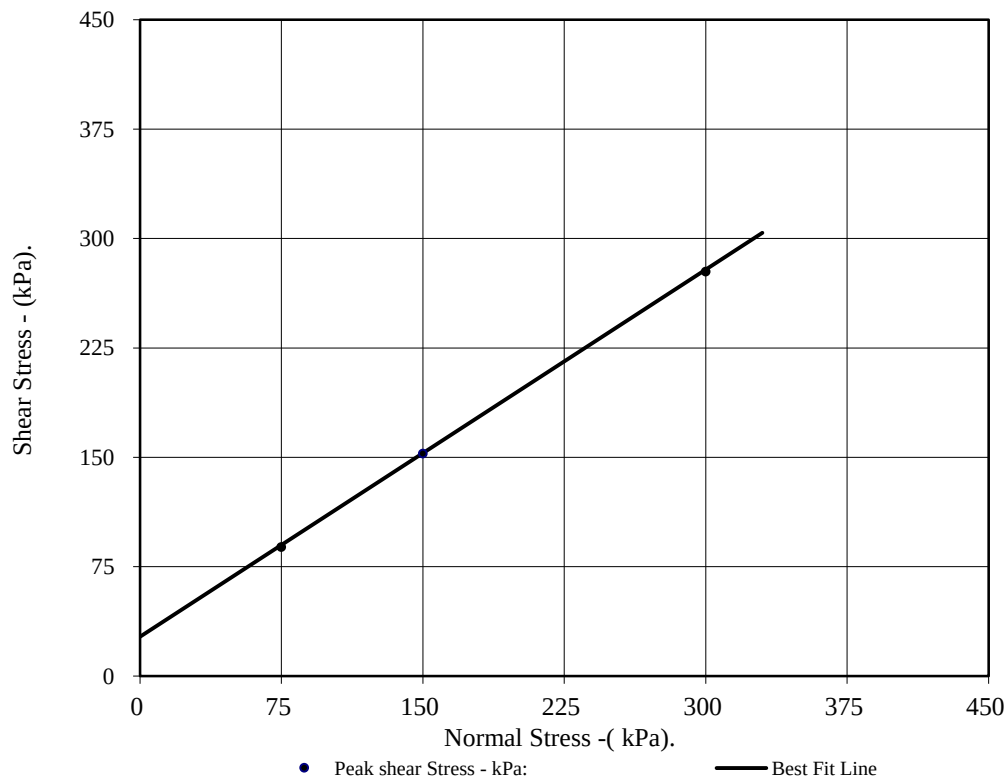
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH01		Top Depth:	3.50	
Sample Number:			Base Depth:	4.00	
Sample Conditions:	Dry		Sample Type	B	
Particle Density - Mg/m3:	2.65	Assumed	Remarks:		
Sample Preparation:	Material tested passing 20mm sieve Recompacted using hand tamped effort				
Sample Description:	See summary of soil descriptions				
STAGE			1	2	3
Initial Conditions					
Height - mm:			150	150	150
Length - mm:			300	300	300
Moisture Content - %:			2.5	2.5	2.5
Bulk Density - Mg/m3:			1.87	1.87	1.87
Dry Density - Mg/m3:			1.82	1.82	1.82
Voids Ratio:			0.455	0.455	0.455
Normal Pressure- kPa			75	150	300
Consolidation Stage					
Consolidated Height - mm:			146.89	146.00	144.45
Shearing Stage					
Rate of Strain (mm/min)			1.00	1.00	1.00
Displacement at peak shear stress (mm)			48.00	48.51	40.50
Peak shear Stress - kPa:			89	153	277
Final Consolidated Conditions					
Moisture Content - %:			2.5	2.5	2.3
Bulk Density - Mg/m3:			1.92	1.92	1.93
Dry Density - Mg/m3:			1.88	1.87	1.89
Peak					
Angle of Shearing Resistance:(θ)			40		
Effective Cohesion - kPa:			27		



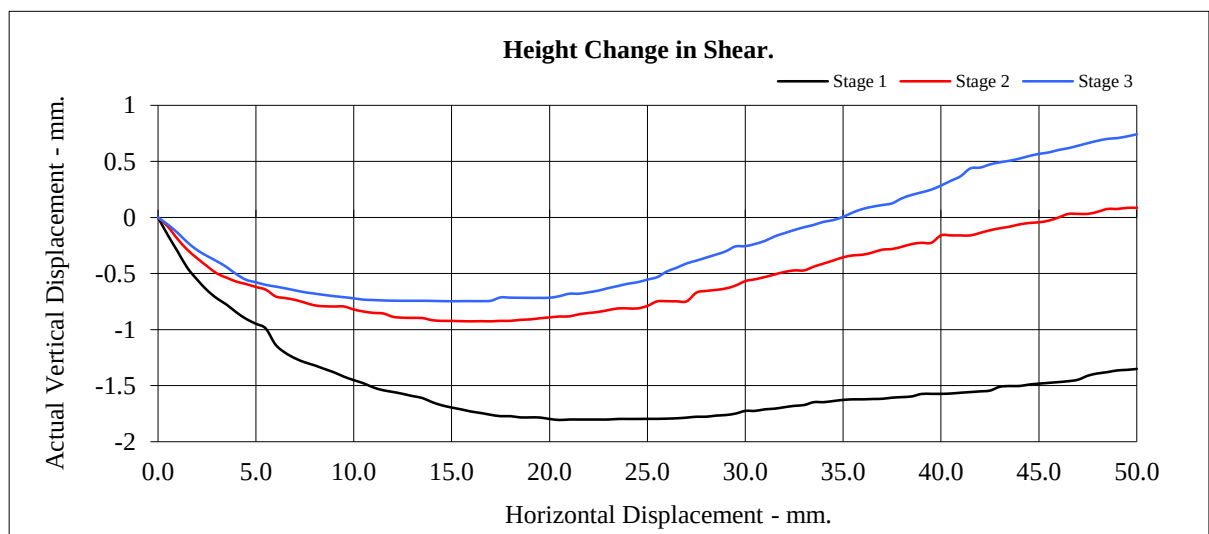
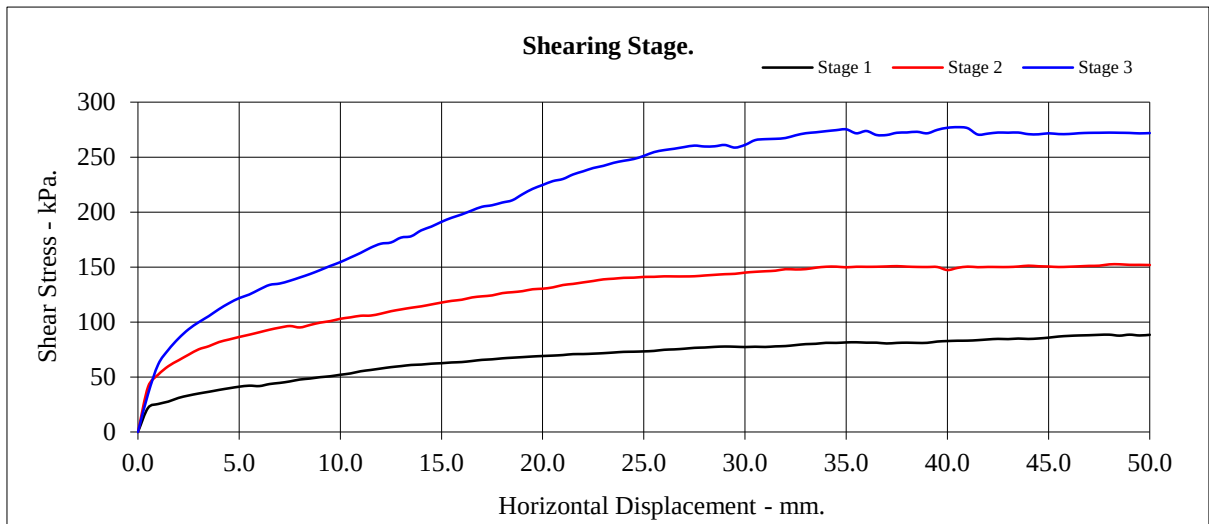
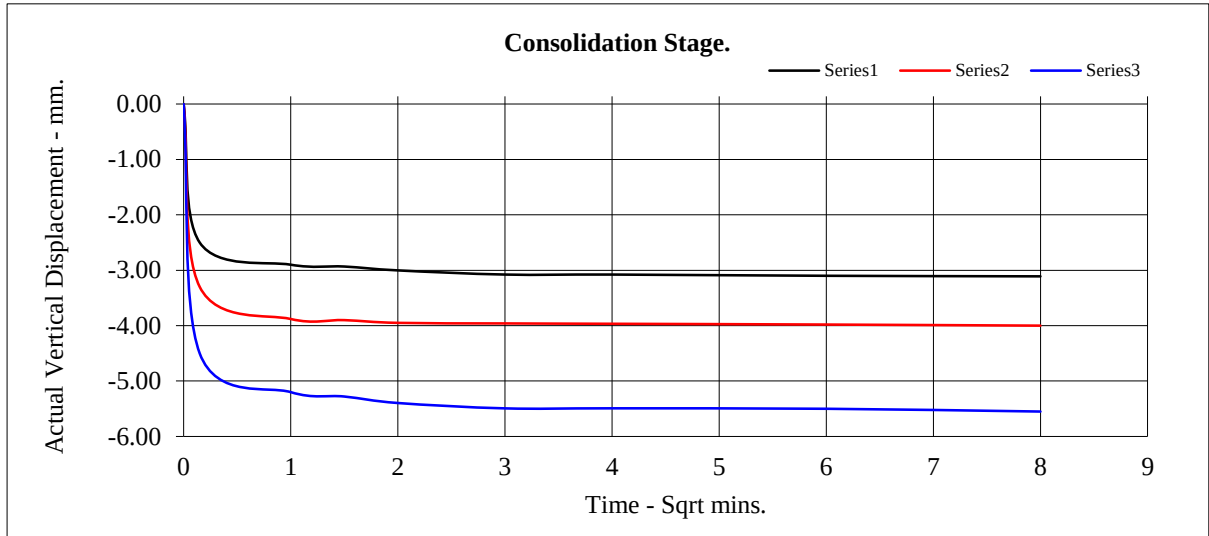
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH01	Top Depth:	3.50
Sample Number:		Base Depth:	4.00



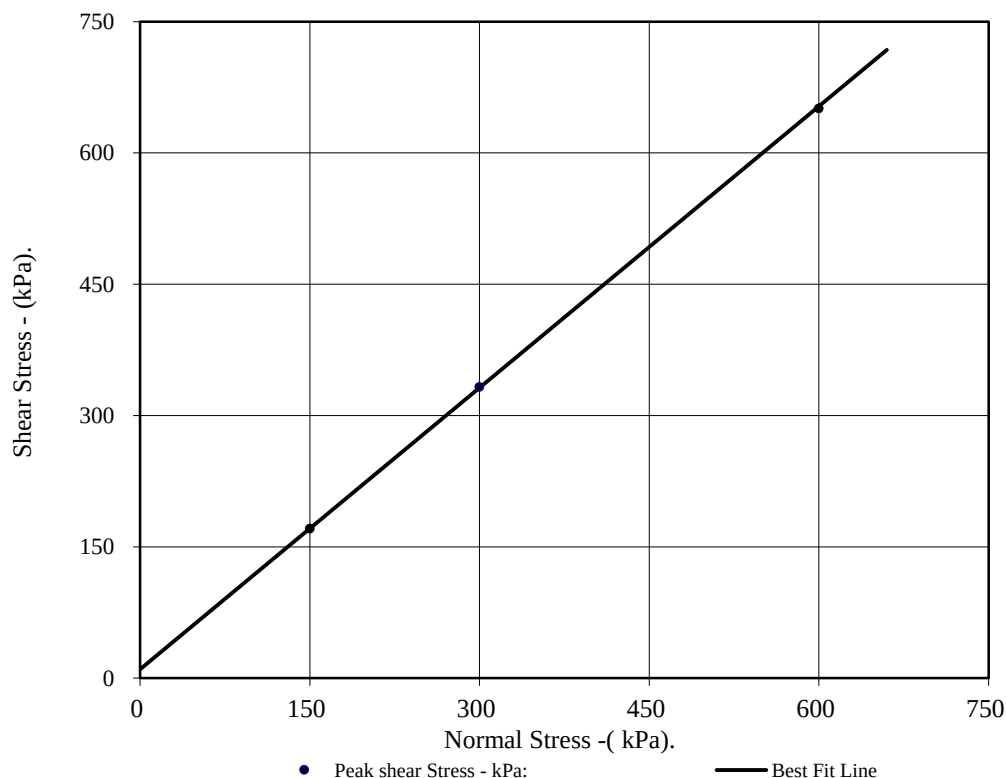
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH01		Top Depth:	8.50	
Sample Number:			Base Depth:	9.50	
Sample Conditions:	Dry		Sample Type	B	
Particle Density - Mg/m3:	2.65	Assumed	Remarks:		
Sample Preparation:	Material tested passing 20mm sieve Recompacted using hand tamped effort				
Sample Description:	See summary of soil descriptions				
STAGE			1	2	3
Initial Conditions					
Height - mm:			150	150	150
Length - mm:			300	300	300
Moisture Content - %:			10.0	10.0	10.0
Bulk Density - Mg/m3:			1.78	1.78	1.78
Dry Density - Mg/m3:			1.62	1.62	1.62
Voids Ratio:			0.640	0.640	0.640
Normal Pressure- kPa			150	300	600
Consolidation Stage					
Consolidated Height - mm:			146.55	142.65	139.45
Shearing Stage					
Rate of Strain (mm/min)			1.00	1.00	1.00
Displacement at peak shear stress (mm)			49.50	50.00	50.00
Peak shear Stress - kPa:			171	333	651
Final Consolidated Conditions					
Moisture Content - %:			9.8	9.9	9.3
Bulk Density - Mg/m3:			1.79	1.92	1.96
Dry Density - Mg/m3:			1.63	1.74	1.79
Peak					
Angle of Shearing Resistance:(θ)			47		
Effective Cohesion - kPa:			10		



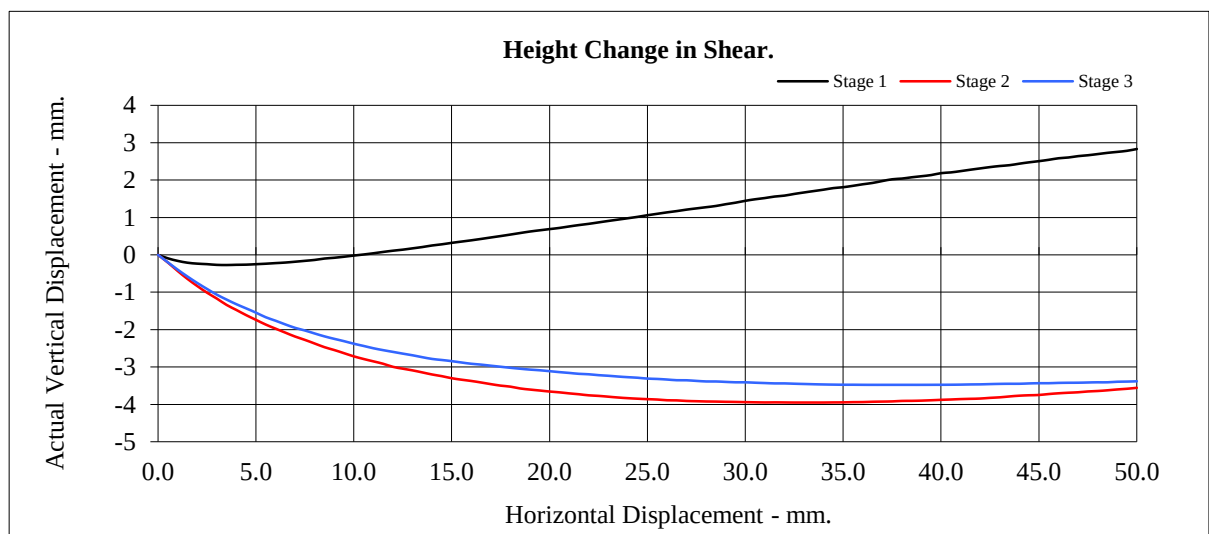
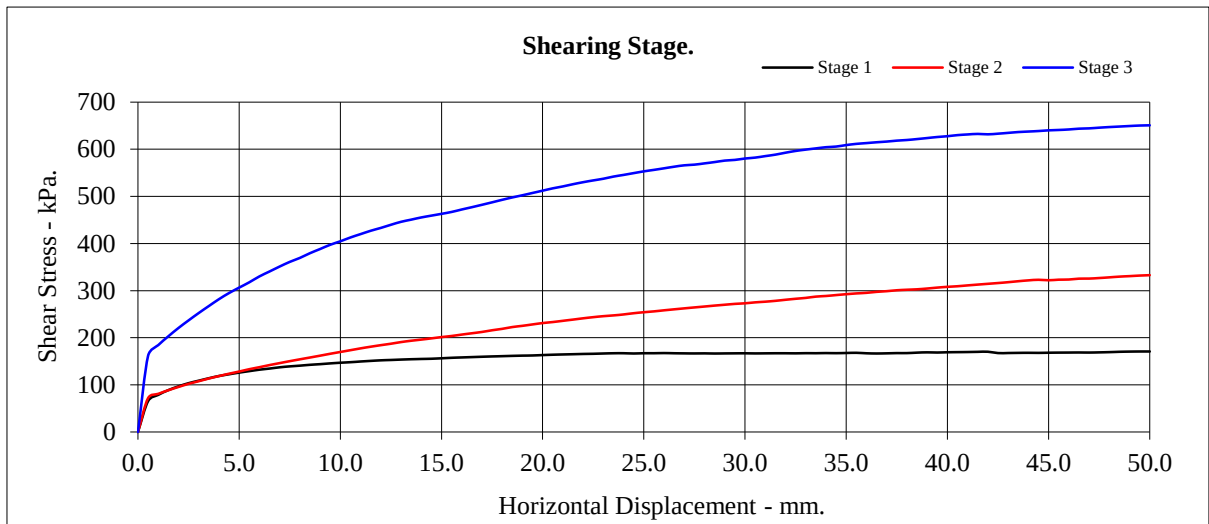
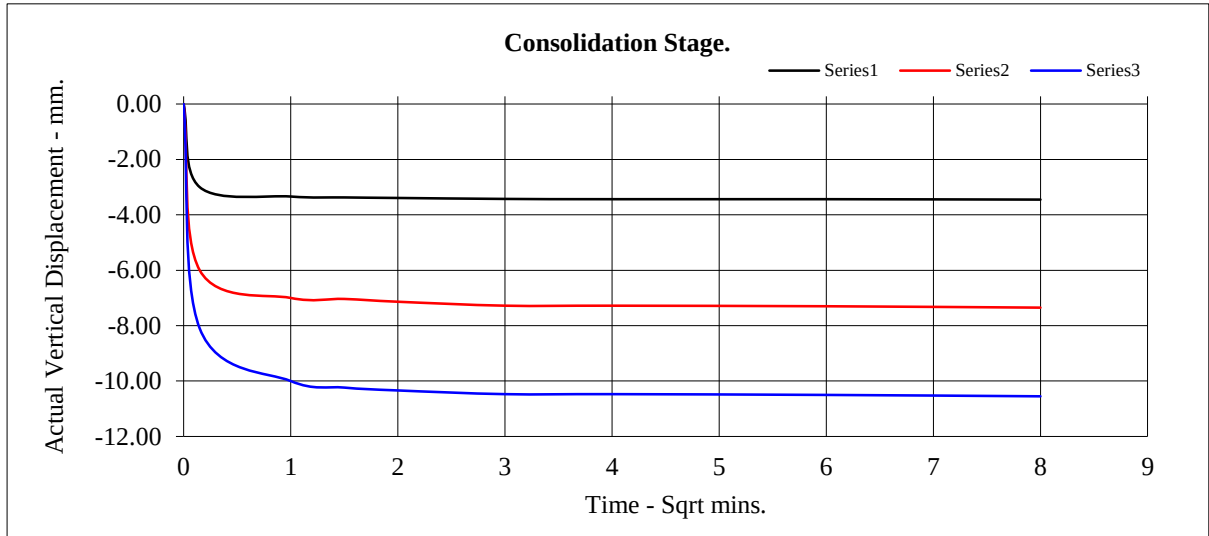
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH01	Top Depth:	8.50
Sample Number:		Base Depth:	9.50



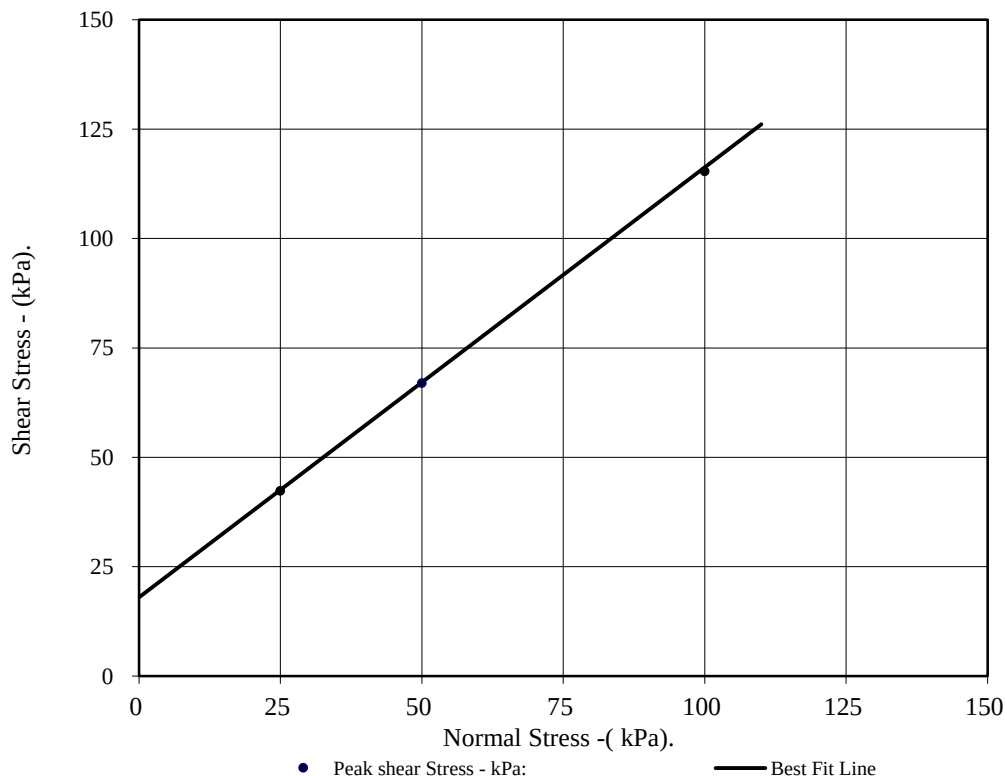
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH02		Top Depth:	1.00	
Sample Number:			Base Depth:	1.20	
Sample Conditions:	Dry		Sample Type	B	
Particle Density - Mg/m3:	2.65	Assumed	Remarks:		
Sample Preparation:	Material tested passing 20mm sieve Recompacted using hand tamped effort				
Sample Description:	See summary of soil descriptions				
STAGE			1	2	3
Initial Conditions					
Height - mm:			150	150	150
Length - mm:			300	300	300
Moisture Content - %:			7.9	7.9	7.9
Bulk Density - Mg/m3:			1.83	1.83	1.83
Dry Density - Mg/m3:			1.70	1.70	1.70
Voids Ratio:			0.563	0.563	0.563
Normal Pressure- kPa			25	50	100
Consolidation Stage					
Consolidated Height - mm:			148.55	148.20	145.85
Shearing Stage					
Rate of Strain (mm/min)			1.00	1.00	1.00
Displacement at peak shear stress (mm)			18.00	50.00	50.00
Peak shear Stress - kPa:			42	67	115
Final Consolidated Conditions					
Moisture Content - %:			7.8	7.5	7.1
Bulk Density - Mg/m3:			1.80	1.85	1.92
Dry Density - Mg/m3:			1.67	1.72	1.79
Peak					
Angle of Shearing Resistance:(θ)			45		
Effective Cohesion - kPa:			18		



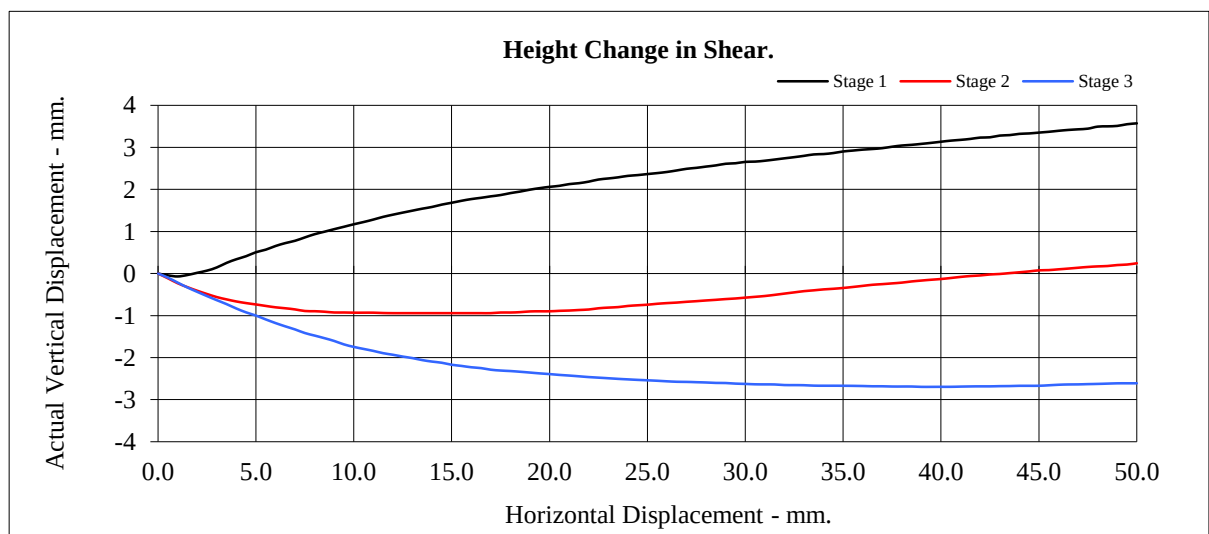
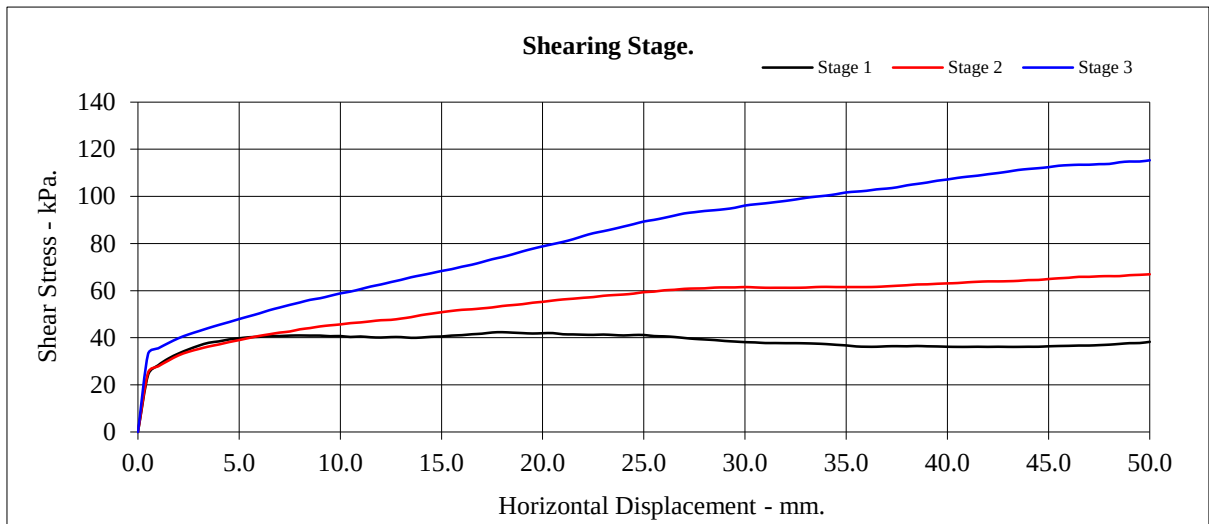
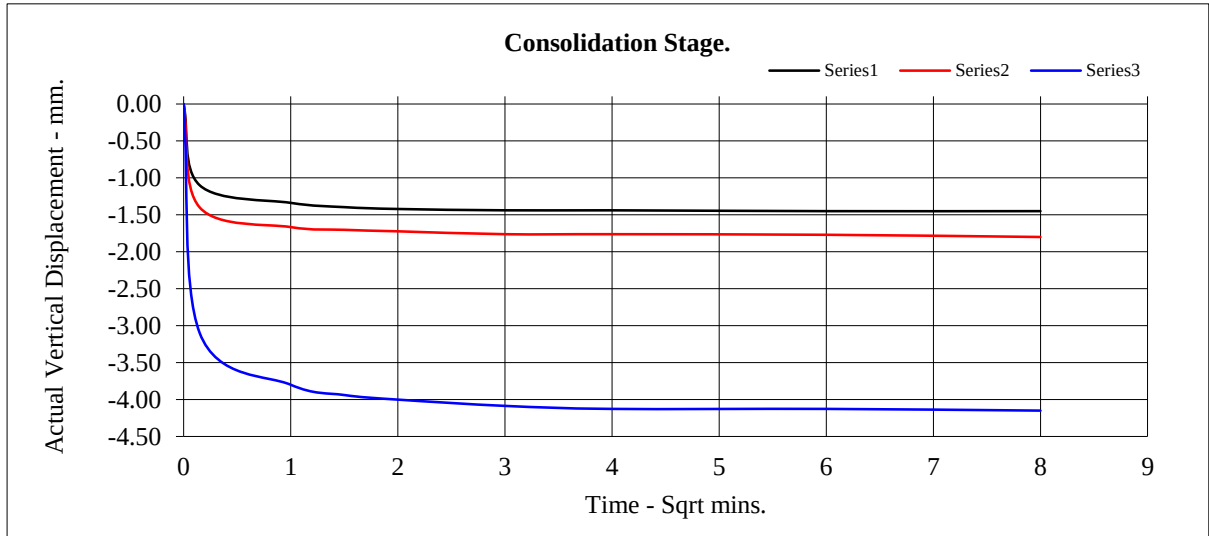
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH02	Top Depth:	1.00
Sample Number:		Base Depth:	1.20



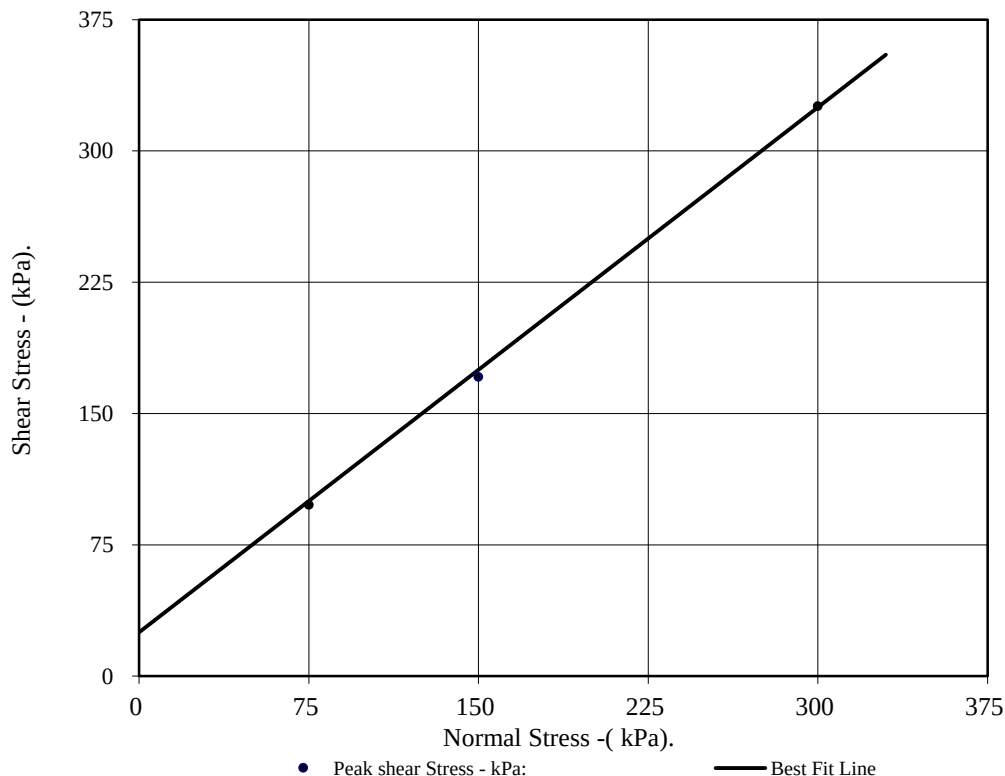
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH02		Top Depth:	4.50	
Sample Number:			Base Depth:	5.50	
Sample Conditions:	Dry		Sample Type	B	
Particle Density - Mg/m3:	2.65	Assumed	Remarks:		
Sample Preparation:	Material tested passing 20mm sieve Recompacted using hand tamped effort				
Sample Description:	See summary of soil descriptions				
STAGE			1	2	3
Initial Conditions					
Height - mm:			150	150	150
Length - mm:			300	300	300
Moisture Content - %:			5.1	5.1	5.1
Bulk Density - Mg/m3:			1.95	1.95	1.95
Dry Density - Mg/m3:			1.86	1.86	1.86
Voids Ratio:			0.428	0.428	0.428
Normal Pressure- kPa			75	150	300
Consolidation Stage					
Consolidated Height - mm:			148.65	146.90	146.35
Shearing Stage					
Rate of Strain (mm/min)			1.00	1.00	1.00
Displacement at peak shear stress (mm)			50.00	50.00	50.00
Peak shear Stress - kPa:			98	171	326
Final Consolidated Conditions					
Moisture Content - %:			5.5	5.3	5.3
Bulk Density - Mg/m3:			1.96	2.03	2.02
Dry Density - Mg/m3:			1.86	1.93	1.91
Peak					
Angle of Shearing Resistance:(θ)			45		
Effective Cohesion - kPa:			25		



