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APPENDIX 9.1

CRITERIA FOR RATING SITE ATTRIBUTES: ESTIMATION OF IMPORTANCE OF SOIL, GEOLOGY AND HYDROGEOLOGY ATTRIBUTES

VOLUME III APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT

MAY 2024

APPENDIX 9.1

**CRITERIA FOR RATING SITE ATTRIBUTES – ESTIMATION OF IMPORTANCE
OF SOIL, GEOLOGY AND HYDROGEOLOGY ATTRIBUTES**

NATIONAL ROADS AUTHORITY (NRA, 2009)

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Table 1 Criteria for rating Site Attributes - Estimation of Importance of Soil and Geology Attributes (NRA)

Importance	Criteria	Typical Examples
Very High	Attribute has a high quality, significance or value on a regional or national scale Degree or extent of soil contamination is significant on a national or regional scale Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale*	Geological feature rare on a regional or national scale (NHA) Large existing quarry or pit Proven economically extractable mineral resource
High	Attribute has a high quality, significance or value on a local scale Degree or extent of soil contamination is significant on a local scale Volume of peat and/or soft organic soil underlying route is significant on a local scale*	Contaminated soil on site with previous heavy industrial usage Large recent landfill site for mixed wastes Geological feature of high value on a local scale (County Geological Site) Well drained and/or highly fertility soils Moderately sized existing quarry or pit Marginally economic extractable mineral resource
Medium	Attribute has a medium quality, significance or value on a local scale Degree or extent of soil contamination is moderate on a local scale Volume of peat and/or soft organic soil underlying route is moderate on a local scale*	Contaminated soil on site with previous light industrial usage Small recent landfill site for mixed wastes Moderately drained and/or moderate fertility soils Small existing quarry or pit Sub-economic extractable mineral resource
Low	Attribute has a low quality, significance or value on a local scale Degree or extent of soil contamination is minor on a local scale Volume of peat and/or soft organic soil underlying route is small on a local scale*	Large historical and/or recent site for construction and demolition wastes Small historical and/or recent landfill site for construction and demolition wastes Poorly drained and/or low fertility soils Uneconomically extractable mineral resource

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Table 2 Criteria for rating Site Attributes - Estimation of Importance of Hydrogeology Attributes (NRA)

Importance	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	Groundwater supports river, wetland or surface water body ecosystem protected by EU legislation e.g. SAC or SPA status
Very High	Attribute has a high quality or value on a regional or national scale	Regionally Important Aquifer with multiple wellfields Groundwater supports river, wetland or surface water body ecosystem protected by national legislation – NHA status Regionally important potable water source supplying >2500 homes Inner source protection area for regionally important water source
High	Attribute has a high quality or value on a local scale	Regionally Important Aquifer Groundwater provides large proportion of baseflow to local rivers Locally important potable water source supplying >1000 homes Outer source protection area for regionally important water source Inner source protection area for locally important water source
Medium	Attribute has a medium quality or value on a local scale	Locally Important Aquifer Potable water source supplying >50 homes Outer source protection area for locally important water source
Low	Attribute has a low quality or value on a local scale	Poor Bedrock Aquifer Potable water source supplying <50 homes

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APPENDIX 9.2

TARGETED SOIL AND GROUNDWATER ASSESSMENT: GROUND INVESTIGATION AT THE TOPAZ FUEL STORAGE TERMINAL, GREENORE

VOLUME III

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Targeted Soil and Groundwater Assessment

Ground Investigation at the Topaz
Fuel Storage Terminal, Greenore

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Document Title:	Ground Investigation at the Topaz Fuel Storage Terminal, Greenore Port					
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1 INTRODUCTION

RPS was requested by Topaz Energy Group Ltd. to conduct an investigation on the shallow subsoil and groundwater environment beneath the decommissioned Topaz fuel storage facility at Greenore Port, Co. Louth in order to develop an exit strategy for the site.

The facility consists of four fuel storage tanks and a refuelling gantry underlain by a concrete hardcover. An area of scrub grassland lies to the west and downgradient of the refuelling gantry. The refuelling gantry was identified as the primary target for investigation as a result of an initial site walkover (Figure 1)

Soil and groundwater investigation works were undertaken on the 14th November 2011 by a suitably qualified member of RPS staff and in the presence of a Topaz Energy Group representative.

1.1 OBJECTIVES

The main objectives of the investigation were to:

- Determine if hydrocarbon contamination exists in the shallow subsoil underlying the site
- Determine if hydrocarbon contamination exists in the groundwater environment underlying the site.
- Provide recommendations on any further works to take place based on ground investigation results.

1.2 PREVIOUS INVESTIGATIONS

A previous investigation was undertaken by K.T. Cullen & Co Ltd. in December 1996 which identified slight hydrocarbon contamination in the shallow soils in the southern extent of the site and in the groundwater.

An Environmental Site Assessment of the facility was undertaken by URS in 2004 and established hydrocarbon contamination in the shallow soils in the area of scrub grassland and to the north east of the refuelling gantry. No issues of hydrocarbon contamination were detected in the groundwater.

2 GROUNDWATER INVESTIGATION

Two historic groundwater monitoring wells (MW3 and MW4) installed by K.T. Cullen & Co Ltd. in 1996 in the vicinity of the hardcover area beneath the refuelling gantry were identified during the site walkover for use during the groundwater investigation.

2.1 GROUNDWATER SAMPLING

Groundwater samples were taken from MW3 only. MW4 was found to be dry when dipped with an electronic dip meter. The methodology applied during the groundwater sampling is outlined below:

- The monitoring well was dipped for water level and well depth using an electronic dip meter.
- The well was then purged by 3 times the well volume to ensure that the sampled water was representative of the groundwater in the surrounding sub surface environment and was not taken from the standing water in the well.
- A water sample was collected from the monitoring well in a 300ml glass bottle.

Designated wattera tubing and a Honda suction pump was used to purge and sample the well.

Samples were analysed for Speciated Petroleum Hydrocarbons by STL, a UKAS accredited laboratory and appropriate lab QA/QC procedures were followed in accordance with RPS standard water sampling protocol.

2.2 GROUNDWATER RESULTS

Hydrocarbon levels in the groundwater sampled at MW3 were below the limit of laboratory detection for all carbon ranges.

Field parameters measured from MW3 indicate brackish water with a high electrical conductivity reading (1061 $\mu\text{S}/\text{cm}$). This reading is above the Threshold Value for indications of saline intrusion (800 $\mu\text{S}/\text{cm}$) outlined in the Groundwater Directive however below the Threshold Value for significant pollution (1875 $\mu\text{S}/\text{cm}$).

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3 SOIL INVESTIGATION

A total number of 6 no. investigative boreholes were drilled in the vicinity of the refuelling gantry and the scrub grassland downgradient of the refuelling gantry. BH1 and BH2 were drilled in the area of the scrub grassland and BH3, BH4, BH5 and BH6 in the area of the concrete hardcover surrounding the refuelling gantry (Figure 1). The locations of boreholes were selected in order to give the best possible overview of the site in the timeframe of 1 working day.

3.1 SOIL SAMPLING

The methodology applied during the soil sampling is outlined below:

- Each borehole was drilled using a Dando Terrier track mounted window sampling rig to a depth of approximately 4m (above the water table).
- All site services were determined prior to drilling works using CAT and Genny scanning equipment and the knowledge of the onsite Topaz representative.
- Sediment core samples were collected from each borehole using a window sampling technique
- Each core sample was lithologically logged by a member of RPS staff. Borehole logs are displayed in Appendix A
- Two soil samples were retrieved from core samples at each borehole location, at 0.5-1.7mbgl depending on the lithology and at 3-4mbgl (at the end of the borehole).
- Soil vapour readings were also collected from each soil sample using a Photo Ionisation Detector (PID) with a 10.6 eV lamp.

All samples were analysed for Speciated Petroleum Hydrocarbons by STL, a UKAS accredited laboratory and appropriate lab QA/QC procedures were followed in accordance with RPS standard water sampling protocol.

3.2 SOIL RESULTS

Petroleum hydrocarbons were detected in the soil samples taken from BH1-1, BH4-1, BH4-2 and BH5-1.

A large range of petroleum hydrocarbons (C8–C40) were detected in the upper subsoil at 0.5mbgl of BH1 (BH1-1) located adjacent to the Non Conforming Product Store. Petroleum hydrocarbons of the range C12–C40 were detected in BH4-1 at 0.5mbgl and C21–C40 in BH4-2 at 3.0mbgl located to the west of the refuelling gantry. Petroleum hydrocarbons of the range C12–C40 were detected in BH5-1 at 0.5mbgl located downgradient of the oil water inceptor. Levels of hydrocarbon contamination identified in the relevant boreholes are displayed in Table 1. None of the detected levels exceed the Dutch Intervention values for mineral oil (5000mg/kg) which may be applied to petroleum hydrocarbons in soil.

Petroleum hydrocarbons were below the limits of laboratory detection in all other samples.

Soil vapour readings using the PID did not reach above the 1.0% level.

Mg/Kg	BH1-1	BH4-1	BH4-2	BH5-1
C8 – C10	4.5	<1.0	<1.0	<1.0
C10 – C12	5.1	<1.0	<1.0	<1.0
C12 – C16	22	6.1	<1.0	5.4
C16 – C21	69	17	<1.0	17
C21 – C40	350	210	23	50

Table 1 Detected Petroleum Concentrations

4 CONCLUSIONS AND RECOMMENDATIONS

The geology underlying the site is of gravel and cobble fill material with heavy boulders in some areas close to the water edge. The soil matrix comprises mainly of estuarine sands with some clay mixes.

No surface evidence of contamination was identified on site during the ground investigation works. No hydrocarbon odour or soil vapour readings were detected using the PID.

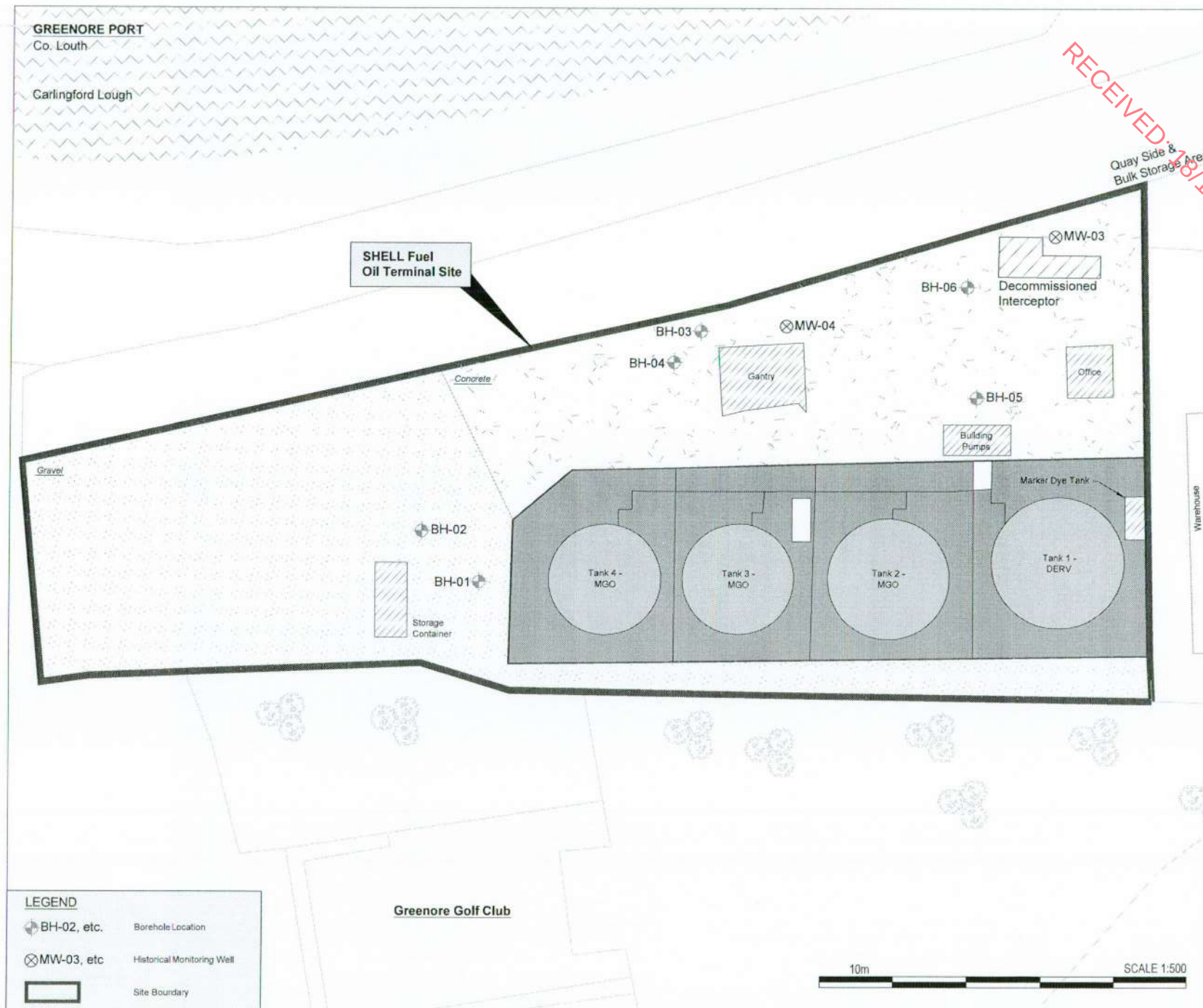
No evidence of hydrocarbon contamination was detected in the groundwater sample retrieved from MW3. A high electrical conductivity reading of the water in MW3 indicates that saline intrusion may be occurring at the site however this is not judged to be significant against the Threshold Values outlined in the Groundwater Directive.

Petroleum hydrocarbon contamination was detected in the upper subsoil at a depth of 0.5mbgl in 3 no. of the 6 no. window sampling locations. Hydrocarbon contamination in the lower subsoil was only detected at a low concentration in BH4 at depth of 3.0mbgl.

If the end use of the site is designated as commercial in preference to residential the hardcover surrounding the gantry should remain in place and it is recommended that the hard cover be extended out to cover the scrub grassland area.

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Figures

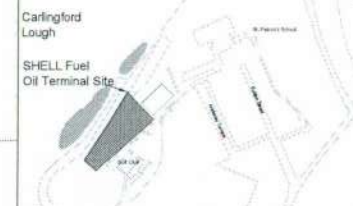


NOTES

- Verifying Dimensions.
The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
- Existing Services.
Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
- Issue of Drawings.
Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipient's own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error or by the recipient. Listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipient's drawing production, or setting out on site.

4. Datum: Ordnance Survey Datum, Mean Head

Greenore Port, Co. Louth



LOCATION PLAN - 1:10,000

F01	Dec. 11	FINAL	SH
No.	Date	Amendment / Issue	App

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TOPAZ

Project
**TARGETED SOIL AND
GROUNDWATER ASSESSMENT**

Title
**FIGURE 1
Site Layout Plan**

Drawing Status	Sheet Size	Drawing Scale
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APPENDIX 9.3

GREENORE PORT: GEOTECHNICAL INTERPRETIVE REPORT

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APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT

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Greenore Port Geotechnical Interpretive Report



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Project Title: Greenore Port GIR

Report Title: Greenore Port
Geotechnical Interpretive Report

Document Reference: 23181-R-001-03

Client: McCarthy Browne

Ultimate Client: McCarthy Browne

Confidentiality: Client Confidential

REVISION HISTORY

Rev	Date	Reason for Issue	Originator	Checker	Reviewer	Approver
00	22/11/2023	Draft Final	GS	WB	WB	DOL
01	08/12/2023	Incorporating new lab test results	GS	WB	WB	DOL
02	16/01/2024	Issued addressing client's comments and internal review across all sections	JL/GS	WB	PQ	DOL
03	30/04/2024	Issued addressing client's comments and additional site investigation	GS/JM	WB	WB	DOL

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REVISION SUMMARY

Rev	Date	Section(s)	Detail of Change
00	22/11/2023		Draft Final
01	08/12/2023		Incorporating new lab test results
02	16/01/2024		Issued addressing client's comments and internal review across all sections
03	30/04/2024		Issued addressing client's comments, changes to sections 4.3, 5.4 and Appendix B, added new sections 6.4.11 and 6.4.12. Updates to Section 7 & Appendix C based upon updated IGSL factual reporting dated 15/04/2024

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EXECUTIVE SUMMARY

Gavin & Doherty Geosolutions Limited (GDG) has been appointed by McCarthy Browne to produce a Ground Investigation Report (GIR) to be considered in the design and site development for the newly proposed Operations and Maintenance Facility (OMF) at Greenore Port. This report has been prepared in accordance with IS EN 1997-1:2005 (NSAI, 2005).

This GIR provides land-based and marine-based ground models and associated soil parameters only based on the SI data available within the study boundary. This assessment is based on:

- 1) Ground investigation data (historic and recent investigations and surveys completed in the harbour area; including bathymetric and geophysical surveys),
- 2) Geotechnical laboratory data, and
- 3) Published and unpublished geological information.

Site investigations include trial pits, boreholes, rotary cores and cone penetration testing. These investigations have allowed an assessment of ground conditions and ground stability.

The ground model has been produced from all GI within the proposed development area, as listed in Section 4.3. Cross-sections extracted from the ground model are presented in Section 5.4. These demonstrate that the typical ground profile for the site comprises Made Ground underlain by a thick layer of Silty sandy Gravel underlain by silty Clay and sandy Gravel. The bedrock lithology encountered on site was Carboniferous Limestone.

From a geotechnical perspective, the ground conditions revealed by intrusive investigation have been interpreted and the engineering test results have been assessed to provide outline guidance on geotechnical issues pertinent to the proposed development. Summary of parameters are outlined in Section 6.5 and Section 8.5.

A total of 24 soil samples were examined as part of the Geo-Environmental Consideration, the results of which were detailed in the IGSL April 2024 Factual Report. The risk to construction workers, assessed qualitatively, highlights potential asbestos exposure in BH04 at 1.0m. Other locations tested revealed low risks to human health. Visual and olfactory evidence of hydrocarbon contamination was identified in BH01 at 4.10 – 5.0m, the source and extent of which remains unknown.

For soil disposal, waste classification designates BH04 at 1.0m as Hazardous (LoW code: 17 05 03*), while others are classified as Non-Hazardous (LoW code: 17 05 04), as per preliminary classification (refer to Appendix C). Waste Acceptance Criteria (WAC) testing was conducted on 12 samples, revealing that six samples exceeded the inert WAC criteria, and 6 samples passed the inert WAC criteria.

The construction project should prioritise re-use or recycling of materials. If landfilling of waste is unavoidable, materials should be segregated by type and sample strategy confirmed with the receiving landfill. Preliminary testing suggests segregated materials, with further testing, may be suitable for disposal at inert or non-hazardous landfills depending on the permit requirements of the receiving facility. Additionally, surplus subsoil could potentially be exported for reuse off-site, pending adherence to Waste Management Act requirements (e.g. Article 27 or 28).

All imported materials for construction should undergo chemical analysis and screening against relevant values for health and environmental suitability.

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1 INTRODUCTION

1.1 BACKGROUND

McCarthy Browne appointed Gavin and Doherty Geosolutions Ltd. (GDG) to produce a Ground Investigation Report (GIR) as part of the development plan for Greenore Port to facilitate an Operations and Maintenance Facility (OMF) to service the offshore wind industry. The OMF will accommodate several functions, such as new quayside infrastructure, pontoons and gangways to accommodate the berthage and mooring of Crew Transfer Vessels (CTV), landside infrastructure including warehousing, office infrastructure, parking and also associated dredging works.

This GIR and the related figures provide an interpretative summary of the available ground investigation data, relevant desk study information, in-situ and laboratory soil and rock testing, and other published data for the site. The report also summarises design parameters for developing the conceptual design and construction of the proposed OMF.

GDG has previously provided a specification and estimated extent of geotechnical testing required, that McCarthy Browne could subsequently use to issue requests for tenders from site investigation contractors.

1.2 DESCRIPTION OF PROJECT

The proposed developments by Doyle Shipping Group (DSG) involve the upgrade of the Greenore Port infrastructure to accommodate the newly proposed OMF.

The proposed OMF will service the proposed offshore wind farm developments off the coastline of County Louth, including North Sea Irish, Setanta, Oriel and Clogher head arrays. An overview of the planned port developments is shown in Figure 1-1 and detailed proposed developments are summarised in Section 3 of this report.



Figure 1-1 Overview of Planned Scope of Development at Port of Greenore (DSG image,2023)

1.3 GEOTECHNICAL CATEGORY

The scheme is considered as Geotechnical Category 2 according to Eurocode 7 (EC7) in that it comprises conventional structures involving no abnormal risks in-ground or loading conditions.

1.4 SCOPE OF REPORT

As the proposed developments are taking place on land and marine areas, this GIR can be separated into two distinct parts;

- The marine (pontoon arrangement area)
- The land (office/warehouse units area)

The scope of this report is as follows:

- Carry out a desk study of the site, including general and background geological information related to the proposed development area.
- Summarise the details of the ground investigations undertaken and all available geotechnical information, including geophysical survey, bathymetry survey, utility survey and available ground investigation data.
- Present the interpreted ground conditions and material properties for the main geological units encountered across the site.

GDG has reviewed the information available for the site, including previous site investigation information provided by McCarthy Browne. The design parameters presented are based on the data reviewed to date, published values, and typical values used by GDG. Further analysis of the information may be required depending on the exact structural solutions adopted for specific locations and situations. These documents, together with this report, will constitute a Ground Investigation Report compliant with IS EN 1997-1: 2005

2 THE SITE

2.1 SITE LOCATION

The site is located at the deep water port at Greenore, Co. Louth. The site is approximately 20km east of Dundalk and is on the southern entrance to Carlingford Lough. Greenore Port is situated by the Dublin-Belfast economic corridor and is 15km from the M1 motorway, which means the port can serve as a dual gateway to both Ireland and the UK. Figure 2-1 shows the location of the site, and the national grid coordinates for the site are 54.0348N and 6.1343W.

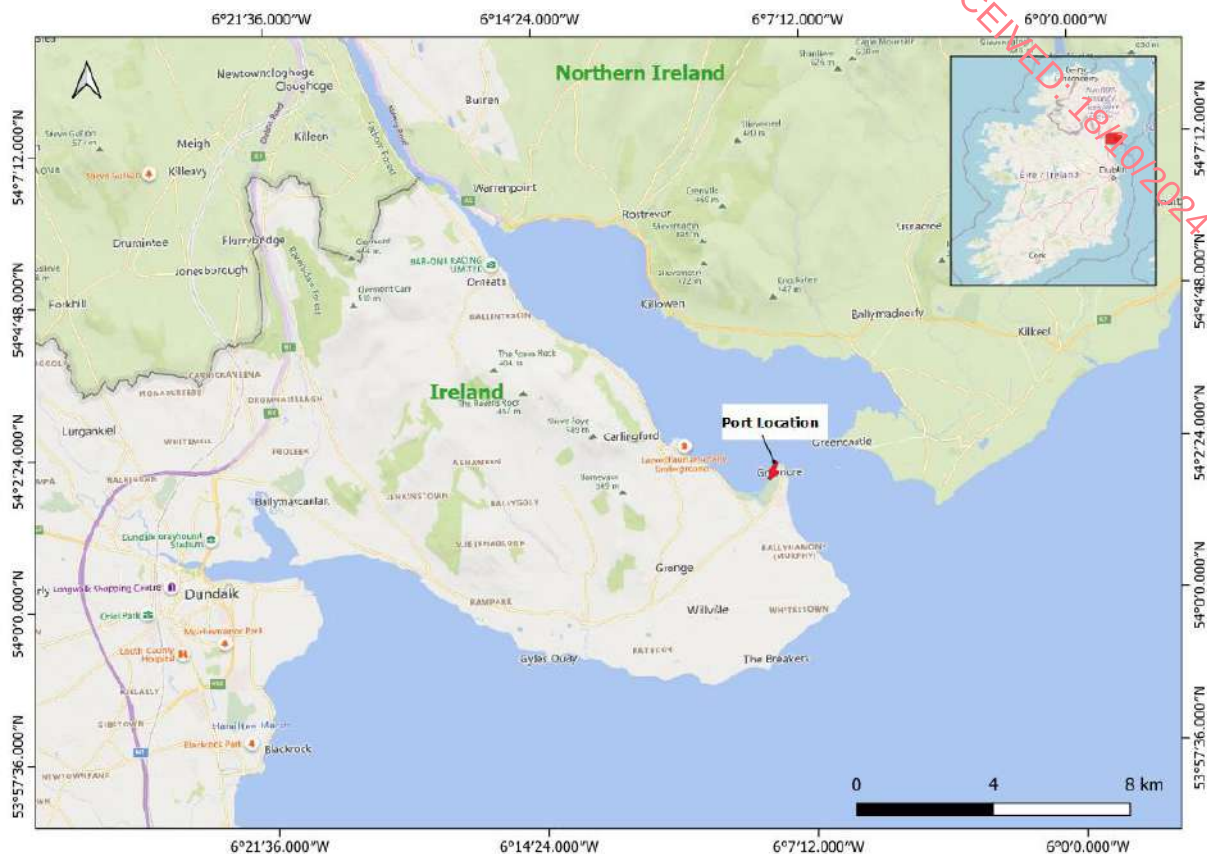


Figure 2-1 Location Map (Generated using QGIS software)

2.2 CURRENT LAND USE AND SURROUNDING LAND USE

Greenore Port is Ireland's only privately owned commercial port. It is a wholly-owned subsidiary of the Doyle Shipping Group (DSG), whose trading name is the Burke Shipping Group.

The harbour consists of a single quay facing northwest and is protected by a detached breakwater (groyne) running parallel to the quay approximately 105m northwest. The groyne consists of a rubble mound rock structure with wooden piles running along its length. The exact depth of these piles is currently unknown.

The main berthing pocket at Greenore currently provides 260m of quayside berthage:

- Berth 1 (120m long at -8mCD),
- Berth 2 (140m long at -7.5mCD).

The Port operates a suite of Liebherr port cranes capable of lifting 124T and discharging over 1,500T of dry bulk per hour. The Port can handle vessels of up to 60,000DWT.

The port provides marine and logistical support services across various industries and currently handles all types of container and bulk traffic. Imports include animal feed, fuel oil, steel, and container and bulk cargo. The Port can handle over 250,000MT of steel annually and has storage facilities for 80,000MT of steel rebar. Additionally, a ferry service operates continuously from Greenore Port to Greencastle all year round. There are over 8.5 ha of dry bulk storage facilities located within a short distance of the Port (Figure 2-2). These stores can cater for a range of dry bulk products.



Figure 2-2 Satellite Image of the Site showing current land use (Microsoft Bing, 2023)

2.3 TOPOGRAPHICAL MAPS

A detailed topographic survey by Six West was carried out on 4 January 2023 in the Greenore Port area. Based on the topographic survey, the levels typically vary from 4.617mAOD to 4.062mAOD at the proposed development area for the landside quay and office units where the new development will tie into. GDG modified screenshot from the topography survey (MG230104 Rev 1 -SixWest- January 4th, 2023) is presented in Figure 2-3.



Figure 2-3 Extract of topographic survey (Six West, 2023), elevation in Ordnance Datum

2.4 BATHYMETRIC SURVEY

A multibeam bathymetric survey by Six West was carried out on 7th March 2023 around the Greenore harbour area. A screenshot from the survey is presented in Figure 2-4, and the survey details are attached in Appendix A.

Based on the survey data, the water depth across the proposed pontoon arrangement area is less than -1.5m Chart Datum between the quay and breakwater. Around the quay wall, the water depth reaches up to -9mCD.

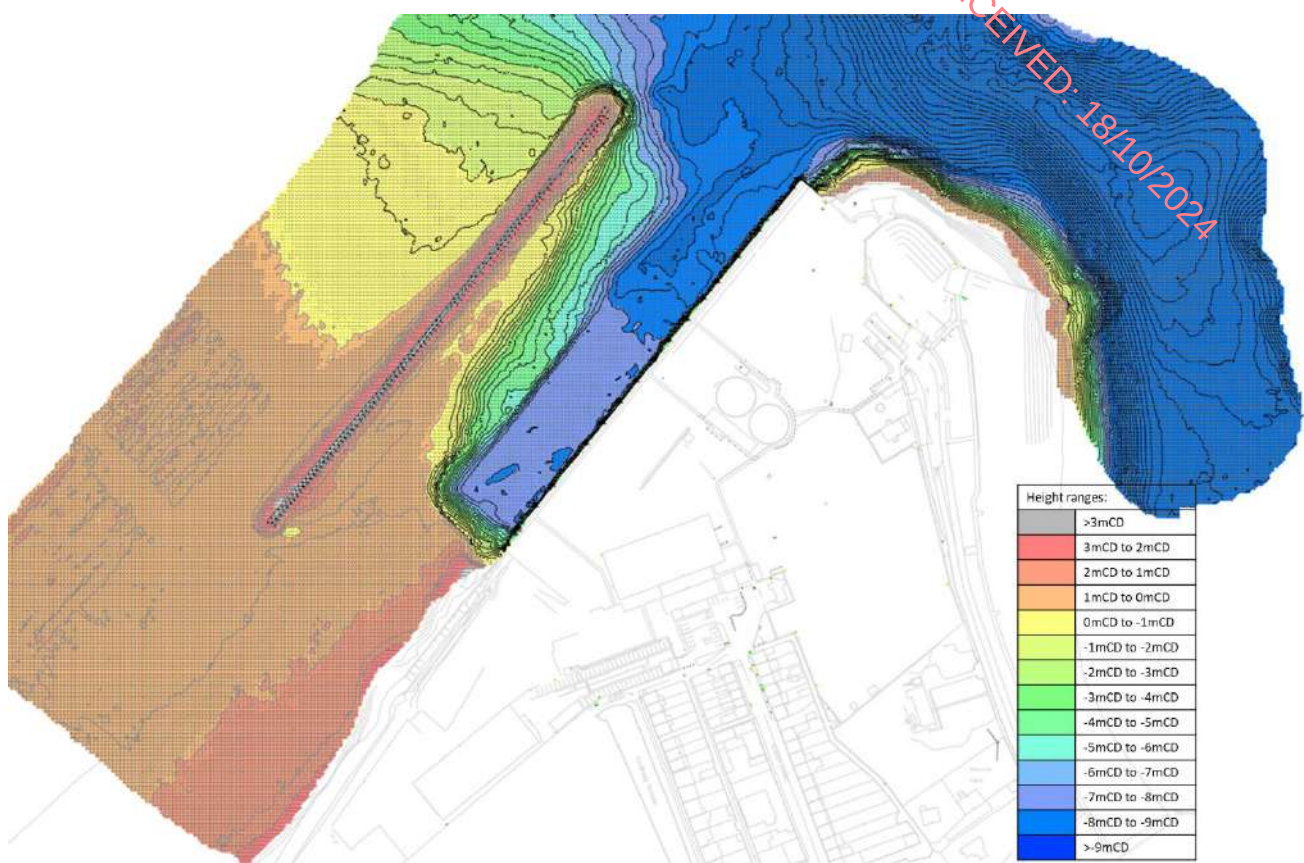


Figure 2-4 Screenshot from the bathymetry survey at Greenore port (Six West, 2023), elevations in meters to Chart Datum

2.5 TIDAL LEVELS

Greenore Port is defined as a Secondary Port in the Admiralty Tide Table, Chart datum Greenore = 3.05m below Ordnance Datum Malin.

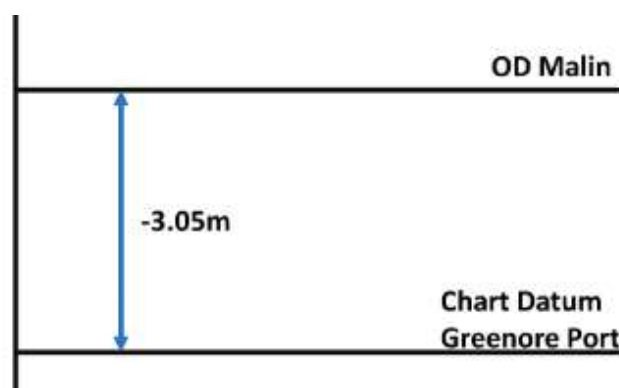


Figure 2-5 Chart Datum Relative to OD Malin for Greenore Port

All the major tidal levels for the site are presented in Table 2-1, taken from the UK Hydrographic Office Tide Tables 2019.

Table 2-1 Site Tidal Levels

Tidal Condition	Abbreviation	Ordnance Datum Malin(mOD)	Level Chart Datum (mCD)
Mean High Water Springs	MHWS	2.25	5.30
Mean High Water Neaps	MHWN	1.25	4.30
Mean Low Water Neaps	MLWN	-1.25	1.80
Mean Low Water Springs	MLWS	-2.35	0.70

2.6 GEOLOGY

The site's bedrock geology and superficial geology have been inferred from available information from the Geological Survey of Ireland (GSI, 2023).

The GSI- 1: 50 000 Quaternary Map of superficial deposits for the site is outlined in Figure 2-6. The figure indicates that the material within the land site area is described as Marine sand and gravels raised beach deposits. There is no information available for the sediments within the channel /offshore marine site.

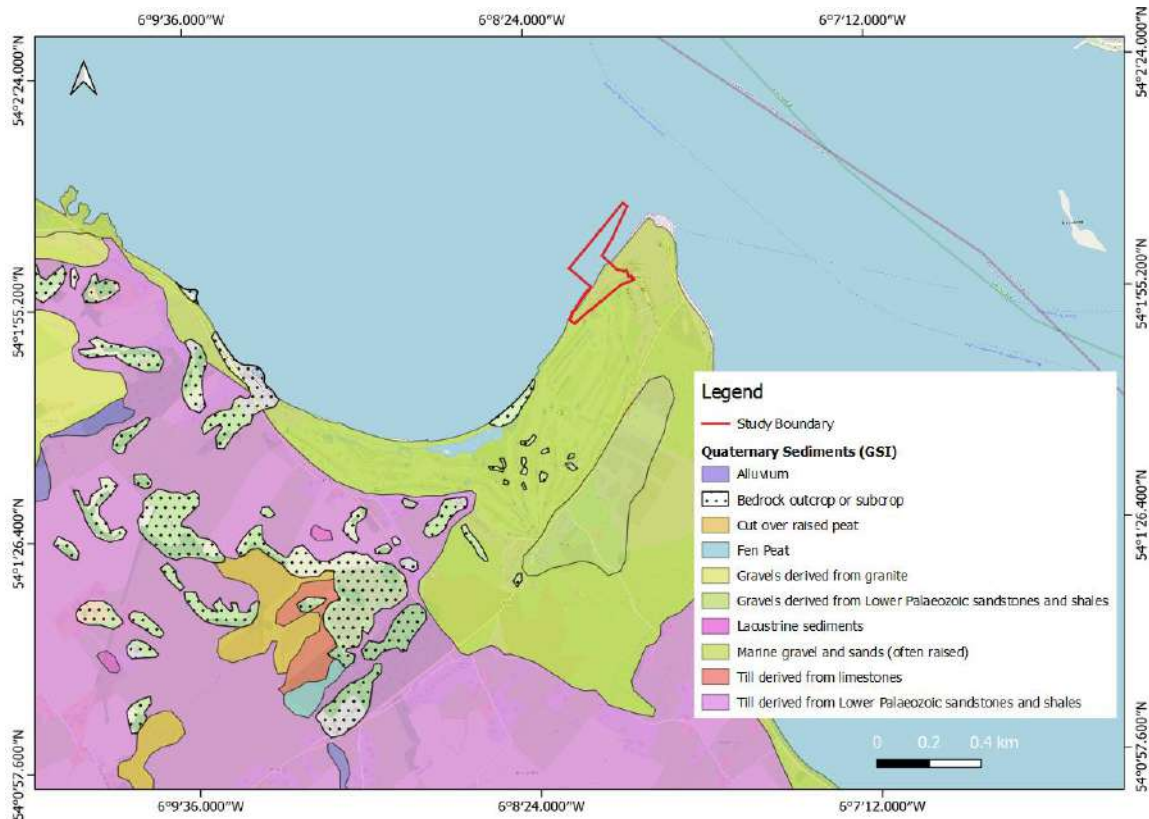


Figure 2-6 Superficial Geology map at 1:500,000 scale (GSI, 2023)

The onshore bedrock geology information obtained from the GSI 1:100,000 scale and offshore bedrock geology is taken from EMODnet (European Commission, 2023) (Figure 2-7). The bedrock geology for the land and marine site is described as Carboniferous – Dinantian Limestone – Undifferentiated.