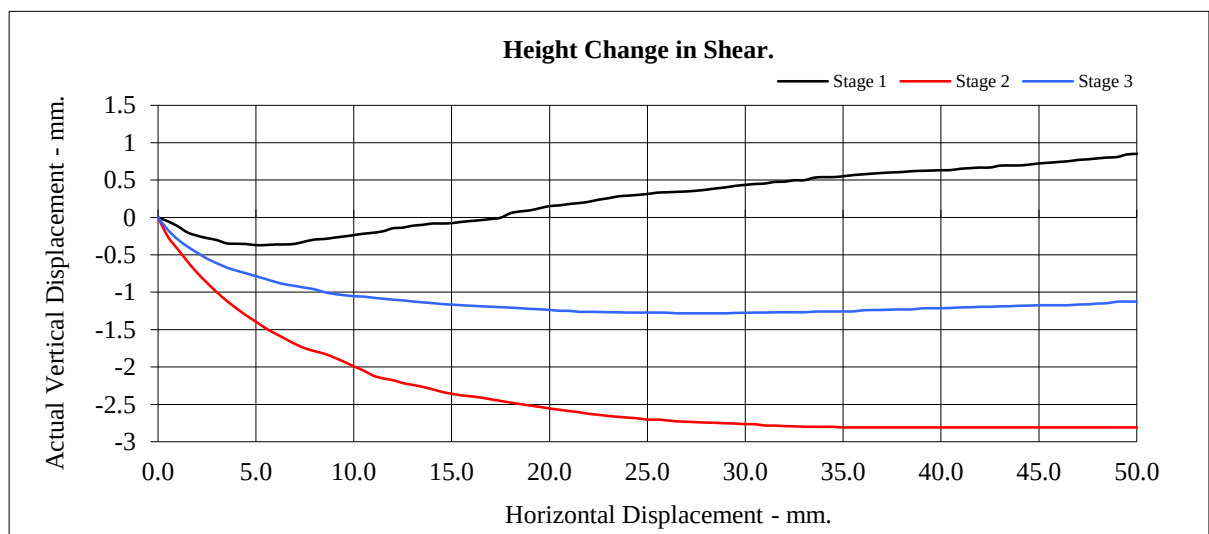
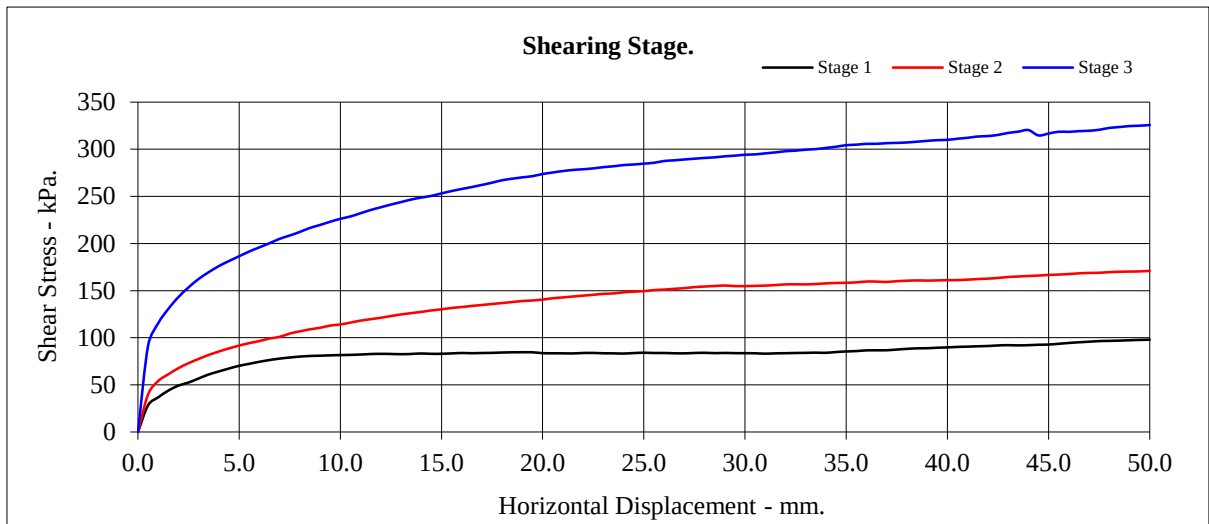
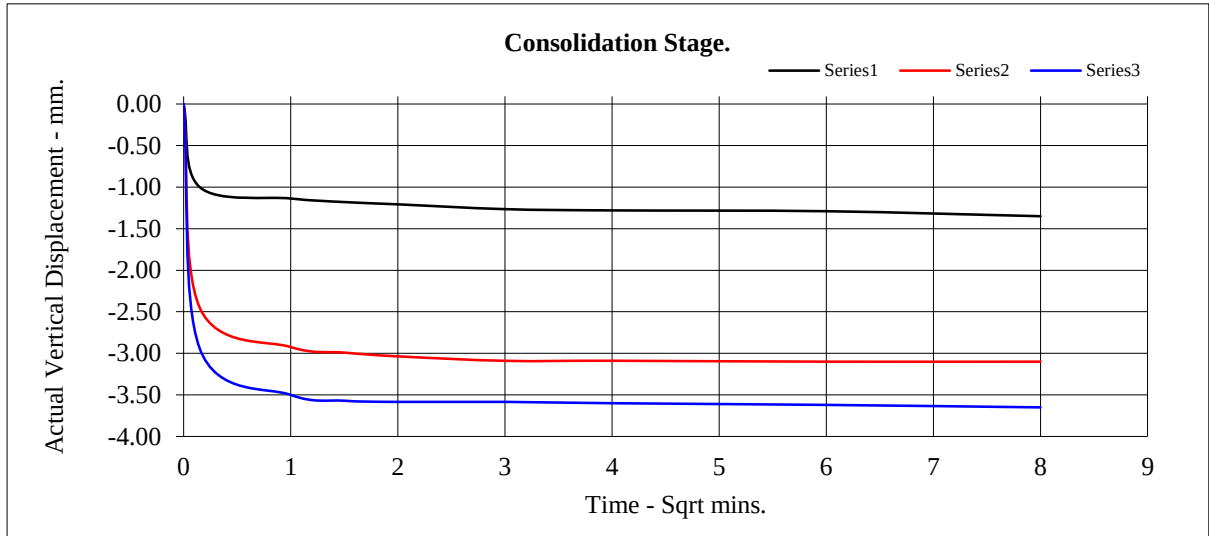
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH02	Top Depth:	4.50
Sample Number:		Base Depth:	5.50



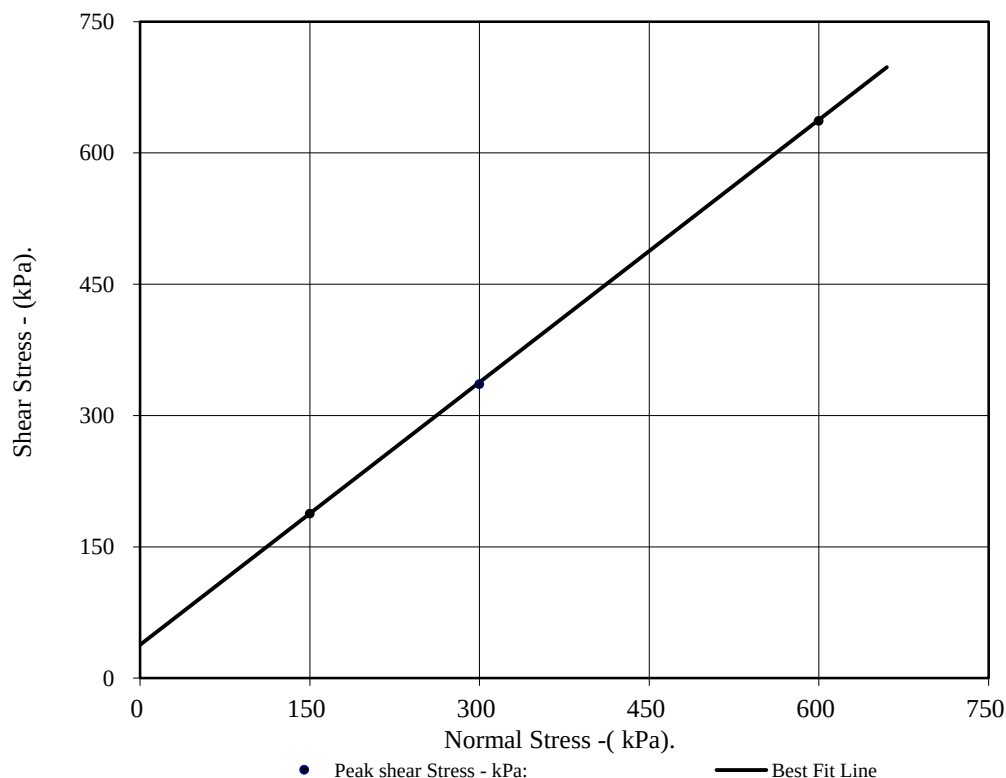
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH02		Top Depth:	9.40	
Sample Number:			Base Depth:	10.00	
Sample Conditions:	Dry		Sample Type	B	
Particle Density - Mg/m3:	2.65	Assumed	Remarks:		
Sample Preparation:	Material tested passing 20mm sieve Recompacted using hand tamped effort				
Sample Description:	See summary of soil descriptions				
STAGE			1	2	3
Initial Conditions					
Height - mm:			150	150	150
Length - mm:			300	300	300
Moisture Content - %:			13	13	13
Bulk Density - Mg/m3:			1.78	1.78	1.78
Dry Density - Mg/m3:			1.58	1.58	1.58
Voids Ratio:			0.682	0.682	0.682
Normal Pressure- kPa			150	300	600
Consolidation Stage					
Consolidated Height - mm:			146.10	142.10	139.45
Shearing Stage					
Rate of Strain (mm/min)			1.00	1.00	1.00
Displacement at peak shear stress (mm)			47.00	50.00	49.50
Peak shear Stress - kPa:			188	336	637
Final Consolidated Conditions					
Moisture Content - %:			13	13	12
Bulk Density - Mg/m3:			1.84	1.93	1.97
Dry Density - Mg/m3:			1.63	1.72	1.76
Peak					
Angle of Shearing Resistance:(θ)			45		
Effective Cohesion - kPa:			38		



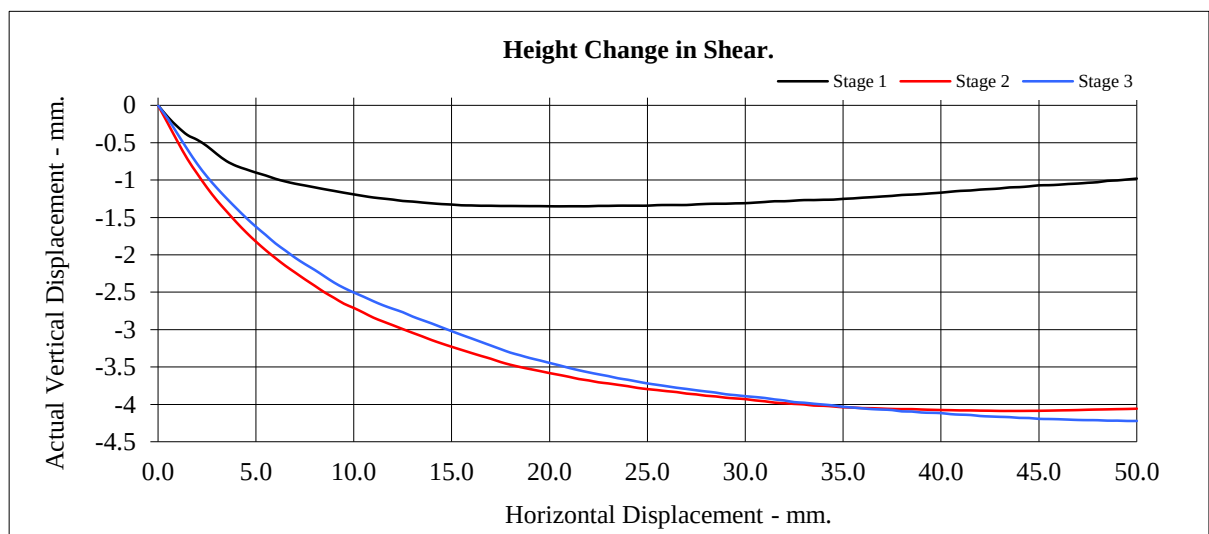
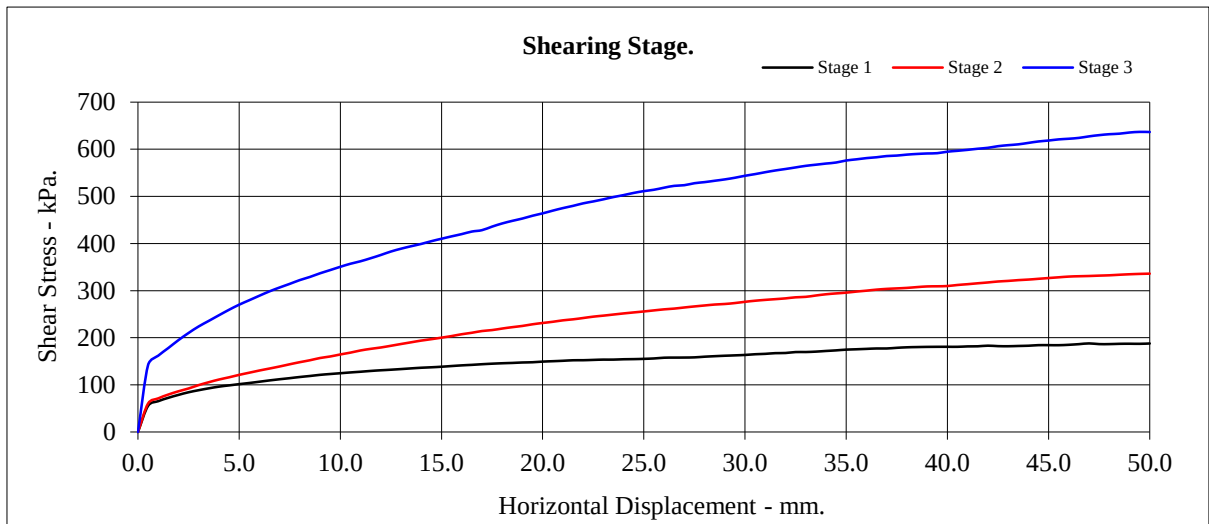
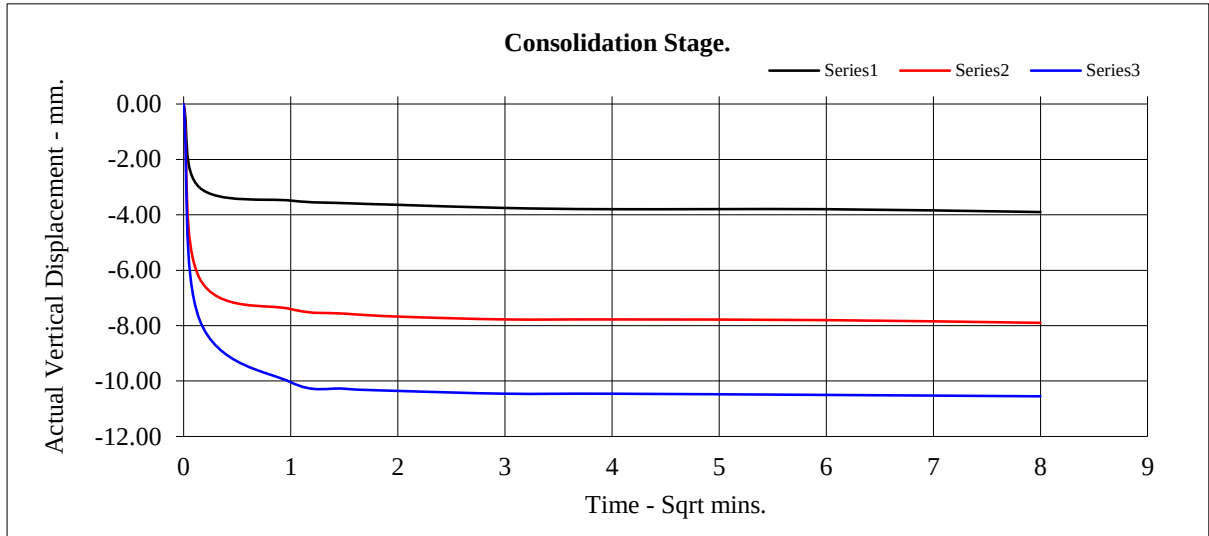
Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932

CONSOLIDATED DRAINED SHEARBOX TEST

BS1377:Part 7:1990 Clause 5

Hole Number:	BH02	Top Depth:	9.40
Sample Number:		Base Depth:	10.00



Trebanos WwTW

Contract No:
PSL23/3488
Client Ref:
C7932



Certificate of Analysis

Certificate Number 23-12813

Issued: 13-Jun-23

Client Professional Soils Laboratory Ltd
5/7 Hexthorpe Road
Hexthorpe
DN4 0AR

Our Reference 23-12813

Client Reference PSL23/3488

Order No (not supplied)

Contract Title TREBANOS WwTW

Description 10 Soil samples.

Date Received 31-May-23

Date Started 31-May-23

Date Completed 13-Jun-23

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood
General Manager



Summary of Chemical Analysis Soil Samples

Our Ref 23-12813

Client Ref PSL23/3488

Contract Title TREBANOS WWTW

Lab No	2179332	2179333	2179334	2179335	2179336	2179337	2179338	2179339	2179340	2179341
Sample ID	BH01	BH01	BH02	SPM01	SPM02	TP01	TP02	TP03	TP04	TP05
Depth	0.10	4.00	10.00	0.10	0.10	1.90-2.10	1.00-1.20	1.00-1.50	1.50-2.00	1.00-1.50
Other ID										
Sample Type	D	D	D	D	D	D	D	D	D	D
Sampling Date	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units										
Metals													
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Inorganics													
pH	DETSC 2008#		pH	8.0	8.3	8.0	7.7	8.0	10.0	7.9	8.8	7.8	7.8
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l	9.3	3.6	4.2	2.7	7.3	7.4	3.9	3.6	3.9	13
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l	37	< 1.0	4.7	< 1.0	49	52	6.0	5.7	29	56
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	20	< 10	91	50	18	57	35	26	30	27
Sulphur as S, Total	DETSC 2320	0.01	%	0.03	0.01	0.10	0.04	0.03	0.06	0.03	0.05	0.05	0.04
Sulphate as SO4, Total	DETSC 2321#	0.01	%	0.04	< 0.01	0.21	0.02	0.04	0.08	0.03	0.09	0.03	0.03

Information in Support of the Analytical Results

Our Ref 23-12813
 Client Ref PSL23/3488
 Contract TREBANOS WwTW

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2179332	BH01 0.10 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)	
2179333	BH01 4.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2179334	BH02 10.00 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)	
2179335	SPM01 0.10 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2179336	SPM02 0.10 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)	
2179337	TP01 1.90-2.10 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2179338	TP02 1.00-1.20 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2179339	TP03 1.00-1.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2179340	TP04 1.50-2.00 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	
2179341	TP05 1.00-1.50 SOIL		PT 500ml	Sample date not supplied, Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), Metals ICP Prep (182 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 23-12813
Client Ref PSL23/3488
Contract TREBANOS WwTW

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report

APPENDIX E

Geo-Environmental Laboratory Test Results

Richard Tucker
CC Ground Investigation Ltd
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i2 Analytical Ltd.
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Analytical Report Number : 23-29866

Project / Site name:	Trebanos WwTW	Samples received on:	20/04/2023
Your job number:	C7932	Samples instructed on/ Analysis started on:	21/04/2023
Your order number:	CCENG07630	Analysis completed by:	02/05/2023
Report Issue Number:	1	Report issued on:	02/05/2023
Samples Analysed:	8 soil samples		

Izabela Wójcik
Signed:
Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-29866
Project / Site name: Trebanos WwTW
Your Order No: CCENG07630

Lab Sample Number				2656574	2656575	2656576	2656577	2656578
Sample Reference				TP04	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	2.00	0.50	2.00	2.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	72	32	28	31
Moisture Content	%	0.01	NONE	19	3.6	9.8	10	15
Total mass of sample received	kg	0.001	NONE	1.1	1.1	1.1	0.8	0.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	DSO	DSO	DSO	DSO	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7	7.5	7.4	7	6.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9	19	13	20	22
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0045	0.0093	0.0065	0.0099	0.011
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.5	9.3	6.5	9.9	11.1
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.3	0.5	1.5	1.3	1
Loss on Ignition @ 450oC	%	0.2	MCERTS	13.4	4.6	-	-	8.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	0.2	0.21	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	0.11	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	-	-	0.1	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	1.2	1.7	-
Anthracene	mg/kg	0.05	MCERTS	-	-	0.27	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	1.8	1.6	-
Pyrene	mg/kg	0.05	MCERTS	-	-	1.5	1.2	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	1	0.39	-
Chrysene	mg/kg	0.05	MCERTS	-	-	1.2	0.82	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	1.2	0.75	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	0.43	0.31	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	0.76	0.41	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	0.47	0.27	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	0.51	0.32	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	10.8	7.93	-
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Analytical Report Number: 23-29866

Project / Site name: Trebanos WwTW

Your Order No: CCENG07630

Lab Sample Number				2656574	2656575	2656576	2656577	2656578
Sample Reference				TP04	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	2.00	0.50	2.00	2.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	28	9.3	20	18	19
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.6	0.6	1.6	1.3	1
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	7.1	10	12	17
Copper (aqua regia extractable)	mg/kg	1	MCERTS	400	24	51	61	72
Lead (aqua regia extractable)	mg/kg	1	MCERTS	120	20	62	81	80
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	200	25	37	37	31
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	850	140	210	270	210

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	11	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	11	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC44) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	11	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC44) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 23-29866
Project / Site name: Trebanos WwTW
Your Order No: CCENG07630

Lab Sample Number				2656574	2656575	2656576	2656577	2656578
Sample Reference				TP04	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	2.00	0.50	2.00	2.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Chloroethane	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
Bromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Vinyl Chloride	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Trichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
Tetrachloromethane	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Tetrachloroethene	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
Styrene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Tribromomethane	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
o-Xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Bromobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-

Analytical Report Number: 23-29866
 Project / Site name: Trebanos WwTW
 Your Order No: CCENG07630

Lab Sample Number				2656574	2656575	2656576	2656577	2656578
Sample Reference				TP04	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	2.00	0.50	2.00	2.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Butylbenzene	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	< 5.0	-	-	-

Analytical Report Number: 23-29866
Project / Site name: Trebanos WwTW
Your Order No: CCENG07630

Lab Sample Number				2656574	2656575	2656576	2656577	2656578
Sample Reference				TP04	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	2.00	0.50	2.00	2.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	< 0.2	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	< 0.2	-	-	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	< 0.3	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	0.09	< 0.05	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	< 0.2	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	< 0.1	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	< 0.1	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	< 0.2	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	< 0.2	-	-	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	-
Azobenzene	mg/kg	0.3	NONE	< 0.3	< 0.3	-	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	0.49	0.08	-	-	-
Anthracene	mg/kg	0.05	MCERTS	0.1	< 0.05	-	-	-
Carbazole	mg/kg	0.3	MCERTS	< 0.3	< 0.3	-	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	< 0.2	-	-	-
Anthraquinone	mg/kg	0.3	NONE	< 0.3	< 0.3	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	1.1	0.11	-	-	-
Pyrene	mg/kg	0.05	MCERTS	0.86	0.09	-	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	< 0.3	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.56	< 0.05	-	-	-
Chrysene	mg/kg	0.05	MCERTS	0.7	< 0.05	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.73	< 0.05	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.34	< 0.05	-	-	-

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Lab Sample Number				2656574	2656575	2656576	2656577	2656578
Sample Reference				TP04	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	2.00	0.50	2.00	2.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.5	< 0.05	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.32	< 0.05	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.3	< 0.05	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Lab Sample Number				2656579	2656580	2656581
Sample Reference				BH02	BH02	BH02
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	4.00
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	10	9.2	18
Total mass of sample received	kg	0.001	NONE	1.4	1.4	1.4

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	DSO	DSO	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.4	6.5	6.8
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3.6	4.6	6
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0018	0.0023	0.003
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1.8	2.3	3
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1	1	1.7
Loss on Ignition @ 450oC	%	0.2	MCERTS	-	6.4	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-	-	-
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Lab Sample Number				2656579	2656580	2656581
Sample Reference				BH02	BH02	BH02
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	4.00
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	18	16	3.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.5	1.5	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	12	12
Copper (aqua regia extractable)	mg/kg	1	MCERTS	41	37	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	50	45	17
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	39	34	17
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	210	220	37

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC44) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC44) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10

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Lab Sample Number				2656579	2656580	2656581
Sample Reference				BH02	BH02	BH02
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	4.00
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
VOCs						
Chloromethane	µg/kg	5	ISO 17025	-	< 5.0	-
Chloroethane	µg/kg	5	NONE	-	< 5.0	-
Bromomethane	µg/kg	5	ISO 17025	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	-	< 5.0	-
1,1-Dichloroethene	µg/kg	5	NONE	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	< 5.0	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-
Trichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	< 5.0	-
Tetrachloromethane	µg/kg	5	NONE	-	< 5.0	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-
Trichloroethene	µg/kg	5	ISO 17025	-	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	-	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	< 5.0	-
p & m-Xylene	µg/kg	5	MCERTS	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	< 5.0	-
Tribromomethane	µg/kg	5	NONE	-	< 5.0	-
o-Xylene	µg/kg	5	MCERTS	-	< 5.0	-
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-
Bromobenzene	µg/kg	5	ISO 17025	-	< 5.0	-
n-Propylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-	< 5.0	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-	< 5.0	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-

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Lab Sample Number				2656579	2656580	2656581
Sample Reference				BH02	BH02	BH02
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	4.00
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Butylbenzene	µg/kg	5	NONE	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	< 5.0	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	-	< 5.0	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	< 5.0	-

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Lab Sample Number				2656579	2656580	2656581
Sample Reference				BH02	BH02	BH02
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	4.00
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
SVOCs						
Aniline	mg/kg	0.1	NONE	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	0.12	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	0.06	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	0.06	-
Azobenzene	mg/kg	0.3	NONE	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	0.45	-
Anthracene	mg/kg	0.05	MCERTS	-	0.09	-
Carbazole	mg/kg	0.3	MCERTS	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	-	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	0.74	-
Pyrene	mg/kg	0.05	MCERTS	-	0.61	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	0.39	-
Chrysene	mg/kg	0.05	MCERTS	-	0.49	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	0.39	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	0.2	-

Analytical Report Number: 23-29866
 Project / Site name: Trebanos WwTW
 Your Order No: CCENG07630

Lab Sample Number				2656579	2656580	2656581
Sample Reference				BH02	BH02	BH02
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.20	1.00	4.00
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	0.25	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	0.19	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	0.21	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 23-29866

Project / Site name: Trebanos WWTW

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2656574	TP04	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2656575	TP04	None Supplied	2	Brown sand with gravel and stones.
2656576	TP05	None Supplied	0.5	Brown sand with gravel and stones.
2656577	TP05	None Supplied	2	Brown sand with gravel and stones.
2656578	TP05	None Supplied	2.5	Brown sand with gravel and stones.
2656579	BH02	None Supplied	0.2	Brown sand with gravel.
2656580	BH02	None Supplied	1	Brown sand with gravel.
2656581	BH02	None Supplied	4	Brown clay and sand.

Analytical Report Number : 23-29866

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE

Analytical Report Number : 23-29866

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Sample Deviation Report



Analytical Report Number : 23-29866

Project / Site name: Trebanos WwTW

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP05	None Supplied	S	2656577	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP05	None Supplied	S	2656577	b	Monohydric phenols in soil	L080-PL	b
TP05	None Supplied	S	2656577	b	Speciated EPA-16 PAHs in soil	L064-PL	b
TP05	None Supplied	S	2656577	b	TPH in (Soil)	L076-PL	b
TP05	None Supplied	S	2656577	b	TPHCWG (Soil)	L088/76-PL	b
TP05	None Supplied	S	2656578	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP05	None Supplied	S	2656578	b	Monohydric phenols in soil	L080-PL	b
TP05	None Supplied	S	2656578	b	TPH in (Soil)	L076-PL	b
TP05	None Supplied	S	2656578	b	TPHCWG (Soil)	L088/76-PL	b

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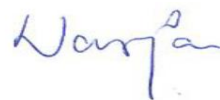
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Analytical Report Number : 23-29871

Project / Site name:	Trebanos WwTW	Samples received on:	20/04/2023
Your job number:	C7932	Samples instructed on/ Analysis started on:	21/04/2023
Your order number:	CCENG07630	Analysis completed by:	02/05/2023
Report Issue Number:	1	Report issued on:	02/05/2023
Samples Analysed:	4 wac multi samples		

Signed:



Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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Waste Acceptance Criteria Analytical Results							
Report No:	23-29871						
					Client: CCGROUND		
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2656592				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	19/04/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP04						
Depth (m)	0.20						
Solid Waste Analysis							
TOC (%)**	1.8				3%	5%	6%
Loss on Ignition (%) **	14				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL #	11				500	--	--
Total PAH (WAC-17) (mg/kg)	6.05				100	--	--
pH (units)**	7.2				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.46				--	To be evaluated	To be evaluated
Eluate Analysis							
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.016	0.0089		0.098	20	100	300
Cadmium *	< 0.0005	< 0.0005		0.0033	0.04	1	5
Chromium *	< 0.0010	< 0.0010		< 0.0050	0.5	10	70
Copper *	0.046	0.043		0.43	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.0088	0.0058		0.061	0.5	10	30
Nickel *	0.031	0.023		0.24	0.4	10	40
Lead *	0.0069	0.0075		0.074	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.15	0.0897		0.98	4	50	200
Chloride *	< 4.0	< 4.0		17	800	15000	25000
Fluoride*	0.64	0.53		5.5	10	150	500
Sulphate *	2.7	1.4		15	1000	20000	50000
TDS*	58	28		310	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	11	3.6		45	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.1						
Dry Matter (%)	81						
Moisture (%)	19						
Stage 1							
Volume Eluate L2 (litres)	0.31						
Filtered Eluate VE1 (litres)	0.21						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = MCERTS accredited							
* = UKAS accredited (liquid eluate analysis only)							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Waste Acceptance Criteria Analytical Results							
Report No:	23-29871						
					Client: CCGROUND		
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2656593				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	19/04/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP04						
Depth (m)	2.00						
Solid Waste Analysis							
TOC (%)**	0.2				3%	5%	6%
Loss on Ignition (%) **	5.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.4				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.70				--	To be evaluated	To be evaluated
Eluate Analysis							
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.0078	< 0.0050		0.035	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	< 0.0010	< 0.0010		< 0.0050	0.5	10	70
Copper *	0.0027	0.0040		0.038	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel *	< 0.0010	0.0015		0.013	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0070	0.0073		0.072	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	0.62	0.20		2.7	10	150	500
Sulphate *	1.9	0.97		11	1000	20000	50000
TDS*	23	10		120	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	3.9	14		130	500	800	1000
Leach Test Information							
Stone Content (%)	72						
Sample Mass (kg)	1.1						
Dry Matter (%)	96						
Moisture (%)	3.6						
Stage 1							
Volume Eluate L2 (litres)	0.34						
Filtered Eluate VE1 (litres)	0.27						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = MCERTS accredited							
* = UKAS accredited (liquid eluate analysis only)							

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Waste Acceptance Criteria Analytical Results							
Report No:	23-29871						
					Client: CCGROUND		
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2656594				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	19/04/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP05						
Depth (m)	2.50						
Solid Waste Analysis							
TOC (%)**	0.5				3%	5%	6%
Loss on Ignition (%) **	10				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) EH, ID, CU, AL #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	2.15				100	--	--
pH (units)**	7.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.00				--	To be evaluated	To be evaluated
Eluate Analysis							
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.019	< 0.0050		0.067	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	< 0.0010	< 0.0010		< 0.0050	0.5	10	70
Copper *	0.0040	0.0047		0.046	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel *	< 0.0010	< 0.0010		< 0.0050	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.011	0.0064		0.071	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	0.30	0.18		2.0	10	150	500
Sulphate *	5.6	1.4		21	1000	20000	50000
TDS*	44	14		190	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	4.5	14		120	500	800	1000
Leach Test Information							
Stone Content (%)	31						
Sample Mass (kg)	0.80						
Dry Matter (%)	85						
Moisture (%)	15						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.30						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = MCERTS accredited							
* = UKAS accredited (liquid eluate analysis only)							

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Waste Acceptance Criteria Analytical Results

Waste Acceptance Criteria Analytical Results							
Report No:	23-29871						
					Client: CCGROUND		
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2656595				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	19/04/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH02						
Depth (m)	1.00						
Solid Waste Analysis							
TOC (%)**	0.7				3%	5%	6%
Loss on Ignition (%) **	6.3				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) EH-ID-CU-AL #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	4.25				100	--	--
pH (units)**	7.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.00				--	To be evaluated	To be evaluated
Eluate Analysis							
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	< 0.0050	< 0.0050		0.028	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	< 0.0010	< 0.0010		0.0069	0.5	10	70
Copper *	0.0012	0.0040		0.036	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel *	< 0.0010	< 0.0010		0.0053	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0064	0.0050		0.052	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	0.13	0.13		1.3	10	150	500
Sulphate *	1.7	1.2		12	1000	20000	50000
TDS*	11	9.9		100	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	5.5	6.6		64	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.4						
Dry Matter (%)	91						
Moisture (%)	9.2						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.22						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
** = MCERTS accredited							
* = UKAS accredited (liquid eluate analysis only)							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 23-29871

Project / Site name: Trebanos WWTW

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2656592	TP04	None Supplied	0.2	Brown loam and clay with gravel and vegetation.
2656593	TP04	None Supplied	2	Brown sand with gravel and stones.
2656594	TP05	None Supplied	2.5	Brown sand with gravel and stones.
2656595	BH02	None Supplied	1	Brown sand with gravel.

Analytical Report Number : 23-29871

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Preparation WAC leachate		In-house method	L043-PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270.	L064-PL	D	NONE
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	ISO 17025
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil in Soil C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS

Analytical Report Number : 23-29871

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L023-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Sample Deviation Report



Analytical Report Number : 23-29871

Project / Site name: Trebanos WwTW

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis. Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
TP05	None Supplied	M	2656594	b	BTEX (Sum of BTEX compounds) in soil	L073B-PL	b
TP05	None Supplied	M	2656594	b	Mineral Oil in Soil C10 - C40	L076-PL	b
TP05	None Supplied	M	2656594	b	PCB's by GC-MS in soil	L027-PL	b
TP05	None Supplied	M	2656594	b	Speciated WAC-17 PAHs in soil	L064-PL	b

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Analytical Report Number : 23-29947

Project / Site name:	Trebanos WwTW	Samples received on:	21/04/2023
Your job number:	C7932	Samples instructed on/ Analysis started on:	21/04/2023
Your order number:	CCENG07632	Analysis completed by:	28/04/2023
Report Issue Number:	1	Report issued on:	02/05/2023
Samples Analysed:	6 soil samples		


Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-29947
Project / Site name: Trebanos WwTW
Your Order No: CCENG07632

Lab Sample Number				2656947	2656948	2656949	2656950	2656951
Sample Reference				TP01	TP01	TP02	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.90-2.00	0.50	0.10	1.10
Date Sampled				20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	61	79	47	< 0.1	40
Moisture Content	%	0.01	NONE	3.2	3.1	8.4	14	6.5
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2	1.2	1.2

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	MJN	N/A	MJN	MJN	MJN

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.8	11	8.9	8	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	17	260	56	13	4.7
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0086	0.13	0.028	0.0064	0.0023
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	8.6	131	28.2	6.4	2.3
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.6	0.5	0.9	2	0.8
Loss on Ignition @ 450oC	%	0.2	MCERTS	-	1.4	3.3	-	5.9

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.08	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.24	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.43	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.35	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.26	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.35	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	-	0.36	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	-	0.13	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.22	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.14	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	-	0.15	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	-	-	2.71	-
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Analytical Report Number: 23-29947
Project / Site name: Trebanos WwTW
Your Order No: CCENG07632

Lab Sample Number				2656947	2656948	2656949	2656950	2656951
Sample Reference				TP01	TP01	TP02	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.90-2.00	0.50	0.10	1.10
Date Sampled				20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	13	13	40	37	15
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.7	1.1	2.6	2.2	1.1
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	-	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	28	310	82	15	10
Copper (aqua regia extractable)	mg/kg	1	MCERTS	44	43	98	240	60
Lead (aqua regia extractable)	mg/kg	1	MCERTS	71	43	140	97	60
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	20	51	94	37
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	130	290	330	200

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC44) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC44) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10	< 10	< 10

Analytical Report Number: 23-29947
Project / Site name: Trebanos WwTW
Your Order No: CCENG07632

Lab Sample Number				2656947	2656948	2656949	2656950	2656951
Sample Reference				TP01	TP01	TP02	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.90-2.00	0.50	0.10	1.10
Date Sampled				20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

VOCs

Chloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Chloroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,1-Dichloroethene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,1-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
2,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Trichloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,2-Dichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Trans-1,2-dichloroethene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Tetrachloromethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,2-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
p & m-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
Styrene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Tribromomethane	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
o-Xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	-	< 5.0
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Bromobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
n-Propylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
tert-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
sec-Butylbenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
p-Isopropyltoluene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0

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 Project / Site name: Trebanos WwTW
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Lab Sample Number				2656947	2656948	2656949	2656950	2656951
Sample Reference				TP01	TP01	TP02	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.90-2.00	0.50	0.10	1.10
Date Sampled				20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Butylbenzene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	< 5.0	-	< 5.0	-	< 5.0
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	< 5.0	-	< 5.0	-	< 5.0

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Lab Sample Number				2656947	2656948	2656949	2656950	2656951
Sample Reference				TP01	TP01	TP02	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.90-2.00	0.50	0.10	1.10
Date Sampled				20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

SVOCs

Aniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	< 0.2	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	< 0.1	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	< 0.1	-	< 0.1	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
2,4-Dinitrotoluene	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Azobenzene	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	0.11	-	0.14
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	< 0.2	-	< 0.2	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	0.1	-	0.16
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	0.09	-	0.15
Butyl benzyl phthalate	mg/kg	0.3	NONE	< 0.3	-	< 0.3	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.08
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	0.16
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	-	0.09
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	-	< 0.05

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Lab Sample Number				2656947	2656948	2656949	2656950	2656951
Sample Reference				TP01	TP01	TP02	BH01	BH01
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	1.90-2.00	0.50	0.10	1.10
Date Sampled				20/04/2023	20/04/2023	20/04/2023	20/04/2023	20/04/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	-	< 0.05

PCBs

PCB Congener 077	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 081	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 105	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 114	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 118	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 123	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 126	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 156	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 157	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 167	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 169	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-
PCB Congener 189	mg/kg	0.001	NONE	< 0.001	-	< 0.001	-	-

Total PCBs – WHO12

Total PCBs	mg/kg	0.012	NONE	< 0.012	-	< 0.012	-	-
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-29947
 Project / Site name: Trebanos WwTW
 Your Order No: CCENG07632

Lab Sample Number				2656952
Sample Reference				BH01
Sample Number				None Supplied
Depth (m)				3.00
Date Sampled				20/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	44
Moisture Content	%	0.01	NONE	9.1
Total mass of sample received	kg	0.001	NONE	1.3

Asbestos in Soil	Type	N/A	ISO 17025	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0045
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.5
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	0.4
Loss on Ignition @ 450oC	%	0.2	MCERTS	-

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
Fluorene	mg/kg	0.05	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	-
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Lab Sample Number				2656952
Sample Reference				BH01
Sample Number				None Supplied
Depth (m)				3.00
Date Sampled				20/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	6.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	10
Lead (aqua regia extractable)	mg/kg	1	MCERTS	14
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	19
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	40

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10
TPH-CWG - Aliphatic (EC5 - EC44) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic > EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10
TPH-CWG - Aromatic (EC5 - EC44) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10

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Lab Sample Number				2656952
Sample Reference				BH01
Sample Number				None Supplied
Depth (m)				3.00
Date Sampled				20/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
VOCs				
Chloromethane	µg/kg	5	ISO 17025	-
Chloroethane	µg/kg	5	NONE	-
Bromomethane	µg/kg	5	ISO 17025	-
Vinyl Chloride	µg/kg	5	NONE	-
Trichlorofluoromethane	µg/kg	5	NONE	-
1,1-Dichloroethene	µg/kg	5	NONE	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-
1,1-Dichloroethane	µg/kg	5	ISO 17025	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-
Trichloromethane	µg/kg	5	ISO 17025	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-
1,2-Dichloroethane	µg/kg	5	ISO 17025	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-
Benzene	µg/kg	5	MCERTS	-
Tetrachloromethane	µg/kg	5	NONE	-
1,2-Dichloropropane	µg/kg	5	ISO 17025	-
Trichloroethene	µg/kg	5	ISO 17025	-
Dibromomethane	µg/kg	5	ISO 17025	-
Bromodichloromethane	µg/kg	5	ISO 17025	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-
Toluene	µg/kg	5	MCERTS	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-
Dibromochloromethane	µg/kg	5	ISO 17025	-
Tetrachloroethene	µg/kg	5	NONE	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-
Chlorobenzene	µg/kg	5	ISO 17025	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-
Ethylbenzene	µg/kg	5	MCERTS	-
p & m-Xylene	µg/kg	5	MCERTS	-
Styrene	µg/kg	5	ISO 17025	-
Tribromomethane	µg/kg	5	NONE	-
o-Xylene	µg/kg	5	MCERTS	-
1,1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-
Isopropylbenzene	µg/kg	5	ISO 17025	-
Bromobenzene	µg/kg	5	ISO 17025	-
n-Propylbenzene	µg/kg	5	ISO 17025	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-
tert-Butylbenzene	µg/kg	5	ISO 17025	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-
sec-Butylbenzene	µg/kg	5	ISO 17025	-
1,3-Dichlorobenzene	µg/kg	5	ISO 17025	-
p-Isopropyltoluene	µg/kg	5	ISO 17025	-
1,2-Dichlorobenzene	µg/kg	5	ISO 17025	-
1,4-Dichlorobenzene	µg/kg	5	ISO 17025	-

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 Project / Site name: Trebanos WwTW
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Lab Sample Number				2656952
Sample Reference				BH01
Sample Number				None Supplied
Depth (m)				3.00
Date Sampled				20/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Butylbenzene	µg/kg	5	NONE	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-
Hexachlorobutadiene	µg/kg	5	NONE	-
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-

Analytical Report Number: 23-29947
 Project / Site name: Trebanos WwTW
 Your Order No: CCENG07632

Lab Sample Number				2656952
Sample Reference				BH01
Sample Number				None Supplied
Depth (m)				3.00
Date Sampled				20/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
SVOCs				
Aniline	mg/kg	0.1	NONE	-
Phenol	mg/kg	0.2	ISO 17025	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-
2-Methylphenol	mg/kg	0.3	MCERTS	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-
Nitrobenzene	mg/kg	0.3	MCERTS	-
4-Methylphenol	mg/kg	0.2	NONE	-
Isophorone	mg/kg	0.2	MCERTS	-
2-Nitrophenol	mg/kg	0.3	NONE	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-
Naphthalene	mg/kg	0.05	MCERTS	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-
4-Chloroaniline	mg/kg	0.1	NONE	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-
Acenaphthylene	mg/kg	0.05	MCERTS	-
Acenaphthene	mg/kg	0.05	MCERTS	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-
Dibenzofuran	mg/kg	0.2	MCERTS	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-
4-Nitroaniline	mg/kg	0.2	NONE	-
Fluorene	mg/kg	0.05	MCERTS	-
Azobenzene	mg/kg	0.3	NONE	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-
Phenanthrene	mg/kg	0.05	MCERTS	-
Anthracene	mg/kg	0.05	MCERTS	-
Carbazole	mg/kg	0.3	MCERTS	-
Dibutyl phthalate	mg/kg	0.2	NONE	-
Anthraquinone	mg/kg	0.3	NONE	-
Fluoranthene	mg/kg	0.05	MCERTS	-
Pyrene	mg/kg	0.05	MCERTS	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-
Chrysene	mg/kg	0.05	MCERTS	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-

Analytical Report Number: 23-29947
 Project / Site name: Trebanos WwTW
 Your Order No: CCENG07632

Lab Sample Number				2656952
Sample Reference				BH01
Sample Number				None Supplied
Depth (m)				3.00
Date Sampled				20/04/2023
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-
PCB Congener 081	mg/kg	0.001	NONE	-
PCB Congener 105	mg/kg	0.001	NONE	-
PCB Congener 114	mg/kg	0.001	NONE	-
PCB Congener 118	mg/kg	0.001	NONE	-
PCB Congener 123	mg/kg	0.001	NONE	-
PCB Congener 126	mg/kg	0.001	NONE	-
PCB Congener 156	mg/kg	0.001	NONE	-
PCB Congener 157	mg/kg	0.001	NONE	-
PCB Congener 167	mg/kg	0.001	NONE	-
PCB Congener 169	mg/kg	0.001	NONE	-
PCB Congener 189	mg/kg	0.001	NONE	-

Total PCBs – WHO12

Total PCBs	mg/kg	0.012	NONE	-
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 23-29947

Project / Site name: Trebanos WWTW

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2656947	TP01	None Supplied	0.5	Brown sand with gravel and stones.
2656948	TP01	None Supplied	1.90-2.00	Brown sand with gravel and stones.
2656949	TP02	None Supplied	0.5	Brown sand with gravel and stones.
2656950	BH01	None Supplied	0.1	Brown loam and clay with gravel and vegetation.
2656951	BH01	None Supplied	1.1	Brown sand with gravel and stones.
2656952	BH01	None Supplied	3	Brown sand with gravel and stones.

Analytical Report Number : 23-29947

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS

Analytical Report Number : 23-29947

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total



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Analytical Report Number : 23-29951

Project / Site name:	Trebanos WwTW	Samples received on:	21/04/2023
Your job number:	C7932	Samples instructed on/ Analysis started on:	21/04/2023
Your order number:	CCENG07632	Analysis completed by:	02/05/2023
Report Issue Number:	1	Report issued on:	02/05/2023
Samples Analysed:	3 wac multi samples		

Izabela Wójcik
Signed:

Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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Waste Acceptance Criteria Analytical Results							
Report No:	23-29951						
					Client: CCGROUND		
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2656959				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	20/04/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP01						
Depth (m)	1.90-2.00						
Solid Waste Analysis							
TOC (%)**	0.4				3%	5%	6%
Loss on Ignition (%) **	1.6				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.9				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	2.2				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.014	0.0082		0.092	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0023	< 0.0010		0.0055	0.5	10	70
Copper *	0.0047	0.0064		0.062	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.0078	< 0.0030		< 0.020	0.5	10	30
Nickel *	< 0.0010	0.0011		0.0081	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0033	0.0041		0.039	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	0.80	0.23		3.2	10	150	500
Sulphate *	2.6	1.3		15	1000	20000	50000
TDS*	72	31		380	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	4.4	15		130	500	800	1000
Leach Test Information							
Stone Content (%)	79						
Sample Mass (kg)	1.2						
Dry Matter (%)	97						
Moisture (%)	3.1						
Stage 1							
Volume Eluate L2 (litres)	0.34						
Filtered Eluate VE1 (litres)	0.27						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
				*= UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

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Waste Acceptance Criteria Analytical Results							
Report No:	23-29951						
					Client: CCGROUND		
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2656960				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	20/04/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	TP02						
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	0.5				3%	5%	6%
Loss on Ignition (%) **	3.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) EH_1D_CU_AL #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.00				--	To be evaluated	To be evaluated
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)					using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l	mg/l		mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.018	0.013		0.13	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.0040	0.0014		0.017	0.5	10	70
Copper *	0.0044	0.015		0.14	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.016	0.0054		0.068	0.5	10	30
Nickel *	< 0.0010	0.0015		0.013	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0041	0.0139		0.13	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	6.8	1.6		23	10	150	500
Sulphate *	5.7	2.4		29	1000	20000	50000
TDS*	92	44		500	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	5.9	26		230	500	800	1000
Leach Test Information							
Stone Content (%)	47						
Sample Mass (kg)	1.2						
Dry Matter (%)	92						
Moisture (%)	8.4						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.24						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							
*= UKAS accredited (liquid eluate analysis only)							
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
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Waste Acceptance Criteria Analytical Results							
Report No:	23-29951						
					Client: CCGROUND		
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2656961				Landfill Waste Acceptance Criteria		
					Limits		
Sampling Date	20/04/2023				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID	BH01						
Depth (m)	1.10						
Solid Waste Analysis							
TOC (%)**	0.6				3%	5%	6%
Loss on Ignition (%) **	6.1				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) EH_ID_CU_AL #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	< 0.85				100	--	--
pH (units)**	7.0				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	0.00				--	To be evaluated	To be evaluated
Eluate Analysis					Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
	mg/l			mg/kg			
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.021	0.0062		0.084	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	< 0.0010	< 0.0010		< 0.0050	0.5	10	70
Copper *	0.0075	0.0087		0.085	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.0037	< 0.0030		< 0.020	0.5	10	30
Nickel *	0.0024	0.0016		0.017	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0093	0.0100		0.099	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	0.33	0.25		2.6	10	150	500
Sulphate *	2.4	1.1		13	1000	20000	50000
TDS*	64	20		270	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	6.2	17		160	500	800	1000
Leach Test Information							
Stone Content (%)	40						
Sample Mass (kg)	1.2						
Dry Matter (%)	94						
Moisture (%)	6.5						
Stage 1							
Volume Eluate L2 (litres)	0.33						
Filtered Eluate VE1 (litres)	0.26						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and i2 cannot be held responsible for any discrepancies with current legislation							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
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Analytical Report Number : 23-29951
Project / Site name: Trebanos WwTW

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2656959	TP01	None Supplied	1.90-2.00	Brown sand with gravel and stones.
2656960	TP02	None Supplied	0.5	Brown sand with gravel and stones.
2656961	BH01	None Supplied	1.1	Brown sand with gravel and stones.

Analytical Report Number : 23-29951
Project / Site name: Trebanos WwTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Preparation WAC leachate		In-house method	L043-PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270.	L064-PL	D	NONE
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	ISO 17025
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance an Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil in Soil C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L023-PL	D	MCERTS



Analytical Report Number : 23-29951
Project / Site name: Trebanos WwTW

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

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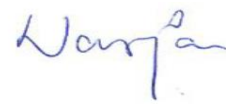
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Analytical Report Number : 23-29973

Project / Site name:	Trebanos WwTW	Samples received on:	21/04/2023
Your job number:	C7932	Samples instructed on/ Analysis started on:	21/04/2023
Your order number:	CCENG07630	Analysis completed by:	28/04/2023
Report Issue Number:	1	Report issued on:	02/05/2023
Samples Analysed:	3 soil samples		



Signed:

Dominika Warjan
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-29973
Project / Site name: Trebanos WwTW
Your Order No: CCENG07630

Lab Sample Number				2657074	2657075	2657076
Sample Reference				SPM01	SPM02	TP03
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.10	0.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	44
Moisture Content	%	0.01	NONE	14	15	7.3
Total mass of sample received	kg	0.001	NONE	1.2	1.2	1.2

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	EC	EC	EC

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.9	7.9	10
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	210	750	3000
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.11	0.37	1.5
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	106	373	1500
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	2.7	3.5	0.5
Loss on Ignition @ 450oC	%	0.2	MCERTS	6	8.2	1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.09	0.24	0.08
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.07	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.16	0.58	0.14
Pyrene	mg/kg	0.05	MCERTS	0.14	0.52	0.13
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.09	0.39	0.09
Chrysene	mg/kg	0.05	MCERTS	0.12	0.41	0.11
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.13	0.46	0.09
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	0.06	0.25	0.07
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.08	0.35	0.08
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.22	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.28	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	0.87	3.77	< 0.80
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Analytical Report Number: 23-29973
 Project / Site name: Trebanos WwTW
 Your Order No: CCENG07630

Lab Sample Number	2657074	2657075	2657076
Sample Reference	SPM01	SPM02	TP03
Sample Number	None Supplied	None Supplied	None Supplied
Depth (m)	0.10	0.10	0.50
Date Sampled	19/04/2023	19/04/2023	19/04/2023
Time Taken	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	21	26	20
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.4	2.5	1
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	50	170
Copper (aqua regia extractable)	mg/kg	1	MCERTS	77	130	61
Lead (aqua regia extractable)	mg/kg	1	MCERTS	210	170	87
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	48	97	36
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	500	400	160

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS_1D_AL}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH_CU_1D_AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH_CU_1D_AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH_CU_1D_AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	16
TPH-CWG - Aliphatic > EC35 - EC44 _{EH_CU_1D_AL}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	16
TPH-CWG - Aliphatic (EC5 - EC44) _{EH_CU+HS_1D_AL}	mg/kg	10	NONE	< 10	< 10	19

TPH-CWG - Aromatic >EC5 - EC7 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS_1D_AR}	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH_CU_1D_AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH_CU_1D_AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH_CU_1D_AR}	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44 _{EH_CU_1D_AR}	mg/kg	8.4	NONE	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC44) _{EH_CU+HS_1D_AR}	mg/kg	10	NONE	< 10	< 10	< 10

Analytical Report Number: 23-29973
 Project / Site name: Trebanos WwTW
 Your Order No: CCENG07630

Lab Sample Number				2657074	2657075	2657076
Sample Reference				SPM01	SPM02	TP03
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.10	0.10	0.50
Date Sampled				19/04/2023	19/04/2023	19/04/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			

PCBs

PCB Congener 077	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 081	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 105	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 114	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 118	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 123	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 126	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 156	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 157	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 167	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 169	mg/kg	0.001	NONE	-	-	< 0.001
PCB Congener 189	mg/kg	0.001	NONE	-	-	< 0.001

Total PCBs – WHO12

Total PCBs	mg/kg	0.012	NONE	-	-	< 0.012
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U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 23-29973

Project / Site name: Trebanos WWTW

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2657074	SPM01	None Supplied	0.1	Brown sand with gravel and vegetation.
2657075	SPM02	None Supplied	0.1	Brown sand with gravel and vegetation.
2657076	TP03	None Supplied	0.5	Brown sand with gravel and stones.

Analytical Report Number : 23-29973

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
PCBs WHO 12 in soil	Determination of PCBs (WHO-12 Congeners) by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

Analytical Report Number : 23-29973

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

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Analytical Report Number : 23-29976

Project / Site name:	Trebanos WwTW	Samples received on:	21/04/2023
Your job number:	C7932	Samples instructed on/ Analysis started on:	21/04/2023
Your order number:	CCENG07630	Analysis completed by:	02/05/2023
Report Issue Number:	1	Report issued on:	02/05/2023
Samples Analysed:	3 wac multi samples		

Izabela Wójcik
Signed:

Izabela Wójcik
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



4041



Environmental Science

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Waste Acceptance Criteria Analytical Results							
Report No:	23-29976						
				Client: CCGROUND			
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2657081			Landfill Waste Acceptance Criteria			
Sampling Date	19/04/2023			Limits			
Sample ID	SPM01			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Depth (m)	0.10						
Solid Waste Analysis							
TOC (%)**	2.5				3%	5%	6%
Loss on Ignition (%) **	5.9				--	--	10%
BTEX (µg/kg) **	< 10				6000	--	--
Sum of PCBs (mg/kg) **	< 0.30				1	--	--
Mineral Oil (mg/kg) BH, ID, CU, AL #	< 10				500	--	--
Total PAH (WAC-17) (mg/kg)	0.87				100	--	--
pH (units)**	7.3				--	>6	--
Acid Neutralisation Capacity (mmol / kg)	1.8				--	To be evaluated	To be evaluated
Eluate Analysis							
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.010	< 0.010		< 0.050	0.5	2	25
Barium *	0.045	0.021		0.25	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	< 0.0010	< 0.0010		< 0.0050	0.5	10	70
Copper *	0.013	0.017		0.16	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	< 0.0030	< 0.0030		< 0.020	0.5	10	30
Nickel *	0.0030	0.0021		0.022	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.013	0.0193		0.18	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	0.13	0.12		1.2	10	150	500
Sulphate *	2.8	1.2		14	1000	20000	50000
TDS*	160	71		840	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	10	16		150	500	800	1000
Leach Test Information							
Stone Content (%)	< 0.1						
Sample Mass (kg)	1.2						
Dry Matter (%)	86						
Moisture (%)	14						
Stage 1							
Volume Eluate L2 (litres)	0.31						
Filtered Eluate VE1 (litres)	0.25						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.							
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation				** = UKAS accredited (liquid eluate analysis only)			
** = MCERTS accredited							

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



4041



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Waste Acceptance Criteria Analytical Results								
Report No:	23-29976							
					Client: CCGROUND			
Location	Trebans WwTW							
Lab Reference (Sample Number)	2657082				Landfill Waste Acceptance Criteria			
Sampling Date	19/04/2023				Limits			
Sample ID	SPM02				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Depth (m)	0.10							
Solid Waste Analysis								
TOC (%)**	3.1				3%	5%	6%	
Loss on Ignition (%) **	7.7				--	--	10%	
BTEX (µg/kg) **	< 10				6000	--	--	
Sum of PCBs (mg/kg) **	< 0.30				1	--	--	
Mineral Oil (mg/kg) EH, ID, CL, AL #	< 10				500	--	--	
Total PAH (WAC-17) (mg/kg)	3.77				100	--	--	
pH (units)**	6.8				--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	-0.77				--	To be evaluated	To be evaluated	
Eluate Analysis		2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)		mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	< 0.010	< 0.010			< 0.050	0.5	2	25
Barium *	0.036	0.021			0.23	20	100	300
Cadmium *	< 0.0005	< 0.0005			< 0.0020	0.04	1	5
Chromium *	< 0.0010	< 0.0010			0.0081	0.5	10	70
Copper *	0.018	0.016			0.16	2	50	100
Mercury *	< 0.0015	< 0.0015			< 0.010	0.01	0.2	2
Molybdenum *	< 0.0030	< 0.0030			< 0.020	0.5	10	30
Nickel *	0.0023	0.0024			0.024	0.4	10	40
Lead *	< 0.0050	< 0.0050			< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050			< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010			< 0.040	0.1	0.5	7
Zinc *	0.014	0.0159			0.16	4	50	200
Chloride *	< 4.0	< 4.0			18	800	15000	25000
Fluoride*	< 0.050	0.063			0.58	10	150	500
Sulphate *	2.1	1.3			14	1000	20000	50000
TDS*	130	65			750	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13			< 0.50	1	-	-
DOC	12	17			160	500	800	1000
Leach Test Information								
Stone Content (%)	< 0.1							
Sample Mass (kg)	1.2							
Dry Matter (%)	85							
Moisture (%)	15							
Stage 1								
Volume Eluate L2 (litres)	0.30							
Filtered Eluate VE1 (litres)	0.26							
Results are expressed on a dry weight basis, after correction for moisture content where applicable.								*= UKAS accredited (liquid eluate analysis only)
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation								**= MCERTS accredited

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.



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Waste Acceptance Criteria Analytical Results							
Report No:	23-29976						
				Client: CCGROUND			
Location	Trebanos WwTW						
Lab Reference (Sample Number)	2657083			Landfill Waste Acceptance Criteria			
Sampling Date	19/04/2023			Limits			
Sample ID	TP03			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	
Depth (m)	0.50						
Solid Waste Analysis							
TOC (%)**	0.1			3%	5%	6%	
Loss on Ignition (%) **	1.2			--	--	10%	
BTEX (µg/kg) **	< 10			6000	--	--	
Sum of PCBs (mg/kg) **	< 0.30			1	--	--	
Mineral Oil (mg/kg) EH, ID, CU, AL #	19			500	--	--	
Total PAH (WAC-17) (mg/kg)	< 0.85			100	--	--	
pH (units)**	7.6			--	>6	--	
Acid Neutralisation Capacity (mmol / kg)	1.8			--	To be evaluated	To be evaluated	
Eluate Analysis	2:1	8:1		Cumulative 10:1	Limit values for compliance leaching test		
(BS EN 12457 - 3 preparation utilising end over end leaching procedure)	mg/l	mg/l		mg/kg	using BS EN 12457-3 at L/S 10 l/kg (mg/kg)		
Arsenic *	0.014	< 0.010		0.065	0.5	2	25
Barium *	0.023	0.016		0.17	20	100	300
Cadmium *	< 0.0005	< 0.0005		< 0.0020	0.04	1	5
Chromium *	0.026	0.0049		0.081	0.5	10	70
Copper *	0.0053	0.0097		0.090	2	50	100
Mercury *	< 0.0015	< 0.0015		< 0.010	0.01	0.2	2
Molybdenum *	0.0067	< 0.0030		0.034	0.5	10	30
Nickel *	< 0.0010	0.0018		0.016	0.4	10	40
Lead *	< 0.0050	< 0.0050		< 0.020	0.5	10	50
Antimony *	< 0.0050	< 0.0050		< 0.020	0.06	0.7	5
Selenium *	< 0.010	< 0.010		< 0.040	0.1	0.5	7
Zinc *	0.0028	0.0043		0.041	4	50	200
Chloride *	< 4.0	< 4.0		< 15	800	15000	25000
Fluoride*	2.6	0.94		12	10	150	500
Sulphate *	10	2.3		35	1000	20000	50000
TDS*	83	45		510	4000	60000	100000
Phenol Index (Monohydric Phenols) *	< 0.13	< 0.13		< 0.50	1	-	-
DOC	3.7	18		160	500	800	1000
Leach Test Information							
Stone Content (%)	44						
Sample Mass (kg)	1.2						
Dry Matter (%)	93						
Moisture (%)	7.3						
Stage 1							
Volume Eluate L2 (litres)	0.34						
Filtered Eluate VE1 (litres)	0.28						
Results are expressed on a dry weight basis, after correction for moisture content where applicable.				* = UKAS accredited (liquid eluate analysis only)			
Stated limits are for guidance only and I2 cannot be held responsible for any discrepancies with current legislation				** = MCERTS accredited			

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes as defined by the Waste (England and Wales) Regulations 2011 (as amended) and EA Guidance WM3.
This analysis is only applicable for landfill acceptance criteria (The Environmental Permitting (England and Wales) Regulations) and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Analytical Report Number : 23-29976

Project / Site name: Trebanos WwTW

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2657081	SPM01	None Supplied	0.1	Brown sand with gravel and vegetation.
2657082	SPM02	None Supplied	0.1	Brown sand with gravel and vegetation.
2657083	TP03	None Supplied	0.5	Brown sand with gravel and stones.

Analytical Report Number : 23-29976
Project / Site name: Trebanos WwTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Preparation WAC leachate		In-house method	L043-PL	W	NONE
Speciated WAC-17 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270.	L064-PL	D	NONE
Chloride in WAC leachate (BS EN 12457-3 Prep)	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260.	L082-PL	W	ISO 17025
Fluoride in WAC leachate (BS EN 12457-3 Prep)	Determination of fluoride in leachate by 1:1ratio with a buffer solution followed by Ion Selective Electrode.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L033-PL	W	ISO 17025
Phenol Index in WAC leachate (BS EN 12457-3 Prep)	Determination of monohydric phenols in leachate by continuous flow analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Sulphate in WAC leachate (BS EN 12457-3 Prep)	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025
TDS in WAC leachate (BS EN 12457-3 Prep)	Determination of total dissolved solids in leachate by electrometric measurement.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L031-PL	W	ISO 17025
DOC in WAC leachate (BS EN 12457-3 Prep)	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L037-PL	W	NONE
PCB's by GC-MS in soil	Determination of PCB by extraction with acetone and hexane followed by GC-MS.	In-house method based on USEPA 8082	L027-PL	D	MCERTS
BTEX (Sum of BTEX compounds) in soil	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Acid neutralisation capacity of soil	Determination of acid neutralisation capacity by addition of acid or alkali followed by electronic probe.	In-house method based on Guidance on Sampling and Testing of Wastes to Meet Landfill Waste Acceptance	L046-PL	W	NONE
Loss on ignition of soil @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace.	In house method.	L047-PL	D	MCERTS
Mineral Oil in Soil C10 - C40	Determination of mineral oil fraction extractable hydrocarbons in soil by GC-FID.	In-house method with silica gel split/clean up.	L076-PL	D	NONE
pH in soil	Determination of pH in soil by addition of water followed by electrometric measurement.	In house method.	L005-PL	W	MCERTS

Analytical Report Number : 23-29976
Project / Site name: Trebanos WwTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total organic carbon in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L023-PL	D	MCERTS
Metals in WAC leachate (BS EN 12457-3 Prep)	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on Standard Methods for the Examination of Water and Waste Water, 21st Ed.	L039-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.



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Environmental Science

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Analytical Report Number : 23-31231

Project / Site name: Trebanos WwTW

Your job number: C7932

Your order number: CCENG07682

Report Issue Number: 1

Samples Analysed: 3 water samples

Samples received on: 28/04/2023

**Samples instructed on/
Analysis started on:** 28/04/2023

Analysis completed by: 09/05/2023

Report issued on: 09/05/2023

Signed:

Joanna Wawrzeczko
Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.



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Analytical Report Number: 23-31231
Project / Site name: Trebanos WwTW

Your Order No: CCENG07682

Lab Sample Number				2664567	2664568	2664569
Sample Reference				BH01	BH02	SW1
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				2.39	2.16	0.00
Date Sampled				27/04/2023	27/04/2023	27/04/2023
Time Taken				0915	1015	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

General Inorganics

pH (L005B)	pH Units	N/A	ISO 17025	7.1	6.8	7.4
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10	< 10
Sulphate as SO ₄	mg/l	0.045	ISO 17025	35.8	17.4	54.9
Sulphide	µg/l	5	NONE	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	17	18	26
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	66	28	5900
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	1.11	0.9	5.38
Nitrate as N	mg/l	0.01	ISO 17025	0.29	0.2	5.62
Nitrite as N	µg/l	1	ISO 17025	120	< 1.0	250
Alkalinity as CaCO ₃	mg/l	3	ISO 17025	190	140	56

Hardness - Total	mg CaCO ₃ /l	1	ISO 17025	233	153	96.3
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Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10	< 10	< 10
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Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16	< 0.16	< 0.16
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Environmental Science

Analytical Report Number: 23-31231

Project / Site name: Trebanos WwTW

Your Order No: CCENG07682

Lab Sample Number				2664567	2664568	2664569
Sample Reference				BH01	BH02	SW1
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				2.39	2.16	0.00
Date Sampled				27/04/2023	27/04/2023	27/04/2023
Time Taken				0915	1015	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.012	ISO 17025	79	51	29
Iron (dissolved)	mg/l	0.004	ISO 17025	0.036	0.007	0.019
Magnesium (dissolved)	mg/l	0.005	ISO 17025	8.8	6.1	5.5
Potassium (dissolved)	mg/l	0.025	ISO 17025	4.9	2.9	9.3
Sodium (dissolved)	mg/l	0.01	ISO 17025	11	11	25

Antimony (dissolved)	µg/l	0.4	ISO 17025	< 0.4	0.5	0.9
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.27	0.86	0.36
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.38	2.9	0.05
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.3
Copper (dissolved)	µg/l	0.5	ISO 17025	1.6	0.6	1.8
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	< 0.2
Manganese (dissolved)	µg/l	0.05	ISO 17025	1600	2100	8.4
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Nickel (dissolved)	µg/l	0.5	ISO 17025	11	60	8.6
Selenium (dissolved)	µg/l	0.6	ISO 17025	0.8	< 0.6	< 0.6
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2	0.7
Zinc (dissolved)	µg/l	0.5	ISO 17025	6.5	73	15

Monoaromatics & Oxygenates

Benzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	< 3.0	< 3.0	< 3.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 _{HS_1D_AL}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44 _{EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44) _{HS+EH_1D_AL_MS}	µg/l	10	NONE	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 _{HS_1D_AR}	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C21 - C35 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >C35 - C44 _{EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C35) _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (C5 - C44) _{HS+EH_1D_AR_MS}	µg/l	10	NONE	< 10	< 10	< 10



4041



Analytical Report Number: 23-31231
Project / Site name: Trebanos WwTW

Your Order No: CCENG07682

Lab Sample Number				2664567	2664568	2664569
Sample Reference				BH01	BH02	SW1
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				2.39	2.16	0.00
Date Sampled				27/04/2023	27/04/2023	27/04/2023
Time Taken				0915	1015	1130
Analytical Parameter (Water Analysis)	Units	Limit of detection	Accreditation Status			

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Environmental Science

Analytical Report Number : 23-31231

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Sulphate in water	Determination of sulphate in water after filtration by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Dissolved Organic Carbon in water	Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Ammoniacal Nitrogen as N in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the discrete analyser (colorimetric) salicylate/nitroprusside method. Accredited matrices SW, GW, PW, FSE, LL.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In house method.	L099-PL	W	ISO 17025
TPH in (Water)	Determination of TPH bands by HS-GC-MS/GC-MS	In-house method, TPH with carbon banding.	L088/70-PL	W	NONE



4041



Analytical Report Number : 23-31231

Project / Site name: Trebanos WWTW

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Chloride in water	Determination of Chloride (dissolved) colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Alkalinity in Water (by discrete analyser)	Determination of Alkalinity by discrete analyser (colorimetry). Accredited matrices: SW, PW, GW.	In house method based on MEWAM & USEPA Method 310.2.	L082-PL	W	ISO 17025

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

APPENDIX F

Gas and Groundwater Monitoring Data

CC Ground Investigations Ltd											Borehole No.	
GAS AND WATER MONITORING RECORD											BH01	
Telephone: 01452 739 165 , Fax: 01452 739 220 , Email: info@CCGround.co.uk											Sheet 1 of 1	
Project Name: Trebanos Storm Outfall				Project No: C7932					Date 12/05/2023			
Location: Trebanos, Pontardawe, Swansea.									Logged By SF			
Client: Morgan Sindall Construction & Infrastructure Ltd									Checked By RT			
Date & Time	Methane (CH ₄) (%)	Carbon Dioxide (CO ₂) (%)	Oxygen (O ₂) (%)	Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H ₂ S) (ppm)	LEL (%)	Flow (L/hr)	Temp (C°)	Baro Pressure (mb)	Water Level (m)	Install Depths (m)	
27/04/2023												
24/04/2023 12:00												
25/04/2023 12:00												
26/04/2023 12:00												
27/04/2023 09:15												
27/04/2023 09:16							0.0					
27/04/2023 09:17							0.0					
27/04/2023 09:18							0.0					
27/04/2023 09:19							0.0					
27/04/2023 09:20							0.0					
27/04/2023 09:21	0.1	0.9	17.3	>>>	2	2%						
27/04/2023 09:22	0.1	0.7	17.6	>>>	1	2%						
27/04/2023 09:23	0.1	0.6	18.4	>>>	1	2%						
27/04/2023 09:24	0.1	0.5	18.7	>>>	1	2%						
27/04/2023 09:25	0.1	0.5	18.8	>>>	1	2%						
27/04/2023 09:26	0.1	0.4	18.8	>>>	1	2%						
27/04/2023 09:27	0.1	0.4	18.9	>>>	1	2%						
27/04/2023 09:28	0.1	0.4	18.9	>>>	1	2%						
27/04/2023 09:29	0.1	0.4	18.9	>>>	1	2%						
27/04/2023 09:30	0.1	0.4	18.9	>>>	1	2%						
27/04/2023 09:31				*								
										2.39*	4.50	
Purged & Sampled												
05/05/2023												
02/05/2023 09:30												
03/05/2023 09:30												
04/05/2023 09:30												
05/05/2023 09:30												
05/05/2023 09:31							0.0					
05/05/2023 09:32							0.0					
05/05/2023 09:33							0.0					
05/05/2023 09:34							0.0					
05/05/2023 09:35							0.0					
05/05/2023 09:36	0.0	0.8	20.4	>>>	3	0%						
05/05/2023 09:37	0.0	0.8	18.6	>>>	3	0%						
05/05/2023 09:38	0.0	1.1	17.8	>>>	4	0%						
05/05/2023 09:39	0.0	1.8	16.5	>>>	3	0%						
05/05/2023 09:40	0.0	1.9	15.8	>>>	2	0%						
05/05/2023 09:41				*								
										2.38	4.50	
12/05/2023												
09/05/2023 09:30												
10/05/2023 09:30												
11/05/2023 09:30												
12/05/2023 09:45												
12/05/2023 09:46							0.0					
12/05/2023 09:47							0.0					
12/05/2023 09:48							0.0					
12/05/2023 09:49							0.0					
12/05/2023 09:50							0.0					
12/05/2023 09:51	0.1	1.7	17.4	28	2	2%						
12/05/2023 09:52	0.1	1.5	17.6	22	1	2%						
12/05/2023 09:53	0.1	1.1	18.3	15	1	2%						
12/05/2023 09:54	0.1	1.0	18.6	13	1	2%						
12/05/2023 09:55	0.0	0.9	18.7	11	1	0%						
12/05/2023 09:56												
										2.13	4.50	
EQUIPMENT: Soil Instruments GA5000 Portable Gas Analyser. Geotechnical Instruments Dipmeter.												
INSTALLATION TYPE: 50mm ID HDPE gas monitoring standpipe. See corresponding borehole log for details.												
METHOD: Gas flow measured using internal flow meter for 5 minutes. Ground gas monitored using GA5000 for 5/10 minutes in accordance with CIRIA 665 (2007).												
REMARKS: LEL value calculated only. Water samples obtained during Visit 1. Surface water sample taken from adjacent river on Visit 1 (referenced: SW1).												