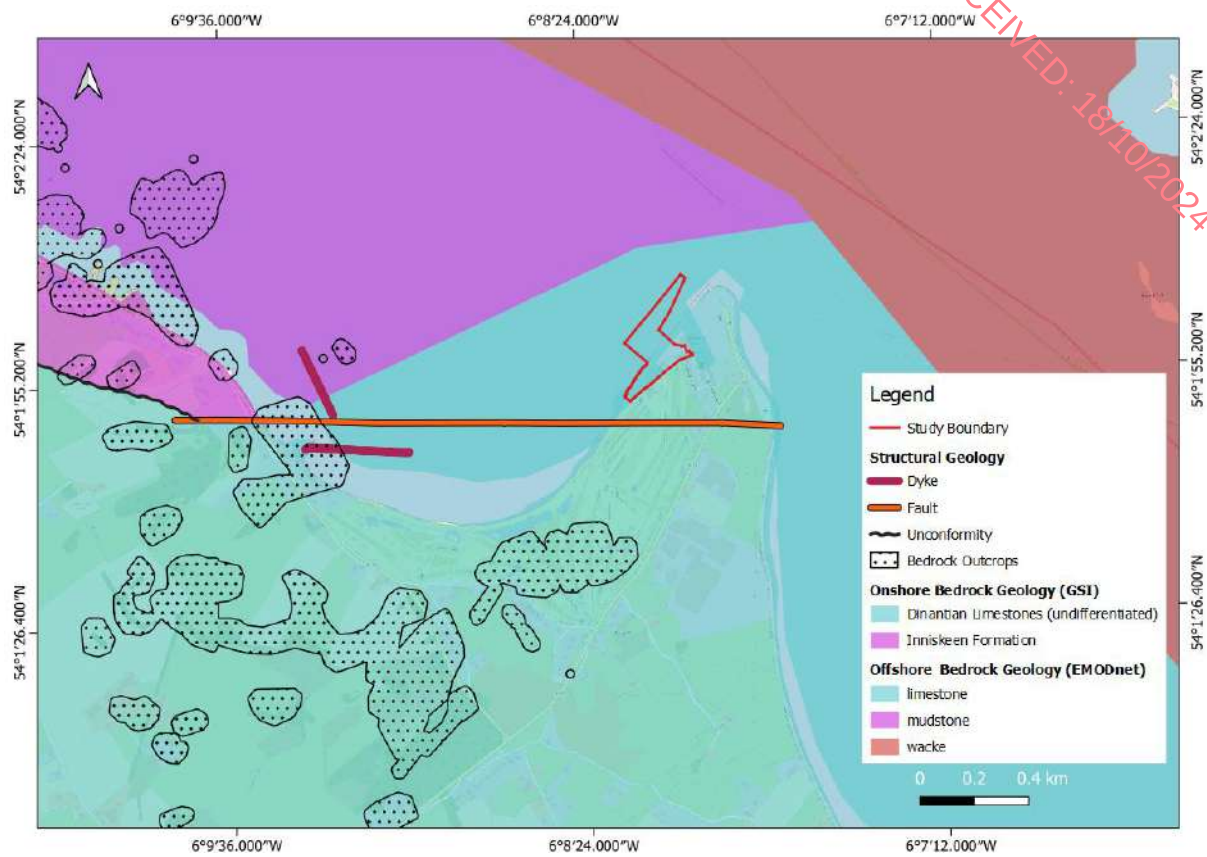


Figure 2-7 Bedrock Geology map at 500,000 scale (European Commission, 2023) & (GSI, 2023)

2.7 SITE HISTORY AND PREVIOUS LAND USE

The Port played a vital maritime role in the area for the past 150 years. The old lighthouse at Greenore Point was built in 1830. Based on the Dundalk and Greenore Railway Act in 1863, the construction of the port and railway was initiated by London and North Western Railway (LNWR), who recognised the area's natural port characteristics, in terms of shelter of its approach and natural water depth. The port was constructed in 1867 to provide links to Heysham and Fleetwood. The Port was opened in 1873, with a railway line connecting it to Dundalk and Newry. From 1873 to 1951 there was a ferry service between Greenore and Holyhead. The Greenore village was constructed to provide homes for the dock and railway workers of the Dundalk, Newry and Greenore Railway. Other facilities also opened in the area including a hotel for passengers, a railway station and later in 1869 a golf club founded along the port boundary. The railway and the station closed on 1 January 1952 and were replaced by bus services to Dundalk and Newry.

From the 1960s both conventional and container traffic were developed. When container traffic started to move to the larger developing ports of Dublin, Belfast and Cork, the port began handling large volumes of bulk cargo as well as playing a vital role in the export of live cattle and frozen beef to the Middle East during the 1980s and 1990s.

In 2002 the port was purchased by new owners. Sometime thereafter the Topaz fuel storage tanks were demolished. GDG understand that local contamination testing was undertaken in May 2014.

Recently in December 2014, Greenore Port was purchased by DSG. In 2015 DSG implemented a strategic development plan to improve Greenore Ports' infrastructure which included the

completion of an extensive port dredging project to make the port accessible to 8.5-metre draft vessels.

Ordnance Survey Ireland (OSi) National Townland and Historical Map Viewer (OSi, 2023) allows for viewing of the historic 25-inch and 6-inch mapping series. Figure 2-9 shows the site before any development. Figure 2-9 is from the 6-inch map series last edition and shows the site was developed with a lighthouse, harbour station, pier, and rail line by 1969. An aerial image from 2013 is presented in Figure 2-10; it is evident that all the railway lines from Figure 2-9 are no longer active, and ports now have more container storage facilities. Figure 2-11 shows the recent port aerial image.



Figure 2-8 Osi Historic 6" First edition (1834) map (OSi, 2023)

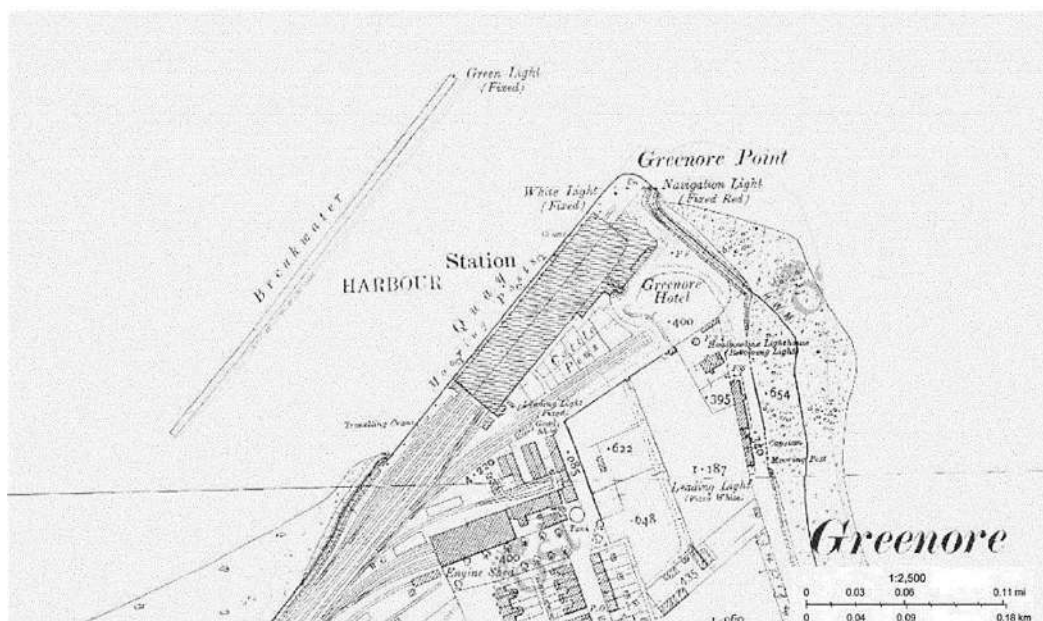


Figure 2-9 Osi Historic 6" last edition (1952-1969) map (OSi, 2023)

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Figure 2-10 OSi Aerial image from 2013 (OSi, 2023)

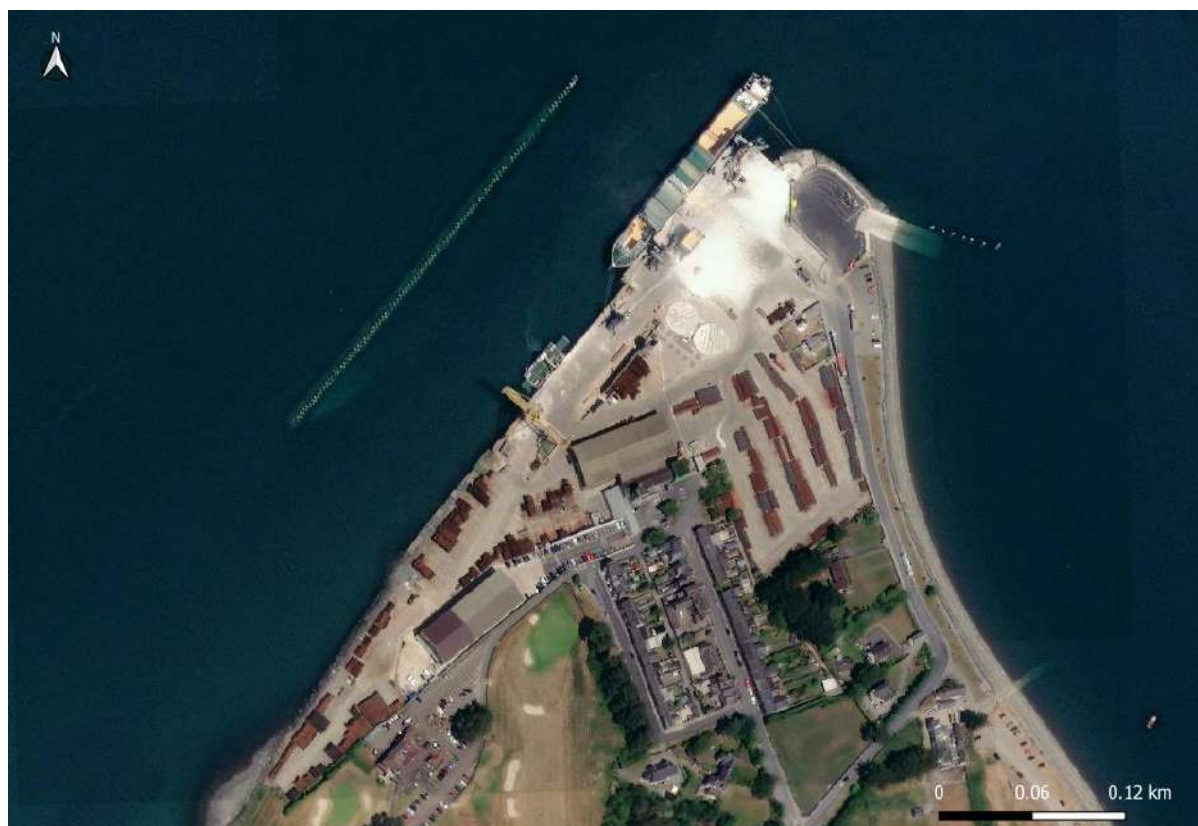


Figure 2-11 Bing Aerial image from 2023 (Bing map, 2023)

2.8 ENVIRONMENTAL PROTECTION

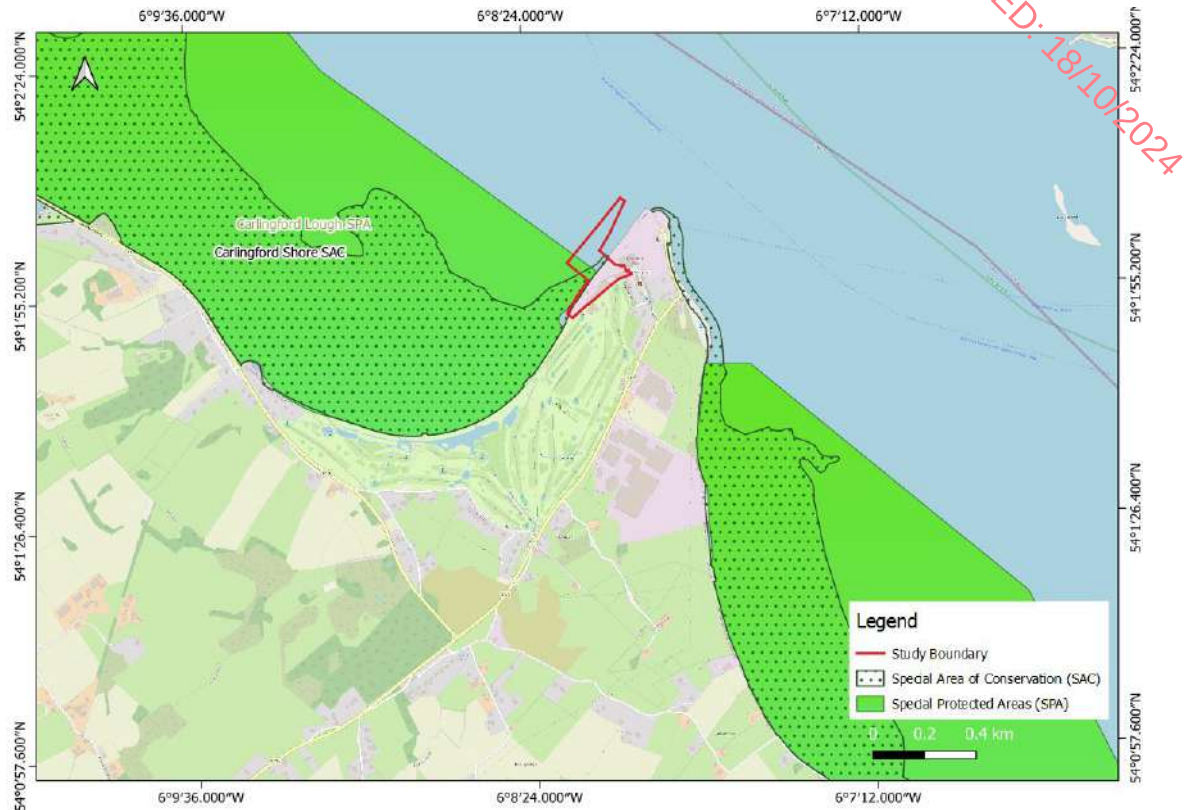


Figure 2-12 Environmental protected area present around the development sites (GSI, 2023)

Carlingford Lough Special Area of Conservation (SAC) and Special Protected Areas (SPA) are present within the proposed development site, as shown in Figure 2-12. GDG recommend carrying out the environmental assessment report for the proposed development concerning the protected sites.

2.9 KARST

GSI bedrock maps were assessed and no significant karst features have been recorded in or around the proposed development area.

2.10 UNDERGROUND FEATURES

A utility plan (Ref.P22034_D1014_D01_Uilities), provided by McCarthy Browne shows existing underground utility and drainage services present around the Greenore Port. An expert on the plan for the proposed development site on the land area is presented in Figure 2-13. The date of the surveys is unknown and the layout of the utilities should be confirmed during detailed design and before construction.

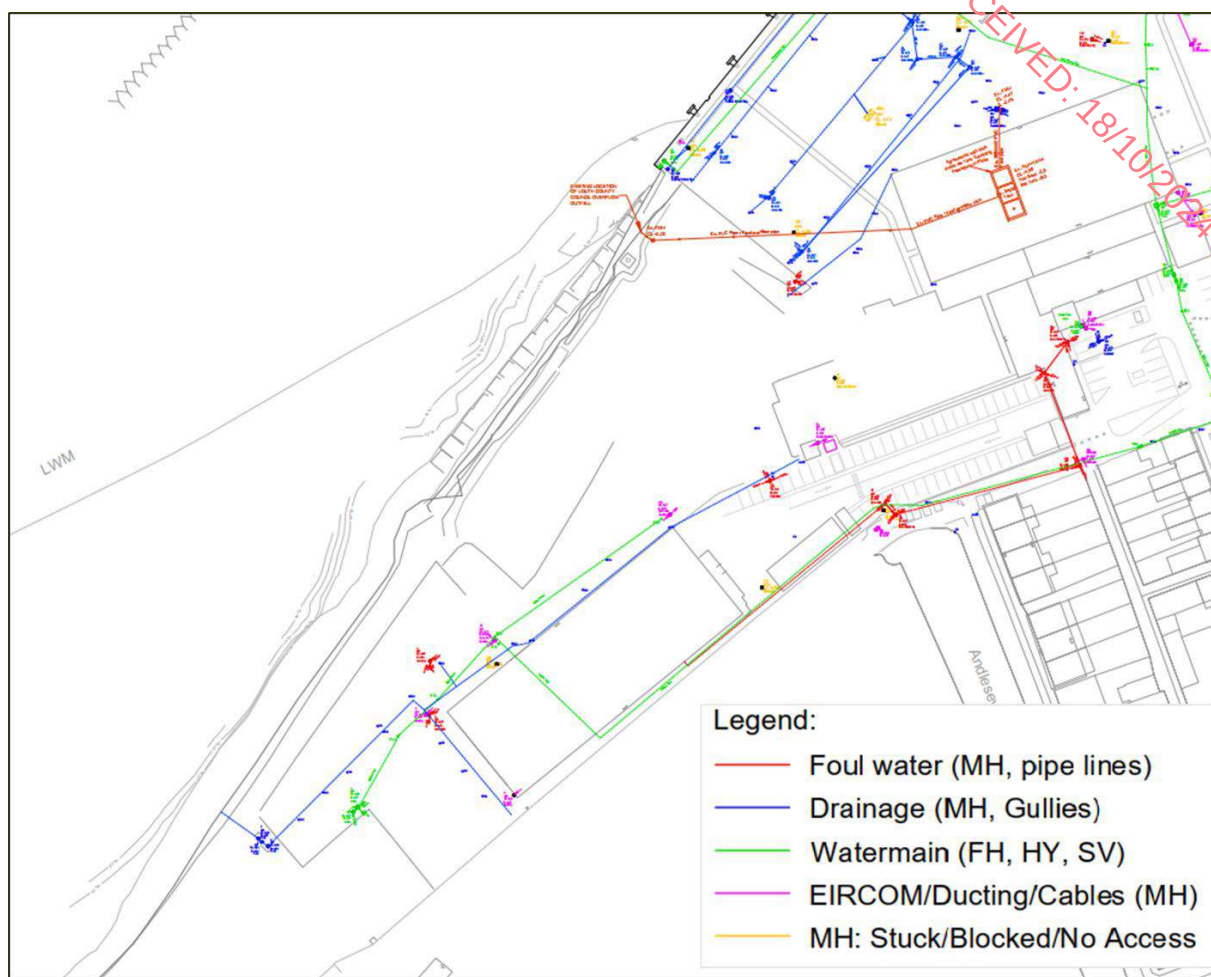


Figure 2-13 Exert of utility survey plan(Ref.P22034_D1014_D01_Uilities)

3 PROPOSED DEVELOPMENT

The proposed OMF development plans at Greenore Port are presented in Figure 3-1 and consist of:

- Piled breakwater pontoons for Crew Transfer Vessels (CTV) berthing. Pontoons and gangways to berth 9 No. of CTV.
 - 5 No. of 24pax CTV with dimension 30m x 10.5m
 - 4 No. of 12pax CTV with dimension 23.5m x 8m
 - additional 2no. layover berths
- 900m² office units and associated warehouse/workshop units of 740m² for 3 No. of developers and associated car parking (76 spaces at the quayside and 135 satellite car parking)
- 70m of quay wall upgrades and pavement. The quay wall will be constructed by a driven steel pile solution. The new quay wall will be an extension of Berth 2
- Satellite parking area (100m from office Campus) & public realm upgrades with linkage to car parking area
- The design dredge level shall be a maximum of -4mCD as per the design drawing 'P22034_D5112_D01_Dredge Design – Plan'

The design dredge levels are exclusive of bottom-related features i.e., scour, over dredge, bed level uncertainties, etc.

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Figure 3-1 General Arrangement plan for proposed developments (extract from the drawing ref.P22034_D4210_D01_proposed facility general arrangement)

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4 GROUND INVESTIGATIONS

4.1 OVERVIEW

An overview of the GI carried out in and around Greenore Port to date is summarised in Table 4-1, and the borehole and In-situ test locations from all the GI campaigns carried out at Greenore Port are presented in Figure 4-1.

4.2 IN-SITU TESTING

The existing SI reports contain a selection of different exploratory locations such as cable percussion and rotary drilling, trial pitting and window sampling with suites of in-situ and geotechnical and geo-environmental laboratory testing.

In-situ testing in the existing GI campaigns consists of the following:

- The Causeway Geotech (2019) carried out CPTU around the landside quay; however, they fall outside the landside proposed development area and, therefore, will not be analysed for this study.
- GII and Causeway Geotech carried out dynamic probe tests (DPSH) in 2020 at Greenore Port. Based on the locations, they fall outside the proposed developments. These tests examine the strength and stiffness parameters of the ground, providing small strain stiffnesses, shear modulus and undrained strength of the test strata.
- Standard penetration testing has been carried out in the overburden majority of the borehole locations, especially the IGSL 2023 GI carried out every 1m interval on the overburden strata.

4.3 QUALITY OF DATA

The representative data for the ground profile and parameters for the land-based development area are derived from the latest 2023 GI. It provides reasonable coverage of rock head elevations across the site as all boreholes encountered bedrock.

RPS carried out a GI in 2011 around the Topaz tanks previously located in the Port, which will fall within the current development site, however, GDG has no access to any borehole logs related to this GI. The available RPS reporting states that six boreholes were carried out only to a maximum depth of 4mBGL and approximate borehole locations are presented in Figure 4-1.

For the marine development area, the GI data used are from the 1998 and 1991 SI campaigns. These boreholes are spread well to cover the site area to understand the ground conditions, however, the majority of these boreholes only extend to a maximum depth of 6 m BGL. Geophysical surveys carried out on site are discussed in Section 9 of this report.

A summary of the ground investigation undertaken to date is presented in Table 4-1.

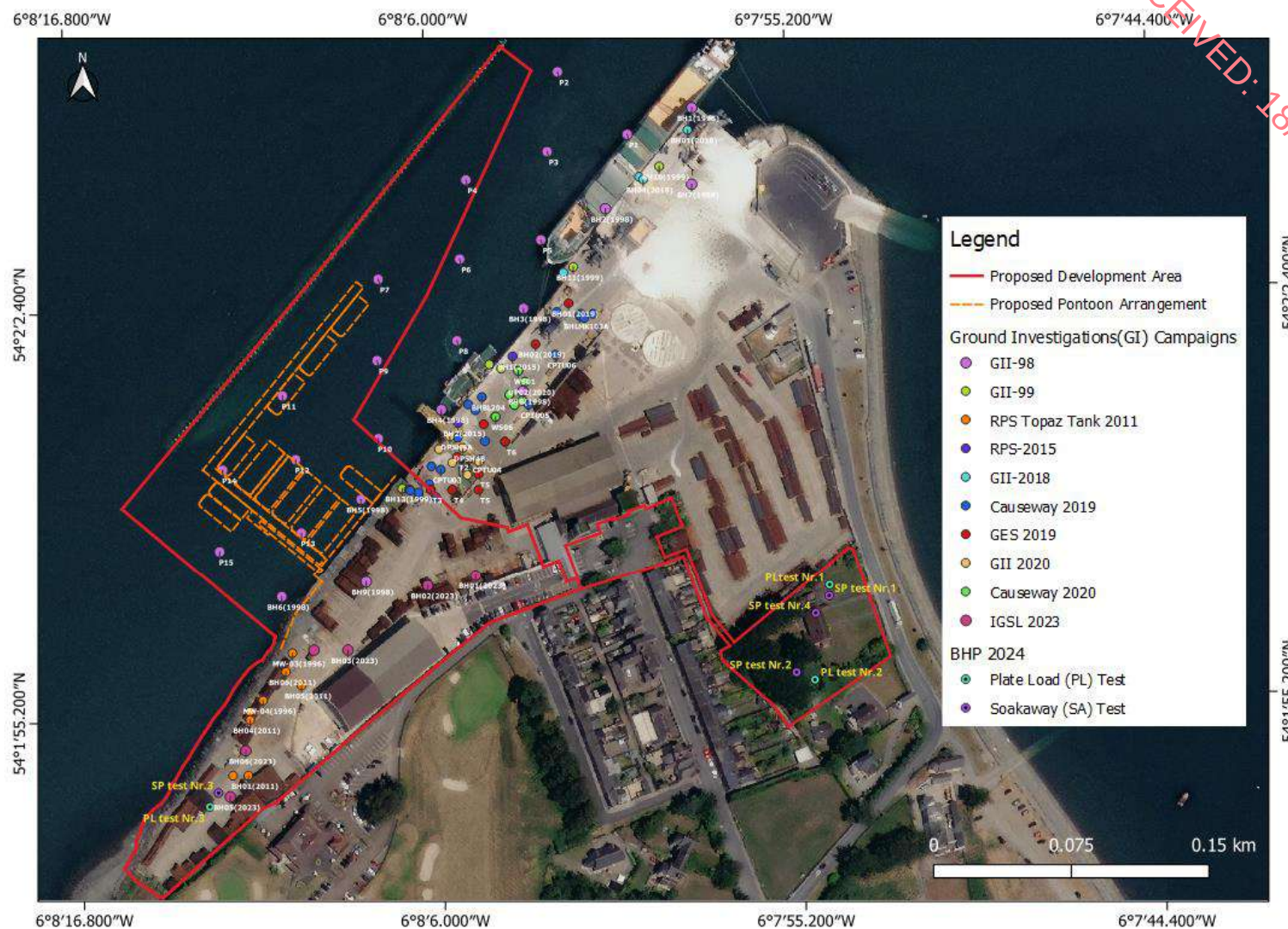


Figure 4-1 Overview Borehole location Map of various GI carried out in Greenore Port

Table 4-1 Summary of GIs carried out around the Greenore Port

SI Campaign Contractor	Year	GI Scope Summary	Report Ref:	Client Representative/ultimate client
IGSL	April 2024	#6 No Window sample boreholes within the proposed O&M facility development land area. Boreholes were advanced to depths between 1.5 m bgl and 2.0 m bgl. Lab tests: Contamination testing - 12 samples were scheduled for analysis as per the Rilta Suite of testing.	Greenore Port Ground Investigation Report Factual, Project no.24882 (*Note this is a revision of the IGSL September 2023 report listed below, to accommodate site additional investigation) Draft test report ref: BHP/MTI/1021 1.1 27/9/06 Ref: McCarthy Browne, Greenore Port, Co.Louth MF130940	McCarthy Browne
BHP	February 2024	#4 No of Soakaway test and 3 No. of plate loading tests carried out in car parking areas within the proposed O&M facility development land area. BHP was contracted by Richard Browne to carry out these tests.		McCarthy Browne
IGSL	September 2023	#6 No boreholes comprised of cable Percussion boring followed by rotary core drilling into the overburden and bedrock within the proposed O&M facility development land area. Boreholes were reached to a depth between 14mbgl to 20mbgl. Lab tests: Atterberg test x 11, PSD X 22, Bulk Density x 34, Direct shear box x 27, Triaxial tests x 9, UCSx6, point load x 18, contamination tests. Soak away and CBR tests are scheduled to be carried out in future.	*Greenore Port Ground Investigation Report Factual, Project no.24882	McCarthy Browne
Causeway Geotech	May 2020	#6 No of dynamic probe tests	only logs	-

Ground Investigations Ireland(GII)	March 2020	#6 No of dynamic probe tests	only logs	-
Geotechnical Environmental Services (GES)	December 2019	#2 No. boreholes drilled in soil and rock to a maximum depth of 21.2m below existing ground level (bgl), Boreholes BH01 and BH02, on encountering rock, were continued by HQ wireline core drilling. #6 No. dynamic probes to a maximum depth of 21.9m below existing ground level (bgl). Lab tests: point load x 18, UCSx14	Berth 2 Upgrade Works, Factual Report, Report No. 011/ROI/19	Keating Construction Limited
Causeway Geotech	March 2019	#15 No. boreholes, 11 no cone penetrometer tests, standpipe installation, 2 no. of trial pits, 2 no. of plate tests. Lab tests: Atterberg test x6, PSD x 10, Consolidated drained Shear box2, Oedometerx3	Greenore Port Development, Berth 2- Ground Investigation. Report no.18-1305	Arup/Byrne Looby Consulting Engineers, on behalf of L&M Keating Ltd.
SI Campaign Contractor	Year	GI Scope Summary	Report Ref:	Client Representative/ultimate client
Ground Investigations Ireland (GII)	February 2018	#4 No. boreholes (BH1 to BH4) drilled in soil and rock. Lab tests: shear box tests x 5, UCS x 4, point load x 17	Greenore Port Ground Investigation Report -7350-01-18	RPS Consulting Engineers
Ground Investigations Ireland (GII)	May 2015	#2 No. boreholes (BH1 & BH2) drilled in soil and rock. Lab tests: PSD x10, Consolidated Shear box testsx4, point load x 6, UCS X4	Greenore Port Land-Based SI carried out for RPS, only logs and lab results	RPS Group
RPS Group	November 2011	#6 No. of boreholes drilled using a Dando Terrier track-mounted window sampling rig to a depth of approximately 4m	Ground Investigation at the Topaz Fuel Storage Terminal, Greenore Port, Doc No. MDE1062Rp001D01, no logs provided	Topaz Energy Group Ltd

Glover Site Investigations Ltd	May 1999	#5 No. of boreholes (10,11,12a,12RC,13) were excavated to bedrock along the existing quay	Greenore Harbour Development Rock Coring Investigation Report No.3309	Kirk McClure Morton on behalf of Greenore Ferry Services Ltd
Glover Site Investigations Ltd	August 1998	#9 No. of boreholes (BH1 to BH9) and 15 No. of marine probe boreholes majority of them excavated to bedrock. Lab tests: Triaxial x5, pH and soluble sulphate content x6, Atterberg limit x4 ,PSD X17	Greenore, Co.Louth Harbour Development Site Investigation Report No.3059	Kirk McClure Morton on behalf of Greenore Ferry Services Ltd
K.T.Cullen & Co Ltd	December 1996	#2 No. of groundwater monitoring wells (MW3 and MW4) installed in the vicinity of the hardcover area beneath the refuelling gantry	Limited information acquired from the RPS-2011 GI report	-

4.4 DATA USAGE

The proposed development area comprises land and marine sites. Therefore, this GIR provides land-based and marine-based ground models.

The following borehole information is utilised to understand the bed level, stratum thickness and levels and associated lab tests used to derive geotechnical parameters for design.

Table 4-2 Land-based boreholes

Location ID	SI Campaign	Easting	Northing	Ground Level (mOD)
BH9(1998)	GII-98	722135.66	810882.02	4.60
BH01(2023)	IGSL 2023	722195.36	810885.58	4.64
BH02(2023)	IGSL 2023	722169.24	810879.91	4.42
BH03(2023)	IGSL 2023	722125.75	810844.59	4.52
BH04(2023)	IGSL 2023	722107.19	810829.54	4.82
BH05(2023)	IGSL 2023	722061.53	810764.59	4.36
BH06(2023)	IGSL 2023	722070.07	810789.71	4.93

Table 4-3 Marine boreholes

Location ID	SI Campaign	Easting	Northing	Ground Level (mOD)
BH5(1998)	GII-98	722132.83	810927.40	4.50
BH6(1998)	GII-98	722089.60	810873.81	4.60
P7	GII-98	722142.17	811047.45	-4.10
P9	GII-98	722141.58	811003.13	-4.90
P10	GII-98	722142.31	810960.61	-3.20
P11	GII-98	722089.98	810983.86	-3.20
P12	GII-98	722097.20	810949.08	-3.20
P13	GII-98	722100.36	810909.06	-1.40
P14	GII-98	722057.39	810943.37	-3.20
P15	GII-98	722055.76	810898.80	-2.45
*BHBL202	Causeway 2019	722158.98	810933.02	4.27
*BHBL202A	Causeway 2019	722159.29	810932.69	4.27
*BHBL202B	Causeway 2019	722159.79	810932.29	4.27
*BH6(1998)	GII-98	722089.60	810873.81	4.6
*BH13(1999)	GII-99	722155.34	810933.36	3.70

**For the marine-based site- in addition to the above boreholes, these nearest land-based boreholes were used to derive the marine geotechnical parameters for the overburden strata due to lack of in situ and lab tests carried out on the overburden samples taken from the marine boreholes.

5 GROUND CONDITIONS

5.1 GROUND MODEL

The following ground model is focused mainly on the boreholes outlined in section 4.3 of this report. A characteristic summary of the ground profile of marine and land-based areas is presented in the following sections.

5.2 GROUND PROFILE FOR LAND DEVELOPMENT AREA

Overburden Deposit

The top strata recorded in all borehole logs were Concrete, Made Ground and Engineered Fill, followed by medium dense to dense grey fine to coarse slightly silty sandy Gravel interbedded with loose to medium dense gravelly Sand. Similarly, the presence of thick layers of cobbles and boulders was also recorded within this unit in BH9 (1998).

This stratum is underlain by very stiff grey/brown SILT/CLAY with some gravel and occasional shell content. In most boreholes, this stratum lies above the bedrock and started to record below - 8.5mOD across the site.

Only in BH9, a 2.7m thick sandy Gravel layer is recorded below the gravelly Silty Clay strata. Medium dense to dense grey fine to coarse sandy fine to coarse subrounded Gravel. Sandy Gravel layer is believed to be blowing sand as drillers recorded as a note in borehole logs. Therefore, it is not considered as a separate stratum.

Bedrock

Bedrock is described as moderately strong fine-grained Carboniferous Limestone across the site. Limestone is encountered on all boreholes within the study site. The shallowest is recorded on the BH03(2023) at -10.5mOD and the deepest in BH01(2023) at approx. -16.6mOD.

Table 5-1 summarises the ground profile for this area. Cross-sections of the study area are provided in Appendix A.

Table 5-1 Geology unit summary for land-based ground model

Material Name	Elevation (mOD)		Thickness approx. (m)		SPT ranges
	The top of the strata encountered	The base of the strata recorded	Min	Max	
Concrete	4.5	4	0.15	0.4	n/a
Made Ground/ Engineered Fill	4.6	-1.5	0.5	6.1	30 to 50
silty sandy Gravel	4	-9.5	4.2	6.5	9 to 35
SILT/CLAY	-8.3	unproven	1.3	4.6	11 to 33
sandy Gravel	-13.5	unproven	2.7	unproven	n/a
Bedrock	-10.5	unproven	unproven		n/a

5.3 GROUND PROFILE FOR MARINE DEVELOPMENT AREA

5.3.1 OVERBURDEN DEPOSIT

Generally, the main overburden material is described as medium dense to dense grey fine to coarse slightly silty sandy Gravel interbedded with loose to medium dense gravelly Sand. The proportion of the silt and sand composition varies slightly from borehole to borehole based on the log descriptions.

The presence of thick layers of cobbles and boulders was recorded in borehole P13(1998) as top strata at -1.5mOD (1.55mCD). This borehole is located at the CTV berthing area. In P9, P7 and P4 cohesive layer of soft black and dark grey organic fine sandy silty CLAY as top strata is noted.

The presence of Silty CLAY cohesive material with some gravel and occasional shell content is recorded in boreholes, especially at the centre of the harbour. In P14 and P13. boreholes this layer

appeared as an interbedded unit - very stiff grey/brown SILT/CLAY with some gravel and occasional shell content.

5.3.2 BEDROCK

Moderately strong grey fine-grained Carboniferous Limestone was encountered in the following boreholes-

- P7 at 4.40mBGL -8.5mOD (-5.45mCD)
- BH5(1998) at 17.90mBGL -13.4mOD (-10.35mCD)
- BH6(1998) at 17.60mBGL -13.00mOD (-9.95mCD)

See the pontoon arrangement area cross sections provided in Appendix B. Table 5-2 summarises the ground profile for this area.

Table 5-2 Geology unit summary for marine-based ground model

Material Name	Elevation (mOD)		Thickness approx. (m)	
	Top	Base	Min	Max
silty sandy Gravel	2.5	-8.5	1.5	7.3
SILT/CLAY	-4.5	-13	0.6	4.6
sandy Gravel	-5.5	unproven	2.3	unproven
Bedrock	-8.5	unproven	unproven	

5.4 GROUND MODEL CROSS SECTIONS

The site investigation data was entered into the HoleBase application to generate cross-sections across the site to understand how the conditions vary and to ascertain if there is a trend in variation across the North-South and East-West orientations. Cross Sections for the land and marine study areas are provided in Appendix B.

6 GEOTECHNICAL ASSESSMENT -LAND DEVELOPMENT AREA

6.1 BACKGROUND

The geotechnical parameters of the overburden and rock geology units are derived from the land-based boreholes within the site boundary, as outlined in Section 4.3. The assessment included borehole and geotechnical lab tests carried out in two different SI campaigns across the site - 1998 and 2023.

6.2 GROUNDWATER STRIKES

Water strikes were recorded in all boreholes drilled for IGSL 2023 SI, and water strike details are provided in Table 6-1. Groundwater conditions observed in the borings are those appertaining to the 20 minutes of investigation. It should be noted, however, that groundwater levels are subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations, etc.

Table 6-1 Water strike summary

Location	Depth Strike m BGL	Elevation m OD	Rose to m BGL	Rose to m OD	Geological Unit
BH01(2023)	4.80	-0.16	4.40	0.24	Silty Sandy GRAVEL
BH02(2023)	5.40	-0.98	4.20	0.22	Silty Sandy GRAVEL
BH03(2023)	4.50	0.02	4.40	0.12	Sandy Clayey GRAVEL (Possible Made Ground)
BH04(2023)	4.50	0.32	4.40	0.42	Silty Sandy GRAVEL
BH05(2023)	4.80	-0.44	4.40	-0.04	Silty Sandy GRAVEL
BH06(2023)	5.50	-0.57	4.20	0.73	Silty Sandy GRAVEL

6.3 IN-SITU TESTS

6.3.1 STANDARD PENETRATION TESTING

SPT tests were carried out at standard depth intervals throughout the overburden using the split spoon sampler (SPT_(s)) or solid cone attachment (SPT_(c)). The test results are deduced through the number of blows needed to drive the cone each 75mm into the ground, to a maximum depth of 450mm. The “standard penetration resistance” or “SPT N value” is calculated by the sum of the number of blows required for the last four 75 mm increments of penetration, to a maximum of 50 blows. The measured number of blows, (SPT N), presented in this report is uncorrected, and no allowance has been made for energy ratio corrections.

SPT recorded values against elevation across the site are shown in Figure 6-1. The characteristic SPT N values for each stratum or geology unit are summarised in Table 6-2.