CC Ground Investigations Ltd											Borehole No.	
GAS AND WATER MONITORING RECORD											BH02	
Telephone: 01452 739 165 , Fax: 01452 739 220 , Email: info@CCGround.co.uk											Sheet 1 of 1	
Project Name: Trebanos Storm Outfall				Project No: C7932					Date 12/05/2023			
Location: Trebanos, Pontardawe, Swansea.									Logged By SF			
Client: Morgan Sindall Construction & Infrastructure Ltd									Checked By RT			
Date & Time	Methane (CH ₄) (%)	Carbon Dioxide (CO ₂) (%)	Oxygen (O ₂) (%)	Carbon Monoxide (CO) (ppm)	Hydrogen Sulphide (H ₂ S) (ppm)	LEL (%)	Flow (L/hr)	Temp (C°)	Baro Pressure (mb)	Water Level (m)	Install Depths (m)	
27/04/2023												
24/04/2023 12:00									1013			
25/04/2023 12:00									1019			
26/04/2023 12:00									1017			
27/04/2023 10:15								13	1011			
27/04/2023 10:16							0.0					
27/04/2023 10:17							0.0					
27/04/2023 10:18							0.0					
27/04/2023 10:19							0.0					
27/04/2023 10:20							0.0					
27/04/2023 10:21	0.1	0.6	18.8	>>>	0	2%						
27/04/2023 10:22	0.1	0.9	18.2	486	0	2%						
27/04/2023 10:23	0.1	1.4	17.5	433	0	2%						
27/04/2023 10:24	0.1	1.2	17.9	315	0	2%						
27/04/2023 10:25	0.1	1.3	17.8	317	0	2%						
27/04/2023 10:26	0.1	1.4	17.3	329	0	2%						
27/04/2023 10:27	0.1	1.5	17.0	336	0	2%						
27/04/2023 10:28	0.1	1.5	17.2	328	0	2%						
27/04/2023 10:29	0.1	1.6	17.0	324	0	2%						
27/04/2023 10:30	0.1	1.7	16.8	321	0	2%						
27/04/2023 10:31				*						2.16*	3.52	
										Purged & Sampled		
05/05/2023												
02/05/2023 10:30									879			
03/05/2023 10:30									1025			
04/05/2023 10:30									1013			
05/05/2023 10:30									1010			
05/05/2023 10:31							1.2	16				
05/05/2023 10:32							0.8					
05/05/2023 10:33							0.6					
05/05/2023 10:34							0.3					
05/05/2023 10:35							0.7					
05/05/2023 10:36	0.1	1.3	19.3	>>>	2	2%						
05/05/2023 10:37	0.1	1.4	18.9	>>>	2	2%						
05/05/2023 10:38	0.1	2.0	17.8	>>>	2	2%						
05/05/2023 10:39	0.1	2.6	16.2	>>>	1	2%						
05/05/2023 10:40	0.1	2.7	16.0	>>>	1	2%						
05/05/2023 10:41				*						2.08	3.52	
05/05/2023 10:42												
12/05/2023												
Access to BH02 denied												

APPENDIX G

SPT Calibration Certificate



SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005
+A1:2011

Drilling Rig Hire UK Ltd
Great Ryburgh
Norfolk
NR21 7AW

SPT Hammer Ref: CC15
Test Date: 03/01/2023
Report Date: 06/01/2023
File Name: CC15.spt
Test Operator: RW

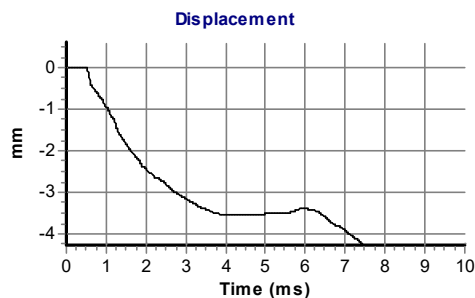
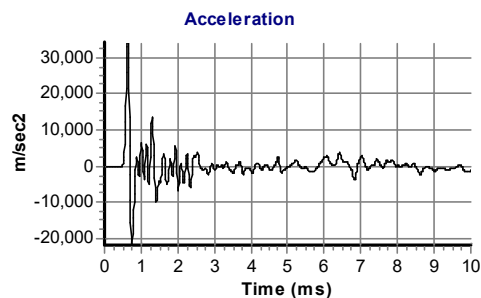
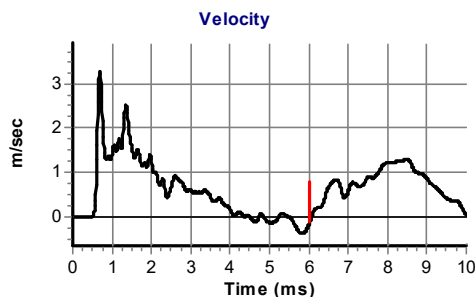
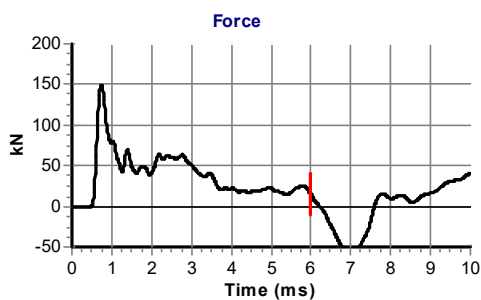
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.6
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 63177
Accelerometer No.2: 63178

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 12.2

Comments / Location



Calculations

Area of Rod A (mm^2): 983
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 297

Energy Ratio E_r (%): **63**

Signed: R. Walter
Title: Drilling Manager



SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005
+A1:2011

Drilling Rig Hire UK Ltd
Great Ryburgh
Norfolk
NR21 7AW

SPT Hammer Ref: CC21
Test Date: 03/01/2023
Report Date: 06/01/2023
File Name: CC21.spt
Test Operator: RW

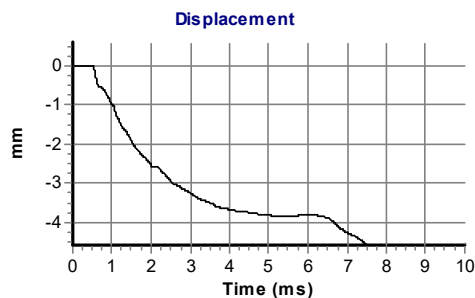
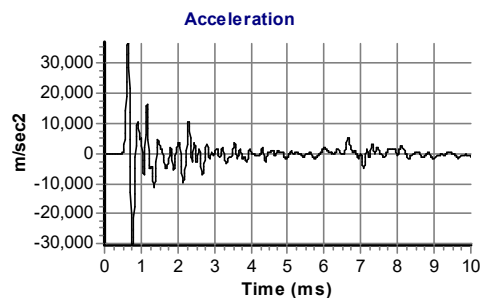
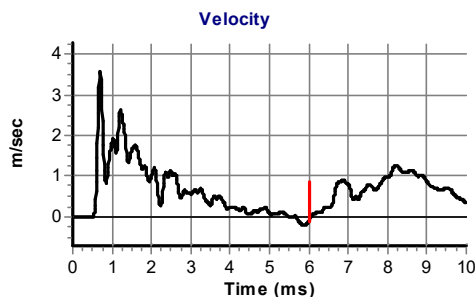
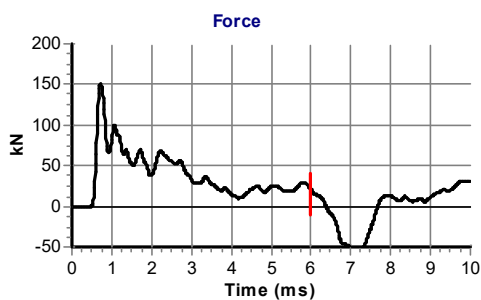
Instrumented Rod Data

Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.6
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 63177
Accelerometer No.2: 63178

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 12.2

Comments / Location



Calculations

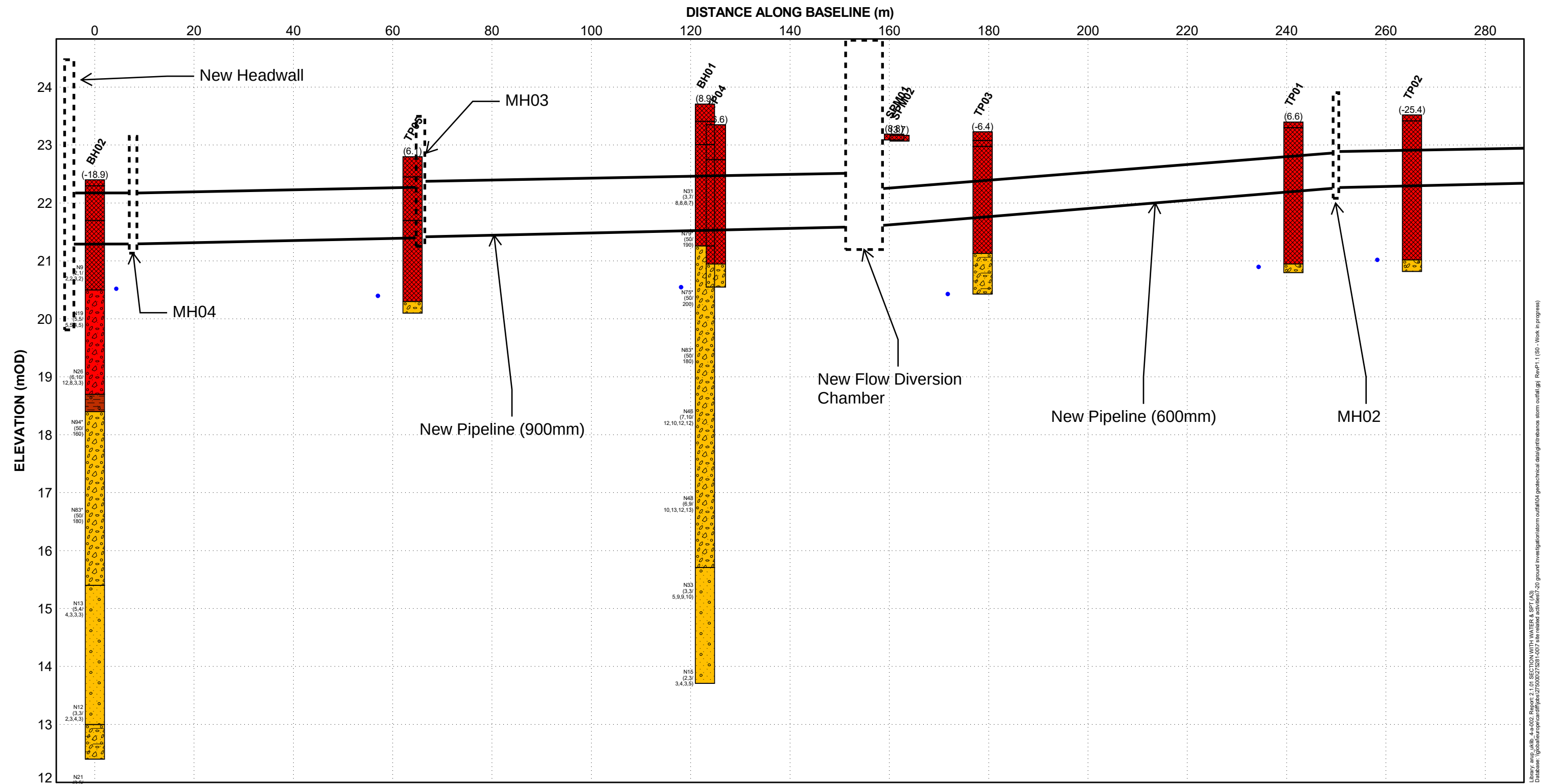
Area of Rod A (mm^2): 983
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 283

Energy Ratio E_r (%): **60**

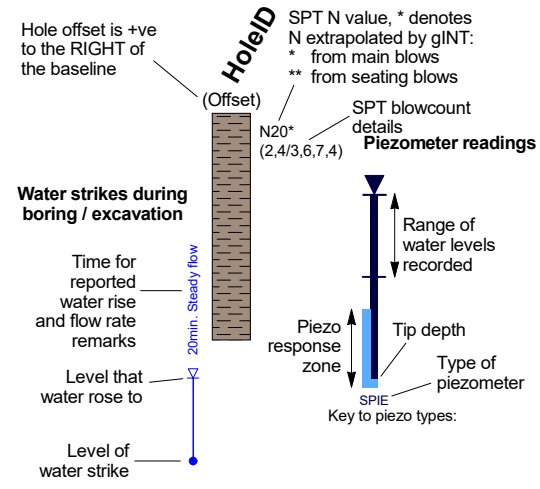
Signed: R. Walter
Title: Drilling Manager

Job number 275281
Date 4 June 2024

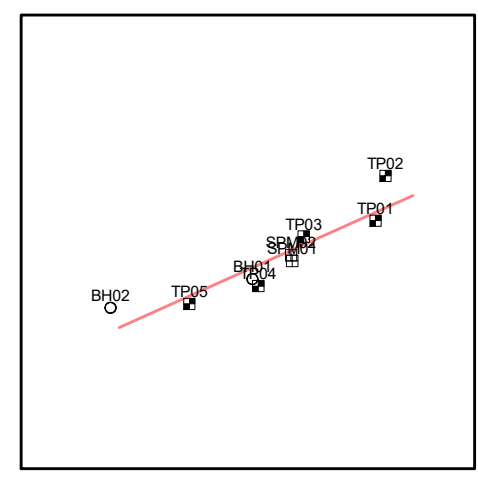
Appendix B – Geotechnical Plots



LEGEND



PLAN



COLOUR LEGEND

- Made Ground [MG]
- Alluvium [ALV]
- Glacial Sands and Gravels [GSG]

MATERIALS

- Fill (MADE GROUND)
- Sandy GRAVEL
- Gravelly SAND
- Cobbly GRAVEL
- Sandy gravelly CLAY
- GRAVEL
- Clayey sandy GRAVEL

SCALE 1:67V 1:778H @ A3-L

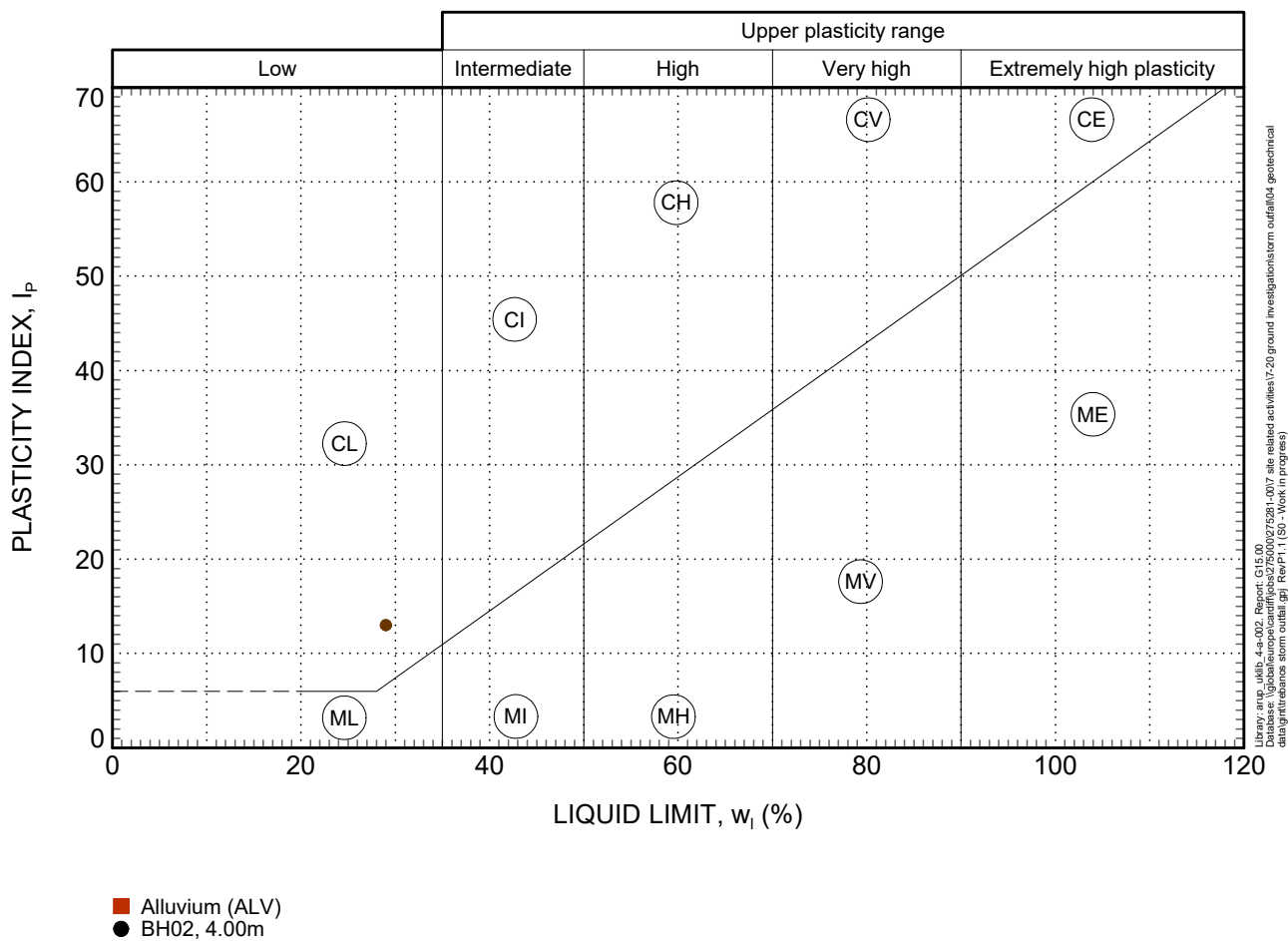
**TREBANOS STORM OUTFALL
GROUND INVESTIGATION REPORT
GEOLOGICAL CROSS SECTION**

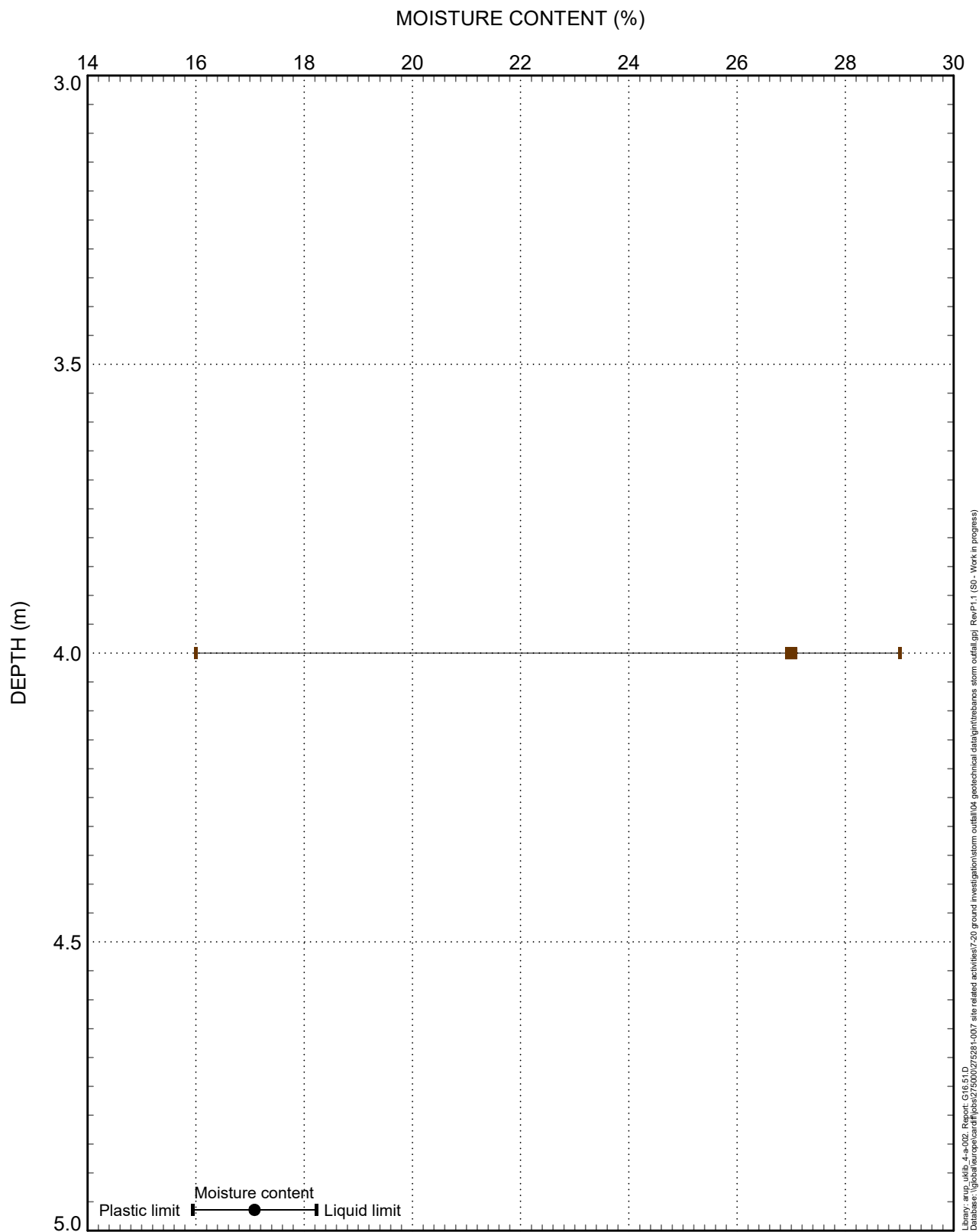
275281

FIGURE 1



- # TREBANOS STORM OUTFALL GROUND INVESTIGATION REPORT PARTICLE SIZE DISTRIBUTION



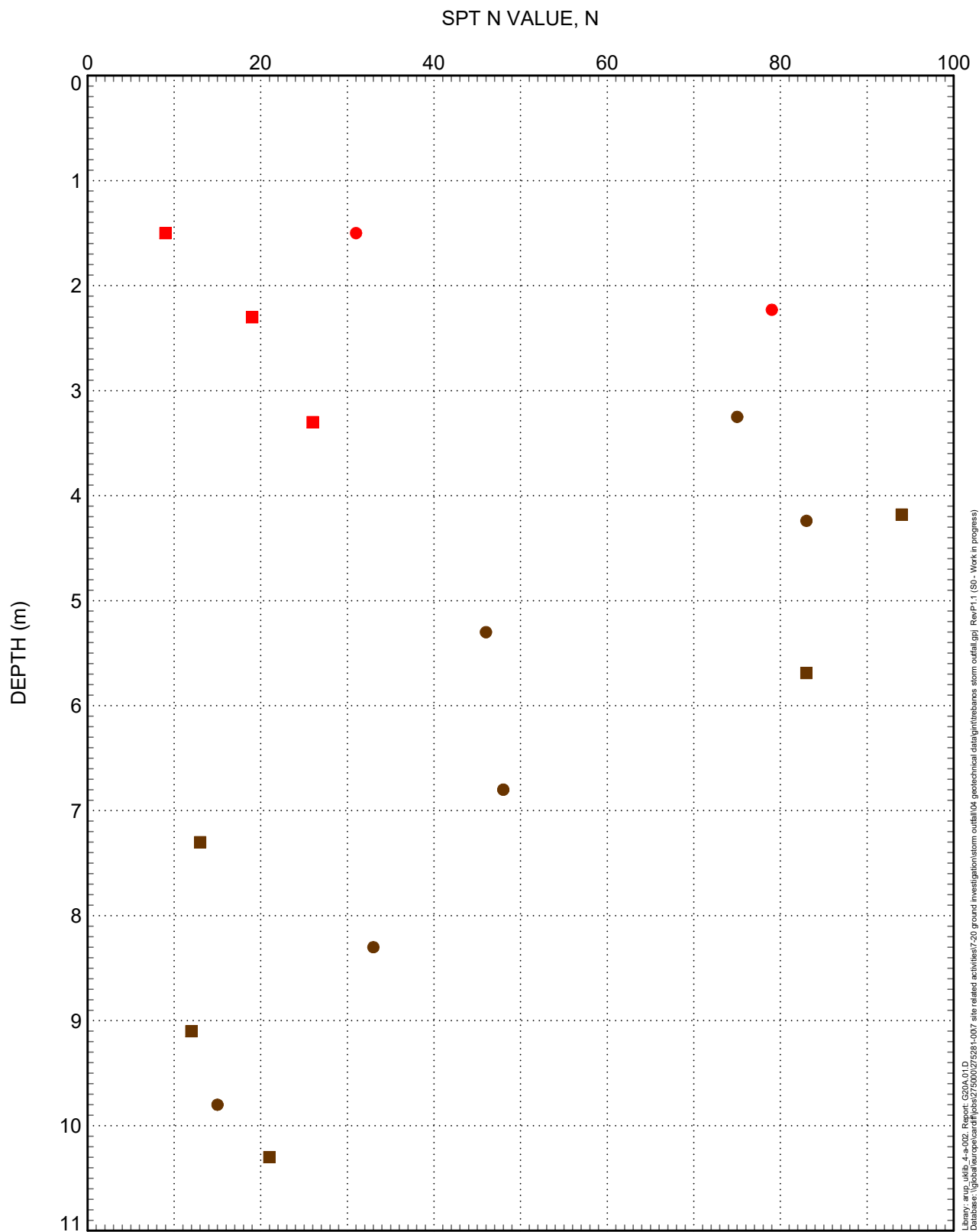


■ Alluvium (ALV)
 ■ BH02

TREBANOS STORM OUTFALL GROUND INVESTIGATION REPORT ATTERBERG LIMITS

275281

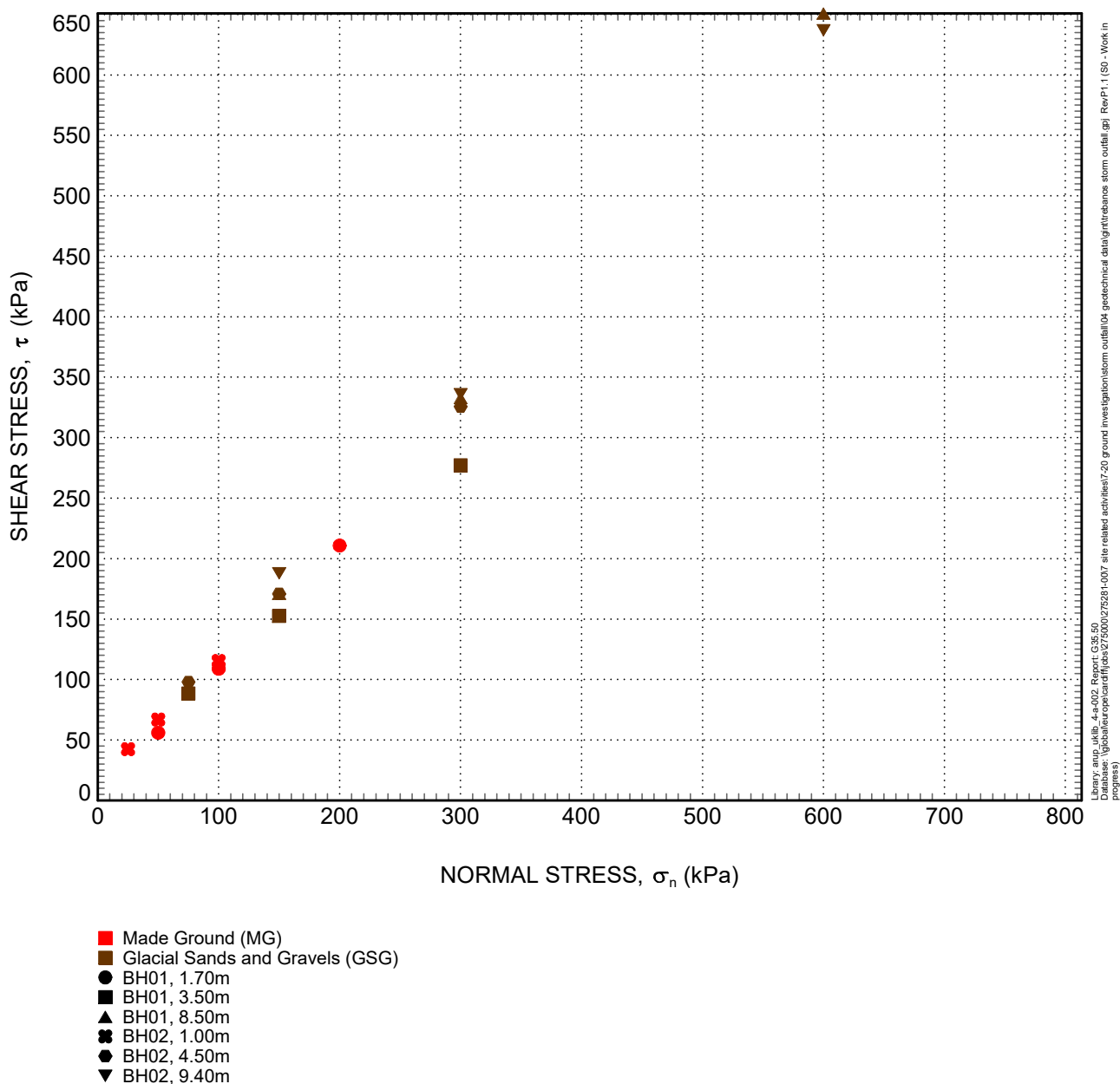
FIGURE 4



TREBANOS STORM OUTFALL GROUND INVESTIGATION REPORT STANDARD PENETRATION TESTS

275281

FIGURE 5



TREBANOS STORM OUTFALL GROUND INVESTIGATION REPORT SHEAR BOX TESTS

275281

FIGURE **6**

Job number 275281
Date 4 June 2024

Appendix C – Hydrogeological Assessment

Technical Note

Project title	Trebanos Storm Outfall
Job number	275281
File reference	4-20
Doc Ref	
Client	DCWW
Date	21 st July 2023
Subject	Appendix C: Assessment of Dewatering Requirements

63 St Thomas Street Bristol BS1 6JZ United Kingdom

t +44 117 976 5432 d +44 117 988 6724

arup.com

1. Introduction

This assessment of dewatering requirements has been produced for the Trebanos Storm Outfall scheme, within the village of Trebanos in the Swansea Valley, Wales.

The site is located within a flood plain, currently used as farmland for livestock. The northern section of the outfall connects to the existing Trebanos Wastewater Treatment Works (WwTW). The site is bounded by the Swansea Canal to the north and the River Tawe to the south (where the outfall will ultimately connect).

Further details on the proposal are summarised in the Ground Investigation Report. The deepest structure is understood to be a 3m by 6m, 4m deep concrete flow diversion chamber where the new storm outfall aligns with the existing final effluent pipe.

Excavation below ground has the potential to intercept groundwater which, without appropriate consideration and mitigation, can lead to geotechnical and environmental challenges.

This technical note summarises the anticipated hydrogeological conditions at the site, requirements for groundwater control, the potential requirement for licences/permits and potential hydrogeological impacts.

2. Baseline Hydrogeological Conditions

2.1 Geology

A site investigation was undertaken in April 2023 at the site, comprising two boreholes to 10 metres below ground level (m bgl), five trial pits and two inspection pits. The ground investigation and geology of the site is discussed in detail in Sections 2 and 3 of the Ground Investigation Report.

In summary, the ground conditions of the site comprise:

- Made Ground – CLAY and SAND with anthropogenic inclusions (e.g. glass and plastic);
- Alluvium – Slightly gravelly CLAY (encountered in BH02 only, 0.3m thick);
- Glacial Sands and Gravels – SAND and GRAVEL with occasional COBBLES; and

Job number 275281
Date 21 July 2023

- Bedrock – Not encountered during Ground Investigation but mapped in 1:50,000 scale geological maps as the Hughes Member of the Pennant Sandstone Formation. The Hughes Member generally comprises Sandstone with thin mudstone/siltstone and seatearth interbeds and thin coals.

2.2 Groundwater Levels

No groundwater strikes were recorded during drilling of either site investigation borehole, however this is likely a result of drilling flush being used, masking any strikes.

Groundwater was encountered within all Trial Pits. These were often terminated shortly after groundwater strikes due to ground instability. Recorded water strikes were as follows:

- TP01: Groundwater encountered at 2.50m bgl (+20.9m OD). No rise recorded.
- TP02: Groundwater encountered at 2.50m bgl (+21.02m OD). No rise recorded.
- TP03: Damp at 2.40m bgl (+20.83m OD). Rapid seepage at 2.80m bgl (20.43m OD). No rise recorded.
- TP04: Seepage at 2.40m bgl (+20.95m OD). No rise recorded.
- TP05: Seepage at 2.40m bgl (+20.40m OD). No rise recorded.

Groundwater monitoring standpipes were installed in BH01 and BH02. The monitoring standpipe in BH01 was screened between 3.0m and 4.5m bgl and the monitoring standpipe in BH02 was screened between 2.5m and 3.5m bgl, both within the Glacial Sands and Gravels.

Three post-installation site visits were undertaken on 27th April, 5th May and 12th May 2023 to measure groundwater levels within the two standpipes.

The groundwater levels are summarised in Table 1 below, which indicated groundwater levels at the site are around 2 to 2.5m bgl.

Table 1: Groundwater Monitoring Results (mAOD)

Monitoring Visit	Monitored Groundwater Level			
	BH01		BH02	
	mbgl	m OD	mbgl	m OD
27 th April 2023	2.39	+21.32	2.16	+20.24
5 th May 2023	2.38	+21.31	2.08	+20.32
12 th May 2023	2.13	+21.58	No access	-

Groundwater levels generally fluctuate seasonally in response to changes in precipitation and recharge. Lowest groundwater levels typically occur in late summer and will rise through the autumn and winter, reaching peak levels typically between January and mid-March. As such, the groundwater level may be higher during wetter periods. The groundwater levels are likely to be influenced by the River Tame which the storm outfall will discharge into, and as such when the river level is higher the groundwater levels will also likely be higher. For the permanent works design, it is recommended that the groundwater level is at least at ground level.

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The depth of the bedrock was not proven by the ground investigation, and the presence of confined artesian conditions is not known. For this assessment, it is assumed that the bedrock is at sufficient depth for any potential confined artesian groundwater conditions to not be a risk to the relatively shallow subterranean structures.

Although no groundwater strikes were observed, perched water may be also encountered during construction in more granular beds within the Made Ground.

2.3 Hydraulic Conductivity

Variable head tests were attempted in both BH01 and BH02 post-fieldwork. Both tests had to be aborted as water levels were recovering to the ambient level faster than water could be pumped or added to the wells:

- For BH01, 50 litres were removed in 30 seconds to attempt a rising head test and 50 litres were added in 30 seconds to attempt a falling head test;
- For BH02, 50 litres were removed in 45 seconds to attempt a rising head test and 50 litres were added in 30 seconds to attempt a falling head test.

The stabilising of the water levels at the ambient water table faster than water could be added or removed indicates a high hydraulic conductivity of the soils.

The geological descriptions and Particle Size Distribution (PSD) curves from the site investigation (see Appendix B) can also provide an indication of the likely hydraulic conductivity of the soils (see Table 2 below reproduced from CIRIA C750, Groundwater control: design and practice, second edition).

The soil descriptions and PSDs indicate that:

- Made Ground: Heterogenous mixture of SANDs and CLAYs with anthropogenic inclusions (e.g. glass and plastic)
- Glacial Sands and Gravels: Clean Sands and Gravels with occasional cobbles. Occasionally silty.

Table 2: Hydraulic Conductivity of Typical Soils (reproduced from CIRIA C750)

Indicative Soil Type	Degree of hydraulic conductivity	Hydraulic Conductivity (m/s)
Clean gravels	High	$>1 \times 10^{-3}$
Sand and gravel mixtures	Medium	1×10^{-3} to 1×10^{-5}
Very fine sands, silty sands	Low	1×10^{-4} to 1×10^{-7}
Silt and interlaminated silt/sand/clay	Very low	1×10^{-6} to 1×10^{-9}
Intact clays	Practically impermeable	$<1 \times 10^{-9}$

2.4 Groundwater Quality

One round of groundwater sampling was undertaken following the main fieldwork period on the 27th April 2023, with a sample taken from each standpipe (two samples total). A surface water sample was also collected from the River Tawe downstream of the site.

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The samples were screened against Freshwater Environmental Quality Standards (EQS) as part of the Tier 1 Controlled Waters Risk Assessment (see Appendix D). Where EQS values are not available, relevant Drinking Water Standards of World Health Organization values have been prioritised.

The screening identified EQS exceedances in relation to heavy metals/metalloids within the groundwater samples, as summarised in Table 3 below.

Table 3: Groundwater EQS Exceedances

Determinand	Screening Criteria (Freshwater EQS)	Recorded Exceedances	
		BH01	BH02
Antimony	0.005 µg/l (Drinking Water Standards)	< Limit of Detection	0.5 µg/l
Cadmium	0.08 µg/l	0.38 µg/l	2.9 µg/l
Bioavailable Manganese	123 µg/l	156.97 µg/l	191.18 µg/l
Bioavailable Nickel	1.2 µg/l	2.82 µg/l	14.62 µg/l
Bioavailable Zinc	12.3 µg/l	< EQS (4.09 µg/l)	49.76 µg/l

The groundwater quality will need to be considered when selecting a discharge location for any groundwater abstracted during construction, and obtaining the relevant permissions/consents/permits. Based on the initial water quality screening and Environmental Quality Standards, any discharges to ground or surface water are likely to require a bespoke environmental permit, and may require treatment before discharge.

3. Groundwater Control Requirements

3.1 Assessment of Dewatering Requirements

Since January 2018, construction dewatering has been a licensable activity, unless the abstraction rate is less than 20m³/day or the works are undertaken in accordance with an exemption. Abstraction licence exemptions include construction dewatering of less than 100m³/d, if undertaken in accordance with the relevant requirements (see <https://www.legislation.gov.uk/uksi/2017/1044/regulation/5/made>). There are no designated conservation sites within 500m of the site.

With a groundwater level observed between 2 and 2.5 mbgl in all site investigation locations (+21.6m OD at it's shallowest), the groundwater table will likely be encountered during excavation of the concrete diversion chamber, together with the deeper sections of the pipe run towards the outfall. As such, some form of groundwater control will be required if the excavations are to be undertaken in the dry.

An assessment has been undertaken of the potential dewatering rate for the deepest structure, to ascertain if an abstraction licence is likely to be required for the works from Natural Resources Wales, as detailed below.

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An assessment of steady state dewatering rates for the excavation has been undertaken using the Dupuit-Forcheimer equation for steady state flow in an unconfined aquifer, as follows¹:

$$Q = \frac{\pi k (H^2 - h_w^2)}{\ln [R_0/r_e]}$$

Where

- k = soil hydraulic conductivity
- H = initial piezometric level
- h_w = piezometric level in the equivalent well (target level)
- R_0 = radius of influence
- r_e = radius of equivalent well

The following assumptions apply to the Dupuit-Forcheimer equation:

- The aquifer has infinite areal extent.
- The aquifer is homogenous, isotropic and of uniform thickness.
- The initial water table is flat.
- The aquifer is pumped at a constant discharge rate.
- The pumping well is fully penetrating, therefore receiving water from the entire saturated thickness of the aquifer.
- The flow to the well is in a steady state.

Utilising the Dupuit-Forcheimer equation, the potential dewatering rates for a 2m drawdown at the deepest excavation is calculated in Table 4.

Table 4: Potential Steady State Dewatering Rates

Parameter	4.0m deep Diversion Chamber
Initial water table above base of aquifer (m)	8 (2.0m bgl) ²
Target water level above base of aquifer (m)	6 (4.0m bgl – Final depth TBC)
Hydraulic conductivity (m/s)	1 x 10 ⁻³

¹ Preene, M, Roberts, T O L and Powrie, W (2016). Groundwater Control – Design and Practice, 2nd edition. Construction Industry Research and Information Association, CIRIA Report C750, London.

² For purpose of assessment have assumed base of aquifer is 10m bgl. This is the depth proven by the boreholes, with some evidence in PSDs that the soils are less permeable at this depth.

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Parameter	4.0m deep Diversion Chamber
Radius of influence (m) ³	150
Radius of equivalent well (m) ⁴	2.9
Calculated Flow Rate (m ³ /d)	1,926

Based on the site investigation data, it is assumed that the overall hydraulic conductivity of the soils is likely to be high in areas; potentially exceeding 1×10^{-3} m/s. On this basis, the assessment indicates that the abstraction rate is likely to exceed the exemption allowance of 100m³/d and an abstraction licence may be required for dewatering operations on the site.

Proximity to the river, high permeability soils and a shallow groundwater table may make construction in the wet a more appropriate option, if practically feasible. Alternatively some form of groundwater cut-off (such as sheet piling) may be appropriate to minimise groundwater inflows. These measures would limit the potential hydrogeological impacts of the works, whilst potentially negating the requirement for an abstraction license of discharge permit. Timing the works in drier conditions will assist with the water management requirements (although flows are still likely to be sufficient to require a licence).

Appropriate arrangements will need to be made to manage and dispose of any abstracted water. Any discharges to surface water or ground will likely require an environmental permit.

3.2 Additional Considerations

The assessment has calculated the potential dewatering rate from the deepest structure only. The pipeline at the site may require excavation below the water table, and it is assumed that the majority of the outfall will be constructed consecutively. As such, the cumulative abstraction rates from all excavations are likely to be greater than calculated above.

Any groundwater abstracted during the early stages of dewatering will potentially be greater than the steady state rate calculated above. During the initial dewatering stages, groundwater is drained out of storage and the cone of drawdown expands until a balance is reached between groundwater recharge and abstraction (steady state). During these initial stages the dewatering rate can be an order of magnitude greater than the steady-state rate however they are typically of short duration.

The site is near to a surface watercourse (and a canal) of which the depth and substrate are not currently known. The degree of continuity between the soils and water course will influence the dewatering rate and could lead to higher abstraction rates and larger hydrogeological impacts.

Anthropogenic (i.e. man-made) ground conditions can significantly impact the required dewatering rates. Higher permeability pathways such as pipe bedding or historical drainage can lead to higher inflows into the excavation. Where these conditions are encountered, additional mitigation may need to be implemented.

³ The radius of influence has been based on the approximate distance to the River Tame. A lower radius of influence results in higher calculated flow rates.

⁴ Radius of equivalent well calculated for 3m x 6m diversion chamber (i.e. $3+6/\pi$).

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Surface water runoff can be significant if not appropriately managed. Code of Construction Practice (CoCP) measures should be incorporated to ensure that surface water is diverted away from any subsurface works. Clear surface water run-off should be segregated from any groundwater control from the excavation.

4. Hydrogeological Impacts

If dewatering is implemented to enable construction in the dry, the hydrogeological impact of the works need to be taken into consideration.

The construction of the storm outfall is assumed to be relatively short in duration. As such, the impacts of any temporary net abstraction from the aquifers overall water resource are anticipated to be low.

The Glacial Sands and Gravels and Bedrock (Hughes Member of the Pennant Sandstone Formation) are both designated as Secondary A aquifers which are aquifers that comprise permeable layers that can support local water supplies and may form an important source of base flow to rivers.

The drawdown impacts on the surrounding receptors (such as surface water features and any existing licensed or private abstractions) need to be taken into consideration, and assessed as part of any abstraction license application.

The site is not located within a Source Protection Zone, with the nearest licensed abstractions (groundwater or surface water) more than 1km away. Unlicensed private water abstraction may be present within the area, which should be identified (through consultation with the local authority) should any dewatering operations be undertaken.

The storm outfall will discharge into the River Tawe (a NRW defined Main River). Swansea Canal and a small tributary of the River Tawe is approximately 200-300m northwest of the proposed outfall

The high hydraulic conductivity of the strata at the site and proximity to receptors means that any hydrogeological impacts (e.g. reduction in baseflow) on local receptors should be assessed in further detail should dewatering be undertaken (such as in a hydrogeological impact assessment that will be required as part of any abstraction license application).

Many risks to the water environment (such as contamination) can be mitigated through the implementation of good site practice and pollution prevention measures (see the Environment Agency groundwater collection for further information, which has been adopted by NRW).

As noted above, appropriate arrangements will need to be made to dispose of any abstracted water. Discharges to surface water or ground will likely require an environmental permit and will need to consider the potential impacts on the receiving water body.

5. Conclusions and Recommendations

This assessment has concluded that the proposed below ground works at the Trebanos Storm Outfall site will likely require excavation below the water table and as such will require appropriate groundwater control measures or construction in the wet.

Groundwater control requirements should be reviewed as works progress, to ensure the most appropriate methodology is utilised for the encountered ground conditions (for instance sump pumping may not be appropriate where running sand conditions are encountered).

Due to the high permeability, groundwater ingress rates are anticipated to be high and an abstraction licence is likely to be required from Natural Resources Wales to undertake the works.

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Proximity to the river, high permeability soils and a shallow groundwater table may make construction in the wet a more appropriate option, if practically feasible. Alternatively some form of groundwater cut-off (such as sheet piling) may be appropriate to minimise groundwater inflows (further assessment of any proposed cut-off would need to be undertaken).

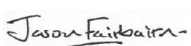
Appropriate arrangements will need to be made to dispose of any abstracted water (discharges to ground or surface water may require an environmental permit). Screening of the groundwater quality measurements has identified environmental quality standard exceedances for several heavy metals/metalloids. Exceedances of environmental quality standards may impact the ability of discharging the groundwater to ground or the river without prior treatment.

Due to the high permeability of the deposits and proximity to potential receptors, hydrogeological impacts will need to be considered in further detail should dewatering be undertaken. This assessment will need to consider both quantity impacts (e.g. reduction in baseflow to the river) and quality impacts (e.g. contaminant mobilisation).

Many risks (e.g. contamination) to the water environment can be mitigated through the implementation of good site practice and pollution prevention measures (see the [Environment Agency groundwater collection](#) for further information) which should be followed during construction.

Surface water runoff can be significant if not appropriately managed. Code of Construction Practice (CoCP) measures should be incorporated to ensure that surface water is diverted away from any subsurface works.

DOCUMENT CHECKING

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Signature			

Job number 275281
Date 4 June 2024

Appendix D – Chemical Screening Tables

Appendix D Soil Results					Lab Sample Number					2656950	2656951	2656952	2656579	2656580	2656581	2656947	2656948	2656949	2657076	2656574	2656575	2656576	2656577	2656578	2657074	2657075	
					Sample Reference					BH01	BH01	BH01	BH02	BH02	BH02	TP01	TP01	TP02	TP03	TP04	TP04	TP05	TP05	TP05	SPM01	SPM02	
Key:					Sample Number					None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Exceeding Commercial 1% Criteria					Depth (m)					0.10	1.10	3.00	0.20	1.00	4.00	0.50	1.90-2.00	0.50	0.50	0.20	2.00	0.50	2.00	2.50	0.10	0.10	
Exceeding Residential No Plant Uptake 1% Criteria					Date Sampled					20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023		
					Time Taken					None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Criteria	Source	Criteria	Source	MAX																			
									Soft dark brown slightly gravelly sandy CLAY with frequent roots and rootlets (<3mm). Gravel is sub-angular to rounded fine to coarse of siliceous material.	Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Dark brown gravelly clayey SAND with occasional roots and rootlets (<3mm) and low cobble content. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material. Cobbles are sub-rounded of siliceous material.	Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare coble sized plastic fragments. 1.20m: Loose.	Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush).	Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded to rounded boulders of quartzite, brick and concrete fragments and clinker. 0.30m: Concrete plinth, not-insitu. 0.40m: Geo-grid netting.	Dark greyish brown very sandy slightly clayey sub-angular to sub-rounded fine to coarse GRAVEL of clinker, brick fragments, concrete, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.	slightly gravelly slightly sandy CLAY with occasional roots and rootlets (<3mm) and low cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete	Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, porcelain and glass fragments, sandstone and clinker with medium cobble content. Cobbles are sub-rounded of siliceous material. Sand is of ash.	Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, brick fragments, clinker and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm).	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.					
									MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND		
Stone Content	%	0.1	NONE	-	-	-	-	79	< 0.1	40	44	< 0.1	< 0.1	< 0.1	61	79	47	44	< 0.1	72	32	28	31	< 0.1	< 0.1		
Moisture Content	%	0.01	NONE	-	-	-	-	19	14	6.5	9.1	10	9.2	18	3.2	3.1	8.4	7.3	19	3.6	9.8	10	15	14	15		
Total mass of sample received	kg	0.001	NONE	-	-	-	-	1.4	1.2	1.2	1.3	1.4	1.4	1.4	1.2	1.2	1.2	1.2	1.1	1.1	1.1	0.8	0.8	1.2	1.2		
Asbestos in Soil	Type	N/A	17025	-	-	-	-		Not-detected	Not-detected	-	Not-detected	Not-detected	-	Not-detected	-	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected	-	Not-detected	Not-detected	
Asbestos Analyst ID	N/A	N/A	N/A	-	-	-	-		MJN	MJN	N/A	DSO	DSO	N/A	MJN	N/A	MJN	EC	DSO	DSO	DSO	DSO	DSO	N/A	EC	EC	
General Inorganics																											
pH - Automated	Units	N/A	MCERTS	-	-	-	-	11	8	8.1	8.1	6.4	6.5	6.8	9.8	11	8.9	10	7	7.5	7.4	7	6.8	7.9	7.9		
Total Cyanide	mg/kg	1	MCERTS	-	-	-	-	0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	3000	13	4.7	9	3.6	4.6	6	17	260	56	3000	9	19	13	20	22	210	750		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.0013	MCERTS	-	-	-	-	1.5	0.0064	0.0023	0.0045	0.0018	0.0023	0.003	0.0086	0.13	0.028	1.5	0.0045	0.0093	0.0065	0.0099	0.011	0.11	0.37		
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	1500	6.4	2.3	4.5	1.8	2.3	3	8.6	131	28.2	1500	4.5	9.3	6.5	9.9	11.1	106	373		
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	-	-	-	-	3.5	2	0.8	0.4	1	1	1.7	0.6	0.5	0.9	0.5	2.3	0.5	1.5	1.3	1	2.7	3.5		
Loss on Ignition @ 450oC	%	0.2	MCERTS	-	-	-	-	13.4	-	5.9	-	-	6.4	-	-	1.4	3.3	1	13.4	4.6	-	-	8.9	6	8.2		
Total Phenols																											
Total Phenols (monohydric)	mg/kg	1	MCERTS	440	SHO (direct contact)	-	-	0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0		
Speciated PAHs																											
Naphthalene	mg/kg	0.05	MCERTS	2.33327	AGAC	-	-	0.21	0.08	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	0.2	0.21	-	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.05	MCERTS	2995	AGAC	-	-	0	< 0.05	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	-	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	2995	AGAC	-	-	0.11	< 0.05	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	0.11	< 0.05	-	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	MCERTS	2795	AGAC	-	-	0.1	< 0.05	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	0.1	< 0.05	-	< 0.05	< 0.05		
Phenanthrene	mg/kg	0.05	MCERTS	1292	AGAC	-	-	1.7	0.24	-	-	-	-	-	< 0.05	-	-	0.08	-	-	1.2	1.7	-	0.09	0.24		
Anthracene	mg/kg	0.05	MCERTS	30604	AGAC	-	-	0.27	< 0.05	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	0.27	< 0.05	-	< 0.05	0.07		
Fluoranthene	mg/kg	0.05	MCERTS	1526.396	AGAC	-	-	1.8	0.43	-	-	-	-	-	< 0.05	-	-	0.14	-	-	1.8	1.6	-	0.16	0.58		
Pyrene	mg/kg	0.05	MCERTS	3661.13	AGAC	-	-	1.5	0.35	-	-	-	-	-	< 0.05	-	-	0.13	-	-	1.5	1.2	-	0.14	0.52		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	3.167392	AGAC/SHO L	-	-	1	0.26	-	-	-	-	-	< 0.05	-	-	0.09	-	-	1	0.39	-	0.09	0.39		
Chrysene	mg/kg	0.05	MCERTS	29.65853	AGAC/SHO L	-	-	1.2	0.35	-	-	-	-	-	< 0.05	-	-	0.11	-	-	1.2	0.82	-	0.12	0.41		
Benzo(b)fluoranthene	mg/kg	0.05	17025	3.953995	AGAC	-	-	1.2	0.36	-	-	-	-	-	< 0.05	-	-	0.09	-	-	1.2	0.75	-	0.13	0.46		
Benzo(k)fluoranthene	mg/kg	0.05	17025	105.6374	AGAC	-	-	0.43	0.13	-	-	-	-	-	< 0.05	-	-	0.07	-	-	0.43	0.31	-	0.06	0.25		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	3.167392	AGAC/SHO L	-	-	0.76	0.22	-	-	-	-	-	< 0.05	-	-	0.08	-	-	0.76	0.41	-	0.08	0.35		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	45	AGAC/SHO L	-	-	0.47	0.14	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	0.47	0.27	-	< 0.05	0.22		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.310292	AGAC/SHO L	-	-	0	< 0.05	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	< 0.05	< 0.05	-	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	355.1437	AGAC	-	-	0.51	0.15	-	-	-	-	-	< 0.05	-	-	< 0.05	-	-	0.51	0.32	-	< 0.05	0.28		
Total PAH																											
Speciated Total EPA-16 PAHs	mg/kg	0.8	17025	-	-	-	-	10.8	2.71	-	-	-	-	-	< 0.80	-	-	< 0.80	-	-	10.8	7.93	-	0.87	3.77		
Heavy Metals / Metalloids																											
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	39.9	C4SL/SHO L	635	C4SL/SHO L	40	37	15	6.7	18	16	3.7	13	13	40	20	28	9.3	20	18	19	21	26		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	85	AGAC/SHO L	-	-	2.6	2.2	1.1	< 0.2	1.5	1.5	0.3	0.7	1.1	2.6	1	2.6	0.6	1.6	1.3	1	1.4	2.5		
Chromium (hexavalent)	mg/kg	1.8	MCERTS	907	AGAC	-	-	0	< 1.8	< 1.8	-	< 1.8	< 1.8	-	< 1.8	-	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	907	AGAC	-	-	310	15	10	11	12	12	12	28	310	82	170	16	7.1	10	12	17	22	50		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	7130	AGAC	-	-	400	240	60	10	41	37	17	44	43	98	61	400	24	51	61	72	77	130		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	310	C4SL	-	-	210	97	60	14	50	45	17	71	43	140	87	120	20	62	81	80	210	170		

Appendix D Soil Results									Lab Sample Number		2656950	2656951	2656952	2656579	2656580	2656581	2656947	2656948	2656949	2657076	2656574	2656575	2656576	2656577	2656578	2657074	2657075
									Sample Reference		BH01	BH01	BH01	BH02	BH02	BH02	TP01	TP01	TP02	TP03	TP04	TP04	TP05	TP05	TP05	SPM01	SPM02
Key:									Sample Number		None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Exceeding Commercial 1% Criteria									Depth (m)		0.10	1.10	3.00	0.20	1.00	4.00	0.50	1.90-2.00	0.50	0.50	0.20	2.00	0.50	2.00	2.50	0.10	0.10
Exceeding Residential No Plant Uptake 1% Criteria									Date Sampled		20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	
									Time Taken		None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Criteria	Source	Criteria	Source	MAX	Soft dark brown slightly gravelly sandy CLAY with frequent roots and rootlets (<3mm). Gravel is sub-angular to rounded fine to coarse of siliceous material.	Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Dark brown gravelly clayey SAND with occasional roots and rootlets (<3mm) and low cobble content. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material. Cobbles are sub-rounded of siliceous material.	Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare cobble sized plastic fragments. 1.20m: Loose.	Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush).	Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded to rounded boulders of quartzite, brick and concrete fragments and clinker. 0.30m: Concrete plinth, not-insitu. 0.40m: Geo-grid netting.	Dark greyish brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of clinker, brick fragments, concrete, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.	Dark brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of siliceous material, porcelain and glass fragments, sandstone and clinker with medium cobble content. Cobbles are sub-rounded of siliceous material and concrete	Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, brick fragments, clinker and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm).	Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, brick fragments, clinker and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm).	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-rounded of brick fragments and siliceous material.	Vegetation over dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick fragments with frequent roots and rootlets (<10mm).	Vegetation over gravelly clayey SAND with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.			
									MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.24	AGAC	-	-	0	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	181.4	AGAC	983	AGAC	200	94	37	19	39	34	17	21	20	51	36	200	25	37	37	31	48	97		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	430	AGAC/SAU L	-	-	0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	40400	AGAC	-	-	850	330	200	40	210	220	37	120	130	290	160	850	140	210	270	210	500	400		

Monoaromatics & Oxygenates

Benzene	µg/kg	5	MCERTS	0.378	AGAC/SHU L	-	-	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
Toluene	µg/kg	5	MCERTS	880	AGAC/SHU L	-	-	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
Ethylbenzene	µg/kg	5	MCERTS	82.4	AGAC	-	-	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
p & m-xylene	µg/kg	5	MCERTS	79	AGAC (p-xylene)	-	-	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
o-xylene	µg/kg	5	MCERTS	79	AGAC/SHU L	-	-	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
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	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

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_ID_AL	mg/kg	0.001	NONE	42.4231	AGAC/SHU L	-	-	0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 HS_ID_AL	mg/kg	0.001	NONE	103.564	AGAC	-	-	0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 HS_ID_AL	mg/kg	0.001	NONE	26.80905	AGAC/SHU L	-	-	0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_ID_AL	mg/kg	1	MCERTS	132	AGAC	-	-	0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_ID_AL	mg/kg	2	MCERTS	1061	AGAC	-	-	0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_ID_AL	mg/kg	8	MCERTS	11925	AGAC (Unit >C16-35)	-	-	0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_ID_AL	mg/kg	8	MCERTS	11925	AGAC (Unit >C16-35)	-	-	16	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0	16	11	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic > EC35 - EC44 EH_CU_ID_AL	mg/kg	8.4	NONE	11926	AGAC (Unit >C16-35)	-	-	0	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_ID_AL	mg/kg	10	NONE	-	-	-	-	16	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	16	11	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC44) EH_CU+HS_ID_AL	mg/kg	10	NONE	-	-	-	-	19	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	19	11	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 HS_ID_AR	mg/kg	0.001	NONE	0.378	AGAC/SHU L (benzene)	-	-	0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 HS_ID_AR	mg/kg	0.001	NONE	880	AGAC (toluene)	-	-	0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 HS_ID_AR	mg/kg	0.001	NONE	47.19811	AGAC/SHU L	-	-	0	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_ID_AR	mg/kg	1	MCERTS	251.7291	AGAC/SHU L	-	-	0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_ID_AR	mg/kg	2	MCERTS	1800	AGAC/SHU L	-	-	0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_ID_AR	mg/kg	10	MCERTS	1400	AGAC	-	-	0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_ID_AR	mg/kg	10	MCERTS	1930	AGAC	-	-	0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic > EC35 - EC44 EH_CU_ID_AR	mg/kg	8.4	NONE	1930	AGAC	-	-	0	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4	< 8.4
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_ID_AR	mg/kg	10	NONE	-	-	-	-	10	< 10	< 10	< 10	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC44) EH_CU+HS_ID_AR	mg/kg	10	NONE	-	-	-	-	10	< 10	< 10	< 10	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10

VOCs

Chloromethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0		< 5.0	< 5.0	-	-	-		
Chloroethane	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0		< 5.0	< 5.0	-	-	-		
Bromomethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0		< 5.0	< 5.0	-	-	-		
Vinyl Chloride	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0		< 5.0	< 5.0	-	-	-		
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0		< 5.0	< 5.0	-	-	-		
1,1-Dichloroethene	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0		< 5.0	< 5.0	-	-	-		

Appendix D Soil Results				Lab Sample Number						2656950	2656951	2656952	2656579	2656580	2656581	2656947	2656948	2656949	2657076	2656574	2656575	2656576	2656577	2656578	2657074	2657075	
				Sample Reference						BH01	BH01	BH01	BH02	BH02	BH02	TP01	TP01	TP02	TP03	TP04	TP04	TP05	TP05	TP05	TP05	SPM01	SPM02
Key:				Sample Number						None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Exceeding Commercial 1% Criteria				Depth (m)						0.10	1.10	3.00	0.20	1.00	4.00	0.50	1.90-2.00	0.50	0.50	0.20	2.00	0.50	2.00	2.50	0.10	0.10	
Exceeding Residential No Plant Uptake 1% Criteria				Date Sampled						20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023		
				Time Taken						None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Criteria	Source	Criteria	Source	MAX																			
									Soft dark brown slightly gravelly sandy CLAY with frequent roots and rootlets (<3mm). Gravel is sub-angular to rounded fine to coarse of siliceous material.	Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Dark brown gravelly clayey SAND with occasional roots and rootlets (<3mm) and low cobble content. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material. Cobbles are sub-rounded of siliceous material.	Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare cobble sized plastic fragments. 1.20m: Loose.	Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush).	Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded boulders of quartzite, brick and concrete fragments and clinker. 0.30m: Concrete plinth, not-insitu. 0.40m: Geo-grid netting.	Dark greyish brown very sandy clayey angular to sub-angular fine to coarse GRAVEL and COBBLES of brick fragments, quartzite and concrete with rare sub-rounded boulders of quartzite and siliceous material.	Dark brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of clinker, brick fragments, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.	slightly brown slightly gravelly sandy CLAY with occasional roots and rootlets (<3mm) and low cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete.	Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, porcelain and glass fragments, sandstone and clinker with medium cobble content. Cobbles are sub-rounded of siliceous material. Sand is of ash.	Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, brick fragments, clinker and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm).	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	Greyish brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material with medium cobble content. Cobbles are sub-rounded of siliceous material.	Vegetation over dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick plastic fragments and roots with frequent rootlets (<10mm).	Vegetation over gravelly clayey SAND with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.			
									MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Cis-1,2-dichloroethene	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,1-Dichloroethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
2,2-Dichloropropane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Trichloromethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,1,1-Trichloroethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,2-Dichloroethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,1-Dichloropropene	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Trans-1,2-dichloroethene	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Benzene	µg/kg	5	MCERTS	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Tetrachloromethane	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,2-Dichloropropane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Trichloroethene	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Dibromomethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Bromodichloromethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Toluene	µg/kg	5	MCERTS	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,3-Dichloropropane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Dibromochloromethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,2-Dibromoethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Chlorobenzene	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
p & m-Xylene	µg/kg	5	MCERTS	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Styrene	µg/kg	5	17025	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
Tribromomethane	µg/kg	5	NONE	-	-	-	-	0	-	< 5.0	-	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	-	< 5.0	< 5.0	-	-	-	-	-
o-Xylene	µg/kg	5	MCERTS</																								

Appendix D Soil Results					Lab Sample Number					2656950	2656951	2656952	2656579	2656580	2656581	2656947	2656948	2656949	2657076	2656574	2656575	2656576	2656577	2656578	2657074	2657075	
					Sample Reference					BH01	BH01	BH01	BH02	BH02	BH02	TP01	TP01	TP02	TP03	TP04	TP04	TP05	TP05	TP05	TP05	SPM01	SPM02
Key:					Sample Number					None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Exceeding Commercial 1% Criteria					Depth (m)					0.10	1.10	3.00	0.20	1.00	4.00	0.50	1.90-2.00	0.50	0.50	0.20	2.00	0.50	2.00	2.50	0.10	0.10	
Exceeding Residential No Plant Uptake 1% Criteria					Date Sampled					20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023		
					Time Taken					None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Criteria	Source	Criteria	Source	MAX	Soft dark brown slightly gravelly sandy CLAY with frequent roots and rootlets (<3mm). Gravel is sub-angular to rounded fine to coarse of siliceous material.	Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Dark brown gravelly clayey SAND with occasional roots and rootlets (<3mm) and low cobble content. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material. Cobbles are sub-rounded of siliceous material.	Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare cobble sized plastic fragments. 1.20m: Loose.	Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush).	Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded to rounded boulders of quartzite, brick and concrete fragments and clinker. 0.30m: Concrete plinth, not insitu. 0.40m: Geo-grid netting.	Dark greyish brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of clinker, brick fragments, concrete, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.	Dark brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of clinker, brick fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete	slightly gravelly sandy CLAY with occasional roots and rootlets (<3mm) and low cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete	Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete	Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm).	Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material with medium cobble content. Cobbles are sub-rounded of siliceous material.	Dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick and plastic fragments and with frequent roots and rootlets (<10mm).	Vegetation over dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick and plastic fragments and with frequent roots and rootlets (<10mm).	Vegetation over gravelly clayey SAND with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.		
									MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND
Aniline	mg/kg	0.1	NONE	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
Phenol	mg/kg	0.2	17025	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
Hexachloroethane	mg/kg	0.05	17025	-	-	-	-	0	-	< 0.05	-	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	< 0.05	-	-	-	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
Naphthalene	mg/kg	0.05	MCERTS	2.33327	AGAC	-	-	0.12	-	< 0.05	-	-	0.12	-	< 0.05	-	< 0.05	-	< 0.05	-	0.09	< 0.05	-	-	-	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	-	0	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	-	< 0.1	< 0.1	-	-	-	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	-	0	-	< 0.05	-	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	< 0.05	-	-	-	-	-
Acenaphthene	mg/kg	0.05	MCERTS	2995	AGAC	-	-	0.06	-	< 0.05	-	-	0.06	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	< 0.05	-	-	-	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	0	-	< 0.2	-	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	-	-	-	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	-	0	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	-	< 0.3	< 0.3	-	-	-	-	-
Diethyl phthalate	mg/kg	0.2</																									

Appendix D Soil Results									Lab Sample Number		2656950	2656951	2656952	2656579	2656580	2656581	2656947	2656948	2656949	2657076	2656574	2656575	2656576	2656577	2656578	2657074	2657075								
									Sample Reference		BH01	BH01	BH01	BH02	BH02	BH02	TP01	TP01	TP02	TP03	TP04	TP04	TP05	TP05	TP05	SPM01	SPM02								
Key:									Sample Number		None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied								
Exceeding Commercial 1% Criteria									Depth (m)		0.10	1.10	3.00	0.20	1.00	4.00	0.50	1.90-2.00	0.50	0.50	0.20	2.00	0.50	2.00	2.50	0.10	0.10								
Exceeding Residential No Plant Uprtake 1% Criteria									Date Sampled		20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	20/04/2023	20/04/2023	20/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023	19/04/2023									
									Time Taken		None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied								
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	Criteria	Source	Criteria	Source	MAX	Soft dark brown slightly gravelly sandy CLAY with frequent roots and rootlets (<3mm). Gravel is sub-angular to rounded fine to coarse of siliceous material.	Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidisation staining on gravel. 3.00m: Very dense.	Dark brown gravelly clayey SAND with occasional roots and rootlets (<3mm) and low cobble content. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material.	Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare coble sized plastic fragments. 1.20m: Loose.	Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush).	Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded boulders of quartzite, brick and concrete fragments and clinker. 0.30m: Concrete plinth, not-insitu. 0.40m: Geo-grid netting.	Dark greyish brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of clinker, brick fragments, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.	slightly gravelly slightly sandy CLAY with occasional roots and rootlets (<3mm) and low cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete	Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, porcelain and glass fragments, sandstone and clinker with medium cobble content. Cobbles are sub-rounded of siliceous material. Sand is of ash.	Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, brick fragments, clinker and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm).	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-rounded of brick fragments and siliceous material.	Dark brown very gravelly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material with brick and plastic fragments with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.	Vegetation over dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick and plastic fragments with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.	Vegetation over gravelly clayey SAND with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.										
									MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND									
									mg/kg	0.05	MCERTS	3.167392	AGAC/SHU L	-	-	-	0.5	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	0.5	< 0.05	-	-	-	-	-	-	-	
									mg/kg	0.05	MCERTS	45	AGAC/SHU L	-	-	-	0.32	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	0.32	< 0.05	-	-	-	-	-	-	-
									mg/kg	0.05	MCERTS		AGAC	-	-	-	0	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	< 0.05	-	-	-	-	-	-	-
									mg/kg	0.05	MCERTS	355.1437	AGAC	-	-	-	0.3	-	< 0.05	-	< 0.05	-	< 0.05	-	< 0.05	-	0.3	< 0.05	-	-	-	-	-	-	-

PCBs																									
PCB Congener 077	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 081	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 105	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 114	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 118	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 123	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 126	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 156	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 157	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 167	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 169	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-
PCB Congener 189	mg/kg	0.001	NONE	-	-	-	-	0	-	-	-					< 0.001	-	< 0.001	< 0.001					-	-

Total PCBs – WHO12																									
Total PCBs	mg/kg	0.012	NONE	-	-	-	-	0	-	-	-					< 0.012	-	< 0.012	< 0.012					-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Appendix D Leachate Results

Location					Trebanos WwTW	Trebanos WwTW	Trebanos WwTW	Trebanos WwTW	Trebanos WwTW	Trebanos WwTW	Trebanos WwTW	Trebanos WwTW	Trebanos WwTW	Trebanos WwTW
Lab Reference (Sample Number)					2656961	2656595	2656959	2656960	2657083	2656592	2656593	2656594	2657081	2657082
Sampling Date					20 April 2023	19 April 2023	20 April 2023	20 April 2023	19 April 2023	19 April 2023	19 April 2023	19 April 2023	19 April 2023	19 April 2023
Sample ID					BH01	BH02	TP01	TP02	TP03	TP04	TP04	TP05	SPM01	SPM02
Depth (m)	m				1.1	1	1.90-2.00	0.5	0.5	0.2	2	2.5	0.1	0.1
Strata							Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded to rounded boulders of quartzite, brick and concrete fragments and clinker. 0.30m: Concrete plinth, not-insitu. 0.40m: Geo-grid netting			slightly gravelly sandy CLAY with occasional roots and rootlets (<3mm) and low cobble content. Gravel is angular to sub rounded fine to coarse of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete fragments. Sand				
					Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare coble sized plastic fragments. 1.20m: Loose.		Dark greyish brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL and COBBLES of brick fragments, quartzite and concrete with rare sub-rounded boulders of quartzite and siliceous material.	Dark brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of clinker, brick fragments, concrete, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.	Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, porcelain and glass fragments, sandstone and clinker with medium cobble content. Cobbles are sub-rounded of siliceous material. Sand is of ash.	Greyish brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material with medium cobble content. Cobbles are sub-rounded of siliceous material.	Vegetation over dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick and plastic fragments and with frequent roots and rootlets (<10mm).	Vegetation over gravelly clayey SAND with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.	
Determinant	Units	Criteria	Source	MAX	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	MADE GROUND	NATURAL	MADE GROUND	MADE GROUND
TOC (%)**	%	-	-	3.10	0.6	0.7	0.4	0.5	0.1	1.8	0.2	0.5	2.5	3.1
Loss on Ignition (%) **	%	-	-	14.00	6.1	6.3	1.6	3.1	1.2	14	5.1	10	5.9	7.7
BTEX (µg/kg) **	µg/kg	-	-	0.00	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Sum of PCBs (mg/kg) **	mg/kg	-	-	0.00	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30
Mineral Oil (mg/kg) ^{EH 1D CU AL #}	mg/kg	-	-	19.00	< 10	< 10	< 10	< 10	19	11	< 10	< 10	< 10	< 10
Total PAH (WAC-17) (mg/kg)	mg/kg	-	-	6.05	< 0.85	4.25	< 0.85	< 0.85	< 0.85	6.05	< 0.85	2.15	0.87	3.77
pH (units)**	pH units	6 to 9	EQS*	7.90	7	7	7.9	7	7.6	7.2	7.4	7	7.3	6.8
Acid Neutralisation Capacity (mmol / kg)	mmol / kg	-	-	2.20	0	0	2.2	0	1.8	0.46	0.7	0	1.8	-0.77
Eluate Analysis (BS EN 12457 - 3 preparation utilising end over end leaching procedure)					2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1	2:1
Arsenic *	mg/l	0.005	EQS	0.01	< 0.010	< 0.010	< 0.010	< 0.010	0.014	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Barium *	mg/l	0.70	WHO	0.05	0.021	< 0.0050	0.014	0.018	0.023	0.016	0.0078	0.019	0.045	0.036
Cadmium *	mg/l	0.0008	EQS	0.00	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Chromium *	mg/l	0.0047	EQS	0.03	< 0.0010	< 0.0010	0.0023	0.004	0.026	< 0.0010	< 0.0010	< 0.0010	< 0.0010	< 0.0010
Copper *	mg/l	0.001	EQS	0.05	0.0075	0.0012	0.0047	0.0044	0.0053	0.046	0.0027	0.004	0.013	0.018
Mercury *	mg/l	0.001	DWS	0.00	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015
Molybdenum *	mg/l	-	-	0.02	0.0037	< 0.0030	0.0078	0.016	0.0067	0.0088	< 0.0030	< 0.0030	< 0.0030	< 0.0030
Nickel *	mg/l	0.004	EQS	0.03	0.0024	< 0.0010	< 0.0010	< 0.0010	< 0.0010	0.031	< 0.0010	< 0.0010	0.003	0.0023
Lead *	mg/l	0.0012	EQS	0.01	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	0.0069	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Antimony *	mg/l	#####	DWS	0.00	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050
Selenium *	mg/l	0.01	DWS	0.00	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Zinc *	mg/l	0.01	EQS	0.15	0.0093	0.0064	0.0033	0.0041	0.0028	0.15	0.007	0.011	0.013	0.014
Chloride *	mg/l	250	EQS	0.00	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0

Appendix D Leachate Results

[illegible]

Appendix D Groundwater Results									
Lab Sample Number							2664567	2664568	2664569
Sample Reference							BH01	BH02	SW1
Sample Number							None Supplied	None Supplied	None Supplied
Depth (m)							2.39	2.16	0.00
Date Sampled							27/04/2023	27/04/2023	27/04/2023
Time Taken							0915	1015	1130
Response zone							Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Medium dense dark brown very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL of siliceous material with low cobble content. Cobbles are sub-rounded of siliceous material.	Surface water sample
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	Criteria	Source	MAX

General Inorganics

pH (L005B)	pH Units	N/A	ISO 17025	6 to 9	EQS*	7.4	7.1	6.8	7.4
Total Cyanide	µg/l	10	ISO 17025	1	EQS	0	< 10	< 10	< 10
Sulphate as SO4	mg/l	0.05	ISO 17025	400	EQS*	54.9	35.8	17.4	54.9
Sulphide	µg/l	5	NONE	-	-	0	< 5.0	< 5.0	< 5.0
Chloride	mg/l	0.15	ISO 17025	250	EQS*	26	17	18	26
Ammoniacal Nitrogen as N	µg/l	15	ISO 17025	300	EQS	5900	66	28	5900
Dissolved Organic Carbon (DOC)	mg/l	0.1	ISO 17025	-	-	5.38	1.11	0.9	5.38
Nitrate as N	mg/l	0.01	ISO 17025	50	DWS	5.62	0.29	0.2	5.62
Nitrite as N	µg/l	1	ISO 17025	500	DWS	250	120	< 1.0	250
Alkalinity as CaCO3	mg/l	3	ISO 17025	-	-	190	190	140	56

Hardness - Total	mgCaCO3/l	1	ISO 17025	-	-	233	233	153	96.3
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Total Phenols

Total Phenols (monohydric)	µg/l	10	ISO 17025	-	-	0	< 10	< 10	< 10
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Appendix D Groundwater Results									
Lab Sample Number							2664567	2664568	2664569
Sample Reference							BH01	BH02	SW1
Sample Number							None Supplied	None Supplied	None Supplied
Depth (m)							2.39	2.16	0.00
Date Sampled							27/04/2023	27/04/2023	27/04/2023
Time Taken							0915	1015	1130
Response zone							Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Medium dense dark brown very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL of siliceous material with low cobble content. Cobbles are sub-rounded of siliceous material.	Surface water sample
Analytical Parameter (Water Analysis)			Units	Limit of detection	Accreditation Status	Criteria	Source	MAX	

Speciated PAHs

Naphthalene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	-	-	0	< 0.01	< 0.01	< 0.01

Appendix D Groundwater Results									
Lab Sample Number							2664567	2664568	2664569
Sample Reference							BH01	BH02	SW1
Sample Number							None Supplied	None Supplied	None Supplied
Depth (m)							2.39	2.16	0.00
Date Sampled							27/04/2023	27/04/2023	27/04/2023
Time Taken							0915	1015	1130
Response zone							Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Medium dense dark brown very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL of siliceous material with low cobble content. Cobbles are sub-rounded of siliceous material.	Surface water sample
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	Criteria	Source	MAX

Total PAH

Total EPA-16 PAHs	µg/l	0.16	ISO 17025	-	-	0	< 0.16	< 0.16	< 0.16
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Heavy Metals / Metalloids

Calcium (dissolved)	mg/l	0.01	ISO 17025	-	-	79	79	51	29
Iron (dissolved)	mg/l	0	ISO 17025	1	EQS	0.036	0.036	0.007	0.019
Magnesium (dissolved)	mg/l	0.01	ISO 17025	-	-	8.8	8.8	6.1	5.5
Potassium (dissolved)	mg/l	0.03	ISO 17025	-	-	9.3	4.9	2.9	9.3
Sodium (dissolved)	mg/l	0.01	ISO 17025	200	EUDWS	25	11	11	25

Antimony (dissolved)	µg/l	0.4	ISO 17025	0.005	DWS	0.9	< 0.4	0.5	0.9
Arsenic (dissolved)	µg/l	0.15	ISO 17025	50	EQS	0.86	0.27	0.86	0.36
Beryllium (dissolved)	µg/l	0.1	ISO 17025	4	USEPA	0	< 0.1	< 0.1	< 0.1
Cadmium (dissolved)	µg/l	0.02	ISO 17025	≤0.08	EQS	2.9	0.38	2.9	0.05
Chromium (dissolved)	µg/l	0.2	ISO 17025	4.7	EQS	0.3	< 0.2	< 0.2	0.3
Copper (dissolved)	µg/l	0.5	ISO 17025	1	EQS	1.8	1.6	0.6	1.8
Bioavailable Copper	µg/l	-	-				0.38	0.22	0.08
Lead (dissolved)	µg/l	0.2	ISO 17025	1.2	EQS	0	< 0.2	< 0.2	< 0.2