Table 6-2 Summary of SPT test results

Strata	SPT	
	Description	N Value
Clayey Gravel (Made Ground)	Count	12
	Min	10
	Average	36
	Max	50
Gravelly Sand/ Silty Sandy GRAVEL	Count	74
	Min	8
	Average	20
	Max	48
SILT/ CLAY	Count	23
	Min	6
	Average	27
	Max	50

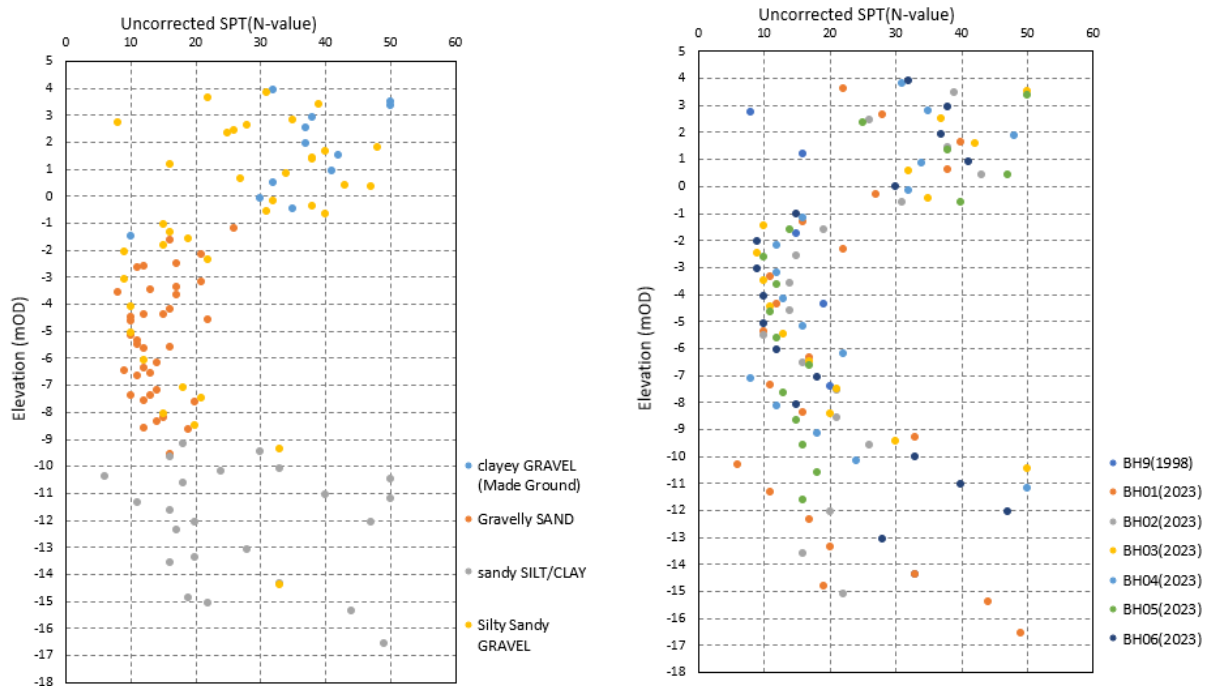


Figure 6-1 SPT N Values vs Elevation based on soil types and boreholes

6.3.2 ROCK CORE

Rock core analysis was carried out on six boreholes from the 2023 SI. The plots presented in Figure 6-2 summarise the main features of the Total Core Recovery (TCR), Solid Core Recovery (SCR) and Rock Quality Designation (RQD) of the rock cores obtained from the site investigation at the proposed development site.

Total Core Recovery (TCR) at the site was generally very high for the rock encountered. Figure 6-2(a) presents the TCR results showing TCR 100% for all of the cores. Solid Core Recovery (SCR) results presented in Figure 6-2(b) show the values vary between 26% and 96% for most of the cores. Rock

Quality Designation (RQD) results are presented in Figure 6-2(c) showing the values are generally between 20% to 94% with no general trend that can be identified from the graphs about elevation.

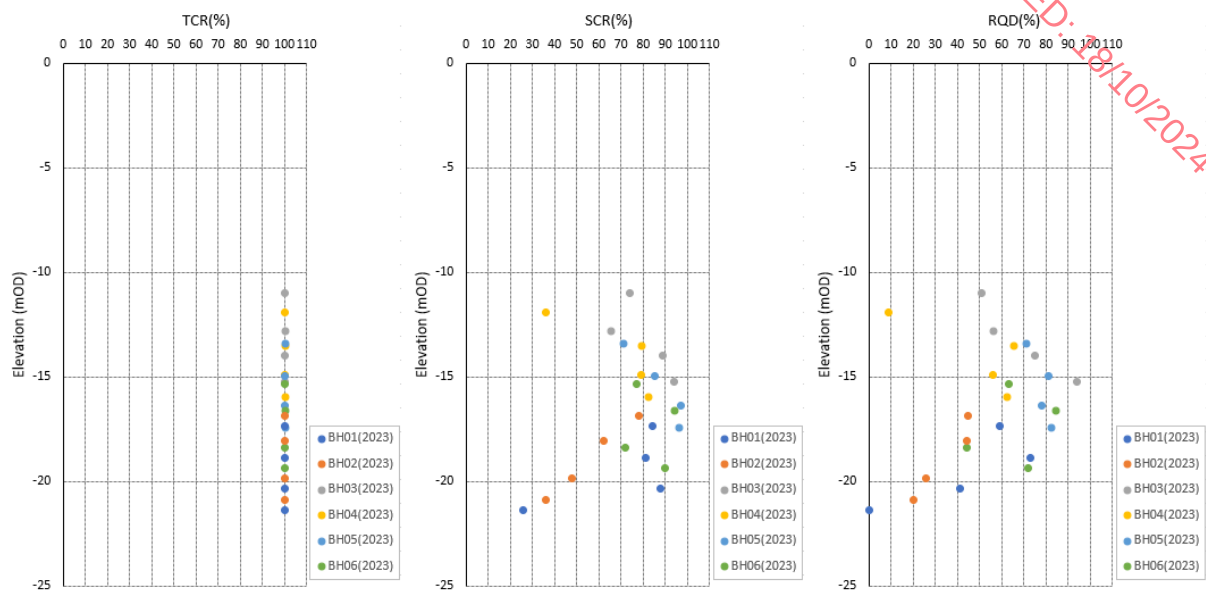


Figure 6-2 Rock core logs: (a) TCR, (b) SCR and (c) RQD with Elevation

6.4 GEOTECHNICAL LABORATORY TESTS

6.4.1 SUMMARY

The following geotechnical tests were undertaken on the IGSL 2023 GI:

- 11 No. Atterberg Limit
- 11 No. Moisture Content
- 22 No. Particle Size Distribution (Sieving & Wet Sieve Analysis)
- 34 No. Bulk Density
- 27 No. Direct Shear Box 60mm x60mm
- 4 No. Consolidated undrained triaxial compression tests
- 6 No. Triaxial Compression (no pore pressure measurement)
- 13 No. pH Soluble and Sulphate content
- 18 No. Point Load Strength testing (rock)
- 6 No. Uniaxial Compressive strength (rock)

6.4.2 YOUNG'S MODULUS

Young's Modulus from SPT

A wide range of equipment is used to undertake SPT testing which influences the amount of energy transferred to the sampler with each blow of the drop hammer. The constitutive properties of a given soil deposit should not vary with the equipment used, and so N is conventionally corrected to a value of N_{60} , representing a standardised energy ratio of 60%. The blow count also needs to be

corrected for the size of the borehole and tests done at shallow depths (<10m). These corrections are achieved using the following:

$$N_{60} = N \cdot \zeta \cdot (ER/60)$$

Where ζ is the correction factor for rod length (i.e. test depth) and borehole size, and ER is the Energy Ratio of the equipment used.

In sands and gravels, the corrected blow counts are further normalised to account for overburden pressure at the test depth. The normalised blow count $((N_1)_{60})$ is obtained from

$$(N_1)_{60} = C_N N_{60}$$

where C_N is the overburden correction factor and is given by:

$$C_N = \frac{A}{B + \sigma'_{v0}}$$

A and B vary with density, coarseness and OCR. For dense to very dense sands and gravels $A=300$ and $B=200$, otherwise, A and B are assumed equal to 200 and 100 respectively.

Granular

Stroud (1989) suggested a correlation between corrected SPT N values and the drained Young's Modulus for sand and gravels:

$$E' = 2 * (N_1)_{60} \text{ (MPa)}$$

Cohesive

The undrained Young's Modulus in the cohesive strata may be evaluated using the following relationship:

$$E_u = 1 * N_{60} \text{ (MPa)}$$

The drained Young's Modulus in the cohesive strata may be estimated by 0.8 times the undrained Young's Modulus. A plot of the correlated drained Young's Modulus values against elevation is included in Figure 6-3. Assessment of the calculated Young's Modulus is presented in Table 6-3. An appropriate characteristic design value for each soil type is taken as the 10th percentile value. Typical published values for Limestone are presented in Figure 6-4 and as such will be treated with caution.

Table 6-3 Summary of calculated Young's Modulus, E' (MPa)

Stratum	Count	Min.	Max.	Average	10th percentile
Clayey GRAVEL (Made Ground)	12	28	112	85	36
Silty Sandy GRAVEL	74	18	120	54	29
SILT/ CLAY	23	7	60	34	19

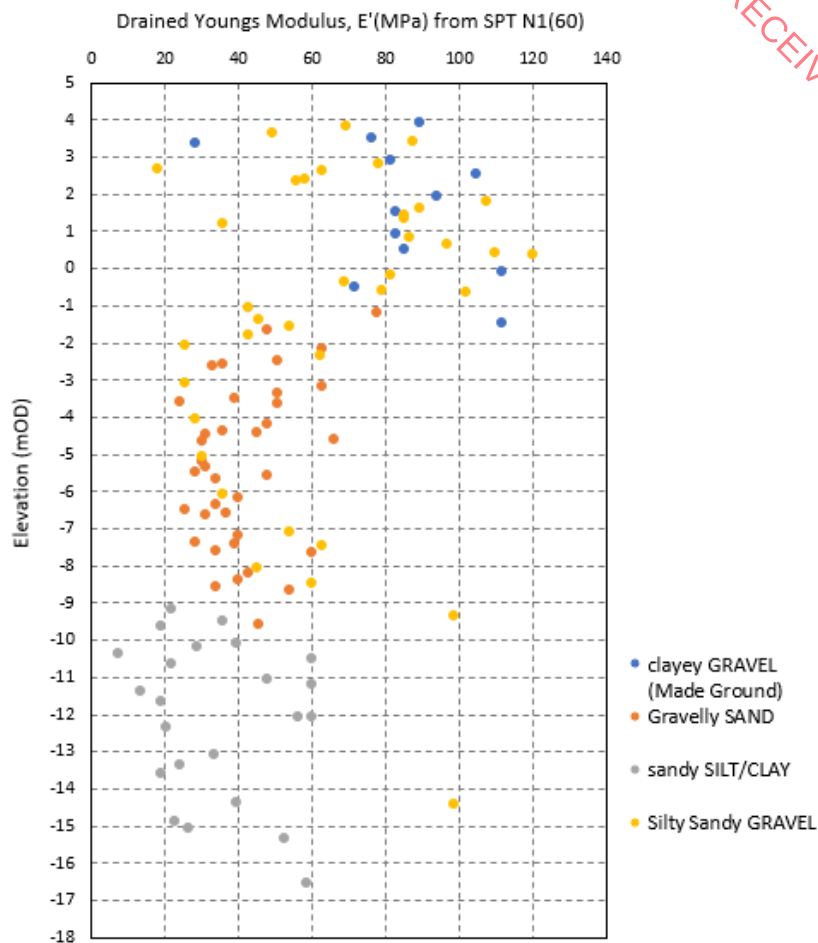


Figure 6-3 Drained Young's Modulus, E' from SPT

Figure 2.3 - Range of Young's modulus of some rock types

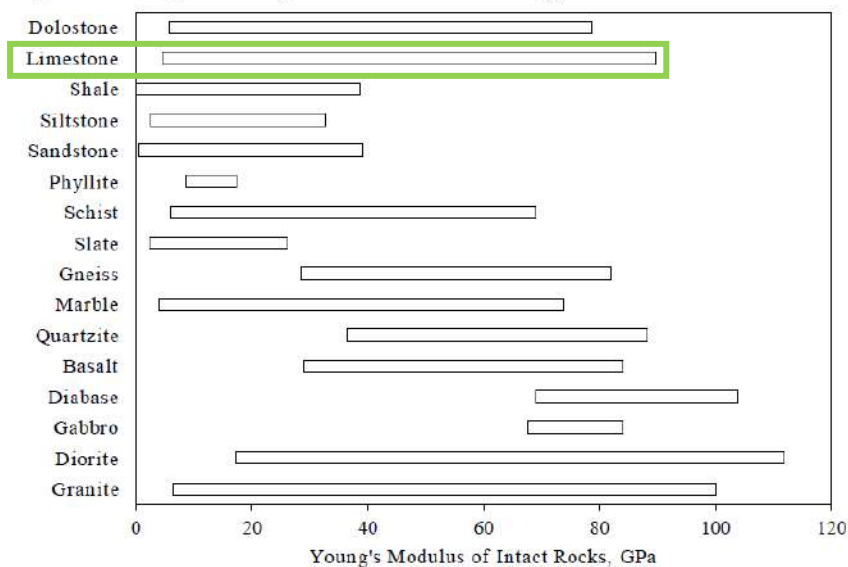


Figure 6-4 Typical Young's Modulus Ranges for Rock Types adapted from AASHTO (2002)

6.4.3 BULK DENSITY

The bulk densities of the materials across the site are presented in Figure 6-5 and an average bulk density of each soil type is summarised in Table 6-4. Bulk densities were measured on disturbed samples for soil types – Made ground, Gravels and Limestone. For the Silt/Clay soil type, the testing was carried out on undisturbed samples.

The unit weight (γ) of strata have been assessed primarily from the measurements of bulk density, then were converted to unit weights, the density values were multiplied by the acceleration due to gravity, taken as 9.81 m/s^2 . The average value of 16 kN/m^3 obtained for the silty sandy Gravel layer appears to be on the low side of the global representative value. Therefore 17 kN/m^3 is taken as the more representative design value for the silty sandy Gravel soil type for the site.

Table 6-4 Summary of Bulk Density

Soil type	Bulk Density (Mg/m^3)	Bulk Unit Weight (kN/m^3)
Clayey GRAVEL (Possible Made Ground)	1.77	17
Silty sandy GRAVEL	1.61	16
Sandy gravelly SILT/CLAY	1.99	20
Bedrock-Limestone	2.69	26

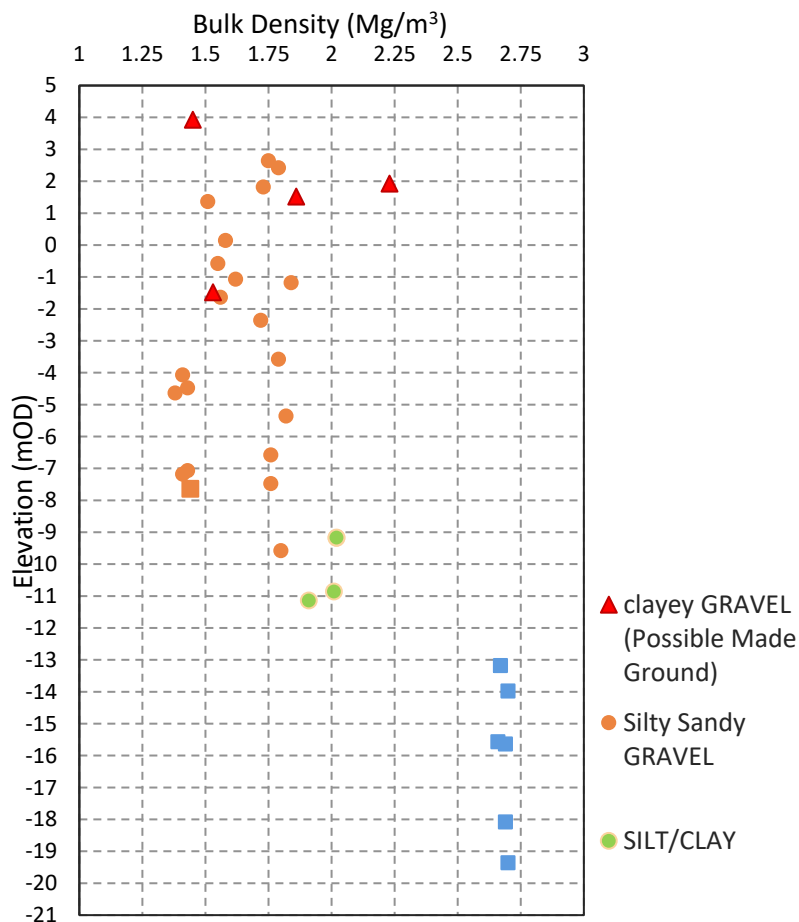


Figure 6-5 Bulk Density vs Elevation

6.4.4 PARTICLE SIZE DISTRIBUTION (PSD)

PSD analyses were carried out on 22 samples taken from various depths as part of 1998 and 2023 SI. In 1998 SI data represented by BH9(1998) only conducted a sieve analysis whereas the 2023 SI carried out a wet sieve analysis on 19 samples which provided more accurate results of SILT proportions in the soil samples.

PSD plots for the samples are presented in Figure 6-6. The PSD plot represents the overburden strata with varying sand, gravel, and silt proportions across the site. As discussed in the ground model, (Section 5.2) the primary overburden deposit is sandy Gravel with varying sand and silt proportions. This unit is underlaid by the slightly sandy SILT strata.

A breakdown of the Clay–Silt–Sand – Gravel–Cobbles–Boulders sized fractions against depth is shown in Figure 6-7. The plots show that the upper 4m are typically comprised of a slightly silty sandy Gravel. The fine content is less than 15%. Similarly, the plot shows below 14m bgl presence of a cohesive layer with 70 to 85% silt content as expected from the borehole logs.

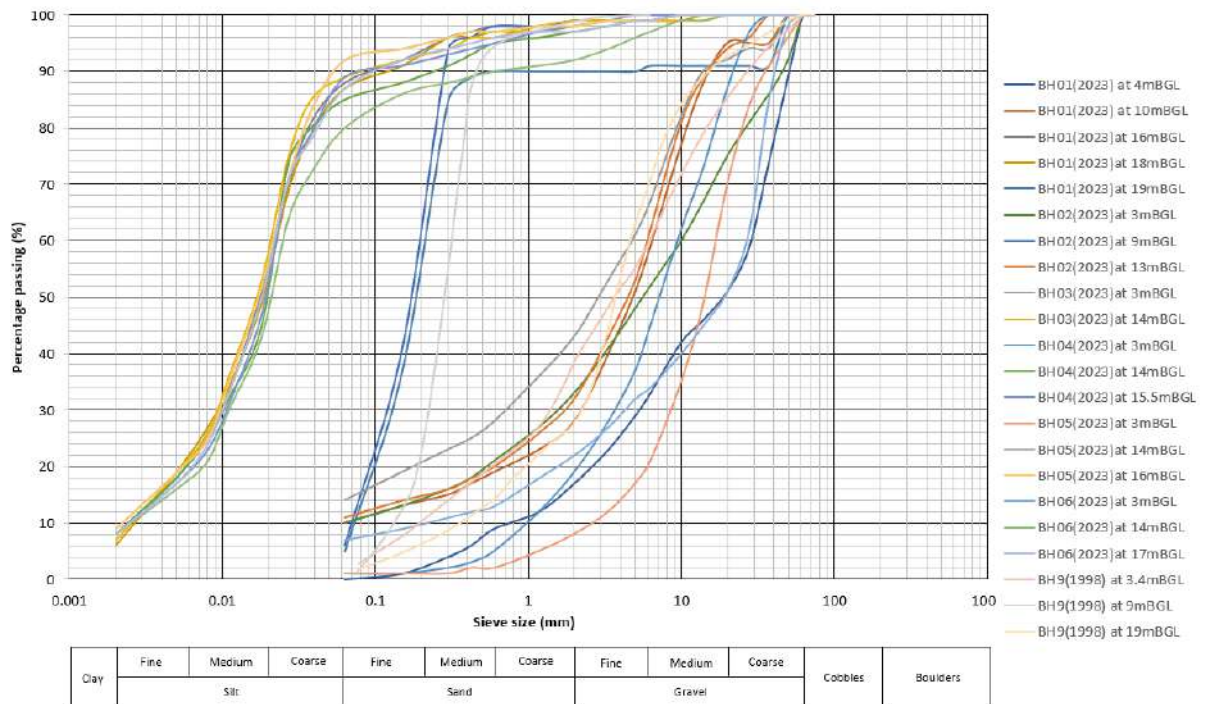


Figure 6-6 PSD plot for the overburden

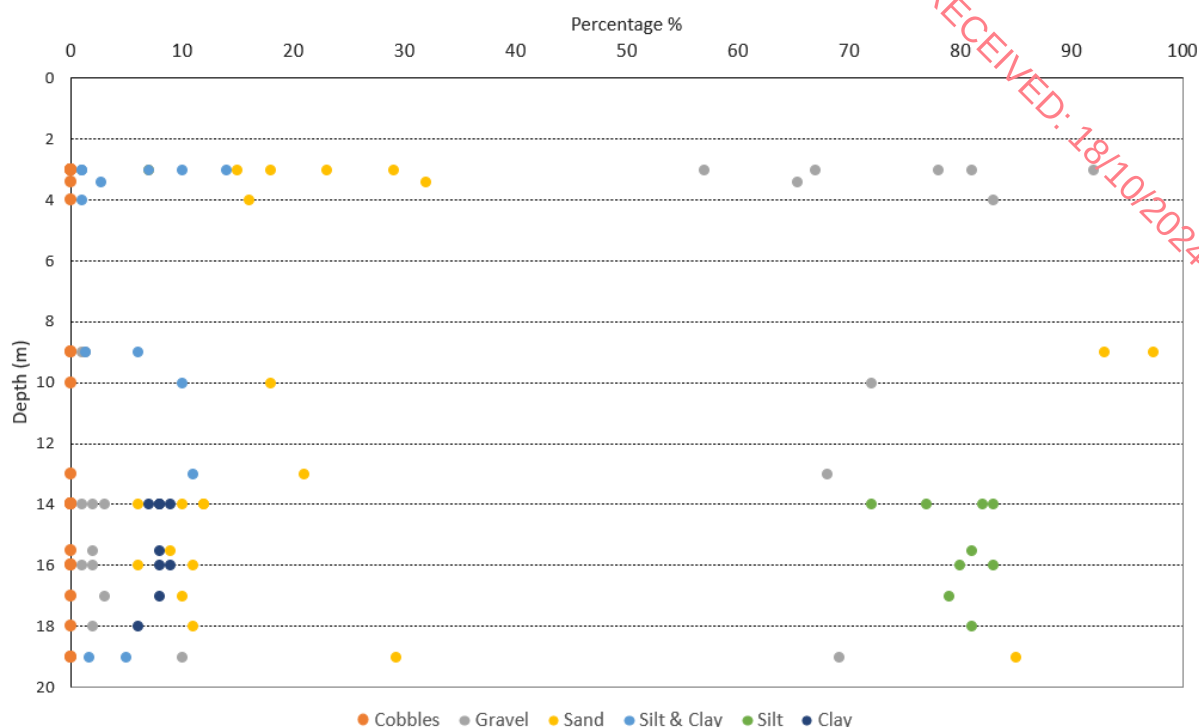


Figure 6-7 PSD fractions vs depth

6.4.5 INDEX TESTS

Water Content (wN), Liquid Limit (wL) and Plastic Limit (wP) lab were measured on 11No. cohesive soil samples recovered from 6No. of boreholes at various depths taken from the study site. Unfortunately, all the tests were carried out on sandy SILT/CLAY strata. The index tests are plotted against elevation in Figure 6-8 and summarised in Table 6-5. Only the BH9 (1998) from 1998 SI recorded the plastic limit and plasticity index for the SILT/CLAY strata. The 2023 SI samples recovered from SILT/CLAY strata from all boreholes show results of PL and PI as NP-non-plastic material.

Table 6-5 Atterberg Limit Summary Table

Stratum	LL (%)			PL (%)*			PI (%)**			Water Content(%)		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
gravelly sandy SILT/CLAY	26	36	46	19	19	19	27	27	27	21	30	37

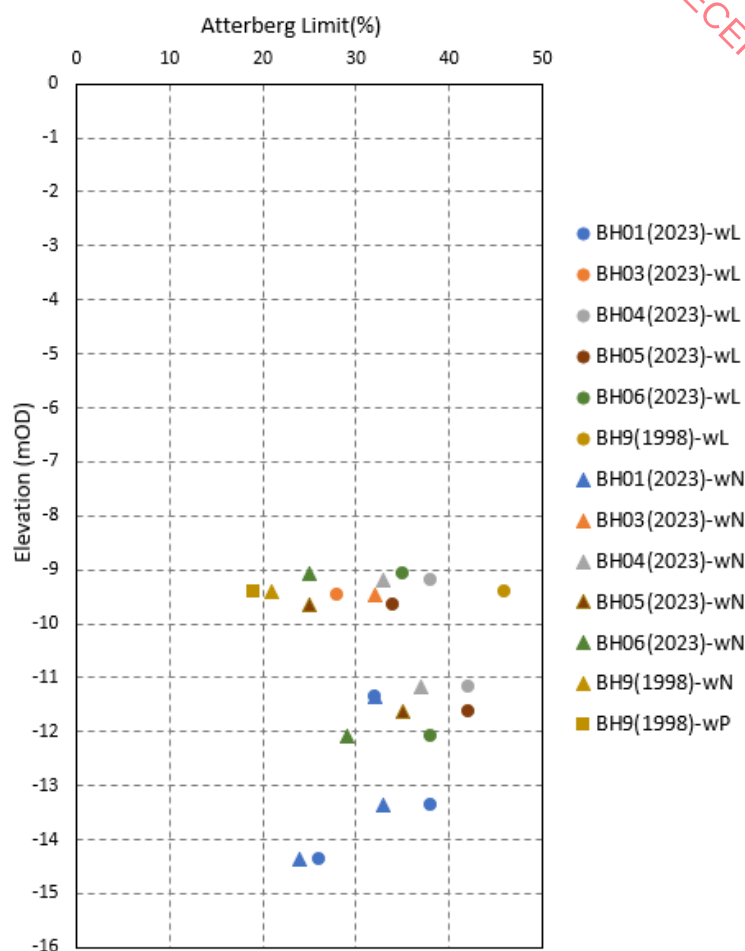


Figure 6-8 Atterberg Limit test results vs Elevation

6.4.6 ANGLE OF FRICTION AND COHESION

The Effective Cohesion (c') and shearing resistance angle, ϕ' ($^\circ$) for each soil type are obtained from the shear box test and consolidated undrained triaxial compression tests. Additionally, a correlation for the effective shearing resistance can also be calculated using the SPT 'N' value and the Peck et al. (1974) correlation for granular deposits.

Triaxial tests

Consolidated undrained triaxial compression tests were carried out on 4nr undisturbed samples taken from BH1, BH4, BH5 and BH6 from 2023 SI. These tests were carried out on sandy SILT/CLAY strata.

Direct Shear

Direct shear tests (60mm x 60 mm) were carried out on 27nr of disturbed samples from 2023 SI at varying depths following BS 1377-Part.7: 1990.

Figure 6-9 presents all the lab test results for each geology unit across the site and

Table 6-6 summarises the results as follows:

Effective Cohesion (C')

- 3 no. of samples tested on the clayey Gravel (Made Ground). The lab results range from 5 to 22. The highest value 22 (see Figure 6-9) is considered as an outlier as the other two results plot much lower values. As the material of this stratum consists of up to 90% gravel (see section 6.4.4), it is expected to have very little or no cohesion, which leads to selecting a representative design value of zero.
- Silty sandy Gravel soil layer shows a range of values from 2 to 35kPa. SILT/CLAY stratum, 4 out of 5 no. of samples results are measured from the undrained triaxial test which shows (see Figure 6-9) a range between 5kPa to 15kPa.
- For design purposes, we recommend a characteristic design value of 0kPa to 1kPa for the two larger strata across the site.

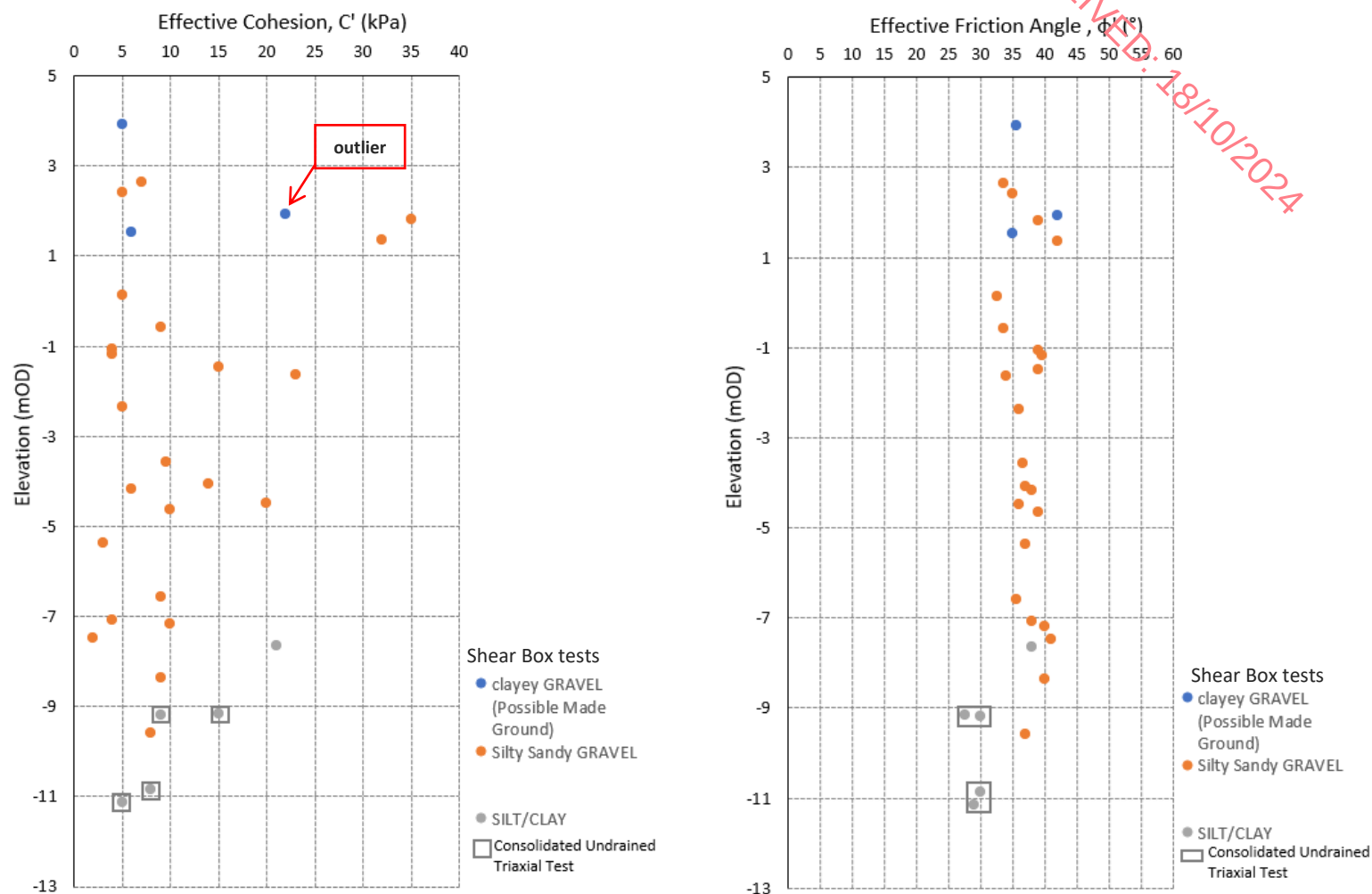
Shearing resistance angle, ϕ' (°)

- The apparent shearing resistance angle of the granular layer ranges from 33 degrees to 42 degrees, and the SILT/CLAY stratum ranges from 28 degrees to 38 degrees. GDG recommend an appropriate characteristic design value for each stratum from the lower range of the result.

Additionally, Shearing resistance for granular deposits using the Peck et al. correlation is presented in Figure 6-10. Based on Figure 6-10, the shearing resistance for clayey Gravel (Made Ground) is calculated as 37.5degrees, which fits with the approximate average value based on the lab test plot Figure 6-9. For the silty sandy Gravel stratum, the Peck et al. correlation gives a value of 33 degrees, which represents a lower value in comparison to the lab test plot Figure 6-9.

Based on the above assessment a conservative design value of c' and ϕ' (°) for each geology unit is summarised in

Table 6-6.



Effective Friction Angle from SPT

The effective friction angle (ϕ') for the granular Gravel deposits has been determined using the SPT correlation proposed by Peck et al (1974) taken from Tomlinson (2001) which is presented in Figure 6-10. For the initial assessment, an effective angle of friction for the clayey Gravel (Made Ground) will be taken as 37.5° , and 33° for the silty sandy Gravel deposits.

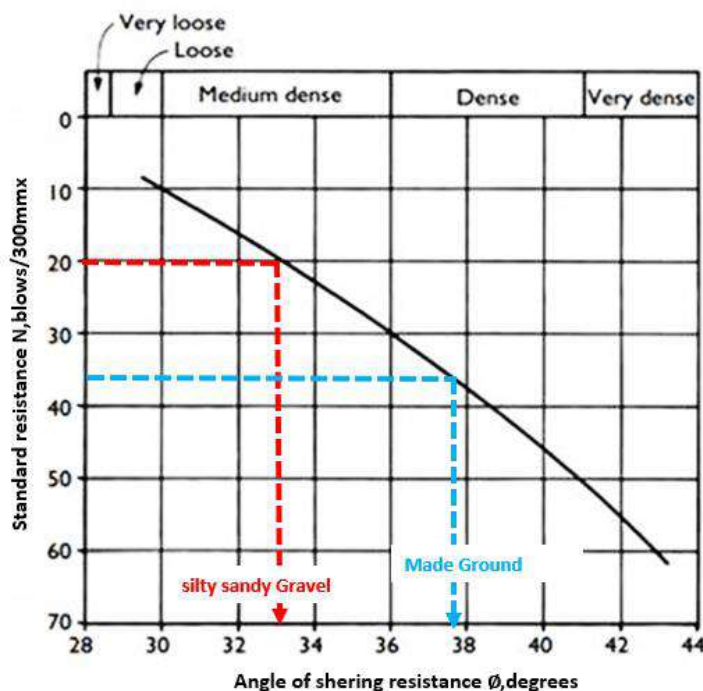


Figure 6-10 Average SPT vs angle of shearing resistance for granular deposits (Peck et al., 1974)

Table 6-6 Summary design value for C' and ϕ' ($^\circ$)

Stratum	Effective Cohesion C' (kPa)	Shearing resistance angle, ϕ' ($^\circ$)
clayey Gravel (Made Ground)	0	35
silty sandy Gravel	0	32 (min) or 37(average)
SILT/CLAY	1	28

6.4.7 UNDRAINED SHEAR STRENGTH

Undrained Shear strength in triaxial compression without pore pressure measurement is carried out on 6nr of samples taken from various depths on the sandy SILT/CLAY strata in 2023 and 1998 SI. Samples are tested under BS1377: Part 7:1990 clause 8 and results are presented in Figure 6-11. GDG has no information regarding whether the samples used for this testing were disturbed or undisturbed.

The undrained shear strength, c_u of the SILT/CLAY varies from 38kPa to 69kPa. Therefore, a conservative design c_u value for the SILT/CLAY strata for the site is taken as 40 kPa (10th percentile value for the lab results) and will be treated cautiously.

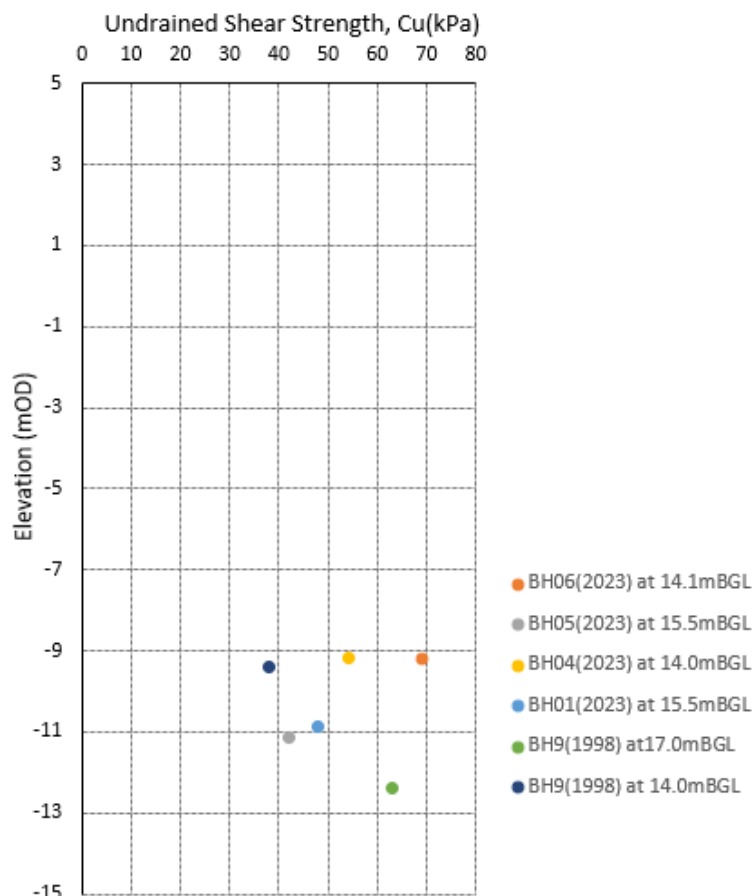


Figure 6-11 Undrained shear strength vs elevation

6.4.8 POISSON'S RATIO

The Poisson's ratio, ν , values were chosen based on typical values for materials based on the soil description and Plasticity Index (PI) as presented by Look (2007), included in Table 6-7. Poisson's ratio is selected based on the Atterberg limit tests and plasticity index of samples collected from the site discussed in section 6.4.5 in this report. The Poisson's ratio, ν , selected for the short-term settlement analysis for the SILT/CLAY strata is 0.30 and silty Sandy Gravel is 0.30.

Table 6-7 Poisson's ratio for soils (Look, 2007)

Material	Short term	Long term
Sands, gravels and other cohesionless soils	0.30	0.30
Low PI (< 12%)	0.35	0.25
Medium PI (12% < PI < 22%)	0.40	0.30
High PI (22% < PI < 32%)	0.45	0.35
Extremely high PI (PI > 32%)	0.45	0.40

6.4.9 POINT LOAD INDEX TEST

Point load index tests (PLT) were carried out on 18 samples. The results are presented in Figure 6-12, and it shows that the point load for the limestone varies from 2.21 MPa to 7.83 MPa. Therefore, an average of 5MPa is taken as the point load index, Is_{50} , for the bedrock at the site.