Appendix D Groundwater Results									
Lab Sample Number							2664567	2664568	2664569
Sample Reference							BH01	BH02	SW1
Sample Number							None Supplied	None Supplied	None Supplied
Depth (m)							2.39	2.16	0.00
Date Sampled							27/04/2023	27/04/2023	27/04/2023
Time Taken							0915	1015	1130
Response zone							Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Medium dense dark brown very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL of siliceous material with low cobble content. Cobbles are sub-rounded of siliceous material.	Surface water sample
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	Criteria	Source	MAX
Manganese (dissolved)				µg/l	0.05	ISO 17025	123	EQS	2100
<i>Bioavailable Manganese</i>					-	-			
Mercury (dissolved)				µg/l	0.05	ISO 17025	-	-	0
Nickel (dissolved)				µg/l	0.5	ISO 17025	1.2	EQS	60
<i>Bioavailable Nickel</i>				µg/l	-	-			
Selenium (dissolved)				µg/l	0.6	ISO 17025	10	DWS	0.8
Vanadium (dissolved)				µg/l	0.2	ISO 17025	20	EQS*	0.7
Zinc (dissolved)				µg/l	0.5	ISO 17025	12.3	EQS	73
<i>Bioavailable Zinc</i>				µg/l	-	-			

Monoaromatics & Oxygenates

Benzene	µg/l	3	ISO 17025	10	EQS	0	< 3.0	< 3.0	< 3.0
Toluene	µg/l	3	ISO 17025	74	EQS	0	< 3.0	< 3.0	< 3.0
Ethylbenzene	µg/l	3	ISO 17025	20	EQS*	0	< 3.0	< 3.0	< 3.0
p & m-xylene	µg/l	3	ISO 17025	-	-	0	< 3.0	< 3.0	< 3.0
o-xylene	µg/l	3	ISO 17025	30	EQS*	0	< 3.0	< 3.0	< 3.0
MTBE (Methyl Tertiary Butyl Ether)	µg/l	3	ISO 17025	15	WHO	0	< 3.0	< 3.0	< 3.0

Appendix D Groundwater Results									
Lab Sample Number							2664567	2664568	2664569
Sample Reference							BH01	BH02	SW1
Sample Number							None Supplied	None Supplied	None Supplied
Depth (m)							2.39	2.16	0.00
Date Sampled							27/04/2023	27/04/2023	27/04/2023
Time Taken							0915	1015	1130
Response zone							Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Medium dense dark brown very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL of siliceous material with low cobble content. Cobbles are sub-rounded of siliceous material.	Surface water sample
Analytical Parameter (Water Analysis)			Units	Limit of detection	Accreditation Status	Criteria	Source	MAX	

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >C5 - C6 _{HS_1D_AL}	µg/l	1	ISO 17025	15000	WHO	0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C6 - C8 _{HS_1D_AL}	µg/l	1	ISO 17025	15000	WHO	0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C8 - C10 _{HS_1D_AL}	µg/l	1	ISO 17025	300	WHO	0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >C10 - C12 _{EH_1D_AL_MS}	µg/l	10	NONE	300	WHO	0	< 10	< 10	< 10
TPH-CWG - Aliphatic >C12 - C16 _{EH_1D_AL_MS}	µg/l	10	NONE	300	WHO	0	< 10	< 10	< 10
TPH-CWG - Aliphatic >C16 - C21 _{EH_1D_AL_MS}	µg/l	10	NONE	-	-	0	< 10	< 10	< 10
TPH-CWG - Aliphatic >C21 - C35 _{EH_1D_AL_MS}	µg/l	10	NONE	-	-	0	< 10	< 10	< 10
TPH-CWG - Aliphatic >C35 - C44 _{EH_1D_AL_MS}	µg/l	10	NONE	-	-	0	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C35) _{HS+EH_1D_AL_MS}	µg/l	10	NONE	-	-	0	< 10	< 10	< 10
TPH-CWG - Aliphatic (C5 - C44) _{HS+EH_1D_AL_MS}	µg/l	10	NONE	-	-	0	< 10	< 10	< 10

TPH-CWG - Aromatic >C5 - C7 _{HS_1D_AR}	µg/l	1	ISO 17025	10	WHO	0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C7 - C8 _{HS_1D_AR}	µg/l	1	ISO 17025	700	WHO	0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C8 - C10 _{HS_1D_AR}	µg/l	1	ISO 17025	300	WHO	0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >C10 - C12 _{EH_1D_AR_MS}	µg/l	10	NONE	90	WHO	0	< 10	< 10	< 10
TPH-CWG - Aromatic >C12 - C16 _{EH_1D_AR_MS}	µg/l	10	NONE	90	WHO	0	< 10	< 10	< 10
TPH-CWG - Aromatic >C16 - C21 _{EH_1D_AR_MS}	µg/l	10	NONE	90	WHO	0	< 10	< 10	< 10

Appendix D Groundwater Results									
Lab Sample Number							2664567	2664568	2664569
Sample Reference							BH01	BH02	SW1
Sample Number							None Supplied	None Supplied	None Supplied
Depth (m)							2.39	2.16	0.00
Date Sampled							27/04/2023	27/04/2023	27/04/2023
Time Taken							0915	1015	1130
Response zone							Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidation staining on gravel. 3.00m: Very dense.	Medium dense dark brown very sandy slightly clayey sub-angular to rounded fine to coarse GRAVEL of siliceous material with low cobble content. Cobbles are sub-rounded of siliceous material.	Surface water sample
Analytical Parameter (Water Analysis)				Units	Limit of detection	Accreditation Status	Criteria	Source	MAX
TPH-CWG - Aromatic >C21 - C35 _{EH_1D_AR_MS}				µg/l	10	NONE	90	WHO	0
TPH-CWG - Aromatic >C35 - C44 _{EH_1D_AR_MS}				µg/l	10	NONE	-	-	0
TPH-CWG - Aromatic (C5 - C35) _{HS+EH_1D_AR_MS}				µg/l	10	NONE	-	-	0
TPH-CWG - Aromatic (C5 - C44) _{HS+EH_1D_AR_MS}				µg/l	10	NONE	-	-	0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Ammonical Nitrogen potential anomaly

Appendix D Ground Gas Results

BH01											
Date & Time	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	LEL (%)	Flow (L/hr)	Temp (C°)	Baro Pressure (mb)	Water Level (m)	Install Depths (m)
27/04/2023	0.1	0.9	17.3	>>>*	2	2	0	13	1013 - 1011	2.39	4.5
05/05/2023	0	1.9	15.8	>>>*	4	0	0	16	979 - 1010	2.38	4.5
12/05/2023	0.1	1.7	17.4	28	2	2	0	18	1008 - 1022	2.13	4.5

BH02											
Date & Time	Methane (%)	Carbon Dioxide (%)	Oxygen (%)	Carbon Monoxide (ppm)	Hydrogen Sulphide (ppm)	LEL (%)	Flow (L/hr)	Temp (C°)	Baro Pressure (mb)	Water Level (m)	Install Depths (m)
27/04/2023	0.1	1.7	16.8	486*	0	2	0	13	1013 - 1011	2.16	3.52
05/05/2023	0.1	2.6	16	>>>*	2	2	1.2 (peak) 0.6 (ave)	16	879 - 1010	2.08	3.52
12/05/2023	Access to BH denied										

*Possible anomolus CO readings on Visits 1 & 2.

Job number 275281
Date 4 June 2024

Appendix E – Waste Assessment

File Note

Project title	Trebanos Storm Outfall
Job number	275281
File reference	4-20
cc	Dŵr Cymru Welsh Water
Prepared by	Agnieszka Lopez-Parodi
Date	21 July 2023
Subject	Appendix E – Trebanos Storm Outfall Waste Assessment

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1. Introduction

This document presents an initial waste assessment for the proposed Trebanos Storm Outfall to inform the off-site disposal of excavated surplus soils. The scheme proposals comprise approximately 300m of a new outfall pipe constructed at depth between 1.5 and 2m bgl with associated manholes, flow diversion outfall chamber and outfall headwall on the riverbank.

This document forms part of the Ground Investigation Technical Note (GITN) and should be read in conjunction with the main report. A summary of relevant information is provided below however direct reference should be made to the GITN.

Reference should also be made to the following documents:

- Preliminary Review of the Features and Constraints via a Part 1 desk Study¹
- Anticipated Ground Conditions Technical Note²
- Ground Investigation Specification^{3 4}
- CC Ground Investigation Factual report⁵ (GITN Appendix A).

¹ Dŵr Cymru Welsh Water AMP7 Alliance, April 2022. Part 1 Geotechnical and Geo-Environmental Risk Headliner, Ref. B16421-102503-XX-ZZ-RP-GB-GC6701.

² Dŵr Cymru Welsh Water AMP7 Alliance, December 2022. Anticipated Ground Conditions Technical Note, Ref. B16421-102503-ZZ-ZZ-RP-GB-GC6701.

³ Dŵr Cymru Welsh Water AMP7 Alliance, January 2023. Trial Pit Ground Investigation Specification, Rev. 2, Ref. B16421-102503-ZZ-ZZ-SP-GB-GC6401.

⁴ Dŵr Cymru Welsh Water AMP7 Alliance, December 2022. AMP7 GI Framework: Trebanos Storm Outfall, Part B Particular Requirements, , Ref. B16421-102503-ZZ-ZZ-SP-GB-GC6402.

⁵ CC Ground Investigation Ltd, Trebanos WwTW GI - Factual Report ref. C7932, dated 29/06/2023

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2. Ground Investigations

Ground investigations were undertaken by CC Geotechnics Ltd in April 2023 comprising 2No boreholes (BH01 and 02 to depth of 10m), 5No trial pits (TP01 to 05 to depth of 2.8m) and 2No inspection pits (SPM01 and 02). Exploratory hole locations are shown on Drawing 2 of the GITN.

Soil samples were obtained for laboratory testing such as dry weight analyses (including metals, hydrocarbons, asbestos), soil leachate and WAC testing. Results are summarised in Appendix E of the GNTN and presented in CC Ground Investigation Factual Report (Appendix A).

2.1 Encountered ground conditions

The completed ground investigations encountered ground conditions within the area of the proposed storm outfall as summarised in Table 1.

Table 1: Summary of encountered ground conditions

Stratum	Thickness (m)	Depth to Top of Stratum (m BGL)	Notes
Made Ground (MG)	2.10-4.00	0.00	Typically recorded 1.9-2.5m thickness. BH02 draft log shows 4m of MG, however based on the description of the strata from 1.9 to 4m bgl it is considered it is likely to represent natural ground (river gravels)
Alluvium	0.30	3.7	Encountered in BH02 only, overlying Glacial Sands and Gravels
Glacial Sands and Gravels	At least 6-7.55 (not proven)	2.1 – 4.0	Encountered in all locations with boreholes penetrating to 10mbgl
Sandstone	Not encountered		

Made ground

Made ground of similar nature and composition was encountered across the proposed pipeline and associate infrastructure of the storm outfall. It was encountered at all exploratory holes.

No visual or olfactory evidence of contamination was noted. Anthropogenic inclusions were recorded in all exploratory holes, such as plastic, glass and brick fragments, with occasional porcelain, wood, concrete and clinker/as and slag. Concrete plinth and geo-grid were also encountered at TP01. The materials encountered contain frequent inclusions of demolition materials resulting in the potential for asbestos to be present. Generic contaminants associated with Made Ground may include metals and hydrocarbons, however, based on the nature of made ground encountered the risk is considered to be low.

Natural ground

Typically made ground was found to be underlain by sandy gravels. Cohesive material was only encountered in BH02 at 3.7m. Bedrock was not encountered.

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2.2 Sampling and testing

A total of 17no. soil samples (14no. obtained from the Made Ground across the site and three obtained from natural ground) were submitted for dry weight chemical testing to an accredited laboratory and were analysed for a suite of determinands including asbestos, heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), Total Petroleum Hydrocarbons (TPHs) and volatile organic compounds (VOCs). Ten samples were also subject to Waste Acceptance Criteria (WAC) testing.

The results of the analysis are summarised in Appendix E of the GNTN and presented in CC Ground Investigation Factual Report (Appendix A).

3. Dry weight classification

3.1 European Waste Catalogue (EWC) code classification

In order to confirm the potential off-site disposal options for material arisings, the chemical analyses results obtained during the ground investigations have been assessed in accordance with current waste management guidance, the European Waste Catalogue (EWC) and guidance from WM3⁶. Based on the ground investigations, the materials encountered and likely to be excavated have been classified using the following EWC codes:

For Made ground and natural ground, the following EWC code is considered applicable:

- **17 05 03*: Soil and stones containing dangerous substances (mirror hazardous entry).**
- **17 05 04: Soils and stones other than those mentioned in 17 05 03 (mirror non-hazardous entry).**

3.1.1 Asbestos

No asbestos was identified in any of the analysed made ground samples tested. However, considering the nature and composition of made ground there is a risk that asbestos may still be present within the unsampled made ground materials.

3.2 Soil dry-weight assessment

The results of the soil analysis have been assessed using HazWasteOnlineTM.

3.2.1 Model inputs

Moisture correction

A review of the chemical analyses results as received from the laboratory indicate that the soil results have been reported in dry weight. On account of this, the Dry Weight Moisture Content correction method has been applied to the results as per the Waste Classification Report included in Annex A of this document.

Hexavalent chromium

⁶ Waste Classification, Guidance on the classification and assessment of Waste (Technical Guidance WM3), Version 1.2.GB (Appendix B update), SEPA, NRW, EA, NIEA, 2021.

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All made ground samples were analysed for hexavalent chromium and recorded concentrations below the laboratory limit of detection (<1.8mg/kg).

Consequently, as hexavalent chromium was recorded at less than detectable concentrations chromate metal compounds are not considered to be present in the soils. On this basis the model has been run omitting any chromate compounds and the next worst-case compound has been used (such as nickel sulphate and zinc sulphate

Hydrocarbon analyses

All samples obtained and tested from the site have been analysed for speciated Total Petroleum Hydrocarbons (TPHs), which includes aliphatic and aromatic chainages C5-C44. The HazWasteOnline model requires the sum of chainages C6-C40 and therefore only the total of these fractions have been input into the model for each sample.

Detectable concentrations of petroleum hydrocarbons are flagged as potentially hazardous on account of hazard property HP3(i). A review of the dry weight soil TPH analyses indicates that concentrations of TPHs within Made Ground have been recorded at a maximum total concentration of 19mg/kg. The hydrocarbon concentrations are not considered high enough to be indicative of a free draining liquid hydrocarbon in soil and no evidence of hydrocarbons was recorded as part of the GI. Therefore, the samples are not truly hazardous with respect to HP3(i).

Based on information presented in the desk study, Diesel Fuel and Gas Oil is unlikely to have been used within the Trebanos site. Therefore, diesel is unlikely to be a potential source of TPH on site and the box in the HazWasteOnline input which asks to “*confirm TPH has NOT arisen from diesel or petrol*” was ticked as part of the assessment.

3.3 Haz-Waste Online (HWOL) soil classification and landfill classification (WAC analyses)

Table 2 includes the HazWasteOnline (HWOL) classification of the samples from the HWOL model output. Table 2 also includes the subsequent Waste Acceptance Classification (WAC), determining the potential offsite disposal options to landfill of the materials.

The encountered Made Ground materials were described as dark brown sandy gravelly clay, clayey sandy gravels or clayey gravelly sand. Based on the materials description, Made Ground materials appear to be one source and therefore the assessment has been undertaken for made ground materials as a single population. Natural materials comprise different type of materials and of different chemical composition. Therefore, these materials have been considered separately within the assessment.

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Table 2: Waste classification, WAC analysis and landfill disposal options

Hole ID	Depth (m bgl)	Strata description	Strata type	HWOL waste classification	WAC analyses	Landfill disposal option
Made Ground						
BH01	0.1	Soft dark brown slightly gravelly sandy CLAY with frequent roots and rootlets (<3mm). Gravel is sub-angular to rounded fine to coarse of siliceous material.	MG	Non-Hazardous	Not undertaken	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Notes 1 and 2.
BH01	0.3	Grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick and chert.	MG	Non-Hazardous	Not undertaken	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Notes 1 and 2.
TP04	0.2	Firm brown slighty gravelly slightly sandy CLAY with occasional roots and rootlets (<3mm) and low cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, sandstone, clinker, wood fragments, concrete, glass and brick fragments. Cobbles are sub-rounded of siliceous material and concrete fragments. Sand is of ash.	MG	Non-Hazardous	Passes INERT WAC criteria	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note 1.
BH01	1.1	Dark brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL of siliceous material and occasional gravel sized plastic and glass fragments.	MG	Non-Hazardous	Passes INERT WAC criteria	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note 1.
BH02	0.2	Dark brown gravelly clayey SAND with occasional roots and rootlets (<3mm) and low cobble content. Gravel is sub-angular to rounded fine to coarse of sandstone and siliceous material. Cobbles are sub-rounded of siliceous material.	MG	Non-Hazardous	Not undertaken	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Notes 1 and 2.

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Hole ID	Depth (m bgl)	Strata description	Strata type	HWOL waste classification	WAC analyses	Landfill disposal option
BH02	1.0	Dark brown and light brown very gravelly clayey SAND with low cobble content. Gravel is sub-angular to rounded fine to coarse of siliceous material and sandstone. Cobbles are sub-angular of siliceous material and rare cobble sized plastic fragments.	MG	Non-Hazardous	Passes INERT WAC criteria	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note 1.
TP01	0.5	Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded to rounded boulders of quartzite, brick and concrete fragments and clinker.	MG	Non-Hazardous	Not undertaken	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note1 and 2.
TP01	1.9-2.0	Dark greyish brown very sandy slightly clayey sub-rounded to rounded fine to coarse GRAVEL and COBBLES of quartzite, brick fragments, concrete and clinker with occasional sub-rounded to rounded boulders of quartzite, brick and concrete fragments and clinker.	MG	Non-Hazardous	Passes INERT WAC criteria	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note 1.
TP02	0.5	Dark greyish brown very sandy clayey sub-angular to sub-rounded fine to coarse GRAVEL and COBBLES of brick fragments, quartzite and concrete with rare sub-rounded boulders of quartzite and siliceous material.	MG	Non-Hazardous	Fails INERT WAC: Fluoride: 23mg/kg > 10mg/kg	Suitable for disposal at an NON-HAZARDOUS waste landfill facility.
TP03	0.5	Dark brown sandy slightly clayey angular to sub-angular fine to coarse GRAVEL of clinker, brick fragments, concrete, limestone and slag with low cobble content. Cobbles are sub-angular of concrete and clinker. Sand is fine to coarse of ash.	MG	Non-Hazardous	Fails INERT WAC: Fluoride: 12mg/kg > 10mg/kg	Suitable for disposal at an NON-HAZARDOUS waste landfill facility.
TP04	2.0	Dark brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material, porcelain and glass fragments, sandstone and clinker with medium cobble content. Cobbles are sub-rounded of siliceous material. Sand is of ash.	MG	Non-Hazardous	Passes INERT WAC criteria	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note 1.

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Hole ID	Depth (m bgl)	Strata description	Strata type	HWOL waste classification	WAC analyses	Landfill disposal option
TP05	0.5	Dark brown slightly gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, brick fragments, clinker and concrete with occasional pockets of greyish brown mottled orangish brown sandy clay (<40mm).	MG	Non-Hazardous	Not undertaken	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note1 and 2.
TP05	2.0	Dark brown very gravelly clayey SAND with medium cobble content. Gravel is angular to sub-rounded fine to coarse of siliceous material, coal, clinker, plastic fragments and sandstone. Cobbles are sub-angular to sub-rounded of brick fragments and siliceous material.	MG	Non-Hazardous	Not undertaken	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note1 and 2.
SPM01	0.1	Vegetation over dark brown very sandy clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material and brick and plastic fragments and with frequent roots and rootlets (<10mm).	MG	Non-Hazardous	Passes INERT WAC criteria	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note 1.
SPM02	0.2	Vegetation over gravelly clayey SAND with frequent roots and rootlets (<10mm). Gravel is angular to sub-rounded fine to coarse of brick and siliceous material.	MG	Non-Hazardous	Passes INERT WAC criteria TOC: 3.1% > 3% but DOC passes	Suitable for disposal at an NON-HAZARDOUS waste landfill facility. See Note 1.
Natural Ground						
BH01	3.0	Light grey and reddish brown very sandy very clayey sub-angular to rounded fine to coarse GRAVEL of sandstone and siliceous material with medium cobble content of sub-angular siliceous material and localised oxidisation staining on gravel. 3.00m: Very dense.	NAT	Non-Hazardous	Not undertaken	Suitable for disposal at an INERT waste landfill facility.
BH02	4.0	Very dense brown reddish orange and grey slightly sandy sub-angular to rounded fine to coarse GRAVEL of sandstone with high cobble content of	NAT	Non-Hazardous	Not undertaken	Suitable for disposal at an INERT waste landfill facility.

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Hole ID	Depth (m bgl)	Strata description	Strata type	HWOL waste classification	WAC analyses	Landfill disposal option
		sub-angular to sub-rounded sandstone (absence of fines, possibly washed away by drill flush).				
TP05	2.5	Greyish brown sandy slightly clayey angular to sub-rounded fine to coarse GRAVEL of siliceous material with medium cobble content. Cobbles are sub-rounded of siliceous material.	NAT	Non-Hazardous	Passes INERT WAC criteria	Suitable for disposal at an INERT waste landfill facility.
Note 1: Based on completed statistical analysis (refer to Sectopn 3.3.1), based onr the measured Fluoride concentrations the made grnd materials are clasified as non-hazardous and sutable for non-hazardous disposal. However, due to a small data population this may not be fully representative of the made ground materials encountered on site. Additional ampling and testing would increase the confidence of the assessment and potentially allow for reclassification of the materials. Note 2: Based on the log descriptions, there are no significant difference between the WAC tested and not WAC tested materials. Therefore, where no testing is available, the completed testing is considered sufficent to provide initial landfill disposal option based on the materials description.						

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3.3.1 Discussion of results

The HWOL classification concluded that all Made Ground and natural ground soil samples tested were classified as Non-Hazardous.

Made Ground

A total of 9 No samples obtained from made ground were tested for WAC determinands, out of which 7 No samples passed all Inert WAC criteria.

2 No samples however recorded exceedances of the Inert WAC thresholds for Fluoride, albeit one of them marginal. Literature review identifies coal combustion and fly ash as potential sources of Fluoride⁷. Therefore, elevated concentrations of Fluoride may be a result of presence of clinker, ash and/or slag inclusions within the made ground as recorded on the exploratory hole logs in a number of locations across the site.

Based on the exploratory hole log descriptions, it is difficult to differentiate between the made ground soils which did not exceed the Inert WAC thresholds (suitable for Inert Waste disposal and those which exceeded the Inert WAC thresholds (suitable for Non-Hazardous Waste disposal) as these had very similar descriptions. Therefore, statistical analysis has been undertaken in accordance with WM3⁸.

The WM3 guidance offers two methods to undertake statistical analysis, one where the sample values are normally distributed and the other -where the distribution is uncertain. A Q-q plot for the data indicates a non-normal distribution and therefore 'Non-parametric method B – The mean and its confidence intervals' method has been applied. The derived cumulative binominal expressions for the mean value (50% percentile $X_{50} = 2.7$ mg/kg) are as follows:

- Upper 90% confidence interval is set at the 8th value = 12mg/kg
- Lower 90% confidence interval is set at 2nd value = 1.2mg/kg

As the upper 90% confidence interval is above the WAC inert threshold for Fluoride of 10 mg/kg, we can be 95% confident that the 50th percentile is above the WAC inert threshold. Therefore, the made ground materials encountered during the ground investigations are considered suitable for **Non-hazardous waste disposal**. However, it needs to be noted that the assessment has been undertaken on a relatively small sample of values and therefore may not be fully representative of the encountered made ground. Additional sampling and testing may provide greater certainty and potentially allow for reclassification of these materials.

⁷ National Environmental Engineering Research Institute, Shaz Ahmad, Reena Singh, Tanvir Arfin and Krishna Neeti, Department of Civil Engineering, National Institute of Technology Patna Fluoride contamination, consequences and removal techniques in water: a review, Society of Chemistry, Environ. Sci.: Adv., 2022, 1, 620-661 First published on 28th September 2022

⁸ Waste Classification, Guidance on the classification and assessment of Waste (Technical Guidance WM3), Version 1.2.GB (Appendix B update), SEPA, NRW, EA, NIEA, 2021

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Should further testing of made ground materials be undertaken during construction or made ground of different nature to that encountered during the completed ground investigations be encountered, the assessments will require review.

Natural Ground

Only limited testing has been carried out on samples taken from natural ground including one WAC testing. The WAC test indicated that the sample taken from the natural gravels is suitable for disposal at an **Inert Waste** landfill facility.

Overall, the natural ground encountered across the site is likely to be classed as non-hazardous based on log descriptions and the fact that no hazardous soils have been encountered within the site. Natural ground is likely to be suitable for inert disposal, subject to liaison with the waste management facility operator.

3.3.2 Summary of off-site disposal options for soils

Made Ground: Non-Hazardous waste and suitable for disposal at an NON-HAZARDOUS waste landfill. However, it needs to be noted that the assessment has been undertaken on a relatively small sample of values and therefore may not be fully representative of the encountered made ground. Additional sampling and testing may provide greater certainty and potentially allow for reclassification of these materials.

Natural Ground: Non-Hazardous waste and suitable for disposal at an INERT waste landfill.

4. Disposal options and recommendations

Re-use as opposed to disposal should be considered for all materials arising as part of the works, including the Made Ground and natural ground that are the subject of this waste assessment.

The potential for re-use has already been assessed with regards to geotechnical and geo-environmental criteria and this is presented in the GITN. There will be a requirement to have a well-defined scope for the intended use of the materials prior to their re-use. If this is not the case, the re-use of materials may not be permissible under the jurisdiction of the relevant authorities and environmental agencies (e.g. Natural Resources Wales).

If re-use is not appropriate, treatment or recycling may be considered, prior to landfill disposal. Landfill disposal is the last resort, in accordance with the hierarchy of waste. The operators of such facilities should be consulted and supplied with a copy of the chemical analyses results prior to the removal of the materials from the site, to confirm acceptance.

During construction, it is imperative that there is no mixing of different waste streams and these materials should always be kept separate and segregated, e.g. made ground should be kept separate from natural materials in case made ground materials of different nature to those analysed and characterised are encountered during the earthworks, which may contain higher concentrations of contaminants and be classified differently. This will facilitate materials characterisation and prevent cross contamination.

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No asbestos fibres or asbestos containing materials were identified within the analysed samples. However, based on the nature of the made ground present within the scheme area, the presence of asbestos cannot be excluded. Should evidence of asbestos be encountered during the construction works, further testing and assessments will be required. Asbestos contaminated waste would require a separate management.

Any materials encountered during the construction works that differ in nature, consistency and/or colour to those sampled and tested as part of the recent GI or exhibiting visual and/or olfactory evidence of contamination (e.g., asbestos or hydrocarbons) will require separate management and additional sampling and analyses to confirm off-site disposal options.

This waste assessment has been undertaken and reviewed by competent and trained staff in accordance with current regulatory guidance and using available approved software. Additionally, this waste assessment has used available GI information provided by CC Ground Engineering Ltd. The assessments and advice given are specific to the waste streams to be generated during the site works as currently understood at the time of writing, however appropriate disposal of the soils to landfill is reliant on appropriate management of the waste streams generated during the site works. It is assumed that the management of wastes, and compliance with the findings of the assessments, to ensure that materials are disposed of to the appropriate landfill, lies with the Contractor and their site operatives.

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Annex A – Waste Classification Reports (HazWaste Online Output)

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:

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



XX0BC-ONHLZ-1JB2W

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

Job name

Trebanos Storm Outfall

Description/Comments

Waste classification of soils as part of GIR.

Project

275281

Site

Trebanos

Classified by

Name: **Nick Kontochristos**
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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.

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Course
 Hazardous Waste Classification
 Most recent 3 year Refresher

Date
 18 Jun 2019
 07 Jun 2022

Next 3 year Refresher due by Jun 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Trebanos, Pontardawe

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

Site is currently used as pasture farmland. Sections of the storm outfall lie within a wooded area adjacent to the River Tawe. The northern section of the outfall connects to the existing Trebanos Wastewater Treatment Works (WwTW).

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

Waste created during the excavation of soils as part of the proposed storm outfall.

Description of the waste

Made ground comprising dark brown gravelly slightly clayey fine to coarse SAND with occasional roots and rootlets to GRAVEL and COBBLES of quartzite. Gravel is sub-angular to sub-rounded fine to coarse of glass, ash, plastic, brick, concrete, slag, clinker and siliceous material.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP04--19042023-0.20		Non Hazardous		3
2	TP04--19042023-2.00		Non Hazardous		9
3	TP05--19042023-0.50		Non Hazardous		14
4	TP05--19042023-2.00		Non Hazardous		16
5	TP05--19042023-2.50		Non Hazardous		18
6	BH02--19042023-0.20		Non Hazardous		20
7	BH02--19042023-1.00		Non Hazardous		22
8	BH02--19042023-4.00		Non Hazardous		27
9	TP01--20042023-0.50		Non Hazardous		29
10	TP01--20042023-1.90		Non Hazardous		34
11	TP02--20042023-0.50		Non Hazardous		36
12	BH01--20042023-0.10		Non Hazardous		41
13	BH01--20042023-1.10		Non Hazardous		43
14	BH01--20042023-3.00		Non Hazardous		48
15	SPM01--19042023-0.10		Non Hazardous		50
16	SPM02--19042023-0.10		Non Hazardous		52
17	TP03--19042023-0.50		Non Hazardous		54

Related documents

#	Name	Description
1	23-29866_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	23-29871_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
3	23-29947_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
4	23-29951_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
5	23-29973_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
6	23-29976_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
7	23-31231_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
8	HWOL_data.batch	i2 Analytical .batch file used to populate the Job
9	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Nick Kontochristos

Created date: 20 Jun 2023 12:40 GMT

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Appendix B: Rationale for selection of metal species	61
Appendix C: Version	62

Classification of sample: TP04--19042023-0.20


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

Sample details

Sample name:	LoW Code:
TP04--19042023-0.20	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
19%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19% Wet Weight Moisture Correction applied (MC)

#		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								
1		arsenic { arsenic trioxide }				28 mg/kg	1.32	29.945 mg/kg	0.00299 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				2.6 mg/kg	1.142	2.406 mg/kg	0.000241 %	✓		
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	23.385 mg/kg	0.00234 %			
			215-160-9	1308-38-9								
4		chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD	
		024-017-00-8										
5		copper { dicopper oxide; copper (I) oxide }				400 mg/kg	1.126	364.788 mg/kg	0.0365 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
6		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	120 mg/kg		97.2 mg/kg	0.00972 %	✓		
		082-001-00-6										
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
8		nickel { nickel sulfate }				200 mg/kg	2.637	427.143 mg/kg	0.0427 %	✓		
		028-009-00-5	232-104-9	7786-81-4								
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD	
		028-031-00-5	239-125-2	15060-62-5								
10		zinc { zinc sulphate }				850 mg/kg	2.469	1700.111 mg/kg	0.17 %	✓		
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11		TPH (C6 to C40) petroleum group				11 mg/kg		8.91 mg/kg	0.000891 %	✓		
				TPH								
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		603-181-00-X	216-653-1	1634-04-4								
13		benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-020-00-8	200-753-7	71-43-2								
14		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-021-00-3	203-625-9	108-88-3								
15		ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-023-00-4	202-849-4	100-41-4								

#	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								
16	xylene 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]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
17	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				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
18	pH		PH		7 pH		7 pH	7pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		0.09 mg/kg		0.0729 mg/kg	0.00000729 %	✓		
20	acenaphthylene 205-917-1	208-96-8			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	acenaphthene 201-469-6	83-32-9			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	fluorene 201-695-5	86-73-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	phenanthrene 201-581-5	85-01-8			0.49 mg/kg		0.397 mg/kg	0.0000397 %	✓		
24	anthracene 204-371-1	120-12-7			0.1 mg/kg		0.081 mg/kg	0.0000081 %	✓		
25	fluoranthene 205-912-4	206-44-0			1.1 mg/kg		0.891 mg/kg	0.0000891 %	✓		
26	pyrene 204-927-3	129-00-0			0.86 mg/kg		0.697 mg/kg	0.0000697 %	✓		
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.56 mg/kg		0.454 mg/kg	0.0000454 %	✓		
28	chrysene 601-048-00-0	205-923-4	218-01-9		0.7 mg/kg		0.567 mg/kg	0.0000567 %	✓		
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.73 mg/kg		0.591 mg/kg	0.0000591 %	✓		
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.34 mg/kg		0.275 mg/kg	0.0000275 %	✓		
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.5 mg/kg		0.405 mg/kg	0.0000405 %	✓		
32	indeno[123-cd]pyrene 205-893-2	193-39-5			0.32 mg/kg		0.259 mg/kg	0.0000259 %	✓		
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
34	benzo[ghi]perylene 205-883-8	191-24-2			0.3 mg/kg		0.243 mg/kg	0.0000243 %	✓		
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
36	1,1-dichloroethane and 1,2-dichloroethane (combined) 203-458-1, 200-863-5	107-06-2, 75-34-3			<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
37	tetrachloroethylene 602-028-00-4	204-825-9	127-18-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
38	carbon tetrachloride; tetrachloromethane 602-008-00-5	200-262-8	56-23-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
39	trichloroethylene; trichloroethene 602-027-00-9	201-167-4	79-01-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
40	vinyl chloride; chloroethylene 602-023-00-7	200-831-0	75-01-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
41	hexachlorobenzene 602-065-00-6	204-273-9	118-74-1		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<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								
42	monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
			P1186								
43	aniline				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	612-008-00-7	200-539-3	62-53-3								
44	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-008-00-0	202-433-2 [1] 203-402-6 [2] 203-582-6 [3] 246-691-4 [4]	95-57-8 [1] 106-48-9 [2] 108-43-0 [3] 25167-80-0 [4]								
45	bis(2-chloroethyl) ether				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	603-029-00-2	203-870-1	111-44-4								
46	hexachloroethane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		200-666-4	67-72-1								
47	nitrobenzene				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
	609-003-00-7	202-716-0	98-95-3								
48	3,5,5-trimethylcyclohex-2-enone; isophorone				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	606-012-00-8	201-126-0	78-59-1								
49	2-nitrophenol				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
		201-857-5	88-75-5								
50	3,4-xyleneol; [1] 2,5-xyleneol; [2] 2,4-xyleneol; [3] 2,3-xyleneol; [4] 2,6-xyleneol; [5] xyleneol; [6] 2,4(or 2,5)-xyleneol [7]				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<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]								
51	bis(2-chloroethoxy)methane				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
		203-920-2	111-91-1								
52	2,4-dichlorophenol				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
	604-011-00-7	204-429-6	120-83-2								
53	4-chloroaniline				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	612-137-00-9	203-401-0	106-47-8								
54	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-014-00-3	200-431-6	59-50-7								
55	2,4,6-trichlorophenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	604-018-00-5	201-795-9	88-06-2								
56	2,4,5-trichlorophenol				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	604-017-00-X	202-467-8	95-95-4								
57	2-methyl naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		202-078-3	91-57-6								
58	2-chloronaphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		202-079-9	91-58-7								
59	dimethyl phthalate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-011-6	131-11-3								
60	2,6-dinitrotoluene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	609-049-00-8	210-106-0	606-20-2								
61	2,4-dinitrotoluene; [1] dinitrotoluene [2]				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]								
62	dibenzofuran				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		205-071-3	132-64-9								
63	4-chlorophenylphenylether				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<LOD
		230-281-7	7005-72-3								
64	diethyl phthalate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
		201-550-6	84-66-2								

#	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							
65	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	612-012-00-9	201-855-4 [1]	88-74-4 [1]							
		202-729-1 [2]	99-09-2 [2]							
		202-810-1 [3]	100-01-6 [3]							
66	azobenzene				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
67	4-bromophenylphenylether				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		202-952-4	101-55-3							
68	carbazole				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
		201-696-0	86-74-8							
69	dibutyl phthalate; DBP				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
70	anthraquinone				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	606-151-00-4	201-549-0	84-65-1							
71	BBP; benzyl butyl phthalate				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
72	1,1,1-trichloroethane; methyl chloroform				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
73	1,1,2,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-015-00-3	201-197-8	79-34-5							
74	1,1,2-trichloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-014-00-8	201-166-9	79-00-5							
75	1,1-dichloroethylene; vinylidene chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
76	1,1-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
77	1,2,3-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-757-1	87-61-6							
78	1,2,4-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
79	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
80	1,2-dichlorobenzene; o-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
81	1,2-dichloropropane; propylene dichloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
82	1,3-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
83	1,3-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-531-3	142-28-9							
84	1,4-dichlorobenzene; p-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
85	2,2-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		209-832-0	594-20-7							
86	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
87	bromomethane; methylbromide				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
88	bromobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
89	n-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		203-209-7	104-51-8							
90	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-030-00-5	208-826-5 [1]	542-75-6 [1]							
		233-195-8 [2]	10061-01-5 [2]							
91	chlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
92	chloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-009-00-0	200-830-5	75-00-3							