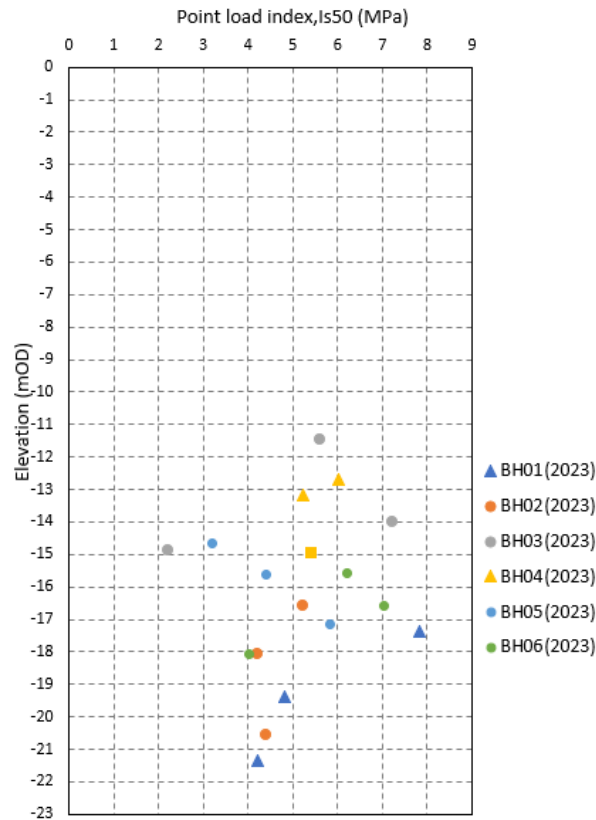


Figure 6-12 Point load, Is_{50} vs Elevation

6.4.10 UNIAXIAL COMPRESSIVE STRENGTH (UCS)

The UCS tests were carried out on 6nr of Limestone samples. Additionally, UCS also calculated based on the point load index, Is_{50} as per section 6.4.9 with the following relation:

$$k * \text{Point Load, } Is_{50} = UCS$$

*Where k is taken as 20

The results are presented in Figure 6-13 and summarised as follows:

- UCS calculated based on the Is_{50} ranges from 44MPa to 157MPa.
- Direct UCS measurements range from 37MPa to 130MPa.
- The majority of the data falls between 80MPa to 130Mpa, suggesting a strong to very strong Limestone bedrock underneath the site.

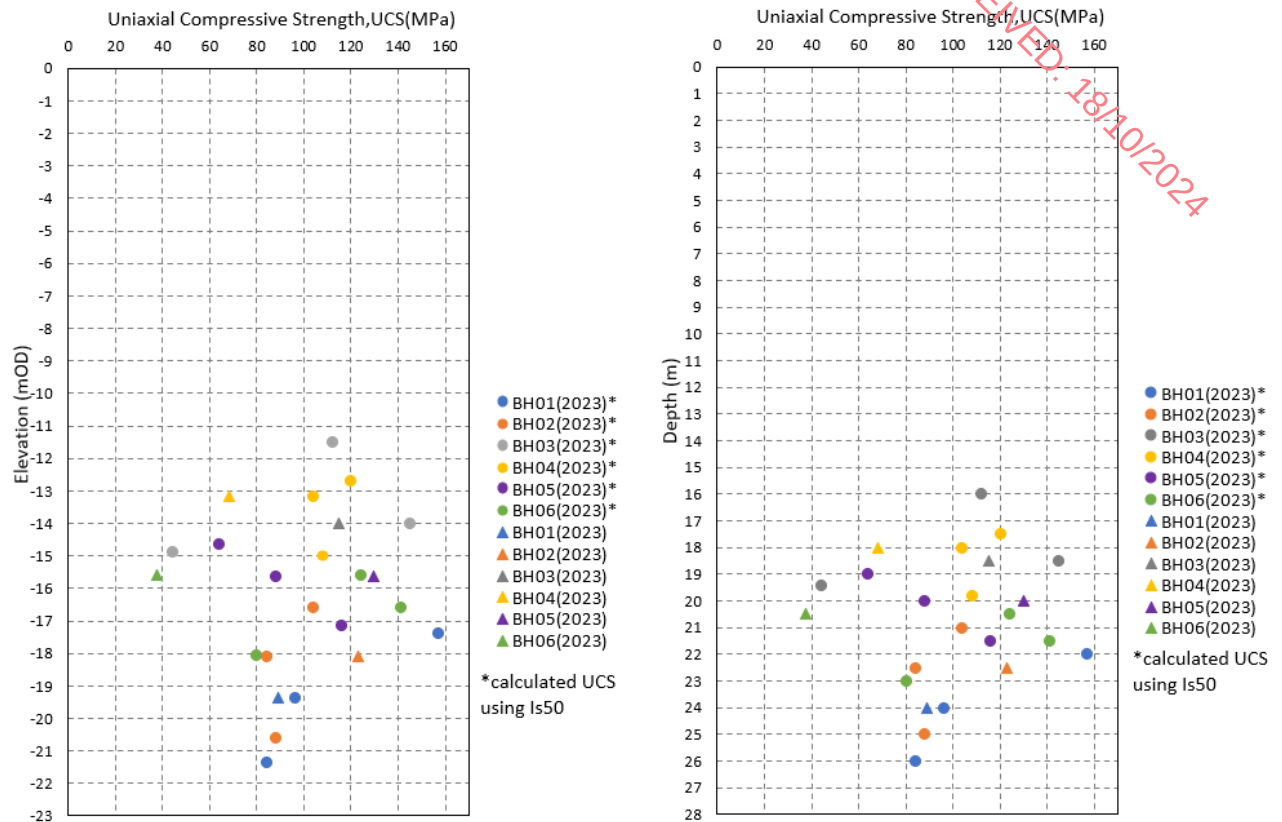


Figure 6-13 UCS vs Elevation and Depth

6.4.11 SOAKAWAY TESTING

Infiltration testing was undertaken at four locations within the car parking area during the ground investigation, following BRE 365. Testing was undertaken in triplicate at each of the four test locations over 1 day. The depth of each test pit varied, with Test Pit 1 being the deepest and Test Pit 3 being the most shallow:

- Test Pit 1: 1.85 m BGL
- Test Pit 2: 1.45 m BGL
- Test Pit 3: 0.725 m BGL
- Test Pit 4: 1.4 m BGL

A summary of the results is presented in Table 6-8, full results can be found within the BHP test report ref: BHP/MTI/1021 1.1 27/9/06.

Table 6-8 Soakaway Test Result Summary

ID	Infiltration Rate, F (m/s)	
	Minimum	Maximum
Test Pit 1	2.17×10^{-5}	4.48×10^{-5}
Test Pit 2	1.83×10^{-4}	2.40×10^{-4}
Test Pit 3	6.15×10^{-4}	6.15×10^{-4}
Test Pit 4	4.41×10^{-5}	1.11×10^{-4}

Based on the test pit photographs and log information provided in the Richard Browne report, the testing was carried out on grey to brown loose sandy Gravel with cobbles present.

Recommendations in Knappett and Craig (2012) are presented in Table 6-9, of typical permeabilities of soils based on gradings. For the site, the results (10^{-4} to 10^{-5} m/s) align with a slightly silty sandy gravel mix material.

Table 6-9 Coefficient of permeability (m/s)

1	1×10 ⁻¹	1×10 ⁻²	1×10 ⁻³	1×10 ⁻⁴	1×10 ⁻⁵	1×10 ⁻⁶	1×10 ⁻⁷	1×10 ⁻⁸	1×10 ⁻⁹	1×10 ⁻¹⁰
Clean Gravels	Desiccated and fissured clay						Unfissured clays and clay-silts (>20% clay)			
	Clean sands and sand-gravel mixes				Very fine sands, silts and clay-silt laminate					

6.4.12 PLATE LOAD TESTING

Plate load testing was carried out at three locations in the car parking area of the site following BS 1377: Part 9 on the 22nd of February 2024. The plate load tests were conducted as incremental loading tests with Test 1 & Test 2 completed just below the topsoil and Test 3 was done on the existing compacted gravel. A 450mm diameter plate was used to perform the plate bearing tests with a maximum pressure of approximately 500kPa applied in two cycles of loading at each location.

The results of the tests have been summarised in Table 6-10. Based on the test results the deformation is taken from the 1st cycle of loading and results indicate that the ground is capable of sustaining a load of 500kPa for a maximum deformation of less than 6mm. The modulus of Subgrade Reaction, k, and an approximate CBR value were estimated from the plate load tests are also provided in Table 6-10. CBR Test 3 was not done on sub-formation material and therefore had a significantly higher test result (30% CBR) than the other two tests.

Table 6-10 Plate load test results summary

ID	Maximum Applied Pressure (kN/m ²)	Maximum Deformation (mm) 1st cycle	Maximum Deformation (mm) 2nd cycle	Estimated CBR % @ 1.25mm deformation	K = (MN/m ² /m) @ 1.25mm deformation
Test 1	500	5.78	6.67	13	64
Test 2	500	3.96	4.42	19	79
Test 3	500	3.79	4.42	30	104

6.4.13 SOIL CHEMISTRY

The Geotechnical Chemistry tests were carried out by Eurofins Chemtest as part of IGSL 2023 SI on 12 samples taken from six boreholes and one sample incorporated into the analyses from the BH9 - 1998 SI. The plots are presented in Figure 6-14.

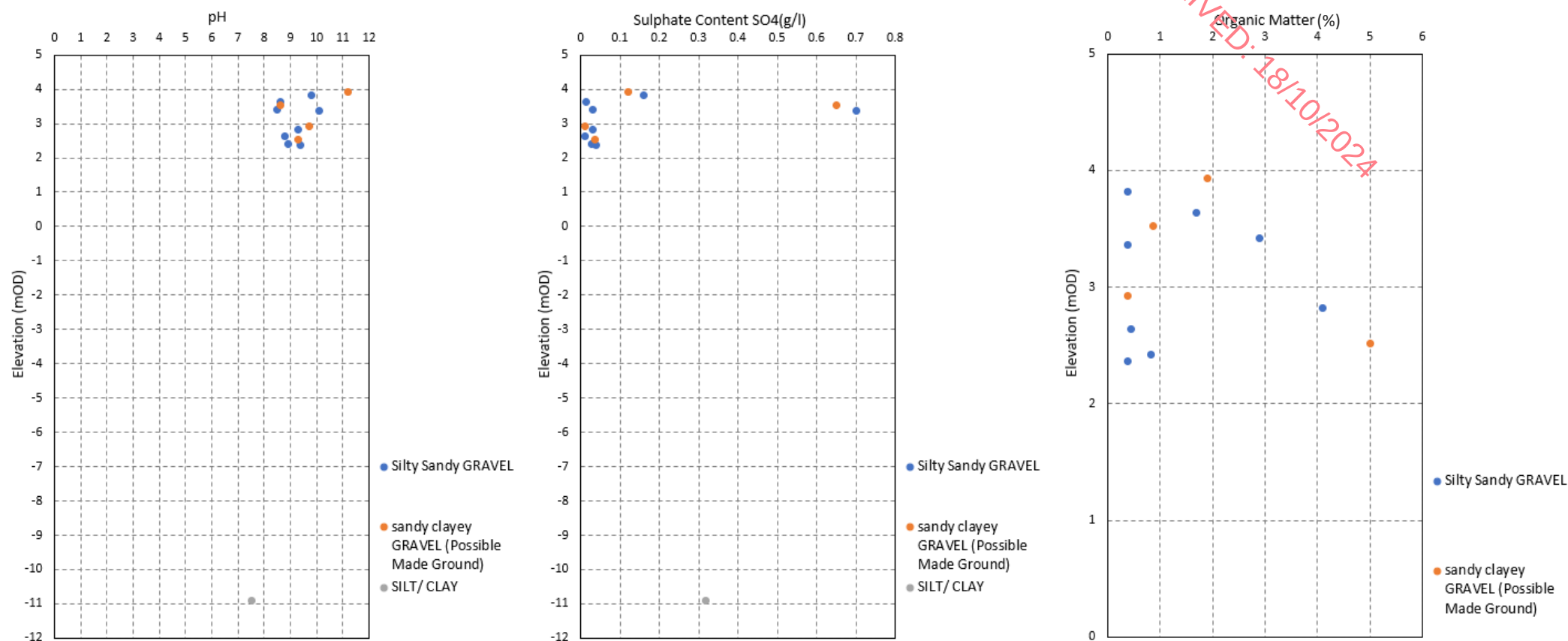


Figure 6-14 Geochemistry test (PH, Water Soluble Sulphate and Organic matter) results vs elevation

6.5 SUMMARY OF GEOTECHNICAL SOIL PARAMETERS OF THE LAND DEVELOPMENT AREA

The following summarises the parameters as identified by a review of the available in-situ and laboratory testing for the strata anticipated. The characteristic value for the geotechnical parameters has been selected as a cautious estimate of the value affecting the occurrence of the limit state. Typically, an average value has been selected for representative parameters. Sensitivity analysis would be proposed to be undertaken to allow for an understanding of the most critical parameters for the design.

Table 6-11 Proposed Characteristic Parameters for the Land Development Area

Classification	Parameters	Made Ground	Overburden Silty Sandy GRAVEL	Sandy SILT/CLAY	Bedrock Limestone
Soil Classification	wN (%)	-	-	21-37	-
	wL (%)	-	-	36	-
	wP (%)	-	-	Non-plastic	-
	Plasticity Index (%)	-	-	Non-plastic	-
	Liquidity Index	-	-	-	-
	γ (kN/m ³)	17	17	19	26.0
	Youngs Modulus E' (MPa)	36	29	19	5000*
Soil Strength	Effective Peak Friction Angle ϕ' (°)	35	32 (min) 37(average)	28	-
	Effective Cohesion c' (kN/m ²)	0	0	1	-
	c _u (kPa)	-	-	40	-
	Poisson's Ratio, ν	0.30	0.30	0.30	-
	Corrected, SPT-N60	42	27	41	-
Rock Strength	Unconfined compressive strength (MPa)	-	-	-	94-103
	Point Load, Is(50) (MPa)	-	-	-	5

*The value stated represents Young's Modulus for intact rock, values will be varied within the design to characterise the weathered and fractured nature of the rock with relevance to the design.

7 GEO-ENVIRONMENTAL CONSIDERATIONS

A total of 24 soil samples were sent for analysis of the contaminants presented and screened in Appendix C. The analytical results are presented in the IGSL April 2024 Factual Report, Appendix 4.

The reader should be aware of the following inconsistencies in the IGSL April 2024 Factual Report, a summary of which is provided below along with the assumptions we have made as part of this assessment:

- We assume the window sample records WSBH01 to WSBH06 correspond respectively to IGSL sample ref: BH1 to BH6 in the 24-07596-2 i.e. WSBH01 = BH1, WSBH02 = BH2, etc.
- The WSBH06 window sample log notes a termination depth of 1.5 m bgl, however, Eurofins Chemtest laboratory report 24-07596-2 dated 9th April 2024 notes several samples in the 1.0-2.0m bgl depth range for BH6. For this assessment, we have conservatively assumed the depth range noted in the 24-07596-2 report for BH6 to be incorrect correct i.e. we assume WSBH06 extended only to 1.5m bgl.
- The sample dates noted in the window sample records differ from those noted in the 24-07596-2 report. For this assessment, we have assumed the dates quoted in the 24-07596-2 report to be correct.

Given the preliminary nature of this assessment this time this approach is deemed reasonable.

7.1 RISK TO CONSTRUCTION WORKERS

In the absence of a preliminary risk assessment or phase 1 desk study and conceptual site model, the following assessment is qualitative, in that professional value judgments have been applied to the available data to assess levels of risk and to highlight any contaminants of concern with regard the contractor's health and safety procedures. This is not a contaminated land assessment; if regulatory approval for Planning, or full assessment for due diligence purposes is required, a desk study and full interpretative report following relevant guidance, including human health and water environment risk assessment, is likely to be necessary.

To determine the potential risk to construction worker health, soil data has been screened against Tier 1 Generic Assessment Criteria for a Commercial End-use Scenario. The 1% Soil Organic Matter (SOM) screening values have been used as constitute the most conservative criteria. The screening criteria used in this assessment comprised commercial Suitable for Use Values (S4ULs) derived by LQM and Category 4 Screening Levels (C4SLs, used to assess whether contaminants are at concentrations that potentially represent Contaminated Land) derived by CL: AIRE, where there is no relevant S4UL. It is noted that the C4SLs are based on the acceptance of a low level of toxicological concern, rather than the more conservative standard adopted in the derivation of S4ULs, which are based on a tolerable or minimal level of risk, although they are considered to be an acceptable screening value in the absence of an S4UL. The screened chemical analysis results, including the relevant screening criteria are given in Appendix C.

In the 24 samples analysed, there was only one exceedance of the commercial screening values identified with asbestos (chrysotile) being noted in BH04 at 1.0m. The asbestos has not been quantified therefore the exposure risk cannot be determined, as such there is a potential risk to human health at this location, and the construction methodology should be tailored by a competent contractor to mitigate the risk to construction workers from airborne asbestos fibres.

The testing of the soils derived from the investigation at the remaining locations indicates that there is a low risk to human health in the context of adequately managed construction works.

It should be noted that chemical testing was undertaken on samples at varying depths ranging from 0.0m to 2.0m across the 24 borehole locations. The Cable Percussion Borehole Logs presented in Appendix 1 of the IGSL April 2024 Factual Report note a Strong hydrocarbon odour with oily residue noted on gravels in BH01 at 4.10 - 5.0m, no testing is available, and a source or the lateral extents of the hydrocarbon contamination has not been identified. If any evidence of contamination is identified during construction (e.g., hydrocarbon-impacted soils, asbestos, etc.), then work in such areas should be halted until a suitably qualified professional has been consulted to assess the situation and provide advice.

7.2 SOILS DISPOSAL

Before any material is disposed of off-site, specific waste classification testing and subsequent waste acceptance criteria (WAC) testing should be undertaken. Disposal of such waste must be undertaken following all relevant current waste legislation and duty of care regulations. This waste assessment is based upon our review of the available data to provide a preliminary waste classification to inform future earthworks.

The 24 samples referenced above have undergone a waste classification, to be used as an indication only of the likely disposal route for the shallow soils at the site:

- One sample was classified as Hazardous BH04 at 1.0m, due to asbestos being identified but no quantification being provided. Therefore, the List of Wastes (LoW) code would be 17 05 03* - 'Soil and stones containing hazardous substances'
- The remaining 23 samples were assessed to be Non-Hazardous. Therefore, the LoW code would be 17 05 04 - 'soil and stones other than those mentioned in 17 05 03'

As noted above BH04 at 1.0m sample has been forced to hazardous due to the presence of asbestos. No quantification of asbestos is available at present therefore value of 10,001mg/kg is utilised. Quantification of asbestos in the soils will enable more accurate classification.

Additionally, although no indication of hydrocarbon was observed at the depths from which the samples were analysed and input into the assessment, evidence of hydrocarbon was observed at 4.1m-5.0m in BH01: *Strong hydrocarbon odour with oily residue noted on gravels*. Testing of these impacted soils will be required before disposal to enable more accurate waste classification.

The results of the waste classification are presented in Appendix C, the reader should note that the waste classification is preliminary and should not be read as a standalone document.

7.2.1 WAC TESTING

Waste Acceptance Criteria (WAC) testing was completed on 12 samples obtained on the 7th of March 2024. The results have been compared to the criteria presented in the European Commission Council Decision 2003/33/EC. These criteria are only applicable to material if it is to be disposed of at a landfill facility. The council decision provides criteria for inert, non-hazardous, stable non-reactive hazardous (SNRH) and hazardous waste. It should be noted that each member state and the licensed operator of the landfill may apply more a more stringent WAC criteria, therefore, analysis should be provided to the receiving facility to confirm suitability.

7.2.1.1 STAGE 1 – WASTE CLASSIFICATION

The waste code for the 12 samples obtained on the 7th of March 2024, has been assessed to be Non-Hazardous. Therefore, the LoW code would be 17 05 04 - 'soil and stones other than those mentioned in 17 05 03'. WAC limits and the associated laboratory analysis are not suitable for use in

the determination of whether a waste is hazardous or non-hazardous, the waste classification is addressed in Section 7.2.

Note, that one sample from testing taken during an earlier phase of sampling was classified as Hazardous BH04 at 1.0 m, it is assumed that this material will be segregated and managed separately as it did not form part of the WAC assessment.

7.2.1.2 STAGE 2 - SCREENING

A summary of the results is presented in Table 7-1 and screening is presented in Appendix C. The analytical results are presented in the IGSL 2024 Factual Report, Appendix 4.

Table 7-1 WAC Testing Summary

Location	Depth (m bgl)	Stratum Description	Waste Classification	WAC Results			Exceedance	Landfill Class
				Inert	Non-Hazardous	Hazardous		
WSBH01	0.0-1.0	Made Ground	Non-Hazardous	Fail	Pass	N/A	Mineral oil	B
WSBH01	1.0-2.0	Silty/ Clayey Sandy GRAVEL	Non-Hazardous	Pass	Pass	N/A	-	A
WSBH02	0.0-1.0	Made Ground	Non-Hazardous	Fail	Pass	N/A	TOC Mineral oil	B
WSBH02	1.0-2.0	Silty/ Clayey Sandy GRAVEL	Non-Hazardous	Fail	Pass	N/A	TOC Mineral oil	B
WSBH03	0.0-1.0	Made Ground	Non-Hazardous	Pass	Pass	N/A	-	A
WSBH03	1.0-2.0	Made Ground	Non-Hazardous	Pass	Pass	N/A	-	A
WSBH04	0.0-1.0	Made Ground	Non-Hazardous	Pass	Pass	N/A	-	A
WSBH04	1.0-2.0	Made Ground	Non-Hazardous	Pass	Pass	N/A	-	A
WSBH05	0.0-1.0	Made Ground	Non-Hazardous	Pass	Pass	N/A	-	A
WSBH05	1.0-2.0	Made Ground	Non-Hazardous	Fail	Pass	N/A	Sulphate	B
WSBH06	0.0-1.0	Made Ground	Non-Hazardous	Fail	Pass	N/A	TOC	B
WSBH06	1.0-1.5	Made Ground	Non-Hazardous	Fail	Pass	N/A	TOC	B

In summary the results present:

- The 12 samples tested were classified as Non-Hazardous – see section 7.2.1.1.
- Six of the 12 samples tested exceeded the inert WAC criteria presented in European Commission Council Decision 2003/33/EC, the others were deemed inert. It should be noted that each member state and the licensed operator of each landfill facility may apply a varied WAC in line with their permit, therefore, the data obtained should be used to confirm acceptance directly with the proposed licensed disposal facility.
 - Materials sampled at the following locations satisfy the inert WAC criteria and would be suitable for disposal at a landfill for inert waste (Class A), subject to confirmation with the operator:
 - WS-BH1: 1.0-2.0 m bgl*
 - WS-BH3: 0.0-1.0 m bgl

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- WS-BH3: 1.0-2.0 m bgl
- WS-BH4: 0.0-1.0 m bgl
- WS-BH4: 1.0-2.0 m bgl
- WS-BH5: 0.0-1.0 m bgl*

*The contractor will have to implement a segregation strategy in these areas as the upper strata in the case of WS-BH1: 0.0-1.0 m bgl and lower strata WS-BH5: 1.0-2.0 m bgl have been deemed unsuitable for inert disposal. The distribution of the samples is presented in Figure 7-1, the green circles highlight the positioning of WS-BH3 & WS-BH4 which satisfy the inert WAC criteria. The red circles denote the positioning of the remaining samples.

- Materials sampled at the following locations do not pass the inert WAC criteria, however, they have been classed as non-hazardous (see section 7.2.1.1) and would be suitable for disposal at a landfill for non-hazardous waste landfill facility (Class B), subject to confirmation with the operator:
 - WS-BH1: 0.0-1.0 m bgl
 - WS-BH2: 0.0-1.0 m bgl
 - WS-BH2: 1.0-2.0 m bgl
 - WS-BH5: 1.0-2.0 m bgl
 - WS-BH6: 0.0-1.0 m bgl
 - WS-BH6: 1.0-1.5 m bgl



Figure 7-1 Sample distribution

7.2.1.3 SUMMARY

As and when works to construct this project are progressed, re-use or recycling of these materials within the works or elsewhere should be considered as the preferred option.

However, should this not be feasible, and landfill be necessary, arisings should be segregated into distinct material types for disposal. Waste materials/classifications should be confirmed by the receiving landfill before any disposal.

The findings indicate that with segregation and further confirmatory testing, materials may be suitable for disposal at an inert (Class A) and non-hazardous (Class B) receiving facility. Where materials are destined for disposal off-site it should be managed and undertaken by a competent contractor according to best practice and disposed of accordingly by a licensed waste disposal contractor.

7.2.2 EXPORT FOR REUSE

Surplus subsoil may be suitable for export for reuse off-site where a suitable reuse site can be identified. Soil reuse will be subject to the requirements under the Waste Management Act (e.g. Article 27 or 28).

7.3 IMPORTED MATERIALS

It is recommended that any imported material required for construction purposes is subject to chemical analysis and assessed against relevant screening values to demonstrate its suitability for use concerning human health and the environment.

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8 GEOTECHNICAL ASSESSMENT-MARINE DEVELOPMENT AREA

8.1 OVERVIEW

The geotechnical parameters of the overburden and rock geology units are derived from the marine-based boreholes as outlined in section 4.3.

There was very limited in-situ test data and lab tests were carried out on marine boreholes. Therefore, to understand the soil properties of the overburden strata, the nearest land-based borehole lab test results are used to derive the geotechnical parameters. The boreholes we selected are- BH13(1999), BHBL202, BHBL202A and BHBL202B.

8.2 IN-SITU TESTS

8.2.1 STANDARD PENETRATION TESTING

21 No. in-situ standard penetration tests (SPT) were carried out, undertaken in cable percussive boreholes completed in 1998 and 2019 SI. The summary of the uncorrected SPT N values recorded for soil strata is presented in Table 8-1.

Table 8-1 Summary of SPT test results

Strata	N SPT	
	Description	Value
Silty sandy GRAVEL	Count	17
	Min	10
	Average	22
	Max	50
Silty CLAY	Count	4
	Min	9
	Average	12
	Max	14

A plot of the uncorrected SPT N profile is shown in Figure 8-1. As seen on the plot silty sandy GRAVEL strata between -3.00mOD and -8.00mOD the SPT N values range between 10 and 18 this is most likely due to the higher silt content on the strata whereas below that the material description changes to more sandy GRAVEL. Similarly, the silty sandy Gravel stratum toward the top above - 2.00mOD based on the borehole description, is less silty with sandy GRAVEL or gravelly SAND material composition.

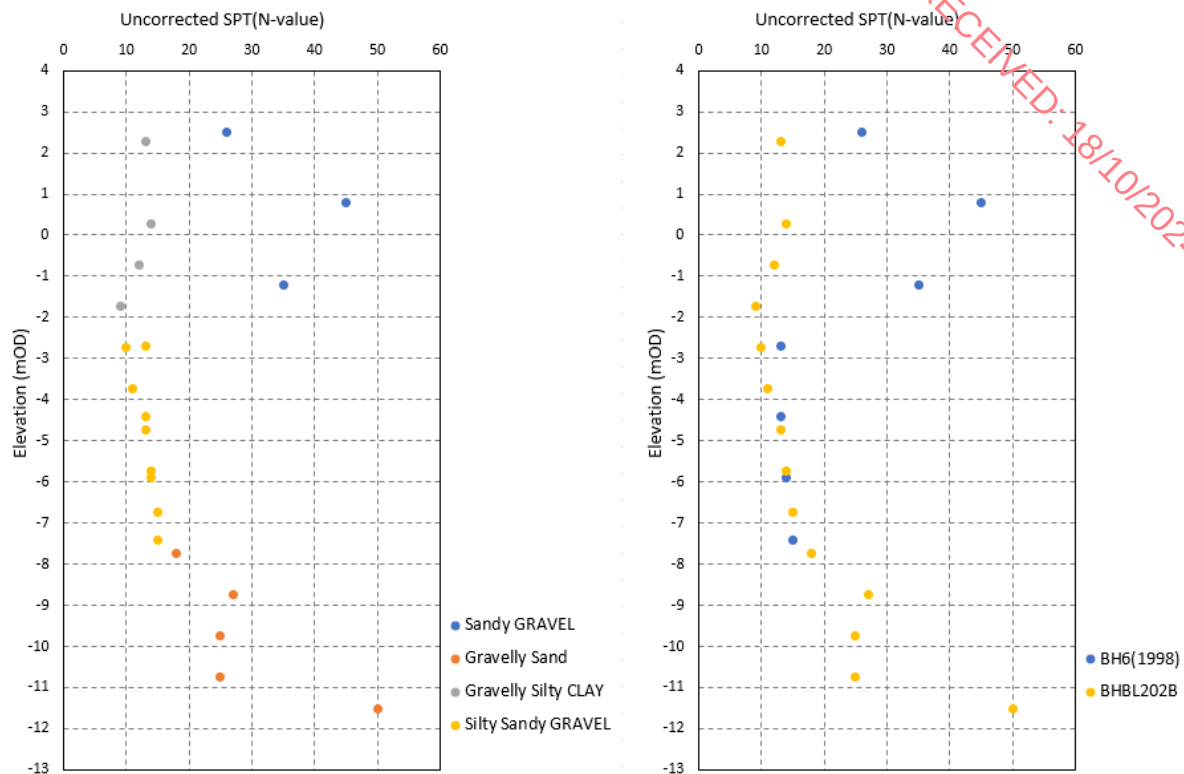


Figure 8-1 SPT N Values vs Elevation based on soil types and boreholes

8.3 GEOTECHNICAL LABORATORY TESTS

8.3.1 SUMMARY

The following geotechnical tests were undertaken:

- 4 No. Atterberg Limit
- 4 No. Water Content
- 4 No. Particle Size Distribution (Sieve Analysis)
- 3 No. Bulk Density
- 2 No. Undrained Shear Strength in Triaxial Compression (no pore pressure measurement)
- 1 No. pH Soluble and Sulphate content
- 4No. Uniaxial Compressive strength (rock)
- 14No. Point Load Strength testing (rock)

8.3.2 BULK DENSITY

The unit weight (γ) of strata has been assessed primarily from the measurements of bulk density, on soil samples in the geotechnical laboratory. The bulk densities measured during the geotechnical laboratory tests were converted to unit weights, and the density values were multiplied by the acceleration due to gravity, taken as 9.81 m/s^2 . Following the conversion, the ranges of bulk unit weights of the laboratory soil samples are detailed in Table 8-2.

Table 8-2 Summary of Bulk Unit Weight(kN/m³)

Soil type	Bulk Density (Mg/m ³)	Bulk Unit Weight (kN/m ³)
Silty sandy GRAVEL	1.61*	16
SILT/CLAY	2.0	20
Bedrock-Limestone	2.69*	26

* Limited bulk density testing was carried out on SILT/CLAY samples retrieved from marine boreholes. Therefore, characteristic design values were based on testing data from the land boreholes, as discussed in Section 6.4.3 (Table 6-4).

8.3.3 PARTICLE SIZE DISTRIBUTION (PSD)

Particle Size Distribution (by sieve) testing was undertaken on 4 no. samples, taken on the overburden samples at various depths from BH6(1998). Testing was carried out only on the BH6(1998) samples within our study area.

The results are presented in Figure 8-2. Based on the PSD data for materials identified as predominantly sandy GRAVEL as described in borehole log were described as silty sandy GRAVEL, where the presence of silt was restricted to identify with the sieve analysis method of testing.

Due to the limited PSD result in the study area additionally, 7 no. of samples from the nearest land boreholes (BHBL202A and BHBL202B) were incorporated to understand the stratum variations. PSD test data - by sieving and sedimentation test results analysed are presented in Figure 8-3. Preparation and testing of these samples were carried out under BS1377-2:1990.

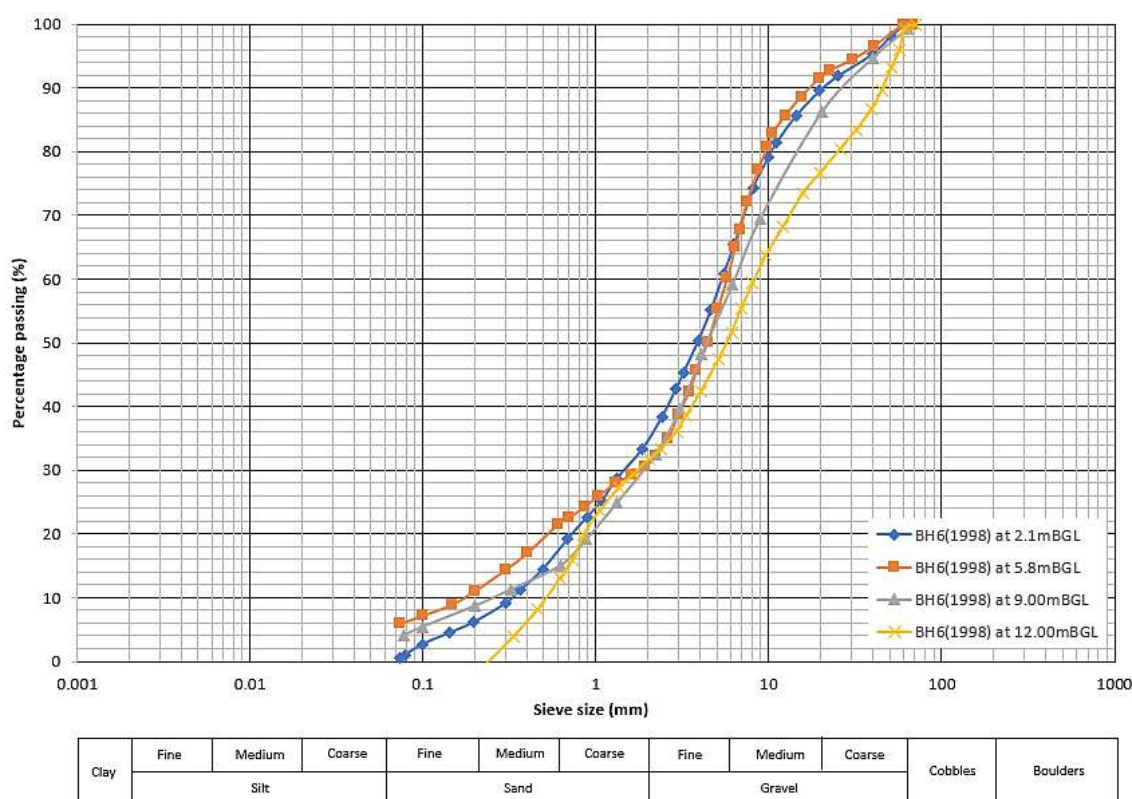


Figure 8-2 Particle Distribution Plot (BH6-1998)

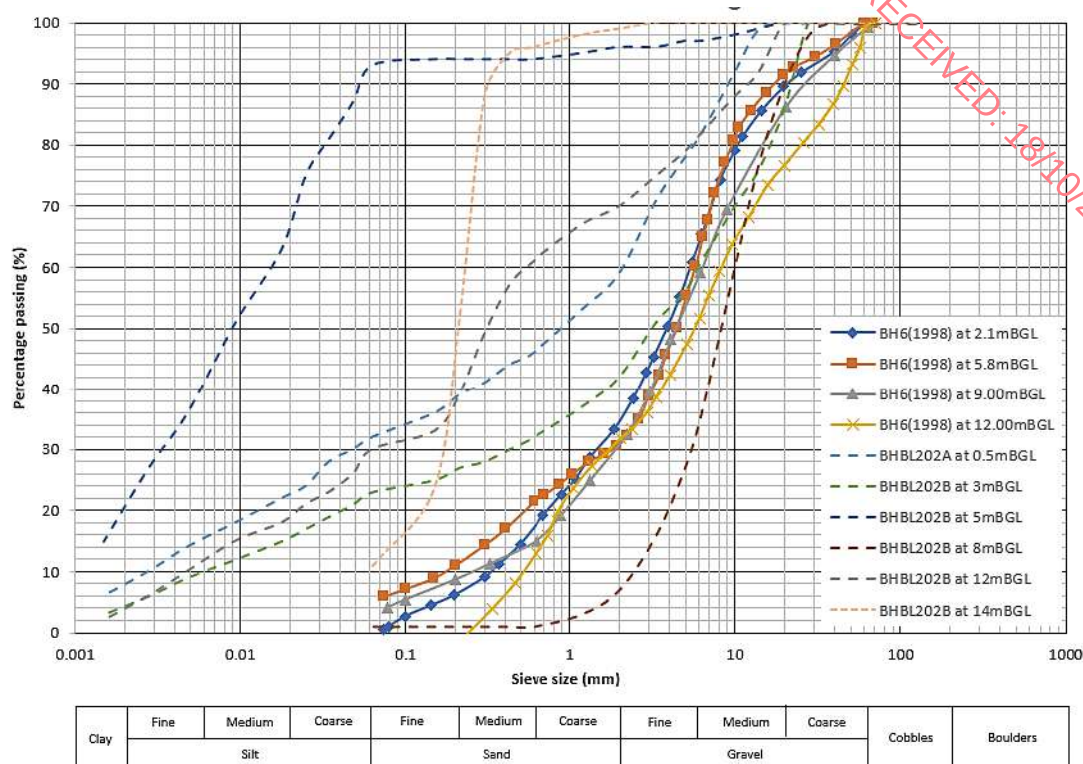


Figure 8-3 Particle Distribution Plot (All Materials)

8.3.4 INDEX TESTS

The Atterberg limit tests {Water Content (w_N), Liquid Limit (w_L) and Plastic Limit (w_P)} lab were carried out on 4No. cohesive soil samples recovered from 2No. boreholes at various depths taken from the nearest land boreholes to the study site. The index tests are plotted against elevation in Figure 8-4 and summarised in Table 8-3. Only one water content measurement was recorded on the sample retrieved from BH6(1998) at 13.3mBGL. The index tests undertaken on cohesive plasticity show low plasticity silty CLAY, which is presented in Figure 8-5.