#	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							
93	chloroform; trichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
94	chloromethane; methyl chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-001-00-7	200-817-4	74-87-3							
95	dibromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		204-704-0	124-48-1							
96	1,2-dibromo-3-chloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
97	dibromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
98	hexachlorobutadiene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-765-5	87-68-3							
99	4-isopropyltoluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-796-7	99-87-6							
100	sec-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-227-0	135-98-8							
101	styrene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
102	trans-1,3-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		431-460-4	10061-02-6							
103	tert-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-632-4	98-06-6							
104	bromoform; tribromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
105	1,2,4-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
106	1,1,1,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		211-135-1	630-20-6							
107	trichlorofluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-892-3	75-69-4							
108	mesitylene; 1,3,5-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
109	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-004-00-9	203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]							
110	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]							
111	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]							
112	cumene; [1] propylbenzene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]							
Total:								0.268 %		

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 Determinand - 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

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 Not a flammable liquid (soil). Hydrocarbon concentrations below 1000mg/kg not considered high enough to be indicative of a free draining liquid hydrocarbon in soil.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00089%)

Classification of sample: TP04--19042023-2.00


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

Sample details

Sample name:	LoW Code:
TP04--19042023-2.00	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
3.6%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	Entry:

Hazard properties

None identified

Determinands

Moisture content: 3.6% Wet Weight Moisture Correction applied (MC)

#	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									
1	arsenic { arsenic trioxide }				9.3	mg/kg	1.32	11.837	mg/kg	0.00118 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.6	mg/kg	1.142	0.661	mg/kg	0.0000661 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				7.1	mg/kg	1.462	10.377	mg/kg	0.00104 %		
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
	024-017-00-8											
5	copper { dicopper oxide; copper (I) oxide }				24	mg/kg	1.126	26.049	mg/kg	0.0026 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	20	mg/kg		19.28	mg/kg	0.00193 %	✓	
	082-001-00-6											
7	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel sulfate }				25	mg/kg	2.637	63.544	mg/kg	0.00635 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
9	selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
10	zinc { zinc sulphate }				140	mg/kg	2.469	333.256	mg/kg	0.0333 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11	TPH (C6 to C40) petroleum group				<36.8	mg/kg		<36.8	mg/kg	<0.00368 %		<LOD
			TPH									
12	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
13	benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
14	toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
15	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4									

#	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									
16	xylene 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]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
17	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				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
18	pH		PH		7.5	pH		7.5	pH	7.5 pH		
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.0001	mg/kg		<0.0001	mg/kg	<0.00000001 %		<LOD
20	acenaphthylene 205-917-1	208-96-8			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
21	acenaphthene 201-469-6	83-32-9			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
22	fluorene 201-695-5	86-73-7			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23	phenanthrene 201-581-5	85-01-8			0.08	mg/kg		0.0771	mg/kg	0.00000771 %	✓	
24	anthracene 204-371-1	120-12-7			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25	fluoranthene 205-912-4	206-44-0			0.11	mg/kg		0.106	mg/kg	0.0000106 %	✓	
26	pyrene 204-927-3	129-00-0			0.09	mg/kg		0.0868	mg/kg	0.00000868 %	✓	
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28	chrysene 601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
34	benzo[ghi]perylene 205-883-8	191-24-2			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
36	1,1-dichloroethane and 1,2-dichloroethane (combined) 203-458-1, 200-863-5	107-06-2, 75-34-3			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
37	tetrachloroethylene 602-028-00-4	204-825-9	127-18-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
38	carbon tetrachloride; tetrachloromethane 602-008-00-5	200-262-8	56-23-5		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
39	trichloroethylene; trichloroethene 602-027-00-9	201-167-4	79-01-6		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
40	vinyl chloride; chloroethylene 602-023-00-7	200-831-0	75-01-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
41	hexachlorobenzene 602-065-00-6	204-273-9	118-74-1		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<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								
42	monohydric phenols				<1 mg/kg		<1	mg/kg	<0.0001 %		<LOD
			P1186								
43	aniline				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	612-008-00-7	200-539-3	62-53-3								
44	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-008-00-0	202-433-2 [1] 203-402-6 [2] 203-582-6 [3] 246-691-4 [4]	95-57-8 [1] 106-48-9 [2] 108-43-0 [3] 25167-80-0 [4]								
45	bis(2-chloroethyl) ether				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	603-029-00-2	203-870-1	111-44-4								
46	hexachloroethane				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		200-666-4	67-72-1								
47	nitrobenzene				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	609-003-00-7	202-716-0	98-95-3								
48	3,5,5-trimethylcyclohex-2-enone; isophorone				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	606-012-00-8	201-126-0	78-59-1								
49	2-nitrophenol				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		201-857-5	88-75-5								
50	3,4-xylene; [1] 2,5-xylene; [2] 2,4-xylene; [3] 2,3-xylene; [4] 2,6-xylene; [5] xylene; [6] 2,4(or 2,5)-xylene [7]				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<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]								
51	bis(2-chloroethoxy)methane				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		203-920-2	111-91-1								
52	2,4-dichlorophenol				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-011-00-7	204-429-6	120-83-2								
53	4-chloroaniline				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	612-137-00-9	203-401-0	106-47-8								
54	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-014-00-3	200-431-6	59-50-7								
55	2,4,6-trichlorophenol				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-018-00-5	201-795-9	88-06-2								
56	2,4,5-trichlorophenol				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	604-017-00-X	202-467-8	95-95-4								
57	2-methyl naphthalene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		202-078-3	91-57-6								
58	2-chloronaphthalene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		202-079-9	91-58-7								
59	dimethyl phthalate				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-011-6	131-11-3								
60	2,6-dinitrotoluene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	609-049-00-8	210-106-0	606-20-2								
61	2,4-dinitrotoluene; [1] dinitrotoluene [2]				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]								
62	dibenzofuran				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-071-3	132-64-9								
63	4-chlorophenylphenylether				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		230-281-7	7005-72-3								
64	diethyl phthalate				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-550-6	84-66-2								

#	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							
65	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	612-012-00-9	201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]							
66	azobenzene				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
67	4-bromophenylphenylether				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		202-952-4	101-55-3							
68	carbazole				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
		201-696-0	86-74-8							
69	dibutyl phthalate; DBP				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
70	anthraquinone				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	606-151-00-4	201-549-0	84-65-1							
71	BBP; benzyl butyl phthalate				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
72	1,1,1-trichloroethane; methyl chloroform				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
73	1,1,2,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-015-00-3	201-197-8	79-34-5							
74	1,1,2-trichloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-014-00-8	201-166-9	79-00-5							
75	1,1-dichloroethylene; vinylidene chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
76	1,1-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
77	1,2,3-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-757-1	87-61-6							
78	1,2,4-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
79	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
80	1,2-dichlorobenzene; o-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
81	1,2-dichloropropane; propylene dichloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
82	1,3-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
83	1,3-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-531-3	142-28-9							
84	1,4-dichlorobenzene; p-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
85	2,2-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		209-832-0	594-20-7							
86	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
87	bromomethane; methylbromide				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
88	bromobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
89	n-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		203-209-7	104-51-8							
90	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
91	chlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
92	chloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-009-00-0	200-830-5	75-00-3							

#	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							
93	chloroform; trichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
94	chloromethane; methyl chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-001-00-7	200-817-4	74-87-3							
95	dibromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		204-704-0	124-48-1							
96	1,2-dibromo-3-chloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
97	dibromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
98	hexachlorobutadiene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-765-5	87-68-3							
99	4-isopropyltoluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-796-7	99-87-6							
100	sec-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-227-0	135-98-8							
101	styrene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
102	trans-1,3-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		431-460-4	10061-02-6							
103	tert-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-632-4	98-06-6							
104	bromoform; tribromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
105	1,2,4-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
106	1,1,1,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		211-135-1	630-20-6							
107	trichlorofluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-892-3	75-69-4							
108	mesitylene; 1,3,5-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
109	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-004-00-9	203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]							
110	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]							
111	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]							
112	cumene; [1] propylbenzene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]							
Total:								0.052 %		

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 Determinand - 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

Classification of sample: TP05--19042023-0.50

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

Sample details

Sample name:	LoW Code:
TP05--19042023-0.50	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.8% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.8% Wet Weight Moisture Correction applied (MC)

#		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									
1		arsenic { arsenic trioxide }				20	mg/kg	1.32	23.819	mg/kg	0.00238 %	✓	
	033-003-00-0	215-481-4	1327-53-3										
2		cadmium { cadmium oxide }				1.6	mg/kg	1.142	1.649	mg/kg	0.000165 %	✓	
	048-002-00-0	215-146-2	1306-19-0										
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }				10	mg/kg	1.462	14.616	mg/kg	0.00146 %		
		215-160-9	1308-38-9										
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
	024-017-00-8												
5		copper { dicopper oxide ; copper (I) oxide }				51	mg/kg	1.126	51.793	mg/kg	0.00518 %	✓	
	029-002-00-X	215-270-7	1317-39-1										
6		lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	62	mg/kg		55.924	mg/kg	0.00559 %	✓	
	082-001-00-6												
7		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7										
8		nickel { nickel sulfate }				37	mg/kg	2.637	87.997	mg/kg	0.0088 %	✓	
	028-009-00-5	232-104-9	7786-81-4										
9		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5										
10		zinc { zinc sulphate }				210	mg/kg	2.469	467.734	mg/kg	0.0468 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]										
11		TPH (C6 to C40) petroleum group				<36.8	mg/kg		<36.8	mg/kg	<0.00368 %		<LOD
			TPH										
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4										
13		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2										
14		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3										
15		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4										

#		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									
16		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1]	95-47-6 [1]									
			203-396-5 [2]	106-42-3 [2]									
			203-576-3 [3]	108-38-3 [3]									
		215-535-7 [4]	1330-20-7 [4]										
17		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 }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
18		pH				7.4	pH		7.4	pH	7.4 pH		
				PH									
19		naphthalene				0.2	mg/kg		0.18	mg/kg	0.000018 %	✓	
		601-052-00-2	202-049-5	91-20-3									
20		acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-917-1	208-96-8									
21		acenaphthene				0.11	mg/kg		0.0992	mg/kg	0.00000992 %	✓	
			201-469-6	83-32-9									
22		fluorene				0.1	mg/kg		0.0902	mg/kg	0.00000902 %	✓	
			201-695-5	86-73-7									
23		phenanthrene				1.2	mg/kg		1.082	mg/kg	0.000108 %	✓	
			201-581-5	85-01-8									
24		anthracene				0.27	mg/kg		0.244	mg/kg	0.0000244 %	✓	
			204-371-1	120-12-7									
25		fluoranthene				1.8	mg/kg		1.624	mg/kg	0.000162 %	✓	
			205-912-4	206-44-0									
26		pyrene				1.5	mg/kg		1.353	mg/kg	0.000135 %	✓	
			204-927-3	129-00-0									
27		benzo[a]anthracene				1	mg/kg		0.902	mg/kg	0.0000902 %	✓	
		601-033-00-9	200-280-6	56-55-3									
28		chrysene				1.2	mg/kg		1.082	mg/kg	0.000108 %	✓	
		601-048-00-0	205-923-4	218-01-9									
29		benzo[b]fluoranthene				1.2	mg/kg		1.082	mg/kg	0.000108 %	✓	
		601-034-00-4	205-911-9	205-99-2									
30		benzo[k]fluoranthene				0.43	mg/kg		0.388	mg/kg	0.0000388 %	✓	
		601-036-00-5	205-916-6	207-08-9									
31		benzo[a]pyrene; benzo[def]chrysene				0.76	mg/kg		0.686	mg/kg	0.0000686 %	✓	
		601-032-00-3	200-028-5	50-32-8									
32		indeno[123-cd]pyrene				0.47	mg/kg		0.424	mg/kg	0.0000424 %	✓	
			205-893-2	193-39-5									
33		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
34		benzo[ghi]perylene				0.51	mg/kg		0.46	mg/kg	0.000046 %	✓	
			205-883-8	191-24-2									
35		monohydric phenols				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
				P1186									
Total:												0.076 %	

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 Determinand - 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

Classification of sample: TP05--19042023-2.00

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

Sample details

Sample name:	LoW Code:
TP05--19042023-2.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
10% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#		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							
1		arsenic { arsenic trioxide }			1	18 mg/kg	1.32	21.389 mg/kg	0.00214 %	✓	
		033-003-00-0	215-481-4	1327-53-3							
2		cadmium { cadmium oxide }				1.3 mg/kg	1.142	1.337 mg/kg	0.000134 %	✓	
		048-002-00-0	215-146-2	1306-19-0							
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }				12 mg/kg	1.462	17.539 mg/kg	0.00175 %		
			215-160-9	1308-38-9							
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
		024-017-00-8									
5		copper { dicopper oxide ; copper (I) oxide }				61 mg/kg	1.126	61.811 mg/kg	0.00618 %	✓	
		029-002-00-X	215-270-7	1317-39-1							
6		lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	81 mg/kg		72.9 mg/kg	0.00729 %	✓	
		082-001-00-6									
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7							
8		nickel { nickel sulfate }				37 mg/kg	2.637	87.802 mg/kg	0.00878 %	✓	
		028-009-00-5	232-104-9	7786-81-4							
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5							
10		zinc { zinc sulphate }				270 mg/kg	2.469	600.039 mg/kg	0.06 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11		TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg	<0.00368 %		<LOD
				TPH							
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
13		benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
14		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3							
15		ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4							

#	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								
16	xylene 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]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
17	 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				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
18	 pH PH		PH		7 pH		7 pH	7pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		0.21 mg/kg		0.189 mg/kg	0.0000189 %		✓	
20	 acenaphthylene 205-917-1	208-96-8			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	 acenaphthene 201-469-6	83-32-9			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	 fluorene 201-695-5	86-73-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	 phenanthrene 201-581-5	85-01-8			1.7 mg/kg		1.53 mg/kg	0.000153 %		✓	
24	 anthracene 204-371-1	120-12-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	 fluoranthene 205-912-4	206-44-0			1.6 mg/kg		1.44 mg/kg	0.000144 %		✓	
26	 pyrene 204-927-3	129-00-0			1.2 mg/kg		1.08 mg/kg	0.000108 %		✓	
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.39 mg/kg		0.351 mg/kg	0.0000351 %		✓	
28	chrysene 601-048-00-0	205-923-4	218-01-9		0.82 mg/kg		0.738 mg/kg	0.0000738 %		✓	
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.75 mg/kg		0.675 mg/kg	0.0000675 %		✓	
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.31 mg/kg		0.279 mg/kg	0.0000279 %		✓	
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.41 mg/kg		0.369 mg/kg	0.0000369 %		✓	
32	 indeno[123-cd]pyrene 205-893-2	193-39-5			0.27 mg/kg		0.243 mg/kg	0.0000243 %		✓	
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
34	 benzo[ghi]perylene 205-883-8	191-24-2			0.32 mg/kg		0.288 mg/kg	0.0000288 %		✓	
35	 monohydric phenols P1186				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.0917 %		

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 Determinand - 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

Classification of sample: TP05--19042023-2.50

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

Sample details

Sample name:	LoW Code:
TP05--19042023-2.50	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	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								
1	arsenic { arsenic trioxide }				19 mg/kg	1.32	21.323 mg/kg		0.00213 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				1 mg/kg	1.142	0.971 mg/kg		0.0000971 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	24.846 mg/kg		0.00248 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg		<0.000409 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				72 mg/kg	1.126	68.904 mg/kg		0.00689 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	80 mg/kg		68 mg/kg		0.0068 %	✓	
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg		<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel sulfate }				31 mg/kg	2.637	69.477 mg/kg		0.00695 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg		<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate }				210 mg/kg	2.469	440.769 mg/kg		0.0441 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg		<0.00368 %		<LOD
			TPH								
12	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
13	benzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4								

#		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							
16		xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1]	95-47-6 [1]							
			203-396-5 [2]	106-42-3 [2]							
			203-576-3 [3]	108-38-3 [3]							
			215-535-7 [4]	1330-20-7 [4]							
17		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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
		006-007-00-5									
18		pH				6.8 pH		6.8 pH	6.8 pH		
				P1186							
19		monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
				P1186							
Total:								0.0741 %			

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 Determinand - 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

Classification of sample: BH02--19042023-0.20

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

Sample details

Sample name:	LoW Code:
BH02--19042023-0.20	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
10% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#	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								
1	arsenic { arsenic trioxide }				18 mg/kg	1.32	21.389 mg/kg		0.00214 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				1.5 mg/kg	1.142	1.542 mg/kg		0.000154 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	17.539 mg/kg		0.00175 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg		<0.000409 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				41 mg/kg	1.126	41.545 mg/kg		0.00415 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	50 mg/kg		45 mg/kg		0.0045 %	✓	
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg		<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel sulfate }				39 mg/kg	2.637	92.548 mg/kg		0.00925 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg		<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate }				210 mg/kg	2.469	466.697 mg/kg		0.0467 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				10 mg/kg		9 mg/kg		0.0009 %	✓	
			TPH								
12	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
13	benzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4								

#		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							
16		xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1]	95-47-6 [1]							
			203-396-5 [2]	106-42-3 [2]							
			203-576-3 [3]	108-38-3 [3]							
			215-535-7 [4]	1330-20-7 [4]							
17		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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
		006-007-00-5									
18		pH				6.4 pH		6.4 pH	6.4 pH		
				PH							
19		monohydric phenols				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
				P1186							
Total:								0.0705 %			

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 Determinand - 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

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 Not a flammable liquid (soil). Hydrocarbon concentrations below 1000mg/kg not considered high enough to be indicative of a free draining liquid hydrocarbon in soil.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0009%)

Classification of sample: BH02--19042023-1.00

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

Sample details

Sample name:	LoW Code:
BH02--19042023-1.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.2% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.2% Wet Weight Moisture Correction applied (MC)

#	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								
1	arsenic { arsenic trioxide }				16 mg/kg	1.32	19.182 mg/kg		0.00192 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				1.5 mg/kg	1.142	1.556 mg/kg		0.000156 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	17.539 mg/kg		0.00175 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg		<0.000409 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				37 mg/kg	1.126	37.825 mg/kg		0.00378 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	45 mg/kg		40.86 mg/kg		0.00409 %	✓	
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg		<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel sulfate }				34 mg/kg	2.637	81.4 mg/kg		0.00814 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg		<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate }				220 mg/kg	2.469	493.267 mg/kg		0.0493 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg		<0.00368 %		<LOD
			TPH								
12	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
13	benzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4								

#	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								
16	xylene				<0.01 mg/kg		<0.01 mg/kg		<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1]	95-47-6 [1]								
		203-396-5 [2]	106-42-3 [2]								
		203-576-3 [3]	108-38-3 [3]								
17	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 }				<1 mg/kg	1.884	<1.884 mg/kg		<0.000188 %		<LOD
	006-007-00-5										
18	pH				6.5 pH		6.5 pH		6.5 pH		
			PH								
19	naphthalene				0.12 mg/kg		0.109 mg/kg		0.0000109 %	✓	
	601-052-00-2	202-049-5	91-20-3								
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		205-917-1	208-96-8								
21	acenaphthene				0.06 mg/kg		0.0545 mg/kg		0.00000545 %	✓	
		201-469-6	83-32-9								
22	fluorene				0.06 mg/kg		0.0545 mg/kg		0.00000545 %	✓	
		201-695-5	86-73-7								
23	phenanthrene				0.45 mg/kg		0.409 mg/kg		0.0000409 %	✓	
		201-581-5	85-01-8								
24	anthracene				0.09 mg/kg		0.0817 mg/kg		0.00000817 %	✓	
		204-371-1	120-12-7								
25	fluoranthene				0.74 mg/kg		0.672 mg/kg		0.0000672 %	✓	
		205-912-4	206-44-0								
26	pyrene				0.61 mg/kg		0.554 mg/kg		0.0000554 %	✓	
		204-927-3	129-00-0								
27	benzo[a]anthracene				0.39 mg/kg		0.354 mg/kg		0.0000354 %	✓	
	601-033-00-9	200-280-6	56-55-3								
28	chrysene				0.49 mg/kg		0.445 mg/kg		0.0000445 %	✓	
	601-048-00-0	205-923-4	218-01-9								
29	benzo[b]fluoranthene				0.39 mg/kg		0.354 mg/kg		0.0000354 %	✓	
	601-034-00-4	205-911-9	205-99-2								
30	benzo[k]fluoranthene				0.2 mg/kg		0.182 mg/kg		0.0000182 %	✓	
	601-036-00-5	205-916-6	207-08-9								
31	benzo[a]pyrene; benzo[def]chrysene				0.25 mg/kg		0.227 mg/kg		0.0000227 %	✓	
	601-032-00-3	200-028-5	50-32-8								
32	indeno[123-cd]pyrene				0.19 mg/kg		0.173 mg/kg		0.0000173 %	✓	
		205-893-2	193-39-5								
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3								
34	benzo[ghi]perylene				0.21 mg/kg		0.191 mg/kg		0.0000191 %	✓	
		205-883-8	191-24-2								
35	phenol				<0.2 mg/kg		<0.2 mg/kg		<0.00002 %		<LOD
	604-001-00-2	203-632-7	108-95-2								
36	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.01 mg/kg		<0.01 mg/kg		<0.000001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3								
37	tetrachloroethylene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	602-028-00-4	204-825-9	127-18-4								
38	carbon tetrachloride; tetrachloromethane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	602-008-00-5	200-262-8	56-23-5								
39	trichloroethylene; trichloroethene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	602-027-00-9	201-167-4	79-01-6								
40	vinyl chloride; chloroethylene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	602-023-00-7	200-831-0	75-01-4								
41	hexachlorobenzene				<0.3 mg/kg		<0.3 mg/kg		<0.00003 %		<LOD
	602-065-00-6	204-273-9	118-74-1								

#	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							
42	monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
43	aniline				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	612-008-00-7	200-539-3	62-53-3							
44	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-008-00-0	202-433-2 [1] 203-402-6 [2] 203-582-6 [3] 246-691-4 [4]	95-57-8 [1] 106-48-9 [2] 108-43-0 [3] 25167-80-0 [4]							
45	bis(2-chloroethyl) ether				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	603-029-00-2	203-870-1	111-44-4							
46	hexachloroethane				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		200-666-4	67-72-1							
47	nitrobenzene				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	609-003-00-7	202-716-0	98-95-3							
48	3,5,5-trimethylcyclohex-2-enone; isophorone				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	606-012-00-8	201-126-0	78-59-1							
49	2-nitrophenol				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
		201-857-5	88-75-5							
50	3,4-xyleneol; [1] 2,5-xyleneol; [2] 2,4-xyleneol; [3] 2,3-xyleneol; [4] 2,6-xyleneol; [5] xyleneol; [6] 2,4(or 2,5)-xyleneol [7]				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<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]							
51	bis(2-chloroethoxy)methane				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
		203-920-2	111-91-1							
52	2,4-dichlorophenol				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	604-011-00-7	204-429-6	120-83-2							
53	4-chloroaniline				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	612-137-00-9	203-401-0	106-47-8							
54	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-014-00-3	200-431-6	59-50-7							
55	2,4,6-trichlorophenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-018-00-5	201-795-9	88-06-2							
56	2,4,5-trichlorophenol				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	604-017-00-X	202-467-8	95-95-4							
57	2-methyl naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		202-078-3	91-57-6							
58	2-chloronaphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		202-079-9	91-58-7							
59	dimethyl phthalate				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-011-6	131-11-3							
60	2,6-dinitrotoluene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	609-049-00-8	210-106-0	606-20-2							
61	2,4-dinitrotoluene; [1] dinitrotoluene [2]				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]							
62	dibenzofuran				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		205-071-3	132-64-9							
63	4-chlorophenylphenylether				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
		230-281-7	7005-72-3							
64	diethyl phthalate				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		201-550-6	84-66-2							

#	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							
65	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	612-012-00-9	201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]							
66	azobenzene				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
67	4-bromophenylphenylether				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		202-952-4	101-55-3							
68	carbazole				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
		201-696-0	86-74-8							
69	dibutyl phthalate; DBP				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
70	anthraquinone				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	606-151-00-4	201-549-0	84-65-1							
71	BBP; benzyl butyl phthalate				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
72	1,1,1-trichloroethane; methyl chloroform				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
73	1,1,2,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-015-00-3	201-197-8	79-34-5							
74	1,1,2-trichloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-014-00-8	201-166-9	79-00-5							
75	1,1-dichloroethylene; vinylidene chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
76	1,1-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
77	1,2,3-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-757-1	87-61-6							
78	1,2,4-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
79	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
80	1,2-dichlorobenzene; o-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
81	1,2-dichloropropane; propylene dichloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
82	1,3-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
83	1,3-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-531-3	142-28-9							
84	1,4-dichlorobenzene; p-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
85	2,2-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		209-832-0	594-20-7							
86	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
87	bromomethane; methylbromide				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
88	bromobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
89	n-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		203-209-7	104-51-8							
90	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
91	chlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
92	chloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-009-00-0	200-830-5	75-00-3							

#	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								
93	chloroform; trichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-006-00-4	200-663-8	67-66-3								
94	chloromethane; methyl chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-001-00-7	200-817-4	74-87-3								
95	dibromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		204-704-0	124-48-1								
96	1,2-dibromo-3-chloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-021-00-6	202-479-3	96-12-8								
97	dibromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-003-00-8	200-824-2	74-95-3								
98	hexachlorobutadiene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		201-765-5	87-68-3								
99	4-isopropyltoluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		202-796-7	99-87-6								
100	sec-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		205-227-0	135-98-8								
101	styrene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-026-00-0	202-851-5	100-42-5								
102	trans-1,3-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		431-460-4	10061-02-6								
103	tert-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		202-632-4	98-06-6								
104	bromoform; tribromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-007-00-X	200-854-6	75-25-2								
105	1,2,4-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-087-00-6	204-428-0	120-82-1								
106	1,1,1,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		211-135-1	630-20-6								
107	trichlorofluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		200-892-3	75-69-4								
108	mesitylene; 1,3,5-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-025-00-5	203-604-4	108-67-8								
109	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	604-004-00-9	203-577-9 [1]	108-39-4 [1]								
		202-423-8 [2]	95-48-7 [2]								
		203-398-6 [3]	106-44-5 [3]								
		215-293-2 [4]	1319-77-3 [4]								
110	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-040-00-X	202-424-3 [1]	95-49-8 [1]								
		203-580-5 [2]	108-41-8 [2]								
		203-397-0 [3]	106-43-4 [3]								
		246-698-2 [4]	25168-05-2 [4]								
111	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-026-00-3	208-750-2 [1]	540-59-0 [1]								
		205-859-7 [2]	156-59-2 [2]								
		205-860-2 [3]	156-60-5 [3]								
112	cumene; [1] propylbenzene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-024-00-X	202-704-5 [1]	98-82-8 [1]								
		203-132-9 [2]	103-65-1 [2]								
Total:									0.0749 %		

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 Determinand - 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

Classification of sample: BH02--19042023-4.00


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

Sample details

Sample name:	LoW Code:
BH02--19042023-4.00	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
18%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

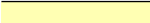
Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	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									
1	arsenic { arsenic trioxide }				3.7	mg/kg	1.32	4.006	mg/kg	0.000401 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.281	mg/kg	0.0000281 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12	mg/kg	1.462	17.539	mg/kg	0.00175 %		
		215-160-9	1308-38-9									
4	copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	15.695	mg/kg	0.00157 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	17	mg/kg		13.94	mg/kg	0.00139 %	✓	
	082-001-00-6											
6	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
7	nickel { nickel sulfate }				17	mg/kg	2.637	36.755	mg/kg	0.00368 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
8	selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
9	zinc { zinc sulphate }				37	mg/kg	2.469	74.918	mg/kg	0.00749 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10	TPH (C6 to C40) petroleum group				<36.8	mg/kg		<36.8	mg/kg	<0.00368 %		<LOD
			TPH									
11	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
12	benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
13	toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
14	ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
15	xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]									

#	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							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	 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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
17	 pH		PH		6.8 pH		6.8 pH	6.8 pH		
18	 monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0206 %		

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 Determinand - 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

Classification of sample: TP01--20042023-0.50


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

Sample details

Sample name:	LoW Code:
TP01--20042023-0.50	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
3.2%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	Entry:

Hazard properties

None identified

Determinands

Moisture content: 3.2% Wet Weight Moisture Correction applied (MC)

#		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								
1		arsenic { arsenic trioxide }				13 mg/kg	1.32	16.615 mg/kg	0.00166 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				0.7 mg/kg	1.142	0.774 mg/kg	0.0000774 %	✓		
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }				28 mg/kg	1.462	40.924 mg/kg	0.00409 %			
			215-160-9	1308-38-9								
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD	
		024-017-00-8										
5		copper { dicopper oxide ; copper (I) oxide }				44 mg/kg	1.126	47.954 mg/kg	0.0048 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
6		lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	71 mg/kg		68.728 mg/kg	0.00687 %	✓		
		082-001-00-6										
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
8		nickel { nickel sulfate }				21 mg/kg	2.637	53.599 mg/kg	0.00536 %	✓		
		028-009-00-5	232-104-9	7786-81-4								
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD	
		028-031-00-5	239-125-2	15060-62-5								
10		zinc { zinc sulphate }				120 mg/kg	2.469	286.833 mg/kg	0.0287 %	✓		
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11		TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg	<0.00368 %		<LOD	
				TPH								
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		603-181-00-X	216-653-1	1634-04-4								
13		benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-020-00-8	200-753-7	71-43-2								
14		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-021-00-3	203-625-9	108-88-3								
15		ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-023-00-4	202-849-4	100-41-4								

#	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									
16	xylene 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]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
17	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				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
18	pH		PH		9.8	pH		9.8	pH	9.8 pH		
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.0001	mg/kg		<0.0001	mg/kg	<0.00000001 %		<LOD
20	acenaphthylene 205-917-1	208-96-8			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
21	acenaphthene 201-469-6	83-32-9			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
22	fluorene 201-695-5	86-73-7			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
23	phenanthrene 201-581-5	85-01-8			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
24	anthracene 204-371-1	120-12-7			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
25	fluoranthene 205-912-4	206-44-0			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
26	pyrene 204-927-3	129-00-0			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
28	chrysene 601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
32	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
34	benzo[ghi]perylene 205-883-8	191-24-2			<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.2	mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
36	1,1-dichloroethane and 1,2-dichloroethane (combined) 203-458-1, 200-863-5	107-06-2, 75-34-3			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
37	tetrachloroethylene 602-028-00-4	204-825-9	127-18-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
38	carbon tetrachloride; tetrachloromethane 602-008-00-5	200-262-8	56-23-5		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
39	trichloroethylene; trichloroethene 602-027-00-9	201-167-4	79-01-6		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
40	vinyl chloride; chloroethylene 602-023-00-7	200-831-0	75-01-4		<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
41	hexachlorobenzene 602-065-00-6	204-273-9	118-74-1		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<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							
42	polychlorobiphenyls; PCB 602-039-00-4 215-648-1 1336-36-3				<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
43	monohydric phenols P1186				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
44	aniline 612-008-00-7 200-539-3 62-53-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
45	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4] 604-008-00-0 202-433-2 [1] 95-57-8 [1] 203-402-6 [2] 106-48-9 [2] 203-582-6 [3] 108-43-0 [3] 246-691-4 [4] 25167-80-0 [4]				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
46	bis(2-chloroethyl) ether 603-029-00-2 203-870-1 111-44-4				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
47	hexachloroethane 200-666-4 67-72-1				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
48	nitrobenzene 609-003-00-7 202-716-0 98-95-3				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
49	3,5,5-trimethylcyclohex-2-enone; isophorone 606-012-00-8 201-126-0 78-59-1				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
50	2-nitrophenol 201-857-5 88-75-5				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
51	3,4-xylene; [1] 2,5-xylene; [2] 2,4-xylene; [3] 2,3-xylene; [4] 2,6-xylene; [5] xylene; [6] 2,4(or 2,5)-xylene [7] 604-006-00-X 202-439-5 [1] 95-65-8 [1] 202-461-5 [2] 95-87-4 [2] 203-321-6 [3] 105-67-9 [3] 208-395-3 [4] 526-75-0 [4] 209-400-1 [5] 576-26-1 [5] 215-089-3 [6] 1300-71-6 [6] 276-245-4 [7] 71975-58-1 [7]				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
52	bis(2-chloroethoxy)methane 203-920-2 111-91-1				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
53	2,4-dichlorophenol 604-011-00-7 204-429-6 120-83-2				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
54	4-chloroaniline 612-137-00-9 203-401-0 106-47-8				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
55	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol 604-014-00-3 200-431-6 59-50-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
56	2,4,6-trichlorophenol 604-018-00-5 201-795-9 88-06-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
57	2,4,5-trichlorophenol 604-017-00-X 202-467-8 95-95-4				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
58	2-methyl naphthalene 202-078-3 91-57-6				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
59	2-chloronaphthalene 202-079-9 91-58-7				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
60	dimethyl phthalate 205-011-6 131-11-3				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
61	2,6-dinitrotoluene 609-049-00-8 210-106-0 606-20-2				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
62	2,4-dinitrotoluene; [1] dinitrotoluene [2] 609-007-00-9 204-450-0 [1] 121-14-2 [1] 246-836-1 [2] 25321-14-6 [2]				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
63	dibenzofuran 205-071-3 132-64-9				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
64	4-chlorophenylphenylether 230-281-7 7005-72-3				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
65	diethyl phthalate 201-550-6 84-66-2				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<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							
66	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3] 612-012-00-9	201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
67	azobenzene 611-001-00-6	203-102-5	103-33-3		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
68	4-bromophenylphenylether 202-952-4	101-55-3			<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
69	carbazole 201-696-0	86-74-8			<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
70	dibutyl phthalate; DBP 607-318-00-4	201-557-4	84-74-2		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
71	anthraquinone 606-151-00-4	201-549-0	84-65-1		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
72	BBP; benzyl butyl phthalate 607-430-00-3	201-622-7	85-68-7		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
73	1,1,1-trichloroethane; methyl chloroform 602-013-00-2	200-756-3	71-55-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
74	1,1,2,2-tetrachloroethane 602-015-00-3	201-197-8	79-34-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
75	1,1,2-trichloroethane 602-014-00-8	201-166-9	79-00-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
76	1,1-dichloroethylene; vinylidene chloride 602-025-00-8	200-864-0	75-35-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
77	1,1-dichloropropene 602-031-00-0	209-253-3	563-58-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
78	1,2,3-trichlorobenzene 201-757-1	87-61-6			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
79	1,2,4-trimethylbenzene 601-043-00-3	202-436-9	95-63-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
80	1,2-dibromoethane 602-010-00-6	203-444-5	106-93-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
81	1,2-dichlorobenzene; o-dichlorobenzene 602-034-00-7	202-425-9	95-50-1		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
82	1,2-dichloropropane; propylene dichloride 602-020-00-0	201-152-2	78-87-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
83	1,3-dichlorobenzene 602-067-00-7	208-792-1	541-73-1		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
84	1,3-dichloropropane 205-531-3	142-28-9			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
85	1,4-dichlorobenzene; p-dichlorobenzene 602-035-00-2	203-400-5	106-46-7		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
86	2,2-dichloropropane 209-832-0	594-20-7			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
87	bromodichloromethane 200-856-7	75-27-4			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
88	bromomethane; methylbromide 602-002-00-2	200-813-2	74-83-9		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
89	bromobenzene 602-060-00-9	203-623-8	108-86-1		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
90	n-butylbenzene 203-209-7	104-51-8			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
91	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2] 602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
92	chlorobenzene 602-033-00-1	203-628-5	108-90-7		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
93	chloroethane 602-009-00-0	200-830-5	75-00-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<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							
94	chloroform; trichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
95	chloromethane; methyl chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-001-00-7	200-817-4	74-87-3							
96	dibromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		204-704-0	124-48-1							
97	1,2-dibromo-3-chloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
98	dibromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
99	hexachlorobutadiene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-765-5	87-68-3							
100	4-isopropyltoluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-796-7	99-87-6							
101	sec-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-227-0	135-98-8							
102	styrene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
103	trans-1,3-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		431-460-4	10061-02-6							
104	tert-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-632-4	98-06-6							
105	bromoform; tribromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
106	1,2,4-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
107	1,1,1,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		211-135-1	630-20-6							
108	trichlorofluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-892-3	75-69-4							
109	mesitylene; 1,3,5-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
110	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-004-00-9	203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]							
111	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]							
112	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]							
113	cumene; [1] propylbenzene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]							
Total:								0.057 %		

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 Determinand - 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

Classification of sample: TP01--20042023-1.90

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

Sample details

Sample name:	LoW Code:
TP01--20042023-1.90	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3.1% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 3.1% Wet Weight Moisture Correction applied (MC)