Table 8-3 Index test Summary Table

Stratum	LL (%)			PL (%)			PI (%)			Water Content (%)
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	
Sandy SILT/CLAY	34	36	42	17	18	20	14	18	25	17

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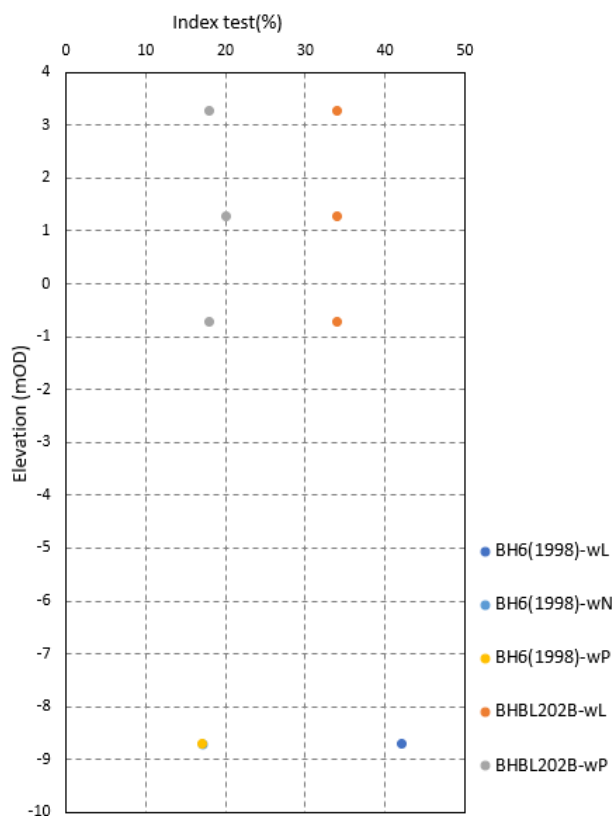


Figure 8-4 Index test results vs Elevation

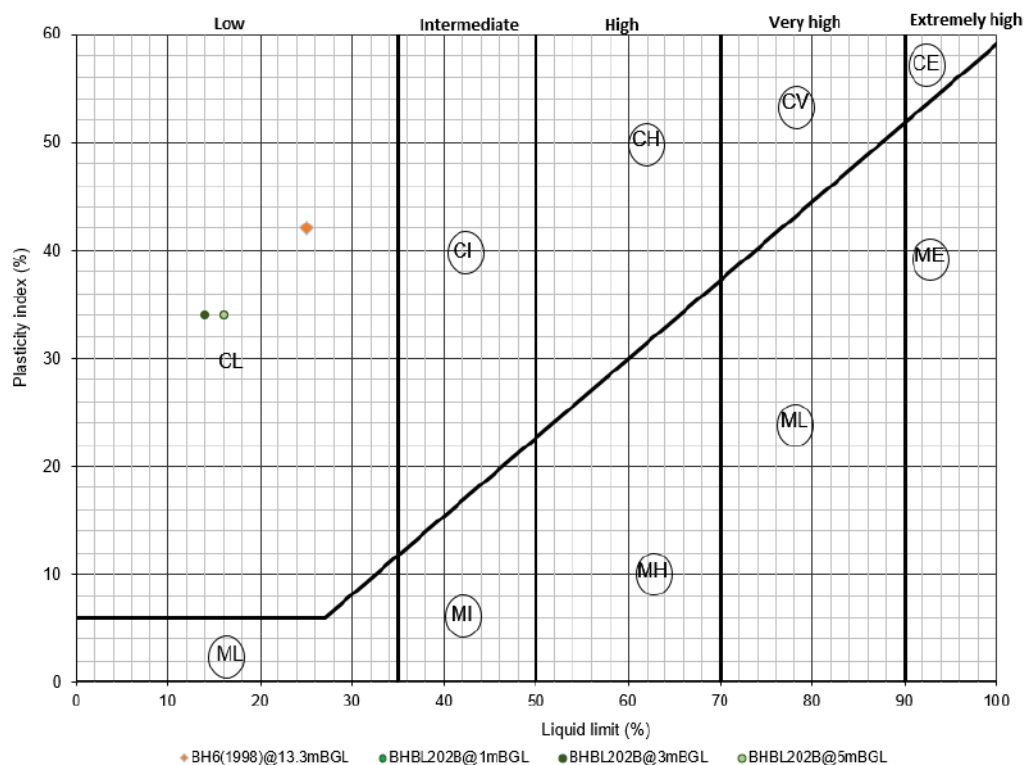


Figure 8-5 Casagrande Plasticity Chart

8.3.5 ANGLE OF FRICTION AND COHESION

Triaxial tests and Direct Shear

Consolidated undrained triaxial compression tests were carried out on 2No. undisturbed samples taken from BH6(1998). 1 nr of consolidated drained shear box test carried out on a sample taken from the nearest land borehole BHBL202B from the 2019 GI campaign. These tests were carried out on the SILT/CLAY stratum and presented in Table 8-4.

Table 8-4 Triaxial test results

Location	Test Type	Depth (mBGL)	Elevation (mOD)	Cohesion (c') (kPa)	Shear resistance angle (degrees)	Description from BH logs
BH6(1998)	Triaxial	13.3	-8.7	5.7	87	Gravelly Silty Clay
BH6(1998)	Triaxial	15	-10.4	5.1	117	Gravelly Silty Clay
BHBL202B	Shear Box	3	1.27	6	29	Gravelly Silty Clay

For design purposes, we recommend a characteristic design value of 1kPa for the SILT/CLAY strata across the site.

Effective Friction Angle from SPT

The effective friction angle (ϕ') for the silty sandy Gravel has been determined using the SPT correlation proposed by Peck et al (1974) which is presented in Figure 8-6. The average SPT taken for each stratum is discussed in section 8.2.1 and Table 8-1. Based on Figure 8-6, silty sandy Gravel strata got an effective angle of shearing resistance of 34 degrees.

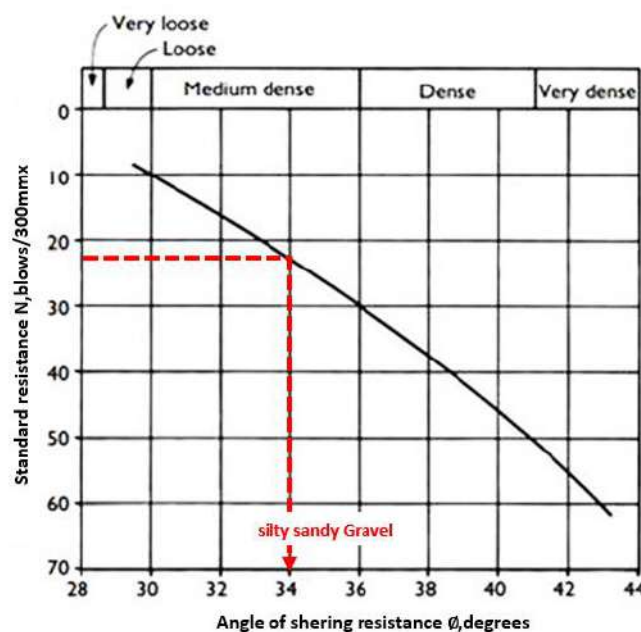


Figure 8-6 Average SPT vs angle of shearing resistance for granular deposits (Peck et al., (1974))

8.3.6 UNDRAINED SHEAR STRENGTH

The undrained shear strength (c_u) of cohesive materials can be evaluated from the N values using the correlation proposed by Stroud (1989), which is shown in Figure 8-7. The undrained shear strength values are summarised in Table 8-5. The N values are taken from the characteristic strength determined in Table 8-1 and the Plasticity Index is taken from the average determined in Table 8-3.

The undrained shear strength, c_u of the SILT/CLAY varies from 40kPa to 67kPa. Therefore, a conservative design c_u value for the SILT/CLAY strata for the site is taken as 40 kPa and as such will be treated with very caution.

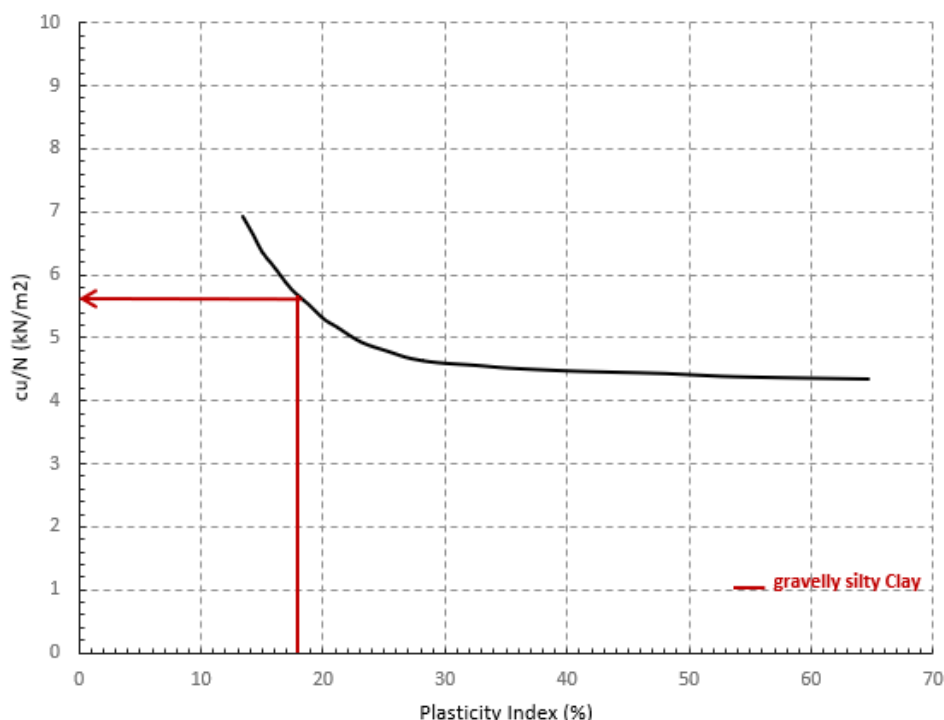


Figure 8-7 Correlation between Plasticity Index values and $f_1 c_u/N$ (Stroud, 1989)

Table 8-5 Summary of undrained shear strength values derived from N and I_p

Stratum	SPT N value	Plasticity index, I_p (%)	c_u/N (kN/m²)	Undrained shear strength, c_u (kPa)
Gravelly silty Clay	12(average)	18	5.6	67.2
	9(lowest)	-	4.5	40.5
	14(highest)	-	4.5	63

8.3.7 SOIL CHEMISTRY

Table 8-6 summarises the geochemical testing results for silty Clay material pH and 2:1 sulphate content.

Table 8-6 Geochemical test results summary

Location	Depth (m BGL)	Elevation (m OD)	Stratum	pH	Sulphate Content SO ₄ (g/l)
BH6(1998)	13.3	-8.7	gravelly silty Clay	7.5	0.284

8.3.8 ROCK QUALITY & STRENGTH

Limestone was found underlying the site in borehole logs that encountered the bedrock. Within the study area, only a rock head was encountered in P7 at 4.4mBGL, which is around -8.5mOD (-11.55mCD).

To understand the strength of the rock we have analysed the UCS and point load lab test data available for the nearest borehole around the study area, which is BH13(1999). A summary of the lab results is provided in Table 8-7, suggesting a strong to very strong Limestone underneath the site.

Table 8-7 UCS and Point Load Data Summary

Stratum	UCS (MPa)			Point Load (MPa)			Fracture Index (%)		
	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max
Limestone	59	67.2	74.3	3.8	5	4.2	2	8.6	14

8.4 BETHNIC SURVEY

Bethnic Survey was carried out on 16th August 2023 around the Greenore harbour and marine site development area. The survey location map is presented in Figure 8-8 with a grab sample description based on the Folk 1954 classification.

Particle Size Analysis carried out on each location is presented in Figure 8-9. Based on the results, the upper 4m is primarily comprised of slightly silty gravelly SAND. Between 5mbgl to 10mbgl gravelly sandy Silt.

Organic Carbon content on these samples was also carried out and presented in Figure 8-10. Between 5bl to 10mbgl, the organic carbon content is higher than 7% whereas the silt content of the soil composition is higher.

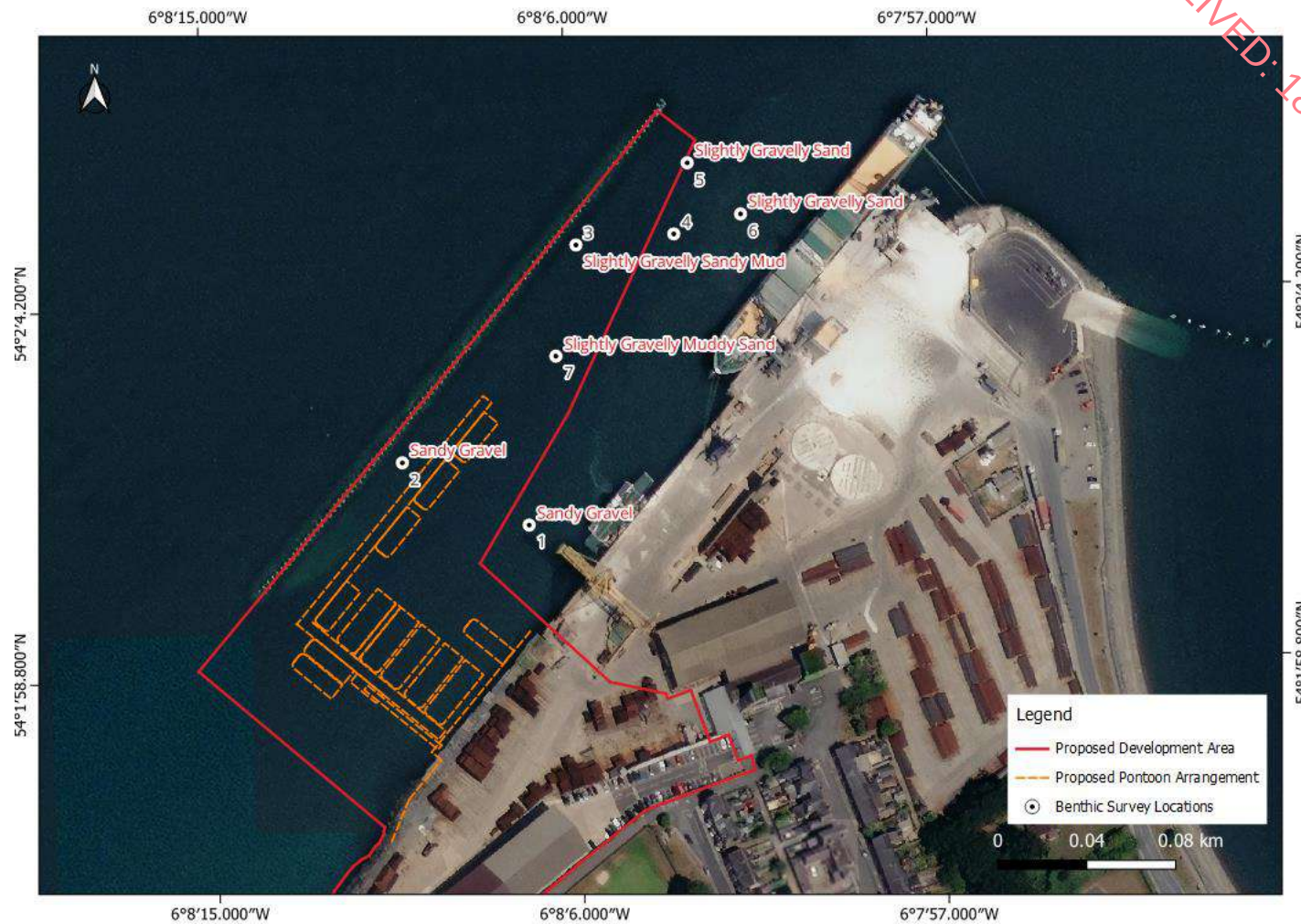


Figure 8-8 Bethnic Survey location map with Folk classification material description

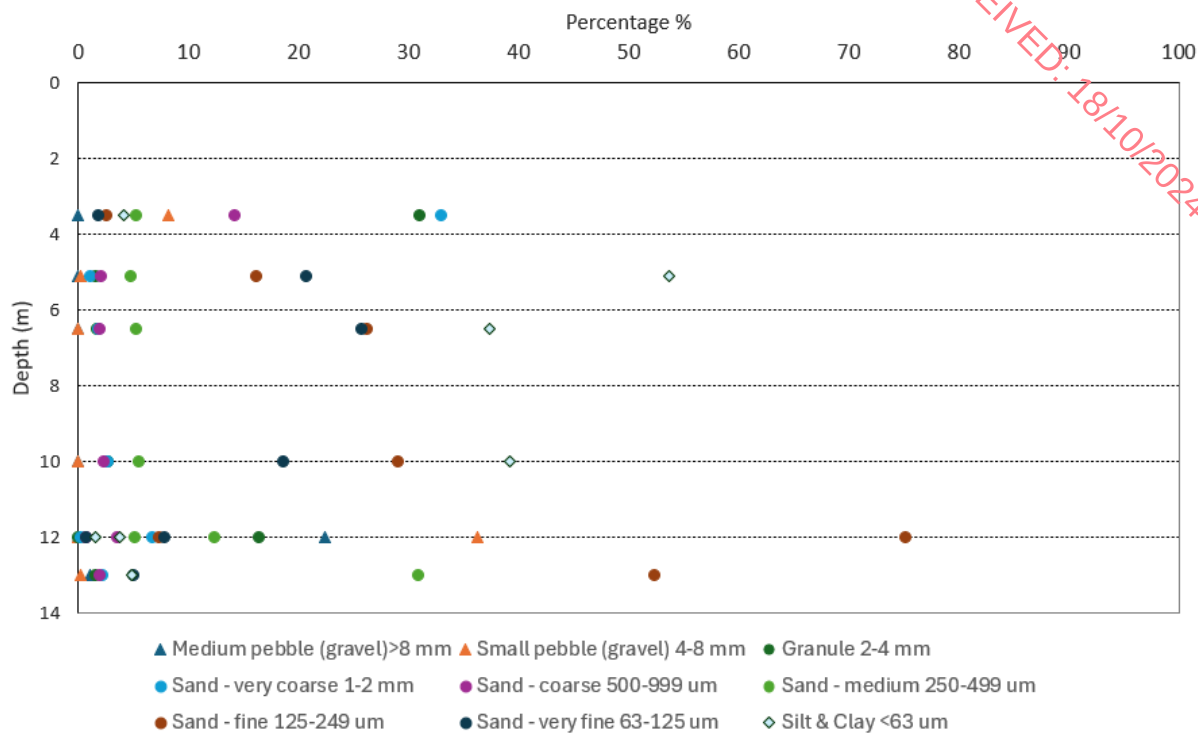


Figure 8-9 Particle Size Analysis vs Depth

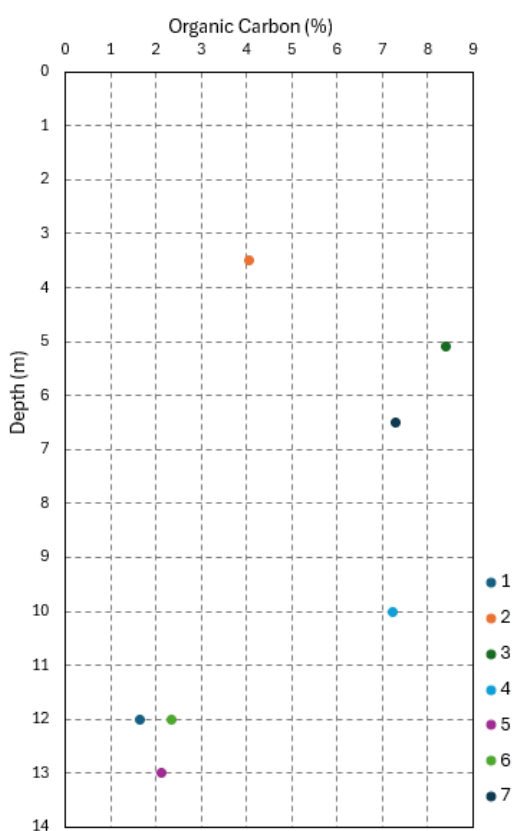


Figure 8-10 Organic Carbon Content vs Depth

8.5 SUMMARY OF GEOTECHNICAL SOIL PARAMETERS

The characteristic design values selected for representative parameters are summarised in Table 8-8. Sensitivity analysis would be proposed to be undertaken to allow for an understanding of the most critical parameters for the design.

Table 8-8 Proposed Characteristic Parameters for the Marine Development Area

Classification	Parameters	Overburden		Bedrock
Geological unit		Silty Sandy GRAVEL	Sandy SILT/CLAY	Limestone
Soil Classification	wN (%)	-	17	-
	wL (%)	-	34-42	-
	wP (%)	-	17-20	-
	Plasticity Index (%)	-	14-25	-
	Liquidity Index	-	-	-
Soil Strength	γ (kN/m ³)	17 [#]	19 [#]	26.0 [#]
	#Youngs Modulus E' (MPa)	29 [#]	19 [#]	5000*
	Effective Peak Friction Angle ϕ' (°)	34	29	-
	Effective Cohesion c' (kN/m ²)	0 [#]	1 [#]	-
	c _u (kPa)	-	40-67	-
	Poisson's Ratio, ν	0.30	0.30	-
	Unconfined compressive strength (MPa)	-	-	67
Rock Strength	Point Load, Is50(MPa)	-	-	5

*The value stated represents Young's Modulus for intact rock, values will be varied within the design to characterise the weathered and fractured nature of the rock with relevance to the design.

[#] same parameters used from section 6.5.

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9 GEOPHYSICAL SURVEY

A geophysical survey consisting of a sub-bottom profiling survey was carried out on the Greenore harbour area including the pontoon development area by Hydrographic Surveys Ltd (HSL) in March-April 2017. However, this survey does not provide the full coverage of the proposed marine development area.

The survey provides information regarding the ground condition including the bedrock depth, bathymetry and overburden thickness across the site. Survey lines were run every 5m parallel to the quay wall to cover the entire survey area. Detailed information regarding the survey and the outcome can be accessed from: *PH17012_Report_Rev_00_Greenore Port Geophysical Survey Report, Hydrographic Survey Ltd, 09.06.2017.*

The following drawings are extracted from the HSL report and provided in Appendix A to do a comparison assessment with the GI information on the marine site.

- PH17012_D02 Bathymetry Results OD Malin 1:500 @ A1
- PH17012_D03 Bathymetry Results Chart Datum 1:500 @ A1 (*the Chart Datum / OD Belfast (Malin) difference has been taken as 3.13m from 2017 Admiralty Tide Tables NP201B Volume1B for Cranfield Point*)
- PH17012_D04 Bedrock Level Results OD Malin 1:500 @ A1

9.1.1 PH17012_D05 DEPTH TO BEDROCK RESULTS 1:500 @ A1 BATHYMETRY RESULTS

Bathymetry data from the 2017 survey shows the proposed pontoon and CTV berthing area the water depth ranges approximately from -3.4 close to the quay wall to 0.3 around the breakwater. A recent bathymetry survey carried out by Six West is also presented in Appendix A and discussed in section 2.4 of this report.

Both bathymetry survey data suggest majority of the proposed CTV berthing area, the water depth is less than -2mCD, however, this depth varies depending on the season and tide levels.

9.1.2 BEDROCK LEVELS AND DEPTH TO BEDROCK

The sub-bottom profiling methodology did successfully map a single reflector consistent with bedrock across the majority of the survey area. Thick gravel sediment in some areas of the survey area prevented penetration and subsequent reflection of the sub-bottom signal from any reflector below. This was the case in the southwest extreme and north-western edge of the survey area where the sea bed rises quickly from c. 7m to 2mOD (Malin). Based on the HSL drawings (PH17012_D04 and PH17012_D05) provided in Appendix A, a comparison assessment is carried out on the bedrock levels and depth to bedrock from the available GI on the site. This is summarised in Table 9-1.

- Bedrock levels from the survey and GI1998 show the same levels in P7 and P6. Variations in levels in other BHs are probably an issue with the interpretation of the geophysical data.
- In The bedrock depth data comparison, the majority of the rock heads weren't encountered during the 1998-GI this discrepancy in eh data most probably is influenced by overburden thickness and the time frame between the GI and the 2017 survey.

Table 9-1 Bedrock levels and depth assessment

Borehole ID	Geophysical Survey - Bedrock Level (mOD)	GI 1998 borehole Level (mOD)	Geophysical Survey -Bedrock Depth(m bgl)	GI 1998 Bedrock Depth (m bgl)	GI 1998 borehole Final Depth (m bgl)
P10	-11.8	-9.2	7.8	-	6
P9	-9.9	-10.9	4.7	-	6
P7	-8.5	-8.5	2.5	2.5	4.7
P6	-9.2	-9.1	0.2	0.9	1.7
P4	-8.5	-10.1	0.9-1	-	6

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10 CONCLUSIONS AND RECOMMENDATIONS

This report presents the findings of an intrusive Ground Investigation of proposed marine and land development at Greenore Port. An assessment has been made primarily by using soil descriptions and the relationships between engineering parameters, the results of the in-situ SPT testing carried out on-site and lab testing of the samples from the onsite boreholes. A summary of parameters is outlined in section 6.5 and section 8.5.

This interpretation has used all available intrusive investigations, bathymetric surveys, geophysical surveys and information available from GSI (Geological Survey Ireland). The interpretation has provided a ground model for the proposed site, in addition to characteristic parameters.

For the land development site, the IGSL 2023 GI provided full coverage to the site and the geotechnical parameters are defined based on IGSL 2023 lab tests. All the boreholes from 2023 and 1998 on site have encountered bedrock which aids in understanding the detailed geology of the site.

The parameters for the marine development area are defined based on a limited number of laboratory and in-situ tests. Additional site investigation information may serve to potentially benefit the design and construction of marine infrastructure on the site. It should be noted, however, that in terms of proposed dredging works, information coverage has been achieved below the proposed dredge level of -4m CD. Proposed pontoon piling may be deemed to require additional site investigation at the construction stage by a successful contractor, or perhaps other measures may be taken, such as providing allowance in terms of pile length, pile diameter, and also by the proposed installation methodology by the works contractor.

The Geo-Environmental assessment notes the absence of a preliminary risk assessment, along with an interpretative report, which is recommended for regulatory approval, planning, and due diligence purposes if required. Potential hazards have been identified in the form of asbestos at BH04, 1.0m and hydrocarbon contamination in BH01, 4.10 - 5.0m. These would require consideration as part of the contractor's working methodology and consideration as part of any human health, water environment risk assessment or disposal.

The construction project should prioritise re-use or recycling of materials. If landfilling of waste is unavoidable, materials should be segregated by type and sample strategy confirmed with the receiving landfill. Preliminary testing suggests segregated materials, with further testing, may be suitable for disposal at inert or non-hazardous landfills depending on the permit requirements of the receiving facility.

Imported construction materials should undergo chemical analysis and screening to ensure suitability for use concerning both human health and environmental impact.

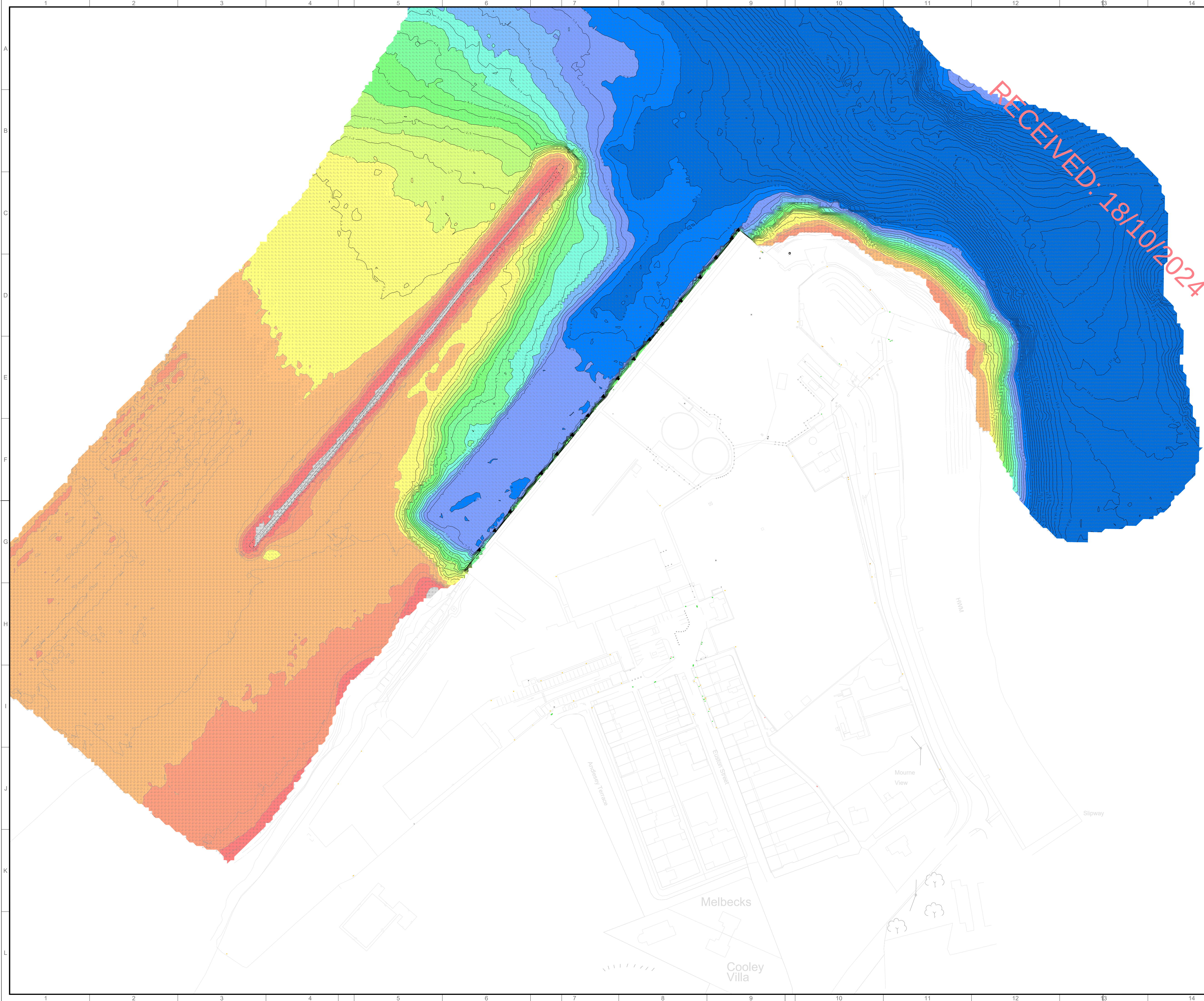
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APPENDIX A: SURVEY DETAILS

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Notes:

Elevations in metres to Chart Datum
ITM Grid
2m Sounding Grid - Shoal Dataset

Chart Datum Greenore = 3.05 metres below Ordnance Datum

Height ranges:

3	
2	
1	
0	
-1	
-2	
-3	
-4	
-5	
-6	
-7	
-8	
-9	

Reference:

MG230307_Bathymetric Survey - SixWest (07/03/2023)

Client:



I01		03/08/23		For information		CW	JMc
Rev:	Date:	Description:				Drw:	Chk:



McCarthy Browne
CIVIL & MARINE CONSULTANTS

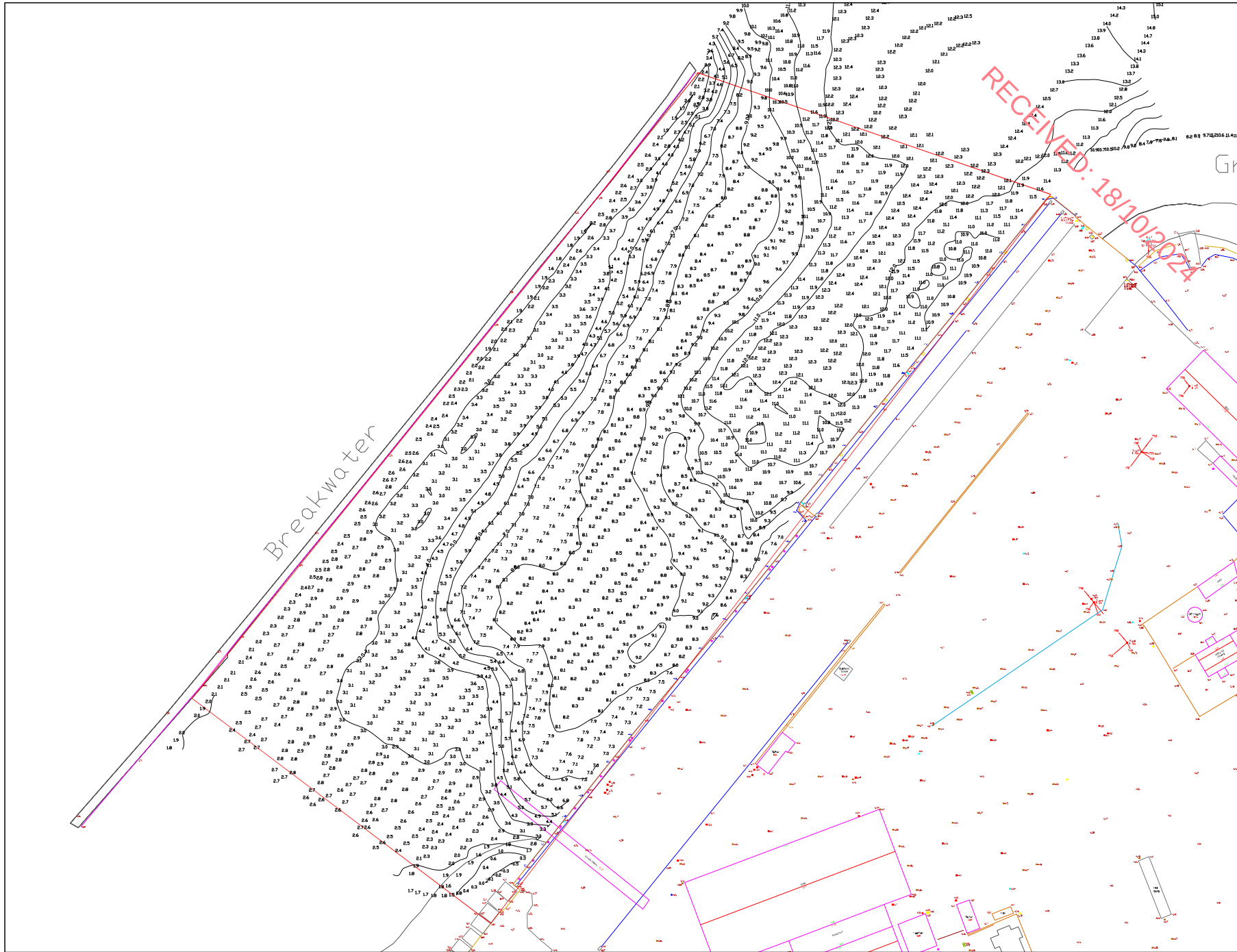
Unit 1B Sycamore House, Millenium Park, Nass, Co. Kildare. W91 XD55 helo@mcCarthybrowne.ie

Client: Greenore Port Unlimited / Doyle Shipping Group

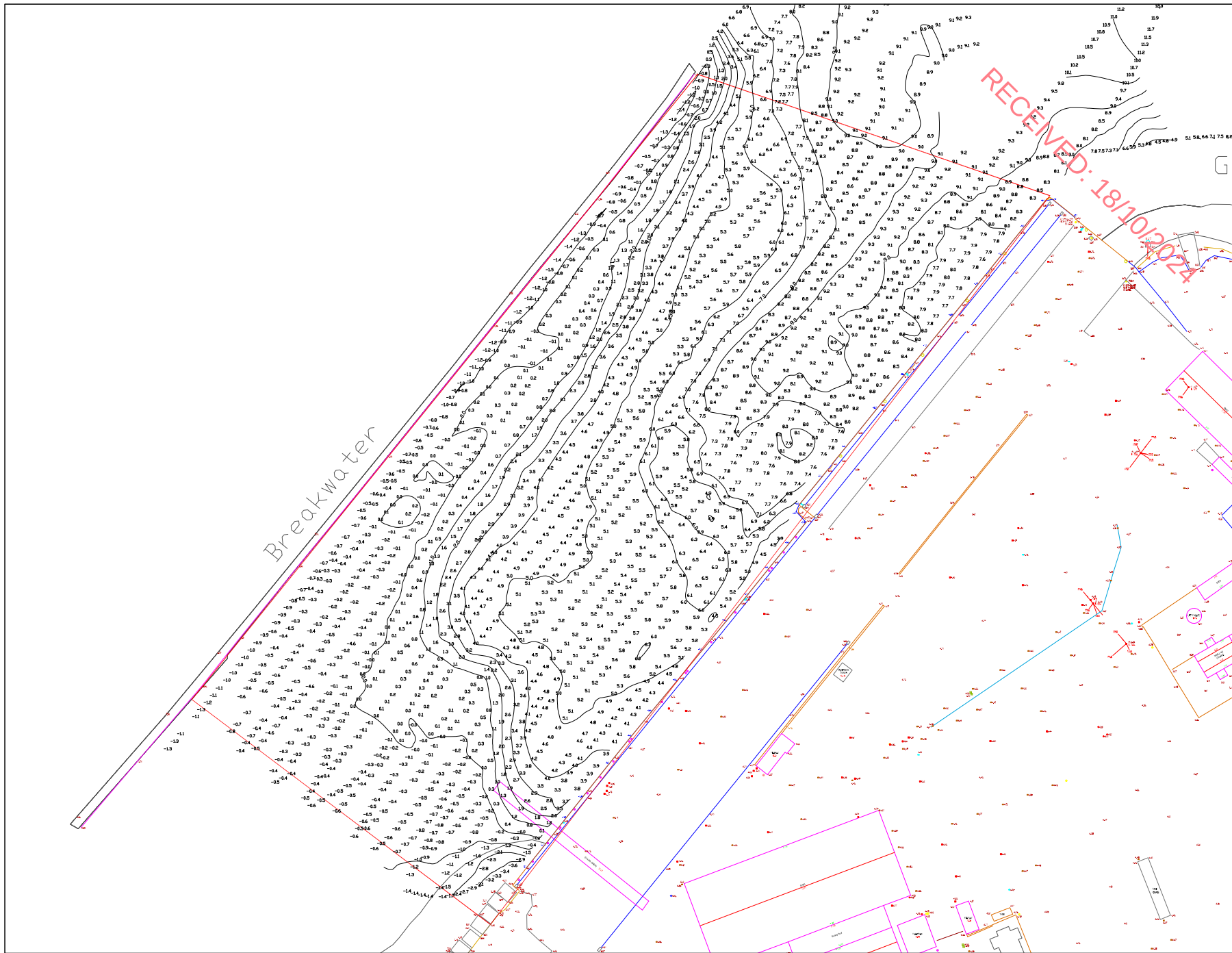
Project: Greenore Operation & Maintenance Facility