#	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								
1	arsenic { arsenic trioxide }				13 mg/kg	1.32	16.632 mg/kg		0.00166 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				1.1 mg/kg	1.142	1.218 mg/kg		0.000122 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				310 mg/kg	1.462	453.082 mg/kg		0.0453 %		
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				43 mg/kg	1.126	46.912 mg/kg		0.00469 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	43 mg/kg		41.667 mg/kg		0.00417 %	✓	
	082-001-00-6										
6	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg		<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel sulfate }				20 mg/kg	2.637	51.099 mg/kg		0.00511 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
8	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg		<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc sulphate }				130 mg/kg	2.469	311.057 mg/kg		0.0311 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
10	TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg		<0.00368 %		<LOD
			TPH								
11	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
12	benzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg		<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								

#	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							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	 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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
17	 pH		PH		11 pH		11 pH	11pH		
18	 monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0964 %		

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 Determinand - 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

Classification of sample: TP02--20042023-0.50

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

Sample details

Sample name:	LoW Code:
TP02--20042023-0.50	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.4% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.4% Wet Weight Moisture Correction applied (MC)

#		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								
1		arsenic { arsenic trioxide }			40	mg/kg	1.32	48.377	mg/kg	0.00484 %	✓	
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }			2.6	mg/kg	1.142	2.721	mg/kg	0.000272 %	✓	
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }			82	mg/kg	1.462	119.848	mg/kg	0.012 %		
			215-160-9	1308-38-9								
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }			<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
			024-017-00-8									
5		copper { dicopper oxide ; copper (I) oxide }			98	mg/kg	1.126	101.069	mg/kg	0.0101 %	✓	
			029-002-00-X	215-270-71317-39-1								
6		lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }		1	140	mg/kg		128.24	mg/kg	0.0128 %	✓	
			082-001-00-6									
7		mercury { mercury dichloride }			<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
			080-010-00-X	231-299-87487-94-7								
8		nickel { nickel sulfate }			51	mg/kg	2.637	123.175	mg/kg	0.0123 %	✓	
			028-009-00-5	232-104-97786-81-4								
9		selenium { nickel selenate }			<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
			028-031-00-5	239-125-215060-62-5								
10		zinc { zinc sulphate }			290	mg/kg	2.469	655.944	mg/kg	0.0656 %	✓	
			030-006-00-9	231-793-3 [1]231-793-3 [2]7446-19-7 [1]7733-02-0 [2]								
11		TPH (C6 to C40) petroleum group			<36.8	mg/kg		<36.8	mg/kg	<0.00368 %		<LOD
				TPH								
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane			<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
			603-181-00-X	216-653-11634-04-4								
13		benzene			<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
			601-020-00-8	200-753-771-43-2								
14		toluene			<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
			601-021-00-3	203-625-9108-88-3								
15		ethylbenzene			<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
			601-023-00-4	202-849-4100-41-4								

#	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								
16	xylene 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]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
17	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				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
18	pH				8.9 pH		8.9 pH	8.9 pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.0001 mg/kg		<0.0001 mg/kg	<0.00000001 %			<LOD
20	acenaphthylene 205-917-1	208-96-8			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	acenaphthene 201-469-6	83-32-9			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	fluorene 201-695-5	86-73-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	phenanthrene 201-581-5	85-01-8			0.11 mg/kg		0.101 mg/kg	0.0000101 %	✓		
24	anthracene 204-371-1	120-12-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	fluoranthene 205-912-4	206-44-0			0.1 mg/kg		0.0916 mg/kg	0.00000916 %	✓		
26	pyrene 204-927-3	129-00-0			0.09 mg/kg		0.0824 mg/kg	0.00000824 %	✓		
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
28	chrysene 601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
32	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
34	benzo[ghi]perylene 205-883-8	191-24-2			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
36	1,1-dichloroethane and 1,2-dichloroethane (combined) 203-458-1, 200-863-5	107-06-2, 75-34-3			<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
37	tetrachloroethylene 602-028-00-4	204-825-9	127-18-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
38	carbon tetrachloride; tetrachloromethane 602-008-00-5	200-262-8	56-23-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
39	trichloroethylene; trichloroethene 602-027-00-9	201-167-4	79-01-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
40	vinyl chloride; chloroethylene 602-023-00-7	200-831-0	75-01-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
41	hexachlorobenzene 602-065-00-6	204-273-9	118-74-1		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<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							
42	polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %		<LOD
43	monohydric phenols P1186				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
44	aniline 612-008-00-7	200-539-3	62-53-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
45	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4] 604-008-00-0	202-433-2 [1] 203-402-6 [2] 203-582-6 [3] 246-691-4 [4]	95-57-8 [1] 106-48-9 [2] 108-43-0 [3] 25167-80-0 [4]		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
46	bis(2-chloroethyl) ether 603-029-00-2	203-870-1	111-44-4		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
47	hexachloroethane 200-666-4		67-72-1		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
48	nitrobenzene 609-003-00-7	202-716-0	98-95-3		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
49	3,5,5-trimethylcyclohex-2-enone; isophorone 606-012-00-8	201-126-0	78-59-1		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
50	2-nitrophenol 201-857-5		88-75-5		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
51	3,4-xyleneol; [1] 2,5-xyleneol; [2] 2,4-xyleneol; [3] 2,3-xyleneol; [4] 2,6-xyleneol; [5] xyleneol; [6] 2,4(or 2,5)-xyleneol [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]		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
52	bis(2-chloroethoxy)methane 203-920-2		111-91-1		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
53	2,4-dichlorophenol 604-011-00-7	204-429-6	120-83-2		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
54	4-chloroaniline 612-137-00-9	203-401-0	106-47-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
55	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol 604-014-00-3	200-431-6	59-50-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
56	2,4,6-trichlorophenol 604-018-00-5	201-795-9	88-06-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
57	2,4,5-trichlorophenol 604-017-00-X	202-467-8	95-95-4		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
58	2-methyl naphthalene 202-078-3		91-57-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
59	2-chloronaphthalene 202-079-9		91-58-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
60	dimethyl phthalate 205-011-6		131-11-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
61	2,6-dinitrotoluene 609-049-00-8	210-106-0	606-20-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
62	2,4-dinitrotoluene; [1] dinitrotoluene [2] 609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
63	dibenzofuran 205-071-3		132-64-9		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
64	4-chlorophenylphenylether 230-281-7		7005-72-3		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
65	diethyl phthalate 201-550-6		84-66-2		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<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							
66	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3]				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	612-012-00-9	201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]							
67	azobenzene				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	611-001-00-6	203-102-5	103-33-3							
68	4-bromophenylphenylether				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
		202-952-4	101-55-3							
69	carbazole				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
		201-696-0	86-74-8							
70	dibutyl phthalate; DBP				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	607-318-00-4	201-557-4	84-74-2							
71	anthraquinone				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	606-151-00-4	201-549-0	84-65-1							
72	BBP; benzyl butyl phthalate				<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
	607-430-00-3	201-622-7	85-68-7							
73	1,1,1-trichloroethane; methyl chloroform				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
74	1,1,2,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-015-00-3	201-197-8	79-34-5							
75	1,1,2-trichloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-014-00-8	201-166-9	79-00-5							
76	1,1-dichloroethylene; vinylidene chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-025-00-8	200-864-0	75-35-4							
77	1,1-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
78	1,2,3-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-757-1	87-61-6							
79	1,2,4-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-043-00-3	202-436-9	95-63-6							
80	1,2-dibromoethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
81	1,2-dichlorobenzene; o-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-034-00-7	202-425-9	95-50-1							
82	1,2-dichloropropane; propylene dichloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-020-00-0	201-152-2	78-87-5							
83	1,3-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-067-00-7	208-792-1	541-73-1							
84	1,3-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-531-3	142-28-9							
85	1,4-dichlorobenzene; p-dichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-035-00-2	203-400-5	106-46-7							
86	2,2-dichloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		209-832-0	594-20-7							
87	bromodichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-856-7	75-27-4							
88	bromomethane; methylbromide				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-002-00-2	200-813-2	74-83-9							
89	bromobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
90	n-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		203-209-7	104-51-8							
91	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
92	chlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
93	chloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-009-00-0	200-830-5	75-00-3							

#	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								
94	chloroform; trichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-006-00-4	200-663-8	67-66-3								
95	chloromethane; methyl chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-001-00-7	200-817-4	74-87-3								
96	dibromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		204-704-0	124-48-1								
97	1,2-dibromo-3-chloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-021-00-6	202-479-3	96-12-8								
98	dibromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-003-00-8	200-824-2	74-95-3								
99	hexachlorobutadiene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		201-765-5	87-68-3								
100	4-isopropyltoluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		202-796-7	99-87-6								
101	sec-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		205-227-0	135-98-8								
102	styrene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-026-00-0	202-851-5	100-42-5								
103	trans-1,3-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		431-460-4	10061-02-6								
104	tert-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		202-632-4	98-06-6								
105	bromoform; tribromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-007-00-X	200-854-6	75-25-2								
106	1,2,4-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	602-087-00-6	204-428-0	120-82-1								
107	1,1,1,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		211-135-1	630-20-6								
108	trichlorofluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
		200-892-3	75-69-4								
109	mesitylene; 1,3,5-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-025-00-5	203-604-4	108-67-8								
110	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %			<LOD
	604-004-00-9	203-577-9 [1]	108-39-4 [1]								
		202-423-8 [2]	95-48-7 [2]								
		203-398-6 [3]	106-44-5 [3]								
		215-293-2 [4]	1319-77-3 [4]								
111	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-040-00-X	202-424-3 [1]	95-49-8 [1]								
		203-580-5 [2]	108-41-8 [2]								
		203-397-0 [3]	106-43-4 [3]								
		246-698-2 [4]	25168-05-2 [4]								
112	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-026-00-3	208-750-2 [1]	540-59-0 [1]								
		205-859-7 [2]	156-59-2 [2]								
		205-860-2 [3]	156-60-5 [3]								
113	cumene; [1] propylbenzene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-024-00-X	202-704-5 [1]	98-82-8 [1]								
		203-132-9 [2]	103-65-1 [2]								
Total:									0.123 %		

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 Determinand - 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

Classification of sample: BH01--20042023-0.10


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

Sample details

Sample name:	LoW Code:
BH01--20042023-0.10	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
14%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#		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								
1		arsenic { arsenic trioxide }				37 mg/kg	1.32	42.013 mg/kg	0.0042 %			
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				2.2 mg/kg	1.142	2.161 mg/kg	0.000216 %			
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15 mg/kg	1.462	21.923 mg/kg	0.00219 %			
			215-160-9	1308-38-9								
4		chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD	
		024-017-00-8										
5		copper { dicopper oxide; copper (I) oxide }				240 mg/kg	1.126	232.383 mg/kg	0.0232 %			
		029-002-00-X	215-270-7	1317-39-1								
6		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	97 mg/kg		83.42 mg/kg	0.00834 %			
		082-001-00-6										
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
8		nickel { nickel sulfate }				94 mg/kg	2.637	213.15 mg/kg	0.0213 %			
		028-009-00-5	232-104-9	7786-81-4								
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD	
		028-031-00-5	239-125-2	15060-62-5								
10		zinc { zinc sulphate }				330 mg/kg	2.469	700.786 mg/kg	0.0701 %			
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11		TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg	<0.00368 %		<LOD	
				TPH								
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		603-181-00-X	216-653-1	1634-04-4								
13		benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-020-00-8	200-753-7	71-43-2								
14		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-021-00-3	203-625-9	108-88-3								
15		ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD	
		601-023-00-4	202-849-4	100-41-4								

#	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								
16	xylene 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]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
17	 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				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
18	 pH		PH		8 pH		8 pH	8pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		0.08 mg/kg		0.0688 mg/kg	0.00000688 %		✓	
20	 acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	 acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	 fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	 phenanthrene	201-581-5	85-01-8		0.24 mg/kg		0.206 mg/kg	0.0000206 %		✓	
24	 anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	 fluoranthene	205-912-4	206-44-0		0.43 mg/kg		0.37 mg/kg	0.000037 %		✓	
26	 pyrene	204-927-3	129-00-0		0.35 mg/kg		0.301 mg/kg	0.0000301 %		✓	
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.26 mg/kg		0.224 mg/kg	0.0000224 %		✓	
28	chrysene 601-048-00-0	205-923-4	218-01-9		0.35 mg/kg		0.301 mg/kg	0.0000301 %		✓	
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.36 mg/kg		0.31 mg/kg	0.000031 %		✓	
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.13 mg/kg		0.112 mg/kg	0.0000112 %		✓	
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.22 mg/kg		0.189 mg/kg	0.0000189 %		✓	
32	 indeno[123-cd]pyrene 205-893-2		193-39-5		0.14 mg/kg		0.12 mg/kg	0.000012 %		✓	
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
34	 benzo[ghi]perylene 205-883-8		191-24-2		0.15 mg/kg		0.129 mg/kg	0.0000129 %		✓	
35	 monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.135 %		

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 Determinand - 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

Classification of sample: BH01--20042023-1.10


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

Sample details

Sample name:	LoW Code:
BH01--20042023-1.10	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
6.5%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	Entry:

Hazard properties

None identified

Determinands

Moisture content: 6.5% Wet Weight Moisture Correction applied (MC)

#		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							
1		arsenic { arsenic trioxide }				15 mg/kg	1.32	18.518 mg/kg	0.00185 %	✓	
		033-003-00-0	215-481-4	1327-53-3							
2		cadmium { cadmium oxide }				1.1 mg/kg	1.142	1.175 mg/kg	0.000117 %	✓	
		048-002-00-0	215-146-2	1306-19-0							
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
			215-160-9	1308-38-9							
4		chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg	<0.000409 %		<LOD
		024-017-00-8									
5		copper { dicopper oxide; copper (I) oxide }				60 mg/kg	1.126	63.162 mg/kg	0.00632 %	✓	
		029-002-00-X	215-270-7	1317-39-1							
6		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	60 mg/kg		56.1 mg/kg	0.00561 %	✓	
		082-001-00-6									
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7							
8		nickel { nickel sulfate }				37 mg/kg	2.637	91.216 mg/kg	0.00912 %	✓	
		028-009-00-5	232-104-9	7786-81-4							
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5							
10		zinc { zinc sulphate }				200 mg/kg	2.469	461.758 mg/kg	0.0462 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11		TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg	<0.00368 %		<LOD
				TPH							
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
13		benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
14		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3							
15		ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4							

#	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								
16	xylene 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]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
17	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				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
18	pH		PH		8.1 pH		8.1 pH	8.1 pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.0001 mg/kg		<0.0001 mg/kg	<0.00000001 %			<LOD
20	acenaphthylene 205-917-1	208-96-8			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	acenaphthene 201-469-6	83-32-9			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	fluorene 201-695-5	86-73-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	phenanthrene 201-581-5	85-01-8			0.14 mg/kg		0.131 mg/kg	0.0000131 %	✓		
24	anthracene 204-371-1	120-12-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	fluoranthene 205-912-4	206-44-0			0.16 mg/kg		0.15 mg/kg	0.000015 %	✓		
26	pyrene 204-927-3	129-00-0			0.15 mg/kg		0.14 mg/kg	0.000014 %	✓		
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.08 mg/kg		0.0748 mg/kg	0.00000748 %	✓		
28	chrysene 601-048-00-0	205-923-4	218-01-9		0.16 mg/kg		0.15 mg/kg	0.000015 %	✓		
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.09 mg/kg		0.0841 mg/kg	0.00000841 %	✓		
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
32	indeno[123-cd]pyrene 205-893-2	193-39-5			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
34	benzo[ghi]perylene 205-883-8	191-24-2			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
35	phenol 604-001-00-2	203-632-7	108-95-2		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %			<LOD
36	1,1-dichloroethane and 1,2-dichloroethane (combined) 203-458-1, 200-863-5	107-06-2, 75-34-3			<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
37	tetrachloroethylene 602-028-00-4	204-825-9	127-18-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
38	carbon tetrachloride; tetrachloromethane 602-008-00-5	200-262-8	56-23-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
39	trichloroethylene; trichloroethene 602-027-00-9	201-167-4	79-01-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
40	vinyl chloride; chloroethylene 602-023-00-7	200-831-0	75-01-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
41	hexachlorobenzene 602-065-00-6	204-273-9	118-74-1		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %			<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								
42	monohydric phenols				<1 mg/kg		<1	mg/kg	<0.0001 %		<LOD
			P1186								
43	aniline				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	612-008-00-7	200-539-3	62-53-3								
44	2-chlorophenol; [1] 4-chlorophenol; [2] 3-chlorophenol; [3] chlorophenol [4]				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-008-00-0	202-433-2 [1] 203-402-6 [2] 203-582-6 [3] 246-691-4 [4]	95-57-8 [1] 106-48-9 [2] 108-43-0 [3] 25167-80-0 [4]								
45	bis(2-chloroethyl) ether				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	603-029-00-2	203-870-1	111-44-4								
46	hexachloroethane				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		200-666-4	67-72-1								
47	nitrobenzene				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	609-003-00-7	202-716-0	98-95-3								
48	3,5,5-trimethylcyclohex-2-enone; isophorone				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	606-012-00-8	201-126-0	78-59-1								
49	2-nitrophenol				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		201-857-5	88-75-5								
50	3,4-xylene; [1] 2,5-xylene; [2] 2,4-xylene; [3] 2,3-xylene; [4] 2,6-xylene; [5] xylene; [6] 2,4(or 2,5)-xylene [7]				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<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]								
51	bis(2-chloroethoxy)methane				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		203-920-2	111-91-1								
52	2,4-dichlorophenol				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
	604-011-00-7	204-429-6	120-83-2								
53	4-chloroaniline				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	612-137-00-9	203-401-0	106-47-8								
54	chlorocresol; 4-chloro-m-cresol; 4-chloro-3-methylphenol				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-014-00-3	200-431-6	59-50-7								
55	2,4,6-trichlorophenol				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	604-018-00-5	201-795-9	88-06-2								
56	2,4,5-trichlorophenol				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	604-017-00-X	202-467-8	95-95-4								
57	2-methyl naphthalene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		202-078-3	91-57-6								
58	2-chloronaphthalene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		202-079-9	91-58-7								
59	dimethyl phthalate				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		205-011-6	131-11-3								
60	2,6-dinitrotoluene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	609-049-00-8	210-106-0	606-20-2								
61	2,4-dinitrotoluene; [1] dinitrotoluene [2]				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]								
62	dibenzofuran				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		205-071-3	132-64-9								
63	4-chlorophenylphenylether				<0.3 mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		230-281-7	7005-72-3								
64	diethyl phthalate				<0.2 mg/kg		<0.2	mg/kg	<0.00002 %		<LOD
		201-550-6	84-66-2								

#	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							
65	o-nitroaniline; [1] m-nitroaniline; [2] p-nitroaniline [3] 612-012-00-9	201-855-4 [1] 202-729-1 [2] 202-810-1 [3]	88-74-4 [1] 99-09-2 [2] 100-01-6 [3]		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
66	azobenzene 611-001-00-6	203-102-5	103-33-3		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
67	4-bromophenylphenylether 202-952-4	101-55-3			<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
68	carbazole 201-696-0	86-74-8			<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
69	dibutyl phthalate; DBP 607-318-00-4	201-557-4	84-74-2		<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
70	anthraquinone 606-151-00-4	201-549-0	84-65-1		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
71	BBP; benzyl butyl phthalate 607-430-00-3	201-622-7	85-68-7		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD
72	1,1,1-trichloroethane; methyl chloroform 602-013-00-2	200-756-3	71-55-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
73	1,1,2,2-tetrachloroethane 602-015-00-3	201-197-8	79-34-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
74	1,1,2-trichloroethane 602-014-00-8	201-166-9	79-00-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
75	1,1-dichloroethylene; vinylidene chloride 602-025-00-8	200-864-0	75-35-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
76	1,1-dichloropropene 602-031-00-0	209-253-3	563-58-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
77	1,2,3-trichlorobenzene 201-757-1	87-61-6			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
78	1,2,4-trimethylbenzene 601-043-00-3	202-436-9	95-63-6		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
79	1,2-dibromoethane 602-010-00-6	203-444-5	106-93-4		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
80	1,2-dichlorobenzene; o-dichlorobenzene 602-034-00-7	202-425-9	95-50-1		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
81	1,2-dichloropropane; propylene dichloride 602-020-00-0	201-152-2	78-87-5		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
82	1,3-dichlorobenzene 602-067-00-7	208-792-1	541-73-1		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
83	1,3-dichloropropane 205-531-3	142-28-9			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
84	1,4-dichlorobenzene; p-dichlorobenzene 602-035-00-2	203-400-5	106-46-7		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
85	2,2-dichloropropane 209-832-0	594-20-7			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
86	bromodichloromethane 200-856-7	75-27-4			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
87	bromomethane; methylbromide 602-002-00-2	200-813-2	74-83-9		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
88	bromobenzene 602-060-00-9	203-623-8	108-86-1		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
89	n-butylbenzene 203-209-7	104-51-8			<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
90	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2] 602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
91	chlorobenzene 602-033-00-1	203-628-5	108-90-7		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
92	chloroethane 602-009-00-0	200-830-5	75-00-3		<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<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							
93	chloroform; trichloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
94	chloromethane; methyl chloride				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-001-00-7	200-817-4	74-87-3							
95	dibromochloromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		204-704-0	124-48-1							
96	1,2-dibromo-3-chloropropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-021-00-6	202-479-3	96-12-8							
97	dibromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
98	hexachlorobutadiene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		201-765-5	87-68-3							
99	4-isopropyltoluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-796-7	99-87-6							
100	sec-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		205-227-0	135-98-8							
101	styrene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
102	trans-1,3-dichloropropene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		431-460-4	10061-02-6							
103	tert-butylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		202-632-4	98-06-6							
104	bromoform; tribromomethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
105	1,2,4-trichlorobenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	602-087-00-6	204-428-0	120-82-1							
106	1,1,1,2-tetrachloroethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		211-135-1	630-20-6							
107	trichlorofluoromethane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		200-892-3	75-69-4							
108	mesitylene; 1,3,5-trimethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-025-00-5	203-604-4	108-67-8							
109	m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4]				<0.5 mg/kg		<0.5 mg/kg	<0.00005 %		<LOD
	604-004-00-9	203-577-9 [1] 202-423-8 [2] 203-398-6 [3] 215-293-2 [4]	108-39-4 [1] 95-48-7 [2] 106-44-5 [3] 1319-77-3 [4]							
110	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]							
111	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]							
112	cumene; [1] propylbenzene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-024-00-X	202-704-5 [1] 203-132-9 [2]	98-82-8 [1] 103-65-1 [2]							
Total:								0.0761 %		

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 Determinand - 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

Classification of sample: BH01--20042023-3.00

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

Sample details

Sample name:	LoW Code:
BH01--20042023-3.00	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.1% (wet weight correction)	

Hazard properties

None identified

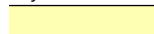
Determinands

Moisture content: 9.1% Wet Weight Moisture Correction applied (MC)

#	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								
1	arsenic { arsenic trioxide }				6.7 mg/kg	1.32	8.041 mg/kg	0.000804 %	✓		
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				11 mg/kg	1.462	16.077 mg/kg	0.00161 %			
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				10 mg/kg	1.126	10.234 mg/kg	0.00102 %	✓		
	029-002-00-X	215-270-7	1317-39-1								
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	14 mg/kg		12.726 mg/kg	0.00127 %	✓		
	082-001-00-6										
6	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
7	nickel { nickel sulfate }				19 mg/kg	2.637	45.538 mg/kg	0.00455 %	✓		
	028-009-00-5	232-104-9	7786-81-4								
8	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
9	zinc { zinc sulphate }				40 mg/kg	2.469	89.784 mg/kg	0.00898 %	✓		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
10	TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg	<0.00368 %			<LOD
			TPH								
11	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
12	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
13	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
14	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
15	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]								

#	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							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
16	 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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
17	 pH		PH		8.1 pH		8.1 pH	8.1 pH		
18	 monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.0225 %		

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 Determinand - 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

Classification of sample: SPM01--19042023-0.10

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

Sample details

Sample name:	LoW Code:
SPM01--19042023-0.10	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
14% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#	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								
1	arsenic { arsenic trioxide }				21 mg/kg	1.32	23.845 mg/kg		0.00238 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				1.4 mg/kg	1.142	1.375 mg/kg		0.000138 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	32.154 mg/kg		0.00322 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg		<0.000409 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				77 mg/kg	1.126	74.556 mg/kg		0.00746 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	210 mg/kg		180.6 mg/kg		0.0181 %	✓	
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg		<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel sulfate }				48 mg/kg	2.637	108.842 mg/kg		0.0109 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg		<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate }				500 mg/kg	2.469	1061.797 mg/kg		0.106 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				<36.8 mg/kg		<36.8 mg/kg		<0.00368 %		<LOD
			TPH								
12	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
13	benzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4								

#		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									
16		xylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-022-00-9	202-422-2 [1]	95-47-6 [1]									
			203-396-5 [2]	106-42-3 [2]									
			203-576-3 [3]	108-38-3 [3]									
					</								

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 Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
	Below limit of detection
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: SPM02--19042023-0.10



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

Sample details

Sample name:	LoW Code:
SPM02--19042023-0.10	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#		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									
1		arsenic { arsenic trioxide }				26	mg/kg	1.32	29.179	mg/kg	0.00292 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		cadmium { cadmium oxide }				2.5	mg/kg	1.142	2.427	mg/kg	0.000243 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }				50	mg/kg	1.462	73.078	mg/kg	0.00731 %		
			215-160-9	1308-38-9									
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8	mg/kg	2.27	<4.086	mg/kg	<0.000409 %		<LOD
		024-017-00-8											
5		copper { dicopper oxide ; copper (I) oxide }				130	mg/kg	1.126	124.411	mg/kg	0.0124 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
6		lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	170	mg/kg		144.5	mg/kg	0.0145 %	✓	
		082-001-00-6											
7		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
8		nickel { nickel sulfate }				97	mg/kg	2.637	217.395	mg/kg	0.0217 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
9		selenium { nickel selenate }				<1	mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
		028-031-00-5	239-125-2	15060-62-5									
10		zinc { zinc sulphate }				400	mg/kg	2.469	839.561	mg/kg	0.084 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11		TPH (C6 to C40) petroleum group				<36.8	mg/kg		<36.8	mg/kg	<0.00368 %		<LOD
				TPH									
12		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
13		benzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
14		toluene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
15		ethylbenzene				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		601-023-00-4	202-849-4	100-41-4									

#	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								
16	xylene 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]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
17	 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				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
18	 pH PH		PH		7.9 pH		7.9 pH	7.9 pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
20	 acenaphthylene 205-917-1	208-96-8			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	 acenaphthene 201-469-6	83-32-9			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	 fluorene 201-695-5	86-73-7			<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	 phenanthrene 201-581-5	85-01-8			0.24 mg/kg		0.204 mg/kg	0.0000204 %		✓	
24	 anthracene 204-371-1	120-12-7			0.07 mg/kg		0.0595 mg/kg	0.00000595 %		✓	
25	 fluoranthene 205-912-4	206-44-0			0.58 mg/kg		0.493 mg/kg	0.0000493 %		✓	
26	 pyrene 204-927-3	129-00-0			0.52 mg/kg		0.442 mg/kg	0.0000442 %		✓	
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.39 mg/kg		0.331 mg/kg	0.0000331 %		✓	
28	chrysene 601-048-00-0	205-923-4	218-01-9		0.41 mg/kg		0.349 mg/kg	0.0000349 %		✓	
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.46 mg/kg		0.391 mg/kg	0.0000391 %		✓	
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.25 mg/kg		0.213 mg/kg	0.0000212 %		✓	
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.35 mg/kg		0.298 mg/kg	0.0000298 %		✓	
32	 indeno[123-cd]pyrene 205-893-2	193-39-5			0.22 mg/kg		0.187 mg/kg	0.0000187 %		✓	
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
34	 benzo[ghi]perylene 205-883-8	191-24-2			0.28 mg/kg		0.238 mg/kg	0.0000238 %		✓	
35	 monohydric phenols P1186				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.148 %		

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 Determinand - 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

Classification of sample: TP03--19042023-0.50

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

Sample details

Sample name:	LoW Code:
TP03--19042023-0.50	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.3% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.3% Wet Weight Moisture Correction applied (MC)

#	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								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	24.479 mg/kg		0.00245 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				1 mg/kg	1.142	1.059 mg/kg		0.000106 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				170 mg/kg	1.462	248.464 mg/kg		0.0248 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.8 mg/kg	2.27	<4.086 mg/kg		<0.000409 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				61 mg/kg	1.126	63.666 mg/kg		0.00637 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	87 mg/kg		80.649 mg/kg		0.00806 %	✓	
	082-001-00-6										
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg		<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel sulfate }				36 mg/kg	2.637	87.991 mg/kg		0.0088 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg		<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc sulphate }				160 mg/kg	2.469	366.246 mg/kg		0.0366 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
11	TPH (C6 to C40) petroleum group				16 mg/kg		14.832 mg/kg		0.00148 %	✓	
			TPH								
12	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
13	benzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
14	toluene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
15	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4								

#	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								
16	xylene 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]		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
17	 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				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
18	 pH		PH		10 pH		10 pH	10pH			
19	naphthalene 601-052-00-2	202-049-5	91-20-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
20	 acenaphthylene	205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
21	 acenaphthene	201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
22	 fluorene	201-695-5	86-73-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
23	 phenanthrene	201-581-5	85-01-8		0.08 mg/kg		0.0742 mg/kg	0.00000742 %		✓	
24	 anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
25	 fluoranthene	205-912-4	206-44-0		0.14 mg/kg		0.13 mg/kg	0.000013 %		✓	
26	 pyrene	204-927-3	129-00-0		0.13 mg/kg		0.121 mg/kg	0.0000121 %		✓	
27	benzo[a]anthracene 601-033-00-9	200-280-6	56-55-3		0.09 mg/kg		0.0834 mg/kg	0.00000834 %		✓	
28	chrysene 601-048-00-0	205-923-4	218-01-9		0.11 mg/kg		0.102 mg/kg	0.0000102 %		✓	
29	benzo[b]fluoranthene 601-034-00-4	205-911-9	205-99-2		0.09 mg/kg		0.0834 mg/kg	0.00000834 %		✓	
30	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		0.07 mg/kg		0.0649 mg/kg	0.00000649 %		✓	
31	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		0.08 mg/kg		0.0742 mg/kg	0.00000742 %		✓	
32	 indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
33	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
34	 benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
35	 polychlorobiphenyls; PCB 602-039-00-4	215-648-1	1336-36-3		<0.012 mg/kg		<0.012 mg/kg	<0.0000012 %			<LOD
36	 monohydric phenols		P1186		<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
Total:									0.0898 %		

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 Determinand - 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

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 Not a flammable liquid (soil). Hydrocarbon concentrations below 1000mg/kg not considered high enough to be indicative of a free draining liquid hydrocarbon in soil.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00148%)

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 (worst case)

GB MCL index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015**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

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

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.

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

- **1,1-dichloroethane and 1,2-dichloroethane (combined)** (EC Number: 203-458-1, 200-863-5, CAS Number: 107-06-2, 75-34-3)

Description/Comments: Combines the hazard statements and risk phrases for 1,1-dichloroethane and 1,2-dichloroethane

Data source: N/A

Data source date: 14 Oct 2016

Hazard Statements: Flam. Liq. 2; H225, Acute Tox. 4; H302, Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Carc. 1B; H350, Aquatic Chronic 3; H412

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: CLP combined data

Data source date: 26 Mar 2019

Hazard Statements: Muta. 2; H341, Acute Tox. 3; H331, Acute Tox. 3; H311, Acute Tox. 3; H301, STOT RE 2; H373, Skin Corr. 1B; H314, Skin Corr. 1B; H314 >= 3 %, Skin Irrit. 2; H315 1 £ conc. < 3 %, Eye Irrit. 2; H319 1 £ conc. < 3 %, Aquatic Chronic 2; H411

- **hexachloroethane** (EC Number: 200-666-4, CAS Number: 67-72-1)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Carc. 2; H351, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, STOT RE 2; H373

- **2-nitrophenol** (EC Number: 201-857-5, CAS Number: 88-75-5)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 4; H312, Skin Irrit. 2; H315, Eye Irrit. 2; H319, Acute Tox. 4; H332, STOT SE 3; H335, STOT RE 2; H373, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

▪ **bis(2-chloroethoxy)methane** (EC Number: 203-920-2, CAS Number: 111-91-1)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 4; H312 , Acute Tox. 1; H330 , Acute Tox. 2; H330 , STOT SE 1; H370 , STOT RE 2; H373

▪ **2-methyl naphthalene** (EC Number: 202-078-3, CAS Number: 91-57-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , STOT SE 3; H336 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

▪ **2-chloronaphthalene** (EC Number: 202-079-9, CAS Number: 91-58-7)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

▪ **dimethyl phthalate** (EC Number: 205-011-6, CAS Number: 131-11-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , STOT SE 3; H335 , STOT SE 3; H336 , Repr. 2; H361 , Aquatic Chronic 3; H412

▪ **dibenzofuran** (EC Number: 205-071-3, CAS Number: 132-64-9)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Acute Tox. 4; H332 , Aquatic Chronic 2; H411

▪ **4-chlorophenylphenylether** (EC Number: 230-281-7, CAS Number: 7005-72-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

▪ **diethyl phthalate** (EC Number: 201-550-6, CAS Number: 84-66-2)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Skin Irrit. 2; H315 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , STOT SE 3; H335 , STOT RE 2; H373 , Repr. 2; H361 , Acute Tox. 4; H302 , STOT SE 3; H336 , Skin Sens. 1; H317 , Aquatic Chronic 1; H410

▪ **4-bromophenylphenylether** (EC Number: 202-952-4, CAS Number: 101-55-3)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

▪ **carbazole** (EC Number: 201-696-0, CAS Number: 86-74-8)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Muta. 2; H341 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301

▪ **1,2,3-trichlorobenzene** (EC Number: 201-757-1, CAS Number: 87-61-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , STOT SE 3; H336 , Aquatic Acute 1; H400 , Aquatic Chronic 3; H410

■ **1,3-dichloropropane** (EC Number: 205-531-3, CAS Number: 142-28-9)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H332 , Flam. Liq. 2; H225 , Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335

■ **2,2-dichloropropane** (EC Number: 209-832-0, CAS Number: 594-20-7)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H332 , Flam. Liq. 2; H225 , Acute Tox. 4; H302 , Acute Tox. 4; H312 , Eye Irrit. 2; H319

■ **bromodichloromethane** (EC Number: 200-856-7, CAS Number: 75-27-4)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Dam. 1; H318 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 1A; H360

■ **n-butylbenzene** (EC Number: 203-209-7, CAS Number: 104-51-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **dibromochloromethane** (EC Number: 204-704-0, CAS Number: 124-48-1)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , STOT SE 3; H336 , Muta. 2; H341 , Aquatic Chronic 2; H411

■ **hexachlorobutadiene** (EC Number: 201-765-5, CAS Number: 87-68-3)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 3; H301 , Acute Tox. 2; H310 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 2; H330 , Carc. 2; H351 , Repr. 2; H361 , STOT SE 2; H371 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

■ **4-isopropyltoluene** (EC Number: 202-796-7, CAS Number: 99-87-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Chronic 2; H411

■ **sec-butylbenzene** (EC Number: 205-227-0, CAS Number: 135-98-8)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Chronic 2; H411

■ **trans-1,3-dichloropropene** (EC Number: 431-460-4, CAS Number: 10061-02-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Acute Tox. 3; H301 , Asp. Tox. 1; H304 , Acute Tox. 3; H311 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Eye Irrit. 2; H319 , Acute Tox. 4; H332 , STOT SE 3; H335 , Aquatic Chronic 1; H410

■ **tert-butylbenzene** (EC Number: 202-632-4, CAS Number: 98-06-6)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , Acute Tox. 4; H332 , STOT SE 3; H335 , Asp. Tox. 1; H304 , Aquatic Chronic 2; H411

▪ **1,1,1,2-tetrachloroethane** (EC Number: 211-135-1, CAS Number: 630-20-6)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , Acute Tox. 3; H331 , Eye Dam. 1; H318 , Acute Tox. 4; H332 , Carc. 2; H351 , Acute Tox. 4; H312 , Aquatic Chronic 3; H412 , Skin Irrit. 2; H315

▪ **trichlorofluoromethane** (EC Number: 200-892-3, CAS Number: 75-69-4)

Description/Comments: VOC; Data from C&L Inventory Database

Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 02 Mar 2017

Hazard Statements: Acute Tox. 4; H312 , Ozone 1; H420

▪ **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

GB MCL index number: 602-039-00-4

Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

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 (edit as required)

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. (edit as required) 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 (edit as required)

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 (edit as required)

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

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. (edit as required) Worst case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

There isn't enough Cr(VI) to make hazardous levels of the Metal chromate. Next worst case species likely to be present selected based on site history.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel sulfate}

There isn't enough Cr(VI) to make hazardous levels of the Metal chromate. Next worst case species likely to be present selected based on site history.

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc sulphate}

There isn't enough Cr(VI) to make hazardous levels of the Metal chromate. Next worst case species likely to be present selected based on site history.

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] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**
 HazWasteOnline Classification Engine Version: 2023.111.5569.10274 (13 Jun 2023)
 HazWasteOnline Database: 2023.111.5569.10274 (22 Apr 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