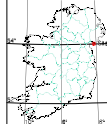
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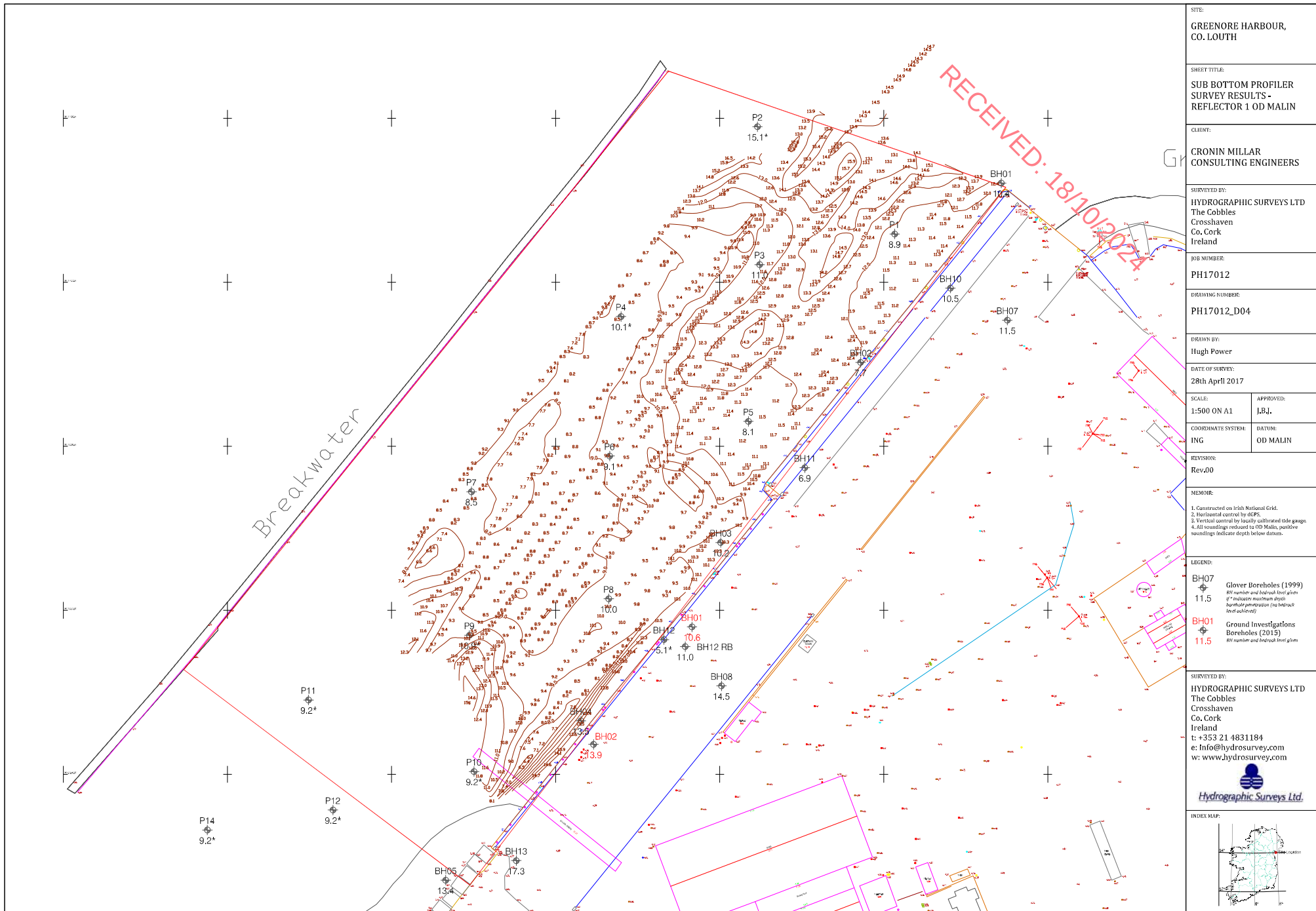
Drw by:	CW	Scale (s):	Scale 1:1000m@A1	Drawing No:		Rev:	
Eng app:	JMc	Date:	03/08/2023				
App by:	JMc	Status:	For information	SK901		I01	



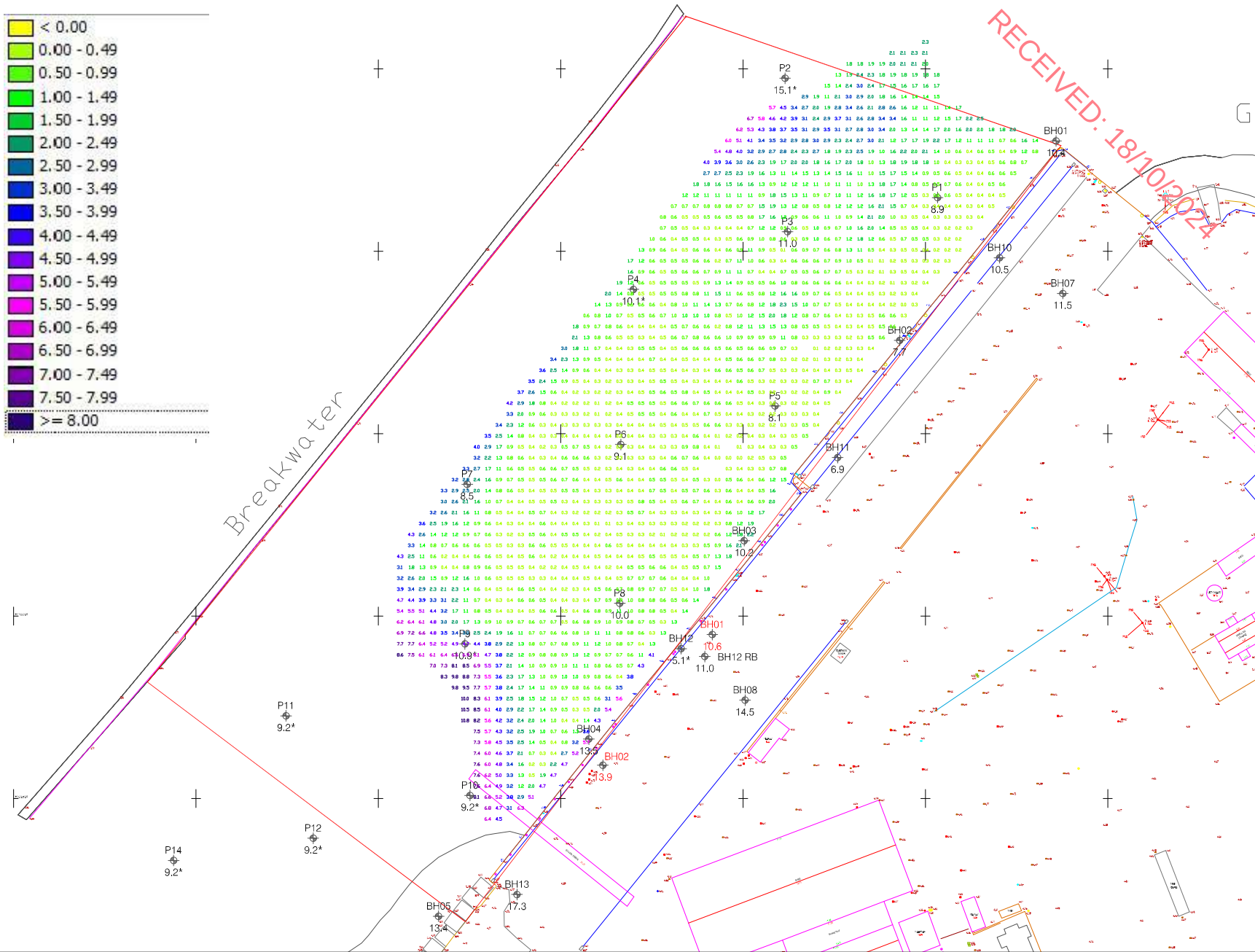
SITE: GREENORE HARBOUR, CO. LOUTH	
SHEET TITLE: BATHYMETRIC SURVEY RESULTS - OD MALIN	
CLIENT: CRONIN MILLAR CONSULTING ENGINEERS	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland	
JOB NUMBER: PH17012	
DRAWING NUMBER: PH17012_D02	
DRAWN BY: Hugh Power	
DATE OF SURVEY: 28th April 2017	
SCALE: 1:500 ON A1	APPROVED: J.B.J.
COORDINATE SYSTEM: ING	DATUM: OD MALIN
REVISION: Rev.00	
MEMOIR: 1. Constructed on Irish National Grid. 2. Horizontal control by GPS. 3. Vertical control by locally calibrated tide gauge. 4. All soundings reduced to OD Malin, positive soundings indicate depth below datum.	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland t: +353 21 4831184 e: info@hydrosurvey.com w: www.hydrosurvey.com	
INDEX MAP: 	



SITE: GREENORE HARBOUR, CO. LOUTH	
SHEET TITLE: BATHYMETRIC SURVEY RESULTS - CHART DATUM	
CLIENT: CRONIN MILLAR CONSULTING ENGINEERS	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland	
JOB NUMBER: PH17012	
DRAWING NUMBER: PH17012_D03	
DRAWN BY: Hugh Power	
DATE OF SURVEY: 28th April 2017	
SCALE: 1:500 ON A1	APPROVED: J.B.J.
COORDINATE SYSTEM: ING	DATUM: CD
REVISION: Rev.00	
MEMOR: 1. Constructed on Irish National Grid. 2. Horizontal control by GPS. 3. Vertical control by locally calibrated tide gauge. 4. All soundings reduced to Chart Datum, positive soundings indicate depth below datum.	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland t: +353 21 4831184 e: info@hydrosurvey.com w: www.hydrosurvey.com	
 Hydrographic Surveys Ltd	
INDEX MAP: 	



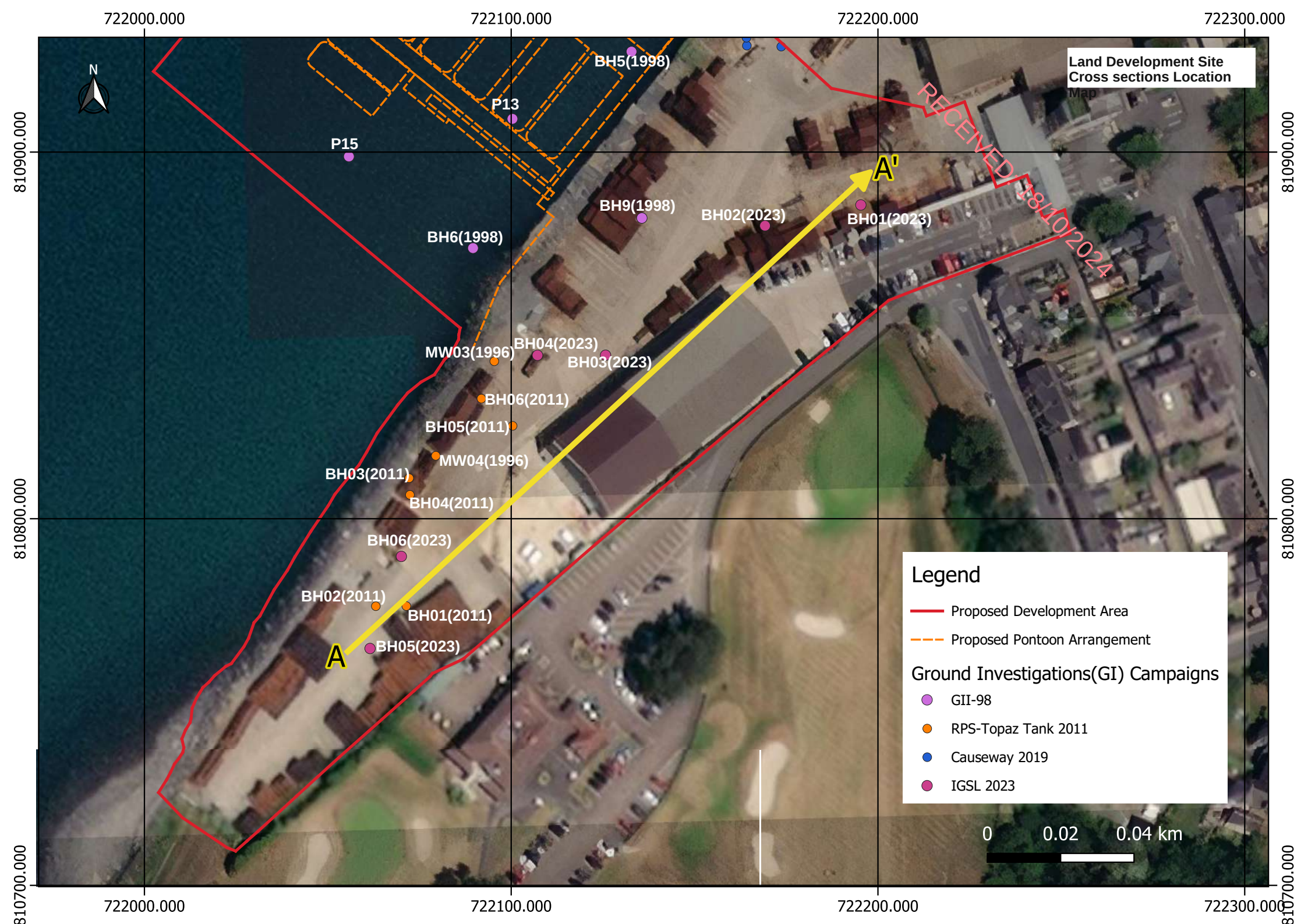
SITE: GREENORE HARBOUR, CO. LOUTH	
SHEET TITLE: SUB BOTTOM PROFILER SURVEY RESULTS - REFLECTOR 1 OD MALIN	
CLIENT: CRONIN MILLAR CONSULTING ENGINEERS	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland	
JOB NUMBER: PH17012	
DRAWING NUMBER: PH17012_D04	
DRAWN BY: Hugh Power	
DATE OF SURVEY: 28th April 2017	
SCALE: 1:500 ON A1	APPROVED: J.B.J.
COORDINATE SYSTEM: ING	DATUM: OD MALIN
REVISION: Rev.00	
MEMOIR: 1. Constructed on Irish National Grid. 2. Horizontal control by GPS. 3. Vertical control by locally calibrated tide gauge. 4. All soundings reduced to OD Malin, positive soundings indicate depth below datum.	
LEGEND: BH07 11.5 BH01 11.5	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland t: +353 21 4831184 e: info@hydrosurvey.com w: www.hydrosurvey.com	
INDEX MAP: 	

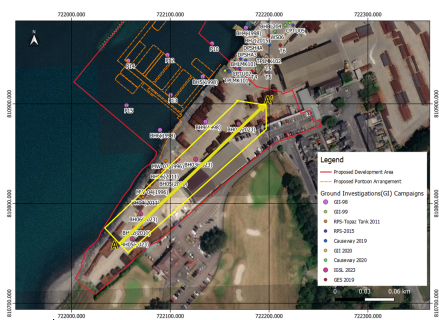


SITE: GREENORE HARBOUR, CO. LOUTH	
SHEET TITLE: SUB BOTTOM PROFILER SURVEY RESULTS - DEPTH TO BEDROCK	
CLIENT: CRONIN MILLAR CONSULTING ENGINEERS	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland	
JOB NUMBER: PH17012	
DRAWING NUMBER: PH17012_D05	
DRAWN BY: Hugh Power	
DATE OF SURVEY: 28th April 2017	
SCALE: 1:500 ON A1	APPROVED: J.B.J.
COORDINATE SYSTEM: ING	DATUM: OD MALIN
REVISION: Rev.00	
MEMOIR: 1. Constructed on Irish National Grid. 2. Horizontal control by GPS. 3. Vertical control by locally calibrated tide gauge. 4. All soundings show thickness of unit above Reflector interpreted as top of rock.	
LEGEND: BH07 11.5 BH01 11.5	
SURVEYED BY: HYDROGRAPHIC SURVEYS LTD The Cobbles Crosshaven Co. Cork Ireland t: +353 21 4831184 e: info@hydrosurvey.com w: www.hydrosurvey.com	
INDEX MAP: 	

RECEIVED: 18/10/2024

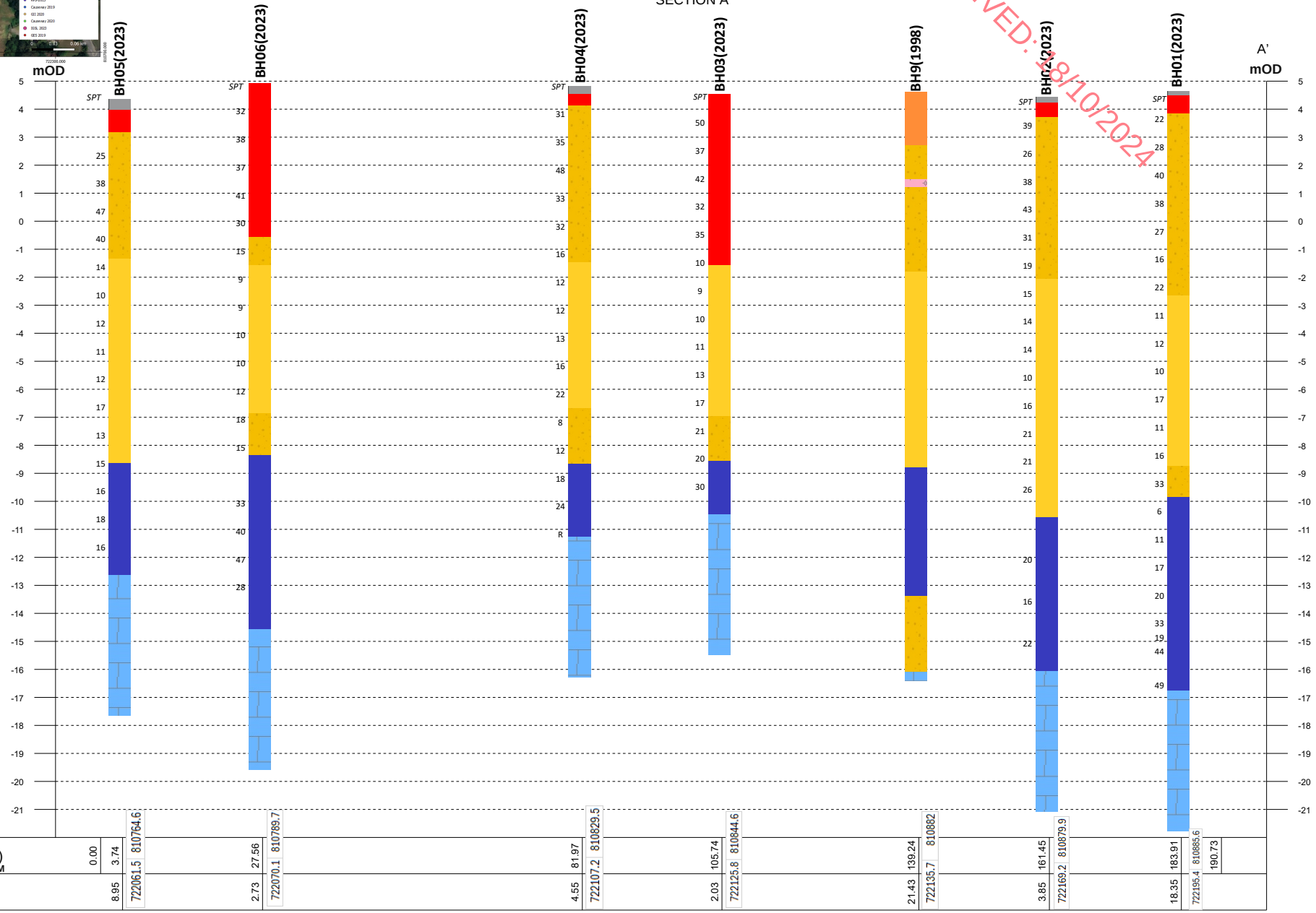
APPENDIX B: CROSS SECTIONS

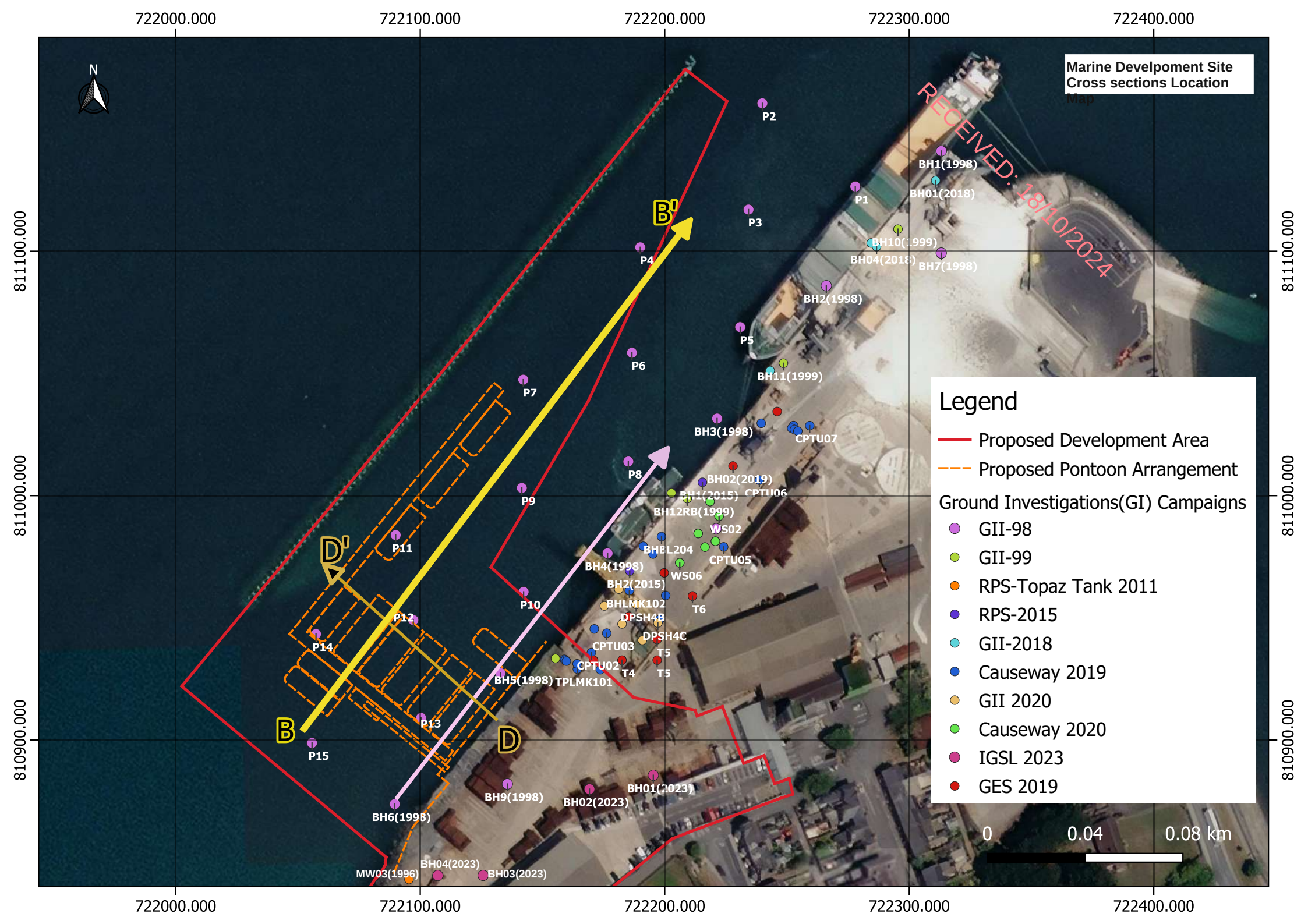


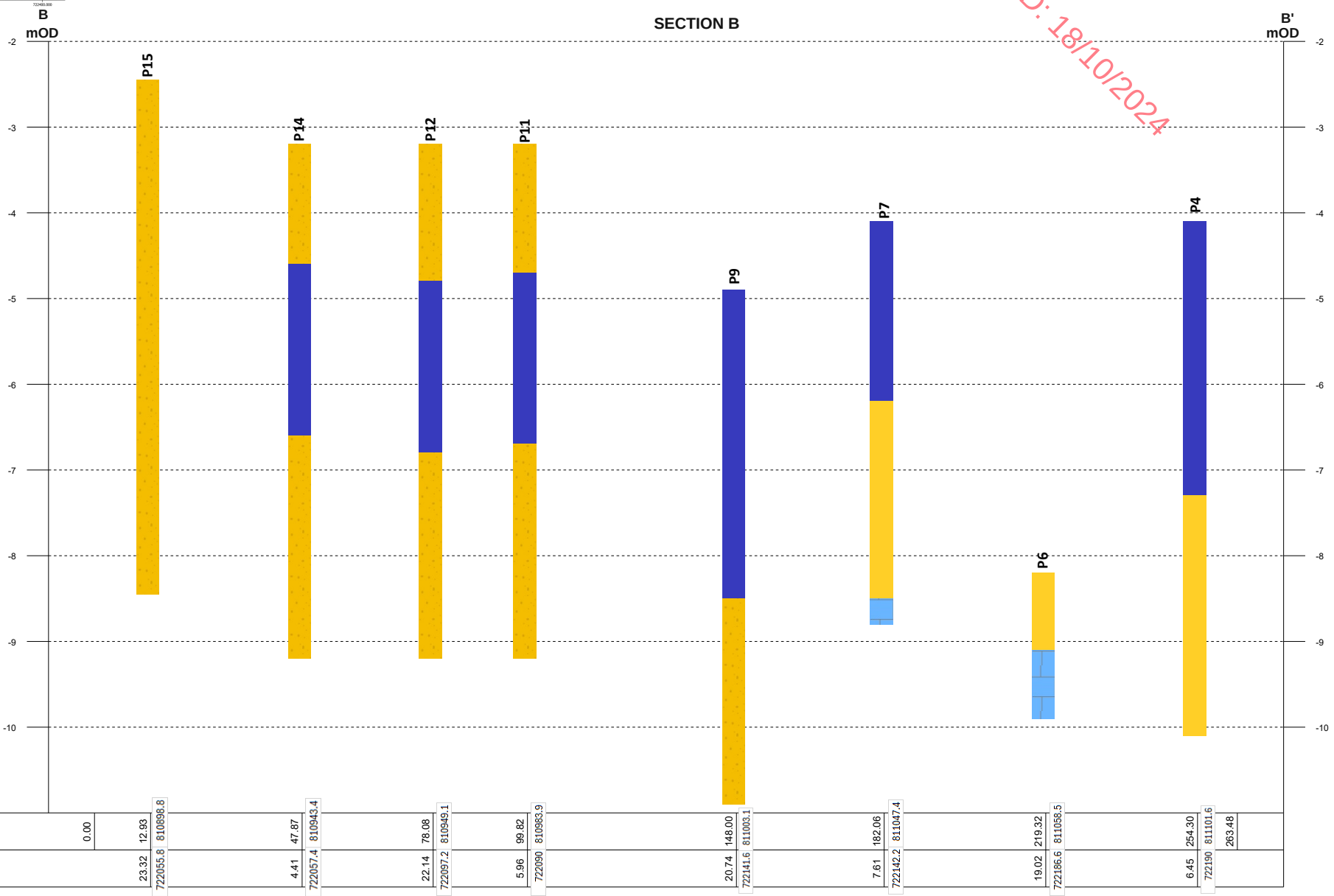
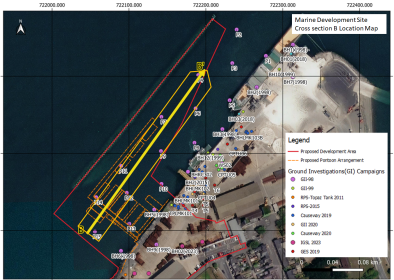


SECTION A

- Legend Key
- MADE GROUND
 - Concrete
 - HARDCORE FILL
 - Silty Sandy GRAVEL
 - COBBLES and BOULDERS
 - Gravelly Sand
 - Silty CLAY
 - LIMESTONE







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APPENDIX C: WASTE CLASSIFICATION GDG REPORT

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GDG

GAVIN & DOHERTY

GEOSOLUTIONS

Greenore Port 23181

Commercial Tier 1 Screened Chemical Analysis Results: Soil samples obtained September 2023

Sample ID					BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04	BH05	BH05	BH06	BH06
Depth (m)					1	2	1	2	1	2	1	2	1	2	1	2
Stratum (see report for further details)					Silty Sandy GRAVEL	Silty Sandy GRAVEL	Silty Sandy GRAVEL	Silty Sandy GRAVEL	Made Ground	Made Ground	Silty Sandy GRAVEL	Silty Sandy GRAVEL	Made Ground	Sandy GRAVEL	Made Ground	Made Ground
Sample Date					20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023	20/09/2023
Analyte	Units	GAC Source	GAC													
Asbestos in Soil	ACM Type				-	-	-	-	-	-	Fibres/Clumps	-	-	-	-	-
	Asbestos Identification	Type	Presence	-	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Inorganics	Moisture	%	-	-	11.0	7.4	8.7	8.1	8	5	7	12.0	10.0	3.3	8.8	6.0
	pH at 20C	pH Units	-	-	8.6	8.8	8.5	8.9	8.6	9.3	9.8	9.3	10.1	9.4	11.2	9.7
	Boron (Hot Water Soluble)	mg/kg	-	-	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	< 0.40	0.78	< 0.40	< 0.40	< 0.40	< 0.40
	Sulphate (2:1 Water Soluble) as SO4	g/l	-	-	0.014	< 0.010	0.031	0.027	0.65	0.036	0.16	0.031	0.7	0.039	0.12	< 0.010
	Total Cyanide	mg/kg	-	-	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Metals	Organic Matter	%	-	-	1.70	0.45	2.9	0.83	0.9	5.00	< 0.40	4.10	< 0.40	< 0.40	1.9	< 0.40
	Arsenic	mg/kg	S4UL	640	6.8	4.6	7	8	5.1	7	12	9	11.0	8.1	9	6
	Cadmium	mg/kg	S4UL	190	0.2	< 0.10	0.15	0.12	0.28	0.14	0.21	0.14	0.13	0.17	0.2	0.16
	Chromium	mg/kg	-	-	25.0	21	39.0	39.0	37	33	52	33	58	29.0	28	27
	Copper	mg/kg	S4UL	68000	13	9	13	14	30	13	28	30	33	23	30	13
	Mercury	mg/kg	S4UL	1100	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.08	< 0.05	0.05	0.1	< 0.05
	Nickel	mg/kg	S4UL	980	23	18	31	31	39	32	51	33	62	27	26	28
	Lead	mg/kg	C4SL	2300	84	21	16	12	40	11	20	22	19	40	60	11
	Zinc	mg/kg	S4UL	730000	38	29	43	43	81	50	78	59	71	88	110	55
	Naphthalene	mg/kg	S4UL	190	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
PAH	Acenaphthylene	mg/kg	S4UL	8300	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Acenaphthene	mg/kg	S4UL	84000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Fluorene	mg/kg	S4UL	63000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Phenanthrene	mg/kg	S4UL	22000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.23	< 0.10	0.14	< 0.10	< 0.10	0.36	< 0.10
	Anthracene	mg/kg	S4UL	520000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Fluoranthene	mg/kg	S4UL	23000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.35	< 0.10	0.19	< 0.10	< 0.10	0.54	< 0.10
	Pyrene	mg/kg	S4UL	54000	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.25	< 0.10	0.17	< 0.10	< 0.10	0.47	< 0.10
	Benzo(a)anthracene	mg/kg	S4UL	170	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.24	< 0.10
	Chrysene	mg/kg	S4UL	350	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.25	< 0.10
	Benzo(b)fluoranthene	mg/kg	S4UL	44	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.32	< 0.10
	Benzo(k)fluoranthene	mg/kg	S4UL	1200	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Benzo(a)pyrene	mg/kg	S4UL	35	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.18	< 0.10
	Indeno(1,2,3-cd)pyrene	mg/kg	S4UL	500	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.11	< 0.10
	Dibenz(a,h)anthracene	mg/kg	S4UL	3.5	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Benzo(ghi)perylene	mg/kg	S4UL	3900	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
	Speciated Total EPA-16 PAHs	mg/kg	-	-	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.50	< 2.0
Total Petroleum Hydrocarbons	Total TPH >C6-C40	mg/kg	-	-	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	60	< 10
Phenols	Total Phenols (monohydric)	mg/kg	S4UL	440	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

-

<LOD

>GAC

Not Tested

Results below Limit of Detection

Results above Generic Assessment Criteria

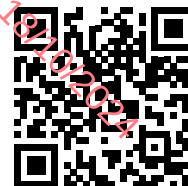
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Page 1 of 1

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)



4UPO6-KK1O6-XKL18

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

Job name

Greenore Port Site Investigation

Description/Comments

BH04(1m) sample has been forced to hazardous due to presence of asbestos. Not quantification of asbestos available at present therefore value of 10,001mg/kg utilised. Quantification of asbestos in the soils will enable a more accurate classification.

Additionally, although no indication of hydrocarbon was observed at the depths from which the samples analysed and input into HWOL, evidence of hydrocarbon was observed at 4.1m-5.0m in BH01: "Strong hydrocarbon odour with oily residue noted on gravels". Testing of these impacted soils will be required prior to disposal to enable more accurate waste classification.

Project

23181

Site

Classified by

Name: **Ruadh McIntosh**
Date: **11 Jan 2024 09:38 GMT**
Telephone: **0) 131 344 4605**

Company: **Gavin & Doherty Geosolutions**
Edinburgh

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

HazWasteOnline™ Certification:

CERTIFIED

Course
Hazardous Waste Classification
Most recent 3 year Refresher

Date
30 Oct 2019
04 Oct 2022

Next 3 year Refresher due by Oct 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Greenore Port, County Louth, Republic of Ireland

Post Code **A91 N2YR**

SIC for the process giving rise to the waste

42990 Construction of other civil engineering projects n.e.c.

Description of industry/producer giving rise to the waste

The soil samples classified were generated during site investigation works being advanced to enable preliminary/indicative material classification of shallow soils likely to be excavated during future development of the Greenore Port.

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

Cable percussive and rotary boreholes

Description of the waste

Silty/clayey sandy gravel for all samples with exception to BH05(1.0m depth) which comprised stone hardcore fill. No indication of contamination (no free phase hydrocarbon, odours, etc) observed during the SI at these depths.

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Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH01	1	Non Hazardous		3
2	BH01[1]	2	Non Hazardous		5
3	BH02	1	Non Hazardous		7
4	BH02[1]	2	Non Hazardous		9
5	BH03	1	Non Hazardous		11
6	BH03[1]	2	Non Hazardous		13
7	BH04	1	Hazardous	HP 7	15
8	BH04[1]	2	Non Hazardous		17
9	BH05	2	Non Hazardous		19
10	BH06	1	Non Hazardous		21
11	BH06[1]	2	Non Hazardous		23
12	BH05[1]	1	Non Hazardous		25

Related documents

#	Name	Description
1	Greenore Port	waste stream template used to create this Job

Report

Created by: Ruadh McIntosh

Created date: 11 Jan 2024 09:38 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	27
Appendix B: Rationale for selection of metal species	28
Appendix C: Version	29

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Classification of sample: BH01

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

Sample details

Sample name:	LoW Code:
BH01	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
11%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% Dry 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	pH				8.6 pH		8.6 pH	8.6 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
4	arsenic { arsenic trioxide }				6.8 mg/kg	1.32	8.088 mg/kg	0.000809 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
5	cadmium { cadmium oxide }				0.16 mg/kg	1.142	0.165 mg/kg	0.0000165 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				25 mg/kg	1.462	32.918 mg/kg	0.00329 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				25 mg/kg	2.27	51.126 mg/kg	0.00511 %	✓	
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	13.186 mg/kg	0.00132 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel sulfate }				23 mg/kg	2.637	54.634 mg/kg	0.00546 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	84 mg/kg		75.676 mg/kg	0.00757 %	✓	
	082-001-00-6									
12	zinc { zinc oxide }				38 mg/kg	1.245	42.612 mg/kg	0.00426 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0292 %	

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

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Classification of sample: BH01[1]

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

Sample details

Sample name:	LoW Code:
BH01[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.4%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.4% Dry 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	pH				8.8 pH		8.8 pH	8.8 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
4	arsenic { arsenic trioxide }				4.6 mg/kg	1.32	5.655 mg/kg	0.000566 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
5	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21 mg/kg	1.462	28.578 mg/kg	0.00286 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				21 mg/kg	2.27	44.385 mg/kg	0.00444 %	✓	
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				9 mg/kg	1.126	9.435 mg/kg	0.000943 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel sulfate }				18 mg/kg	2.637	44.19 mg/kg	0.00442 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	21 mg/kg		19.553 mg/kg	0.00196 %	✓	
	082-001-00-6									
12	zinc { zinc oxide }				29 mg/kg	1.245	33.61 mg/kg	0.00336 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.02 %	

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

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Classification of sample: BH02

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

Sample details

Sample name:	LoW Code:
BH02	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
8.7%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.7% Dry 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	pH				8.5 pH		8.5 pH	8.5 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
4	arsenic { arsenic trioxide }				6.7 mg/kg	1.32	8.138 mg/kg	0.000814 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
5	cadmium { cadmium oxide }				0.15 mg/kg	1.142	0.158 mg/kg	0.0000158 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				39 mg/kg	1.462	52.439 mg/kg	0.00524 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				39 mg/kg	2.27	81.444 mg/kg	0.00814 %	✓	
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	13.465 mg/kg	0.00135 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel sulfate }				31 mg/kg	2.637	75.195 mg/kg	0.00752 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	16 mg/kg		14.719 mg/kg	0.00147 %	✓	
	082-001-00-6									
12	zinc { zinc oxide }				43 mg/kg	1.245	49.239 mg/kg	0.00492 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0309 %	

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

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Classification of sample: BH02[1]

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

Sample details

Sample name:	LoW Code:
BH02[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.1%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.1% Dry 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	pH				8.9 pH		8.9 pH	8.9 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
4	arsenic { arsenic trioxide }				7.7 mg/kg	1.32	9.405 mg/kg	0.00094 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
5	cadmium { cadmium oxide }				0.12 mg/kg	1.142	0.127 mg/kg	0.0000127 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				39 mg/kg	1.462	52.73 mg/kg	0.00527 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				39 mg/kg	2.27	81.896 mg/kg	0.00819 %	✓	
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				14 mg/kg	1.126	14.581 mg/kg	0.00146 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel sulfate }				31 mg/kg	2.637	75.613 mg/kg	0.00756 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	12 mg/kg		11.101 mg/kg	0.00111 %	✓	
	082-001-00-6									
12	zinc { zinc oxide }				43 mg/kg	1.245	49.512 mg/kg	0.00495 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0309 %	

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

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Classification of sample: BH03

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

Sample details

Sample name:	LoW Code:
BH03	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
8.3%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.3% Dry 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	pH				8.6 pH		8.6 pH	8.6 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
4	arsenic { arsenic trioxide }				5.1 mg/kg	1.32	6.218 mg/kg	0.000622 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
5	cadmium { cadmium oxide }				0.28 mg/kg	1.142	0.295 mg/kg	0.0000295 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				37 mg/kg	1.462	49.933 mg/kg	0.00499 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				37 mg/kg	2.27	77.553 mg/kg	0.00776 %	✓	
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				30 mg/kg	1.126	31.188 mg/kg	0.00312 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel sulfate }				39 mg/kg	2.637	94.95 mg/kg	0.00949 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	40 mg/kg		36.934 mg/kg	0.00369 %	✓	
	082-001-00-6									
12	zinc { zinc oxide }				81 mg/kg	1.245	93.095 mg/kg	0.00931 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0404 %	

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

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Classification of sample: BH03[1]

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

Sample details

Sample name:	LoW Code:
BH03[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.3%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.3% Dry 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	pH				9.3 pH		9.3	pH	9.3 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2								
3	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 }				<0.5 mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5										
4	arsenic { arsenic trioxide }				7 mg/kg	1.32	8.777	mg/kg	0.000878 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
5	cadmium { cadmium oxide }				0.14 mg/kg	1.142	0.152	mg/kg	0.0000152 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				33 mg/kg	1.462	45.804	mg/kg	0.00458 %	✓	
		215-160-9	1308-38-9								
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				33 mg/kg	2.27	71.14	mg/kg	0.00711 %	✓	
	024-017-00-8										
8	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	13.9	mg/kg	0.00139 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel sulfate }				32 mg/kg	2.637	80.127	mg/kg	0.00801 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	11 mg/kg		10.446	mg/kg	0.00104 %	✓	
	082-001-00-6										
12	zinc { zinc oxide }				50 mg/kg	1.245	59.103	mg/kg	0.00591 %	✓	
	030-013-00-7	215-222-5	1314-13-2								
13	naphthalene				<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		0.23 mg/kg		0.218 mg/kg	0.0000218 %	✓
18	anthracene	204-371-1	120-12-7		0.11 mg/kg		0.104 mg/kg	0.0000104 %	✓
19	fluoranthene	205-912-4	206-44-0		0.35 mg/kg		0.332 mg/kg	0.0000332 %	✓
20	pyrene	204-927-3	129-00-0		0.25 mg/kg		0.237 mg/kg	0.0000237 %	✓
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7	108-95-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0304 %	

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: BH04

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

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Sample details

Sample name:	LoW Code:
BH04	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
7.4%	
(dry weight correction)	

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

asbestos: (conc.: 0.931%)

Determinands

Moisture content: 7.4% Dry 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	asbestos										
	650-013-00-6	-----	12001-28-4								
			132207-32-0								
			12172-73-5								
			77536-66-4								
2	pH										
3	boron { diboron trioxide }										
	005-008-00-8	215-125-8	1303-86-2								
4	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										
5	arsenic { arsenic trioxide }										
	033-003-00-0	215-481-4	1327-53-3								
6	cadmium { cadmium oxide }										
	048-002-00-0	215-146-2	1306-19-0								
7	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }										
		215-160-9	1308-38-9								
8	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }										
	024-017-00-8										

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
9	copper { dicopper oxide; copper (I) oxide }				28 mg/kg	1.126	29.353 mg/kg	0.00294 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
10	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
11	nickel { nickel sulfate }				51 mg/kg	2.637	125.206 mg/kg	0.0125 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
12	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	20 mg/kg		18.622 mg/kg	0.00186 %	✓	
	082-001-00-6									
13	zinc { zinc oxide }				78 mg/kg	1.245	90.398 mg/kg	0.00904 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
16	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
17	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
18	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
19	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
20	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
21	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
22	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
23	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
24	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
25	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
26	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
27	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
28	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
29	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
30	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
31	phenol				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:									0.978 %	

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
•	Speciated 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

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Classification of sample: BH04[1]

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

Sample details

Sample name:	LoW Code:
BH04[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% Dry 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	pH				9.3 pH		9.3 pH		9.3 pH		
2	boron { diboron trioxide }				0.78 mg/kg	3.22	2.242 mg/kg		0.000224 %	✓	
	005-008-00-8	215-125-8	1303-86-2								
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg		<0.0000942 %		<LOD
	006-007-00-5										
4	arsenic { arsenic trioxide }				9.4 mg/kg	1.32	11.081 mg/kg		0.00111 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
5	cadmium { cadmium oxide }				0.14 mg/kg	1.142	0.143 mg/kg		0.0000143 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				33 mg/kg	1.462	43.064 mg/kg		0.00431 %	✓	
		215-160-9	1308-38-9								
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				33 mg/kg	2.27	66.884 mg/kg		0.00669 %	✓	
	024-017-00-8										
8	copper { dicopper oxide; copper (I) oxide }				30 mg/kg	1.126	30.158 mg/kg		0.00302 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
9	mercury { mercury dichloride }				0.08 mg/kg	1.353	0.0967 mg/kg		0.00000967 %	✓	
	080-010-00-X	231-299-8	7487-94-7								
10	nickel { nickel sulfate }				33 mg/kg	2.637	77.688 mg/kg		0.00777 %	✓	
	028-009-00-5	232-104-9	7786-81-4								
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	22 mg/kg		19.643 mg/kg		0.00196 %	✓	
	082-001-00-6										
12	zinc { zinc oxide }				59 mg/kg	1.245	65.57 mg/kg		0.00656 %	✓	
	030-013-00-7	215-222-5	1314-13-2								
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		0.14 mg/kg		0.125 mg/kg	0.0000125 %	✓
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		0.19 mg/kg		0.17 mg/kg	0.000017 %	✓
20	pyrene	204-927-3	129-00-0		0.17 mg/kg		0.152 mg/kg	0.0000152 %	✓
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7	108-95-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0329 %	

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

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Classification of sample: BH05

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

Sample details

Sample name:	LoW Code:
BH05	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
2 m	
Moisture content:	
3.3%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 3.3% Dry 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	pH				9.4 pH		9.4 pH	9.4 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
4	arsenic { arsenic trioxide }				8.1 mg/kg	1.32	10.353 mg/kg	0.00104 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
5	cadmium { cadmium oxide }				0.17 mg/kg	1.142	0.188 mg/kg	0.0000188 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				29 mg/kg	1.462	41.031 mg/kg	0.0041 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				29 mg/kg	2.27	63.727 mg/kg	0.00637 %	✓	
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				23 mg/kg	1.126	25.068 mg/kg	0.00251 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	mercury { mercury dichloride }				0.05 mg/kg	1.353	0.0655 mg/kg	0.00000655 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel sulfate }				27 mg/kg	2.637	68.916 mg/kg	0.00689 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	40 mg/kg		38.722 mg/kg	0.00387 %	✓	
	082-001-00-6									
12	zinc { zinc oxide }				88 mg/kg	1.245	106.036 mg/kg	0.0106 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0368 %	

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

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Classification of sample: BH06

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

Sample details

Sample name:	LoW Code:
BH06	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	
Moisture content:	
8.8%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.8% Dry 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	pH				11.2	pH		11.2	pH	11.2 pH		
2	boron { diboron trioxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
3	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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5											
4	arsenic { arsenic trioxide }				9.1	mg/kg	1.32	11.043	mg/kg	0.0011 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
5	cadmium { cadmium oxide }				0.17	mg/kg	1.142	0.178	mg/kg	0.0000178 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				28	mg/kg	1.462	37.614	mg/kg	0.00376 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				28	mg/kg	2.27	58.419	mg/kg	0.00584 %	✓	
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				30	mg/kg	1.126	31.045	mg/kg	0.0031 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	mercury { mercury dichloride }				0.08	mg/kg	1.353	0.0995	mg/kg	0.00000995 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				26	mg/kg	2.637	63.009	mg/kg	0.0063 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	60	mg/kg		55.147	mg/kg	0.00551 %	✓	
	082-001-00-6											
12	zinc { zinc oxide }				110	mg/kg	1.245	125.844	mg/kg	0.0126 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
13	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		0.36 mg/kg		0.331 mg/kg	0.0000331 %	✓
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		0.54 mg/kg		0.496 mg/kg	0.0000496 %	✓
20	pyrene	204-927-3	129-00-0		0.47 mg/kg		0.432 mg/kg	0.0000432 %	✓
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.24 mg/kg		0.221 mg/kg	0.0000221 %	✓
22	chrysene	601-048-00-0	205-923-4		0.25 mg/kg		0.23 mg/kg	0.000023 %	✓
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.32 mg/kg		0.294 mg/kg	0.0000294 %	✓
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.18 mg/kg		0.165 mg/kg	0.0000165 %	✓
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.11 mg/kg		0.101 mg/kg	0.0000101 %	✓
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		60 mg/kg		55.147 mg/kg	0.00551 %	✓
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0443 %	

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 Samples revealed low level TPH <1000 mg/kg or <0.1%. Samples exhibited no evidence of hydrocarbon contamination/ free phase product therefore a test for liquid flammability was deemed not appropriate. See page 21 WM3 guidance.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00551%)

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Classification of sample: BH06[1]

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

Sample details

Sample name:	LoW Code:
BH06[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6% Dry 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	pH				9.7 pH		9.7 pH	9.7 pH		
2	boron { diboron trioxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
3	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
4	arsenic { arsenic trioxide }				5.9 mg/kg	1.32	7.349 mg/kg	0.000735 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
5	cadmium { cadmium oxide }				0.16 mg/kg	1.142	0.172 mg/kg	0.0000172 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27 mg/kg	1.462	37.228 mg/kg	0.00372 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				27 mg/kg	2.27	57.821 mg/kg	0.00578 %	✓	
	024-017-00-8									
8	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	13.808 mg/kg	0.00138 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel sulfate }				28 mg/kg	2.637	69.648 mg/kg	0.00696 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	11 mg/kg		10.377 mg/kg	0.00104 %	✓	
	082-001-00-6									
12	zinc { zinc oxide }				55 mg/kg	1.245	64.584 mg/kg	0.00646 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0275 %	

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

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Classification of sample: BH05[1]

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

Sample details

Sample name:	LoW Code:
BH05[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
10%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 10% Dry 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	pH				10.1	pH		10.1	pH	10.1 pH		
2	boron { diboron trioxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
3	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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5											
4	arsenic { arsenic trioxide }				11	mg/kg	1.32	13.203	mg/kg	0.00132 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
5	cadmium { cadmium oxide }				0.13	mg/kg	1.142	0.135	mg/kg	0.0000135 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				58	mg/kg	1.462	77.064	mg/kg	0.00771 %	✓	
		215-160-9	1308-38-9									
7	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				58	mg/kg	2.27	119.691	mg/kg	0.012 %	✓	
	024-017-00-8											
8	copper { dicopper oxide; copper (I) oxide }				33	mg/kg	1.126	33.777	mg/kg	0.00338 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
9	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel sulfate }				62	mg/kg	2.637	148.613	mg/kg	0.0149 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
11	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	19	mg/kg		17.273	mg/kg	0.00173 %	✓	
	082-001-00-6											
12	zinc { zinc oxide }				71	mg/kg	1.245	80.341	mg/kg	0.00803 %	✓	
	030-013-00-7	215-222-5	1314-13-2									
13	naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
17	phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
18	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
19	fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
20	pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
29	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10 mg/kg	<0.001 %	<LOD
30	phenol	604-001-00-2	203-632-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
Total:								0.0504 %	

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

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Appendix A: Classifier defined and non GB MCL determinands

• pH (CAS Number: PH)

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

• 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

• 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

• 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

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■ **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

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

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

Appendix B: Rationale for selection of metal species

boron {diboron trioxide}

-

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]

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic.

cadmium {cadmium oxide}

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

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

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

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight

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. Worst case copper sulphate is very soluble and likely to have been leached away if ever present

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel sulfate}

Worst case CLP species based on hazard statements/molecular weight

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc oxide}

Worst case CLP species based on hazard statements/molecular weight

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2024.9.5904.10918 (09 Jan 2024)

HazWasteOnline Database: 2024.9.5904.10918 (09 Jan 2024)

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

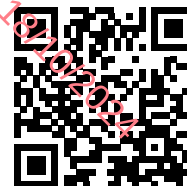
GB MCL List - version 1.1 of 09 June 2021

GB MCL List v2.0 - version 2.0 of 20th October 2023

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)



U0QUH-99SGI-JQAA8

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

Job name

Greenore Port Phase II GI

Description/Comments

12 Samples from 6 locations WSBH01 to WSBH06, samples obtained from 0.0-1.0 and 1.0-2.0 respectively. the purpose being to use the results to inform the waste management plan for the site.

Project

Greenore Port Phase II GI

Site

Greenore Port

Classified by

Name: **Alan Shepherd**
Date: **08 Apr 2024 15:26 GMT**
Telephone: **+447391845649**
Company: **Gavin & Doherty Geosolutions (UK) Ltd**
Nexus, 21 Young Street
Edinburgh
EH2 4HU

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

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification
Most recent 3 year Refresher

Date

21 Sep 2016
06 Feb 2024

Next 3 year Refresher due by Feb 2027

Purpose of classification

2 - Material Characterisation

Address of the waste

Greenore Port, Co. Louth, Republic of Ireland

Post Code **A91 N2YR**

SIC for the process giving rise to the waste

42990 Construction of other civil engineering projects n.e.c.

Description of industry/producer giving rise to the waste

The soil samples classified were generated during site investigation works being advanced to enable preliminary/indicative material classification of shallow soils likely to be excavated during future development of the Greenore Port.

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

A window sample rig was used to obtain soil samples

Description of the waste

Concrete, Made Ground and Engineered Fill, underlain by medium dense to dense grey fine to coarse slightly silty sandy Gravel interbedded with loose to medium dense gravelly Sand.

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Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results			Page
					Inert	SNRHW	Hazardous	
1	-BH1-07/03/2024-0.0	0.0-1.0	Non Hazardous		Fail	Pass	N/A	3
2	-BH1-07/03/2024-1.0	1.0-2.0	Non Hazardous		Pass	Pass	N/A	7
3	-BH2-07/03/2024-0.0	0.0-1.0	Non Hazardous		Fail	Pass	N/A	11
4	-BH2-07/03/2024-1.0	1.0-2.0	Non Hazardous		Fail	Pass	N/A	15
5	-BH3-07/03/2024-0.0	0.0-1.0	Non Hazardous		Pass	Pass	N/A	19
6	-BH3-07/03/2024-1.0	1.0-2.0	Non Hazardous		Pass	Pass	N/A	23
7	-BH4-07/03/2024-0.0	0.0-1.0	Non Hazardous		Pass	Pass	N/A	27
8	-BH4-07/03/2024-1.0	1.0-2.0	Non Hazardous		Pass	Pass	N/A	31
9	-BH5-07/03/2024-0.0	0.0-1.0	Non Hazardous		Pass	Pass	N/A	35
10	-BH5-07/03/2024-1.0	1.0-2.0	Non Hazardous		Fail	Pass	N/A	39
11	-BH6-07/03/2024-0.0	0.0-1.0	Non Hazardous		Fail	Fail	N/A	43
12	-BH6-07/03/2024-1.0	1.0-2.0	Non Hazardous		Fail	Fail	N/A	47

Related documents

#	Name	Description
1	HWOL_24-07596-20240322 162536.hwol	Eurofins Chemtest .hwol file used to populate the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate the samples in this Job: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Alan Shepherd

Created date: 08 Apr 2024 15:26 GMT

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Appendix C: Version	54

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Classification of sample: -BH1-07/03/2024-0.0

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

Sample details

Sample name:	LoW Code:	
-BH1-07/03/2024-0.0	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.0-1.0 m		
Moisture content:		
4%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				8.2 mg/kg	1.32	10.394 mg/kg	0.00104 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	30.868 mg/kg	0.00309 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				23 mg/kg	1.126	24.86 mg/kg	0.00249 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	480 mg/kg		460.8 mg/kg	0.0461 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.1 mg/kg	1.353	0.13 mg/kg	0.000013 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				<0.5 mg/kg	1.5	<0.75 mg/kg	<0.000075 %		<LOD
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				21 mg/kg	2.208	44.515 mg/kg	0.00445 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				0.71 mg/kg	2.554	1.741 mg/kg	0.000174 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				53 mg/kg	1.245	63.331 mg/kg	0.00633 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				120 mg/kg		115.2 mg/kg	0.0115 %	✓	
			TPH							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MCM Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
16		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
17		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
18		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
19		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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
20		pH				8.6	pH		8.6	pH	8.6 pH		
				PH									
21		naphthalene				0.35	mg/kg		0.336	mg/kg	0.0000336 %	✓	
		601-052-00-2	202-049-5	91-20-3									
22		acenaphthylene				0.18	mg/kg		0.173	mg/kg	0.0000173 %	✓	
			205-917-1	208-96-8									
23		acenaphthene				0.37	mg/kg		0.355	mg/kg	0.0000355 %	✓	
			201-469-6	83-32-9									
24		fluorene				0.2	mg/kg		0.192	mg/kg	0.0000192 %	✓	
			201-695-5	86-73-7									
25		phenanthrene				4.8	mg/kg		4.608	mg/kg	0.000461 %	✓	
			201-581-5	85-01-8									
26		anthracene				0.52	mg/kg		0.499	mg/kg	0.0000499 %	✓	
			204-371-1	120-12-7									
27		fluoranthene				4.9	mg/kg		4.704	mg/kg	0.00047 %	✓	
			205-912-4	206-44-0									
28		pyrene				4.1	mg/kg		3.936	mg/kg	0.000394 %	✓	
			204-927-3	129-00-0									
29		benzo[a]anthracene				1.8	mg/kg		1.728	mg/kg	0.000173 %	✓	
		601-033-00-9	200-280-6	56-55-3									
30		chrysene				3.3	mg/kg		3.168	mg/kg	0.000317 %	✓	
		601-048-00-0	205-923-4	218-01-9									
31		benzo[k]fluoranthene				1.5	mg/kg		1.44	mg/kg	0.000144 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				2.6	mg/kg		2.496	mg/kg	0.00025 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				1.7	mg/kg		1.632	mg/kg	0.000163 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.36	mg/kg		0.346	mg/kg	0.0000346 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				1.8	mg/kg		1.728	mg/kg	0.000173 %	✓	
			205-883-8	191-24-2									
36		polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
37		barium { barium oxide }				67	mg/kg	1.117	71.814	mg/kg	0.00718 %	✓	
			215-127-9	1304-28-5									
38		benzo[bk]fluoranthene				4	mg/kg		3.84	mg/kg	0.000384 %	✓	
			[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9									
39		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									
41		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				0.0166	mg/kg		0.0159	mg/kg	0.00000159 %	✓	
		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]							
Total:								0.0862 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0115%)
o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 1.59e-06%)

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WAC results for sample: -BH1-07/03/2024-0.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.5	3	5	6
2	LOI (loss on ignition)	%	1	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.017	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	7400	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	33	100	-	-
7	pH	pH	9.8	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.011	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.055	0.5	2	25
10	barium	mg/kg	0.051	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.022	0.5	10	70
13	copper	mg/kg	0.038	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.011	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	0.44	0.5	10	50
18	antimony	mg/kg	0.017	0.06	0.7	5
19	selenium	mg/kg	<0.005	0.1	0.5	7
20	zinc	mg/kg	0.064	4	50	200
21	chloride	mg/kg	18	800	15,000	25,000
22	fluoride	mg/kg	2.4	10	150	500
23	sulphate	mg/kg	150	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	580	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail

Classification of sample: -BH1-07/03/2024-1.0

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

RECEIVED: 18/10/2024

Sample details

Sample name:	LoW Code:	
-BH1-07/03/2024-1.0	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.0-2.0 m		
Moisture content:		
5.6%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 5.6% 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				12 mg/kg	1.32	14.957 mg/kg	0.0015 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				46 mg/kg	1.462	63.467 mg/kg	0.00635 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				75 mg/kg	1.126	79.713 mg/kg	0.00797 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	120 mg/kg		113.28 mg/kg	0.0113 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.07 mg/kg	1.353	0.0894 mg/kg	0.00000894 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				0.6 mg/kg	1.5	0.85 mg/kg	0.000085 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				45 mg/kg	2.208	93.799 mg/kg	0.00938 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				0.57 mg/kg	2.554	1.374 mg/kg	0.000137 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				110 mg/kg	1.245	129.251 mg/kg	0.0129 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				55 mg/kg		51.92 mg/kg	0.00519 %	✓	
			TPH							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MCM Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		603-181-00-X	216-653-1	1634-04-4								
16		benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-020-00-8	200-753-7	71-43-2								
17		toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-021-00-3	203-625-9	108-88-3								
18		ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-023-00-4	202-849-4	100-41-4								
19		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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD	
		006-007-00-5										
20		pH				8.8 pH		8.8 pH	8.8 pH			
				PH								
21		naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-052-00-2	202-049-5	91-20-3								
22		acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-917-1	208-96-8								
23		acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-469-6	83-32-9								
24		fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-695-5	86-73-7								
25		phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-581-5	85-01-8								
26		anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			204-371-1	120-12-7								
27		fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-912-4	206-44-0								
28		pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			204-927-3	129-00-0								
29		benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-033-00-9	200-280-6	56-55-3								
30		chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-048-00-0	205-923-4	218-01-9								
31		benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-036-00-5	205-916-6	207-08-9								
32		benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-032-00-3	200-028-5	50-32-8								
33		indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-893-2	193-39-5								
34		dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-041-00-2	200-181-8	53-70-3								
35		benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-883-8	191-24-2								
36		polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		602-039-00-4	215-648-1	1336-36-3								
37		barium { barium oxide }				64 mg/kg	1.117	67.455 mg/kg	0.00675 %	✓		
			215-127-9	1304-28-5								
38		benzo[bk]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9								
39		coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-881-7	191-07-1								
40		monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
				P1186								
41		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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]							
Total:								0.0624 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00519%)

RECEIVED: 18/10/2024

WAC results for sample: -BH1-07/03/2024-1.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.55	3	5	6
2	LOI (loss on ignition)	%	0.61	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-	-
7	pH	pH	9.2	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.014	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.04	0.5	2	25
10	barium	mg/kg	<0.05	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	<0.005	0.5	10	70
13	copper	mg/kg	0.045	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.0068	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	0.015	0.5	10	50
18	antimony	mg/kg	0.007	0.06	0.7	5
19	selenium	mg/kg	<0.005	0.1	0.5	7
20	zinc	mg/kg	0.043	4	50	200
21	chloride	mg/kg	28	800	15,000	25,000
22	fluoride	mg/kg	1.7	10	150	500
23	sulphate	mg/kg	39	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	410	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

RECEIVED: 18/10/2024

Classification of sample: -BH2-07/03/2024-0.0

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

Sample details

Sample name:	LoW Code:
-BH2-07/03/2024-0.0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.0-1.0 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.3% 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		antimony { antimony trioxide }				23 mg/kg	1.197	26.074 mg/kg	0.00261 %	✓		
		051-005-00-X	215-175-0	1309-64-4								
2		arsenic { arsenic trioxide }				24 mg/kg	1.32	30.008 mg/kg	0.003 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
3		boron { diboron trioxide }			11	0.62 mg/kg	3.22	1.891 mg/kg	0.000189 %	✓		
		005-008-00-8	215-125-8	1303-86-2								
4		cadmium { cadmium oxide }				0.37 mg/kg	1.142	0.4 mg/kg	0.00004 %	✓		
		048-002-00-0	215-146-2	1306-19-0								
5		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				65 mg/kg	1.462	89.966 mg/kg	0.009 %	✓		
			215-160-9	1308-38-9								
6		chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD	
		024-017-00-8										
7		copper { dicopper oxide; copper (I) oxide }				120 mg/kg	1.126	127.946 mg/kg	0.0128 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
8		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	210 mg/kg		198.87 mg/kg	0.0199 %	✓		
		082-001-00-6										
9		mercury { mercury dichloride }				0.15 mg/kg	1.353	0.192 mg/kg	0.0000192 %	✓		
		080-010-00-X	231-299-8	7487-94-7								
10		molybdenum { molybdenum(VI) oxide }				1.5 mg/kg	1.5	2.131 mg/kg	0.000213 %	✓		
		042-001-00-9	215-204-7	1313-27-5								
11		nickel { nickel dichloride }				67 mg/kg	2.208	140.1 mg/kg	0.014 %	✓		
		028-011-00-6	231-743-0	7718-54-9								
12		selenium { nickel selenate }				0.68 mg/kg	2.554	1.645 mg/kg	0.000164 %	✓		
		028-031-00-5	239-125-2	15060-62-5								
13		zinc { zinc oxide }				200 mg/kg	1.245	235.749 mg/kg	0.0236 %	✓		
		030-013-00-7	215-222-5	1314-13-2								
14		TPH (C6 to C40) petroleum group				180 mg/kg		170.46 mg/kg	0.017 %	✓		
				TPH								

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MVC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		603-181-00-X	216-653-1	1634-04-4								
16		benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-020-00-8	200-753-7	71-43-2								
17		toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-021-00-3	203-625-9	108-88-3								
18	●	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-023-00-4	202-849-4	100-41-4								
19		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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD	
		006-007-00-5										
20	●	pH				8.5 pH		8.5 pH	8.5 pH			
				PH								
21		naphthalene				0.15 mg/kg		0.142 mg/kg	0.0000142 %	✓		
		601-052-00-2	202-049-5	91-20-3								
22	●	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-917-1	208-96-8								
23	●	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-469-6	83-32-9								
24	●	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-695-5	86-73-7								
25	●	phenanthrene				0.83 mg/kg		0.786 mg/kg	0.0000786 %	✓		
			201-581-5	85-01-8								
26	●	anthracene				0.17 mg/kg		0.161 mg/kg	0.0000161 %	✓		
			204-371-1	120-12-7								
27	●	fluoranthene				0.96 mg/kg		0.909 mg/kg	0.0000909 %	✓		
			205-912-4	206-44-0								
28	●	pyrene				0.84 mg/kg		0.795 mg/kg	0.0000795 %	✓		
			204-927-3	129-00-0								
29		benzo[a]anthracene				0.39 mg/kg		0.369 mg/kg	0.0000369 %	✓		
		601-033-00-9	200-280-6	56-55-3								
30		chrysene				0.48 mg/kg		0.455 mg/kg	0.0000455 %	✓		
		601-048-00-0	205-923-4	218-01-9								
31		benzo[k]fluoranthene				0.17 mg/kg		0.161 mg/kg	0.0000161 %	✓		
		601-036-00-5	205-916-6	207-08-9								
32		benzo[a]pyrene; benzo[def]chrysene				0.34 mg/kg		0.322 mg/kg	0.0000322 %	✓		
		601-032-00-3	200-028-5	50-32-8								
33	●	indeno[123-cd]pyrene				0.26 mg/kg		0.246 mg/kg	0.0000246 %	✓		
			205-893-2	193-39-5								
34		dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-041-00-2	200-181-8	53-70-3								
35	●	benzo[ghi]perylene				0.33 mg/kg		0.313 mg/kg	0.0000313 %	✓		
			205-883-8	191-24-2								
36	●	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		602-039-00-4	215-648-1	1336-36-3								
37		barium { barium oxide }				75 mg/kg	1.117	79.3 mg/kg	0.00793 %	✓		
			215-127-9	1304-28-5								
38	●	benzo[bk]fluoranthene				0.65 mg/kg		0.616 mg/kg	0.0000616 %	✓		
			[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9								
39	●	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-881-7	191-07-1								
40	●	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
				P1186								
41		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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]							
Total:								0.111 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.017%)

RECEIVED: 18/10/2024

WAC results for sample: -BH2-07/03/2024-0.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	3.5	3	5	6
2	LOI (loss on ignition)	%	2.8	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	840	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	5.6	100	-	-
7	pH	pH	9.5	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.01	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.067	0.5	2	25
10	barium	mg/kg	0.13	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.0064	0.5	10	70
13	copper	mg/kg	0.052	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.019	0.5	10	30
16	nickel	mg/kg	0.0082	0.4	10	40
17	lead	mg/kg	0.056	0.5	10	50
18	antimony	mg/kg	0.008	0.06	0.7	5
19	selenium	mg/kg	<0.005	0.1	0.5	7
20	zinc	mg/kg	0.079	4	50	200
21	chloride	mg/kg	18	800	15,000	25,000
22	fluoride	mg/kg	1.4	10	150	500
23	sulphate	mg/kg	170	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	610	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail

Classification of sample: -BH2-07/03/2024-1.0

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

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Sample details

Sample name:	LoW Code:	
-BH2-07/03/2024-1.0	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.0-2.0 m		
Moisture content:		
6.3%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 6.3% 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	antimony { antimony trioxide }				2.3 mg/kg	1.197	2.58 mg/kg	0.000258 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				11 mg/kg	1.32	13.609 mg/kg	0.00136 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	0.69 mg/kg	3.22	2.082 mg/kg	0.000208 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				61 mg/kg	1.462	83.538 mg/kg	0.00835 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				70 mg/kg	1.126	73.847 mg/kg	0.00738 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	130 mg/kg		121.81 mg/kg	0.0122 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.08 mg/kg	1.353	0.101 mg/kg	0.0000101 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				2 mg/kg	1.5	2.811 mg/kg	0.000281 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				57 mg/kg	2.208	117.931 mg/kg	0.0118 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				0.57 mg/kg	2.554	1.364 mg/kg	0.000136 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				100 mg/kg	1.245	116.63 mg/kg	0.0117 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				380 mg/kg		356.06 mg/kg	0.0356 %	✓	
			TPH							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MCM Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
16		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
17		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
18	●	ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
19	🧪	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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
20	●	pH				8.9	pH		8.9	pH	8.9 pH		
				PH									
21		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
22	●	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
23	●	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
24	●	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
25	●	phenanthrene				0.82	mg/kg		0.768	mg/kg	0.0000768 %	✓	
			201-581-5	85-01-8									
26	●	anthracene				0.37	mg/kg		0.347	mg/kg	0.0000347 %	✓	
			204-371-1	120-12-7									
27	●	fluoranthene				0.79	mg/kg		0.74	mg/kg	0.000074 %	✓	
			205-912-4	206-44-0									
28	●	pyrene				1	mg/kg		0.937	mg/kg	0.0000937 %	✓	
			204-927-3	129-00-0									
29		benzo[a]anthracene				0.53	mg/kg		0.497	mg/kg	0.0000497 %	✓	
		601-033-00-9	200-280-6	56-55-3									
30		chrysene				0.51	mg/kg		0.478	mg/kg	0.0000478 %	✓	
		601-048-00-0	205-923-4	218-01-9									
31		benzo[k]fluoranthene				0.43	mg/kg		0.403	mg/kg	0.0000403 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				0.69	mg/kg		0.647	mg/kg	0.0000647 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33	●	indeno[123-cd]pyrene				0.7	mg/kg		0.656	mg/kg	0.0000656 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35	●	benzo[ghi]perylene				0.63	mg/kg		0.59	mg/kg	0.000059 %	✓	
			205-883-8	191-24-2									
36	●	polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
37	🧪	barium { barium oxide }				89	mg/kg	1.117	93.109	mg/kg	0.00931 %	✓	
			215-127-9	1304-28-5									
38	●	benzo[bk]fluoranthene				0.88	mg/kg		0.825	mg/kg	0.0000825 %	✓	
			[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9									
39	●	coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40	●	monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									
41		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]							
Total:								0.0995 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0356%)

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WAC results for sample: -BH2-07/03/2024-1.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	4.1	3	5	6
2	LOI (loss on ignition)	%	3	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	2400	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	7.4	100	-	-
7	pH	pH	9.2	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.012	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.025	0.5	2	25
10	barium	mg/kg	<0.05	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.01	0.5	10	70
13	copper	mg/kg	0.014	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.034	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	0.0075	0.5	10	50
18	antimony	mg/kg	0.0067	0.06	0.7	5
19	selenium	mg/kg	0.0087	0.1	0.5	7
20	zinc	mg/kg	0.064	4	50	200
21	chloride	mg/kg	15	800	15,000	25,000
22	fluoride	mg/kg	1.4	10	150	500
23	sulphate	mg/kg	150	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	550	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail

Classification of sample: -BH3-07/03/2024-0.0

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

RECEIVED: 18/10/2024

Sample details

Sample name:	LoW Code:
-BH3-07/03/2024-0.0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.0-1.0 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.6%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.6% 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				13 mg/kg	1.32	16.031 mg/kg	0.0016 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	0.73 mg/kg	3.22	2.195 mg/kg	0.00022 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				0.22 mg/kg	1.142	0.235 mg/kg	0.0000235 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				61 mg/kg	1.462	83.271 mg/kg	0.00833 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				72 mg/kg	1.126	75.714 mg/kg	0.00757 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	75 mg/kg		70.05 mg/kg	0.00701 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.05 mg/kg	1.353	0.0632 mg/kg	0.00000632 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				1.2 mg/kg	1.5	1.681 mg/kg	0.000168 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				64 mg/kg	2.208	131.99 mg/kg	0.0132 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				0.6 mg/kg	2.554	1.431 mg/kg	0.000143 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				130 mg/kg	1.245	151.133 mg/kg	0.0151 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				39 mg/kg		36.426 mg/kg	0.00364 %	✓	
			TPH							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MCM Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
16		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
17		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
18	●	ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
19	🧪	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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
20	●	pH				8.6	pH		8.6	pH	8.6 pH		
				PH									
21		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
22	●	acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
23	●	acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
24	●	fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
25	●	phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
26	●	anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
27	●	fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
28	●	pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
29		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
30		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33	●	indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
35	●	benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36	●	polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		602-039-00-4	215-648-1	1336-36-3									
37	🧪	barium { barium oxide }				69	mg/kg	1.117	71.954	mg/kg	0.0072 %	✓	
			215-127-9	1304-28-5									
38	●	benzo[bk]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9									
39	●	coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40	●	monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									
41		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]							
Total:								0.0649 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00364%)

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WAC results for sample: -BH3-07/03/2024-0.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.1	3	5	6
2	LOI (loss on ignition)	%	1.3	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-	-
7	pH	pH	8.9	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.018	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.013	0.5	2	25
10	barium	mg/kg	<0.05	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	<0.005	0.5	10	70
13	copper	mg/kg	0.041	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.018	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	0.018	0.5	10	50
18	antimony	mg/kg	0.011	0.06	0.7	5
19	selenium	mg/kg	0.03	0.1	0.5	7
20	zinc	mg/kg	<0.025	4	50	200
21	chloride	mg/kg	<10	800	15,000	25,000
22	fluoride	mg/kg	1.6	10	150	500
23	sulphate	mg/kg	130	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	640	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: -BH3-07/03/2024-1.0

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

RECEIVED: 18/10/2024

Sample details

Sample name:	LoW Code:
-BH3-07/03/2024-1.0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.0-2.0 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.9% 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				9.4 mg/kg	1.32	11.555 mg/kg	0.00116 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	1.2 mg/kg	3.22	3.597 mg/kg	0.00036 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				55 mg/kg	1.462	74.839 mg/kg	0.00748 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				29 mg/kg	1.126	30.398 mg/kg	0.00304 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	53 mg/kg		49.343 mg/kg	0.00493 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				<0.5 mg/kg	1.5	<0.75 mg/kg	<0.000075 %		<LOD
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				53 mg/kg	2.208	108.953 mg/kg	0.0109 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				0.52 mg/kg	2.554	1.236 mg/kg	0.000124 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				79 mg/kg	1.245	91.547 mg/kg	0.00915 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				42 mg/kg		39.102 mg/kg	0.00391 %	✓	
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MCM Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
	601-020-00-8	200-753-7	71-43-2								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
	601-023-00-4	202-849-4	100-41-4								
19	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD	
	006-007-00-5										
20	pH				9.3 pH		9.3 pH	9.3 pH			
			PH								
21	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-052-00-2	202-049-5	91-20-3								
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		205-917-1	208-96-8								
23	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		201-469-6	83-32-9								
24	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		201-695-5	86-73-7								
25	phenanthrene				0.13 mg/kg		0.121 mg/kg	0.0000121 %	✓		
		201-581-5	85-01-8								
26	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		204-371-1	120-12-7								
27	fluoranthene				0.18 mg/kg		0.168 mg/kg	0.0000168 %	✓		
		205-912-4	206-44-0								
28	pyrene				0.13 mg/kg		0.121 mg/kg	0.0000121 %	✓		
		204-927-3	129-00-0								
29	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-033-00-9	200-280-6	56-55-3								
30	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-048-00-0	205-923-4	218-01-9								
31	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		205-883-8	191-24-2								
36	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	602-039-00-4	215-648-1	1336-36-3								
37	barium { barium oxide }				46 mg/kg	1.117	47.815 mg/kg	0.00478 %	✓		
		215-127-9	1304-28-5								
38	benzo[bk]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9								
39	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		205-881-7	191-07-1								
40	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			P1186								
41	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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]							
Total:								0.0466 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00391%)

RECEIVED: 18/10/2024

WAC results for sample: -BH3-07/03/2024-1.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.72	3	5	6
2	LOI (loss on ignition)	%	0.94	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-	-
7	pH	pH	8.8	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.017	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.029	0.5	2	25
10	barium	mg/kg	<0.05	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	<0.005	0.5	10	70
13	copper	mg/kg	0.0094	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.0098	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	<0.005	0.5	10	50
18	antimony	mg/kg	<0.005	0.06	0.7	5
19	selenium	mg/kg	0.022	0.1	0.5	7
20	zinc	mg/kg	0.058	4	50	200
21	chloride	mg/kg	360	800	15,000	25,000
22	fluoride	mg/kg	1.3	10	150	500
23	sulphate	mg/kg	200	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	1300	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

RECEIVED: 18/10/2024

Classification of sample: -BH4-07/03/2024-0.0

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

Sample details

Sample name:	LoW Code:
-BH4-07/03/2024-0.0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.0-1.0 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
5.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 5.3% 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	antimony { antimony trioxide }				3.2 mg/kg	1.197	3.628 mg/kg	0.000363 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				41 mg/kg	1.32	51.264 mg/kg	0.00513 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	0.46 mg/kg	3.22	1.403 mg/kg	0.00014 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				0.78 mg/kg	1.142	0.844 mg/kg	0.0000844 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				99 mg/kg	1.462	137.025 mg/kg	0.0137 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				100 mg/kg	1.126	106.622 mg/kg	0.0107 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	99 mg/kg		93.753 mg/kg	0.00938 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.08 mg/kg	1.353	0.103 mg/kg	0.0000103 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				1.4 mg/kg	1.5	1.989 mg/kg	0.000199 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				110 mg/kg	2.208	230.015 mg/kg	0.023 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				1 mg/kg	2.554	2.418 mg/kg	0.000242 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				230 mg/kg	1.245	271.111 mg/kg	0.0271 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				110 mg/kg		104.17 mg/kg	0.0104 %	✓	
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
16	benzene	601-020-00-8	200-753-7	71-43-2	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
17	toluene	601-021-00-3	203-625-9	108-88-3	0.0079 mg/kg		0.0074 mg/kg	0.000000748 %	✓	
18	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
20	pH		PH		9.8 pH		9.8 pH	9.8 pH		
21	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	acenaphthylene		205-917-1	208-96-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	acenaphthene		201-469-6	83-32-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fluorene		201-695-5	86-73-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	phenanthrene		201-581-5	85-01-8	0.2 mg/kg		0.189 mg/kg	0.0000189 %	✓	
26	anthracene		204-371-1	120-12-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	fluoranthene		205-912-4	206-44-0	0.22 mg/kg		0.208 mg/kg	0.0000208 %	✓	
28	pyrene		204-927-3	129-00-0	0.24 mg/kg		0.227 mg/kg	0.0000227 %	✓	
29	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[ghi]perylene		205-883-8	191-24-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	barium { barium oxide }		215-127-9	1304-28-5	89 mg/kg	1.117	94.102 mg/kg	0.00941 %	✓	
38	benzo[bk]fluoranthene	[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
41	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]	0.0097 mg/kg		0.0091 mg/kg	0.000000919 %	✓	

#	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]							
Total:								0.11 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

toluene: (conc.: 7.48e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0104%)

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 9.19e-07%)

RECEIVED: 18/10/2024

WAC results for sample: -BH4-07/03/2024-0.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.9	3	5	6
2	LOI (loss on ignition)	%	0.59	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.018	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	340	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-	-
7	pH	pH	9.6	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.015	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.14	0.5	2	25
10	barium	mg/kg	<0.05	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.016	0.5	10	70
13	copper	mg/kg	0.077	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.011	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	0.034	0.5	10	50
18	antimony	mg/kg	0.016	0.06	0.7	5
19	selenium	mg/kg	0.0053	0.1	0.5	7
20	zinc	mg/kg	0.025	4	50	200
21	chloride	mg/kg	13	800	15,000	25,000
22	fluoride	mg/kg	1.7	10	150	500
23	sulphate	mg/kg	87	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	550	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: -BH4-07/03/2024-1.0

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

RECEIVED: 18/10/2024

Sample details

Sample name:	LoW Code:
-BH4-07/03/2024-1.0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.0-2.0 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.1%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.1% 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				14 mg/kg	1.32	16.987 mg/kg	0.0017 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	0.86 mg/kg	3.22	2.545 mg/kg	0.000254 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				0.1 mg/kg	1.142	0.105 mg/kg	0.0000105 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				55 mg/kg	1.462	73.874 mg/kg	0.00739 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				37 mg/kg	1.126	38.284 mg/kg	0.00383 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	34 mg/kg		31.246 mg/kg	0.00312 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				1 mg/kg	1.5	1.379 mg/kg	0.000138 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				53 mg/kg	2.208	107.549 mg/kg	0.0108 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				0.66 mg/kg	2.554	1.549 mg/kg	0.000155 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				100 mg/kg	1.245	114.389 mg/kg	0.0114 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				45 mg/kg		41.355 mg/kg	0.00414 %	✓	
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
16	benzene	601-020-00-8	200-753-7	71-43-2	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
17	toluene	601-021-00-3	203-625-9	108-88-3	0.0037 mg/kg		0.0034 mg/kg	0.00000034 %	✓	
18	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
20	pH		PH		9.3 pH		9.3 pH	9.3 pH		
21	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	acenaphthylene		205-917-1	208-96-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	acenaphthene		201-469-6	83-32-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fluorene		201-695-5	86-73-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	phenanthrene		201-581-5	85-01-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	anthracene		204-371-1	120-12-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	fluoranthene		205-912-4	206-44-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	pyrene		204-927-3	129-00-0	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[ghi]perylene		205-883-8	191-24-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	barium { barium oxide }		215-127-9	1304-28-5	70 mg/kg	1.117	71.825 mg/kg	0.00718 %	✓	
38	benzo[bk]fluoranthene	[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	monohydric phenols		P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
41	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]	<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
Total:								0.0508 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

toluene: (conc.: 3.4e-07%)

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00414%)

RECEIVED: 18/10/2024

WAC results for sample: -BH4-07/03/2024-1.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.72	3	5	6
2	LOI (loss on ignition)	%	2.1	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-	-
7	pH	pH	9.1	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.012	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.01	0.5	2	25
10	barium	mg/kg	<0.05	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.0074	0.5	10	70
13	copper	mg/kg	0.024	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.0093	0.5	10	30
16	nickel	mg/kg	0.007	0.4	10	40
17	lead	mg/kg	<0.005	0.5	10	50
18	antimony	mg/kg	0.0059	0.06	0.7	5
19	selenium	mg/kg	0.013	0.1	0.5	7
20	zinc	mg/kg	0.037	4	50	200
21	chloride	mg/kg	15	800	15,000	25,000
22	fluoride	mg/kg	1.9	10	150	500
23	sulphate	mg/kg	71	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	100	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	640	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: -BH5-07/03/2024-0.0

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

RECEIVED: 18/10/2024

Sample details

Sample name:	LoW Code:
-BH5-07/03/2024-0.0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.0-1.0 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 3.5% 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	 antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	 arsenic { arsenic trioxide }				26 mg/kg	1.32	33.127 mg/kg	0.00331 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	 boron { diboron trioxide }			11	0.45 mg/kg	3.22	1.398 mg/kg	0.00014 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	 cadmium { cadmium oxide }				0.4 mg/kg	1.142	0.441 mg/kg	0.0000441 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				170 mg/kg	1.462	239.768 mg/kg	0.024 %	✓	
		215-160-9	1308-38-9							
6	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	 copper { dicopper oxide; copper (I) oxide }				53 mg/kg	1.126	57.584 mg/kg	0.00576 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	 lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	39 mg/kg		37.635 mg/kg	0.00376 %	✓	
	082-001-00-6									
9	 mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	 molybdenum { molybdenum(VI) oxide }				1 mg/kg	1.5	1.448 mg/kg	0.000145 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	 nickel { nickel dichloride }				120 mg/kg	2.208	255.695 mg/kg	0.0256 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	 selenium { nickel selenate }				0.84 mg/kg	2.554	2.07 mg/kg	0.000207 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	 zinc { zinc oxide }				160 mg/kg	1.245	192.184 mg/kg	0.0192 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	 TPH (C6 to C40) petroleum group				98 mg/kg		94.57 mg/kg	0.00946 %	✓	
			TPH							

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MVC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
15		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		603-181-00-X	216-653-1	1634-04-4								
16		benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-020-00-8	200-753-7	71-43-2								
17		toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-021-00-3	203-625-9	108-88-3								
18	●	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD	
		601-023-00-4	202-849-4	100-41-4								
19		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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD	
		006-007-00-5										
20	●	pH				10.1 pH		10.1 pH	10.1 pH			
				PH								
21		naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-052-00-2	202-049-5	91-20-3								
22	●	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-917-1	208-96-8								
23	●	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-469-6	83-32-9								
24	●	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-695-5	86-73-7								
25	●	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			201-581-5	85-01-8								
26	●	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			204-371-1	120-12-7								
27	●	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-912-4	206-44-0								
28	●	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			204-927-3	129-00-0								
29		benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-033-00-9	200-280-6	56-55-3								
30		chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-048-00-0	205-923-4	218-01-9								
31		benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-036-00-5	205-916-6	207-08-9								
32		benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-032-00-3	200-028-5	50-32-8								
33	●	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-893-2	193-39-5								
34		dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		601-041-00-2	200-181-8	53-70-3								
35	●	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-883-8	191-24-2								
36	●	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		602-039-00-4	215-648-1	1336-36-3								
37		barium { barium oxide }				77 mg/kg	1.117	82.962 mg/kg	0.0083 %	✓		
			215-127-9	1304-28-5								
38	●	benzo[bk]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9								
39	●	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
			205-881-7	191-07-1								
40	●	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
				P1186								
41		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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]							
Total:								0.101 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00946%)

RECEIVED: 18/10/2024

WAC results for sample: -BH5-07/03/2024-0.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.55	3	5	6
2	LOI (loss on ignition)	%	1	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-	-
7	pH	pH	11.4	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.018	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.054	0.5	2	25
10	barium	mg/kg	0.059	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.12	0.5	10	70
13	copper	mg/kg	0.019	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.04	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	<0.005	0.5	10	50
18	antimony	mg/kg	0.0065	0.06	0.7	5
19	selenium	mg/kg	0.06	0.1	0.5	7
20	zinc	mg/kg	<0.025	4	50	200
21	chloride	mg/kg	46	800	15,000	25,000
22	fluoride	mg/kg	2.3	10	150	500
23	sulphate	mg/kg	240	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	2200	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: -BH5-07/03/2024-1.0

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

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Sample details

Sample name:	LoW Code:	
-BH5-07/03/2024-1.0	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.0-2.0 m		
Moisture content:		
3.3%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 3.3% 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				17 mg/kg	1.32	21.705 mg/kg	0.00217 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	0.56 mg/kg	3.22	1.744 mg/kg	0.000174 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				0.1 mg/kg	1.142	0.11 mg/kg	0.000011 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				68 mg/kg	1.462	96.106 mg/kg	0.00961 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				60 mg/kg	1.126	65.324 mg/kg	0.00653 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	77 mg/kg		74.459 mg/kg	0.00745 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.05 mg/kg	1.353	0.0654 mg/kg	0.00000654 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				1.4 mg/kg	1.5	2.031 mg/kg	0.000203 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				81 mg/kg	2.208	172.952 mg/kg	0.0173 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				0.66 mg/kg	2.554	1.63 mg/kg	0.000163 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				120 mg/kg	1.245	144.437 mg/kg	0.0144 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				75 mg/kg		72.525 mg/kg	0.00725 %	✓	
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
16	benzene	601-020-00-8	200-753-7	71-43-2	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
17	toluene	601-021-00-3	203-625-9	108-88-3	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
18	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
19	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
20	pH				9.4 pH		9.4 pH	9.4 pH		
21	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	acenaphthylene		205-917-1	208-96-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	acenaphthene		201-469-6	83-32-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fluorene		201-695-5	86-73-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	phenanthrene		201-581-5	85-01-8	0.17 mg/kg		0.164 mg/kg	0.0000164 %	✓	
26	anthracene		204-371-1	120-12-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	fluoranthene		205-912-4	206-44-0	0.25 mg/kg		0.242 mg/kg	0.0000242 %	✓	
28	pyrene		204-927-3	129-00-0	0.21 mg/kg		0.203 mg/kg	0.0000203 %	✓	
29	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	chrysene	601-048-00-0	205-923-4	218-01-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[ghi]perylene		205-883-8	191-24-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	barium { barium oxide }		215-127-9	1304-28-5	83 mg/kg	1.117	89.612 mg/kg	0.00896 %	✓	
38	benzo[bk]fluoranthene	[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	monohydric phenols			P1186	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
41	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]	<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
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

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00725%)

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WAC results for sample: -BH5-07/03/2024-1.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1	3	5	6
2	LOI (loss on ignition)	%	0.17	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-	-
7	pH	pH	9.3	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.017	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.012	0.5	2	25
10	barium	mg/kg	0.14	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.0054	0.5	10	70
13	copper	mg/kg	0.0071	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.012	0.5	10	30
16	nickel	mg/kg	<0.005	0.4	10	40
17	lead	mg/kg	<0.005	0.5	10	50
18	antimony	mg/kg	<0.005	0.06	0.7	5
19	selenium	mg/kg	0.014	0.1	0.5	7
20	zinc	mg/kg	<0.025	4	50	200
21	chloride	mg/kg	20	800	15,000	25,000
22	fluoride	mg/kg	1.3	10	150	500
23	sulphate	mg/kg	2400	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	2900	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail

Classification of sample: -BH6-07/03/2024-0.0

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

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Sample details

Sample name:	LoW Code:	
-BH6-07/03/2024-0.0	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.0-1.0 m		
Moisture content:		
5.9%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 5.9% 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	antimony { antimony trioxide }				3.6 mg/kg	1.197	4.055 mg/kg	0.000406 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				25 mg/kg	1.32	31.061 mg/kg	0.00311 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide }			11	<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				0.39 mg/kg	1.142	0.419 mg/kg	0.0000419 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				52 mg/kg	1.462	71.517 mg/kg	0.00715 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				110 mg/kg	1.126	116.541 mg/kg	0.0117 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	360 mg/kg		338.76 mg/kg	0.0339 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.38 mg/kg	1.353	0.484 mg/kg	0.0000484 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				1.6 mg/kg	1.5	2.259 mg/kg	0.000226 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel dichloride }				58 mg/kg	2.208	120.512 mg/kg	0.0121 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	selenium { nickel selenate }				1.1 mg/kg	2.554	2.643 mg/kg	0.000264 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc oxide }				170 mg/kg	1.245	199.117 mg/kg	0.0199 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	TPH (C6 to C40) petroleum group				140 mg/kg		131.74 mg/kg	0.0132 %	✓	
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
16	benzene	601-020-00-8	200-753-7	71-43-2	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
17	toluene	601-021-00-3	203-625-9	108-88-3	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
18	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
20	pH		PH		11.2 pH		11.2 pH	11.2 pH		
21	naphthalene	601-052-00-2	202-049-5	91-20-3	0.37 mg/kg		0.348 mg/kg	0.0000348 %	✓	
22	acenaphthylene		205-917-1	208-96-8	0.13 mg/kg		0.122 mg/kg	0.0000122 %	✓	
23	acenaphthene		201-469-6	83-32-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	fluorene		201-695-5	86-73-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	phenanthrene		201-581-5	85-01-8	1.5 mg/kg		1.411 mg/kg	0.000141 %	✓	
26	anthracene		204-371-1	120-12-7	0.34 mg/kg		0.32 mg/kg	0.000032 %	✓	
27	fluoranthene		205-912-4	206-44-0	2.4 mg/kg		2.258 mg/kg	0.000226 %	✓	
28	pyrene		204-927-3	129-00-0	2.2 mg/kg		2.07 mg/kg	0.000207 %	✓	
29	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	1.1 mg/kg		1.035 mg/kg	0.000104 %	✓	
30	chrysene	601-048-00-0	205-923-4	218-01-9	1.3 mg/kg		1.223 mg/kg	0.000122 %	✓	
31	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.46 mg/kg		0.433 mg/kg	0.0000433 %	✓	
32	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1.1 mg/kg		1.035 mg/kg	0.000104 %	✓	
33	indeno[123-cd]pyrene		205-893-2	193-39-5	0.6 mg/kg		0.565 mg/kg	0.0000565 %	✓	
34	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[ghi]perylene		205-883-8	191-24-2	0.68 mg/kg		0.64 mg/kg	0.000064 %	✓	
36	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	barium { barium oxide }		215-127-9	1304-28-5	110 mg/kg	1.117	115.57 mg/kg	0.0116 %	✓	
38	benzo[bk]fluoranthene	[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		1.7 mg/kg		1.6 mg/kg	0.00016 %	✓	
39	coronene		205-881-7	191-07-1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	monohydric phenols			P1186	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
41	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]	<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<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							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
Total:								0.115 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0132%)

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WAC results for sample: -BH6-07/03/2024-0.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	6.8	3	5	6
2	LOI (loss on ignition)	%	3.2	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	250	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	14	100	-	-
7	pH	pH	10.2	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.014	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.17	0.5	2	25
10	barium	mg/kg	0.064	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.035	0.5	10	70
13	copper	mg/kg	0.059	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.013	0.5	10	30
16	nickel	mg/kg	0.0057	0.4	10	40
17	lead	mg/kg	0.1	0.5	10	50
18	antimony	mg/kg	0.018	0.06	0.7	5
19	selenium	mg/kg	0.013	0.1	0.5	7
20	zinc	mg/kg	0.078	4	50	200
21	chloride	mg/kg	25	800	15,000	25,000
22	fluoride	mg/kg	1.9	10	150	500
23	sulphate	mg/kg	230	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	710	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail
	SNRHW WAC criteria fail

Classification of sample: -BH6-07/03/2024-1.0

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

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Sample details

Sample name:	LoW Code:
-BH6-07/03/2024-1.0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.0-2.0 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 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	 antimony { antimony trioxide }				6.8 mg/kg	1.197	7.489 mg/kg	0.000749 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	 arsenic { arsenic trioxide }				32 mg/kg	1.32	38.87 mg/kg	0.00389 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	 boron { diboron trioxide }			11	0.46 mg/kg	3.22	1.363 mg/kg	0.000136 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	 cadmium { cadmium oxide }				0.23 mg/kg	1.142	0.242 mg/kg	0.0000242 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				53 mg/kg	1.462	71.265 mg/kg	0.00713 %	✓	
		215-160-9	1308-38-9							
6	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	 copper { dicopper oxide; copper (I) oxide }				150 mg/kg	1.126	155.373 mg/kg	0.0155 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	 lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	730 mg/kg		671.6 mg/kg	0.0672 %	✓	
	082-001-00-6									
9	 mercury { mercury dichloride }				0.79 mg/kg	1.353	0.984 mg/kg	0.0000984 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	 molybdenum { molybdenum(VI) oxide }				3.3 mg/kg	1.5	4.555 mg/kg	0.000455 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	 nickel { nickel dichloride }				67 mg/kg	2.208	136.106 mg/kg	0.0136 %	✓	
	028-011-00-6	231-743-0	7718-54-9							
12	 selenium { nickel selenate }				1.3 mg/kg	2.554	3.054 mg/kg	0.000305 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	 zinc { zinc oxide }				230 mg/kg	1.245	263.381 mg/kg	0.0263 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
14	 TPH (C6 to C40) petroleum group				94 mg/kg		86.48 mg/kg	0.00865 %	✓	
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MCM Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
16	benzene	601-020-00-8	200-753-7	71-43-2	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
17	toluene	601-021-00-3	203-625-9	108-88-3	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
18	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
20	pH		PH		9.7 pH		9.7 pH	9.7 pH			
21	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
22	acenaphthylene		205-917-1	208-96-8	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
23	acenaphthene		201-469-6	83-32-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
24	fluorene		201-695-5	86-73-7	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
25	phenanthrene		201-581-5	85-01-8	2.5 mg/kg		2.3 mg/kg	0.00023 %		✓	
26	anthracene		204-371-1	120-12-7	0.56 mg/kg		0.515 mg/kg	0.0000515 %		✓	
27	fluoranthene		205-912-4	206-44-0	3.4 mg/kg		3.128 mg/kg	0.000313 %		✓	
28	pyrene		204-927-3	129-00-0	2.8 mg/kg		2.576 mg/kg	0.000258 %		✓	
29	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	1.5 mg/kg		1.38 mg/kg	0.000138 %		✓	
30	chrysene	601-048-00-0	205-923-4	218-01-9	1.5 mg/kg		1.38 mg/kg	0.000138 %		✓	
31	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.63 mg/kg		0.58 mg/kg	0.000058 %		✓	
32	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1.2 mg/kg		1.104 mg/kg	0.00011 %		✓	
33	indeno[123-cd]pyrene		205-893-2	193-39-5	0.75 mg/kg		0.69 mg/kg	0.000069 %		✓	
34	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
35	benzo[ghi]perylene		205-883-8	191-24-2	0.77 mg/kg		0.708 mg/kg	0.0000708 %		✓	
36	polychlorobiphenyls; PCB	602-039-00-4	215-648-1	1336-36-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
37	barium { barium oxide }		215-127-9	1304-28-5	200 mg/kg	1.117	205.437 mg/kg	0.0205 %		✓	
38	benzo[bk]fluoranthene	[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		2.3 mg/kg		2.116 mg/kg	0.000212 %		✓	
39	coronene		205-881-7	191-07-1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
40	monohydric phenols			P1186	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
41	o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]	<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<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							
		203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]							
Total:								0.167 %		

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 Waste is a solid (soil) with no free draining liquid phase, test non applicable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00865%)

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WAC results for sample: -BH6-07/03/2024-1.0

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

The WAC used in this report are the WAC defined for the inert, stable non-reactive hazardous and hazardous classes of landfill in the UK. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample FAILS the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	5.9	3	5	6
2	LOI (loss on ignition)	%	3.3	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	180	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	18	100	-	-
7	pH	pH	9.9	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	0.013	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.038	0.5	2	25
10	barium	mg/kg	0.085	20	100	300
11	cadmium	mg/kg	<0.0011	0.04	1	5
12	chromium	mg/kg	0.096	0.5	10	70
13	copper	mg/kg	0.06	2	50	100
14	mercury	mg/kg	<0.0005	0.01	0.2	2
15	molybdenum	mg/kg	0.021	0.5	10	30
16	nickel	mg/kg	0.0072	0.4	10	40
17	lead	mg/kg	0.19	0.5	10	50
18	antimony	mg/kg	0.033	0.06	0.7	5
19	selenium	mg/kg	0.025	0.1	0.5	7
20	zinc	mg/kg	0.051	4	50	200
21	chloride	mg/kg	28	800	15,000	25,000
22	fluoride	mg/kg	2.7	10	150	500
23	sulphate	mg/kg	68	1,000	20,000	50,000
24	phenol index	mg/kg	<0.3	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	510	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail
	SNRHW WAC criteria fail

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Appendix A: Classifier defined and non EU CLP 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)**

EU CLP index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP 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):

03 Jun 2015 - 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)

EU CLP index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

03 Jun 2015 - 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**

EU CLP 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):

14 Dec 2015 - 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

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• **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

• **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

EU CLP 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):

29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

• **barium oxide** (EC Number: 215-127-9, CAS Number: 1304-28-5)

Description/Comments: Data from ECHA's C&L Inventory Database, Sigma Aldrich SDS dated 6/2/20

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/88825>

Data source date: 02 Apr 2020

Hazard Statements: Acute Tox. 3; H301 , Skin Corr. 1B; H314 , Eye Dam. 1; H318 , Acute Tox. 1; H332

• **benzo[bk]fluoranthene** (EC Number: [1] 205-911-9 [2] 205-916-6, CAS Number: [1] 205-99-2 [2] 207-08-9)

Description/Comments: Combined data from harmonised entries in CLP for benzo[b] and benzo[k]fluoranthene; 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: Carc. 1B; H350 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.

Data source: <http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en>

Data source date: 16 Jun 2014

Hazard Statements: STOT SE 2; H371

▪ **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

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

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

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic.

boron {diboron trioxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility.

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history

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

Reasonable case species based on hazard statements/molecular weight.

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 [Note all samples revealed Cr(VI) concentrations less than the LOD, therefore based on the information available, there isn't enough Cr(VI) to make hazardous levels of the Metal chromate]

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Worst case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Reasonable worst case species based on hazard statements/molecular weight [Note all samples revealed Cr(VI) concentrations less than the LOD, therefore based on the information available, there isn't enough Cr(VI) to make hazardous levels of the Metal chromate]

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel dichloride}

Reasonable worst case species based on hazard statements/molecular weight [Note all samples revealed Cr(VI) concentrations less than the LOD, therefore based on the information available, there isn't enough Cr(VI) to make hazardous levels of the Metal chromate]

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc oxide}

Reasonable worst case species based on hazard statements/molecular weight [Note all samples revealed Cr(VI) concentrations less than the LOD, therefore based on the information available, there isn't enough Cr(VI) to make hazardous levels of the Metal chromate]

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]

barium {barium oxide}

Reasonable worst case CLP species based on hazard statements/molecular weight [Note all samples revealed Cr(VI) as being less than the LOD]

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Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1.NI - Jan 2021**
HazWasteOnline Classification Engine Version: 2024.96.6000.11109 (05 Apr 2024)
HazWasteOnline Database: 2024.95.5999.11108 (04 Apr 2024)

This classification utilises the following guidance and legislation:

WM3 v1.1.NI - Waste Classification - 1st Edition v1.1.NI - Jan 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

17th ATP - Regulation (EU) 2021/849 of 11 March 2021

18th ATP - Regulation (EU) 2022/692 of 16 February 2022

19th ATP - Regulation (EU) 2023/1434 of 25 April 2023

20th ATP - Regulation (EU) 2023/1435 of 2 May 2023

21st ATP - Regulation (EU) 2024/197 of 19 October 2023

Determinand	Unit	-BH1-07/03/2024-0.0	-BH1-07/03/2024-1.0	-BH2-07/03/2024-0.0	-BH2-07/03/2024-1.0	-BH3-07/03/2024-0.0	-BH3-07/03/2024-1.0	-BH4-07/03/2024-0.0	-BH4-07/03/2024-1.0	-BH5-07/03/2024-0.0	-BH5-07/03/2024-1.0	-BH6-07/03/2024-0.0	-BH6-07/03/2024-1.0
TOC (total organic carbon)	%	1.5	0.55	3.5	4.1	1.1	0.72	1.9	0.72	0.55	1	6.8	5.9
LOI (loss on ignition)	%	1	0.61	2.8	3	1.3	0.94	0.59	2.1	1	0.17	3.2	3.3
BTEX(benzene, toluene, ethylbenzene and xylenes)	mg/kg	0.017	<0.01	<0.01	<0.01	<0.01	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.01
PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TPH Total WAC With Florisil	mg/kg	7400	<10	840	2400	<10	<10	340	<10	<10	<10	250	180
Total Of 17 PAH's Lower	mg/kg	33	<1	5.6	7.4	<1	<1	<1	<1	<1	<1	14	18
pH	pH	9.8	9.2	9.5	9.2	8.9	8.8	9.6	9.1	11.4	9.3	10.2	9.9
ANC (acid neutralisation capacity)	mol/kg	0.011	0.014	0.01	0.012	0.018	0.017	0.015	0.012	0.018	0.017	0.014	0.013
Eluates 10:1													
arsenic	mg/kg	0.055	0.04	0.067	0.025	0.013	0.029	0.14	0.01	0.054	0.01	0.17	0.038
barium	mg/kg	0.051	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	0.059	0.14	0.064	0.085
cadmium	mg/kg	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
chromium	mg/kg	0.022	<0.005	0.0064	0.01	<0.005	<0.005	0.016	0.0074	0.12	0.0054	0.035	0.096
copper	mg/kg	0.038	0.045	0.052	0.014	0.041	0.0094	0.077	0.024	0.019	0.0071	0.059	0.06
mercury	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
molybdenum	mg/kg	0.011	0.0068	0.019	0.034	0.018	0.0098	0.011	0.0093	0.04	0.012	0.013	0.021
nickel	mg/kg	<0.005	<0.005	0.0082	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	0.0057	0.0072
lead	mg/kg	0.44	0.015	0.056	0.0075	0.018	<0.005	0.034	<0.005	<0.005	<0.005	0.1	0.19
antimony	mg/kg	0.017	0.007	0.008	0.0067	0.011	<0.005	0.016	0.0059	0.0065	<0.005	0.018	0.033
selenium	mg/kg	<0.005	<0.005	<0.005	0.0087	0.03	0.022	0.0053	0.013	0.06	0.014	0.013	0.025
zinc	mg/kg	0.064	0.043	0.079	0.064	<0.025	0.058	0.025	0.037	<0.025	<0.025	0.078	0.051
chloride	mg/kg	18	28	18	15	<10	360	13	15	46	20	25	28
fluoride	mg/kg	2.4	1.7	1.4	1.4	1.6	1.3	1.7	1.9	2.3	1.3	1.9	2.7
sulphate	mg/kg	150	39	170	150	130	200	87	71	240	2400	230	68
phenol index	mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
DOC (dissolved organic carbon)	mg/kg	<50	<50	<50	<50	<50	<50	<50	100	<50	<50	<50	<50
TDS (total dissolved solids)	mg/kg	580	410	610	550	640	1300	550	640	2200	2900	710	510
Waste Classification (Not determined from WAC see section 7 of GIR):		Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous	Non Hazardous
European Commission Council Decision 2003/33/EC, Criteria for landfills:		B	A	B	B	A	A	A	A	A	B	B	B

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Global Project Reach



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APPENDIX 9.4

WASTE CLASSIFICATION REPORT

VOLUME III

APPENDICES TO

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

MAY 2024

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)

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

Job name

HWOL_24-06781-20240312 182216

Description/Comments

24/02/5725 - Trial Pit (TP) 1 Soil Sample
 24/02/5726 - Trial Pit (TP) 2 Soil Sample
 24/02/5727 - Trial Pit (TP) 3 Soil Sample
 24/02/5728 - Trial Pit (TP) 4 Soil Sample

Project

McCarthy Browne

Site

Greenore Port, Co. Louth

Classified by

Name: **James Purcell**
 Date: **18 Mar 2024 12:26 GMT**
 Telephone: **061 455399**
 Company: **BHP Laboratories**
New Road, Thomondgate
Limerick

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

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification

Date

09 Feb 2023

Next 3 year Refresher due by Feb 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Greenore Port, Co. Louth

Post Code N/A

Description of industry/producer giving rise to the waste

Site investigation works at Greenore Port, Co. Louth.

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

Soils excavated from trial holes for inspection and infiltration testing.

Description of the waste

Brown, Cobblely silty SAND

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Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non-Haz	
1	24/02/5725-22/02/2024-		Non Hazardous		Fail	Pass	3
2	24/02/5726-22/02/2024-		Non Hazardous		Fail	Pass	7
3	24/02/5727-22/02/2024-		Non Hazardous		Pass	Pass	11
4	24/02/5728-22/02/2024-		Non Hazardous		Pass	Pass	15

Related documents

#	Name	Description
1	HWOL_24-06781-20240312 182216.hwol	Eurofins Chemtest .hwol file used to populate the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate the samples in this Job: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: James Purcell

Created date: 18 Mar 2024 12:26 GMT

Appendices	Page
Appendix A: Classifier defined and non EU CLP determinands	19
Appendix B: Rationale for selection of metal species	20
Appendix C: Version	21

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Classification of sample: 24/02/5725-22/02/2024-

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

Sample details

Sample name:	LoW Code:
24/02/5725-22/02/2024-	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
17% (dry weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% Dry 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg		<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				14 mg/kg	1.32	15.799 mg/kg		0.00158 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
3	boron { diboron trioxide }			11	1.3 mg/kg	3.22	3.578 mg/kg		0.000358 %	✓	
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.195 mg/kg		0.0000195 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	27.482 mg/kg		0.00275 %	✓	
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg		<0.000113 %		<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				25 mg/kg	1.126	24.057 mg/kg		0.00241 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	79 mg/kg	1.56	105.321 mg/kg		0.00675 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				0.17 mg/kg	1.353	0.197 mg/kg		0.0000197 %	✓	
	080-010-00-X	231-299-8	7487-94-7								
10	molybdenum { molybdenum(VI) oxide }				0.5 mg/kg	1.5	0.641 mg/kg		0.0000641 %	✓	
	042-001-00-9	215-204-7	1313-27-5								
11	nickel { nickel chromate }				21 mg/kg	2.976	53.42 mg/kg		0.00534 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				0.59 mg/kg	2.554	1.288 mg/kg		0.000129 %	✓	
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				81 mg/kg	2.774	192.056 mg/kg		0.0192 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group				32.5 mg/kg		27.778 mg/kg		0.00278 %	✓	
			TPH								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg		<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg		<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	<LOD
	601-021-00-3	203-625-9	108-88-3						
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	<LOD
	601-023-00-4	202-849-4	100-41-4						
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %	<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]						
20	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %	<LOD
	006-007-00-5								
21	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-052-00-2	202-049-5	91-20-3						
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-917-1	208-96-8						
23	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		201-469-6	83-32-9						
24	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		201-695-5	86-73-7						
25	phenanthrene				0.35 mg/kg		0.299 mg/kg	0.0000299 %	✓
		201-581-5	85-01-8						
26	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		204-371-1	120-12-7						
27	fluoranthene				0.59 mg/kg		0.504 mg/kg	0.0000504 %	✓
		205-912-4	206-44-0						
28	pyrene				0.5 mg/kg		0.427 mg/kg	0.0000427 %	✓
		204-927-3	129-00-0						
29	benzo[a]anthracene				0.3 mg/kg		0.256 mg/kg	0.0000256 %	✓
	601-033-00-9	200-280-6	56-55-3						
30	chrysene				0.27 mg/kg		0.231 mg/kg	0.0000231 %	✓
	601-048-00-0	205-923-4	218-01-9						
31	benzo[b]fluoranthene				0.43 mg/kg		0.368 mg/kg	0.0000368 %	✓
	601-034-00-4	205-911-9	205-99-2						
32	benzo[k]fluoranthene				0.15 mg/kg		0.128 mg/kg	0.0000128 %	✓
	601-036-00-5	205-916-6	207-08-9						
33	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-032-00-3	200-028-5	50-32-8						
34	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-893-2	193-39-5						
35	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-041-00-2	200-181-8	53-70-3						
36	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-883-8	191-24-2						
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	602-039-00-4	215-648-1	1336-36-3						
38	sulfur { sulfur }				2.8 mg/kg		2.393 mg/kg	0.000239 %	✓
	016-094-00-1	231-722-6	7704-34-9						
39	barium { barium diboron tetraoxide }				47 mg/kg	1.623	65.216 mg/kg	0.00652 %	✓
	056-005-00-3	237-222-4	13701-59-2						
40	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-881-7	191-07-1						
41	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
			P1186						
Total:								0.049 %	

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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 The soil had no liquid phase or liquid film meaning that the soil will not be flammable with TPH below 10,000 mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00278%)

RECEIVED: 18/03/2024

WAC results for sample: 24/02/5725-22/02/2024-

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3	3	5
2	LOI (loss on ignition)	%	5.4	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	2.6	100	-
7	pH	pH	7.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.004	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.017	0.5	2
10	barium	mg/kg	0.12	20	100
11	cadmium	mg/kg	<0.0011	0.04	1
12	chromium	mg/kg	0.014	0.5	10
13	copper	mg/kg	0.049	2	50
14	mercury	mg/kg	<0.0005	0.01	0.2
15	molybdenum	mg/kg	0.0049	0.5	10
16	nickel	mg/kg	0.019	0.4	10
17	lead	mg/kg	0.065	0.5	10
18	antimony	mg/kg	<0.005	0.06	0.7
19	selenium	mg/kg	<0.005	0.1	0.5
20	zinc	mg/kg	0.48	4	50
21	chloride	mg/kg	18	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	110	500	800
26	TDS (total dissolved solids)	mg/kg	890	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

RECEIVED: 18/10/2024

Classification of sample: 24/02/5726-22/02/2024-

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

Sample details

Sample name:	LoW Code:
24/02/5726-22/02/2024-	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
12%	Entry:
(dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Dry 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394	mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				9.1 mg/kg	1.32	10.728	mg/kg	0.00107 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
3	boron { diboron trioxide }			11	2.5 mg/kg	3.22	7.187	mg/kg	0.000719 %	✓	
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				0.14 mg/kg	1.142	0.143	mg/kg	0.0000143 %	✓	
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23 mg/kg	1.462	30.014	mg/kg	0.003 %	✓	
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				23 mg/kg	1.126	23.121	mg/kg	0.00231 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	70 mg/kg	1.56	97.488	mg/kg	0.00625 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				0.14 mg/kg	1.353	0.169	mg/kg	0.0000169 %	✓	
	080-010-00-X	231-299-8	7487-94-7								
10	molybdenum { molybdenum(VI) oxide }				<0.5 mg/kg	1.5	<0.75	mg/kg	<0.000075 %		<LOD
	042-001-00-9	215-204-7	1313-27-5								
11	nickel { nickel chromate }				21 mg/kg	2.976	55.805	mg/kg	0.00558 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				0.39 mg/kg	2.554	0.889	mg/kg	0.0000889 %	✓	
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				83 mg/kg	2.774	205.584	mg/kg	0.0206 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group				61.7 mg/kg		55.089	mg/kg	0.00551 %	✓	
			TPH								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2								

RECEIVED: 18/10/2024

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	<LOD
	601-021-00-3	203-625-9	108-88-3						
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	<LOD
	601-023-00-4	202-849-4	100-41-4						
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %	<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]						
20	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 }				0.5 mg/kg	1.884	0.841 mg/kg	0.0000841 %	✓
	006-007-00-5								
21	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-052-00-2	202-049-5	91-20-3						
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-917-1	208-96-8						
23	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		201-469-6	83-32-9						
24	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		201-695-5	86-73-7						
25	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		201-581-5	85-01-8						
26	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		204-371-1	120-12-7						
27	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-912-4	206-44-0						
28	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		204-927-3	129-00-0						
29	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-033-00-9	200-280-6	56-55-3						
30	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-048-00-0	205-923-4	218-01-9						
31	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-034-00-4	205-911-9	205-99-2						
32	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-036-00-5	205-916-6	207-08-9						
33	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-032-00-3	200-028-5	50-32-8						
34	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-893-2	193-39-5						
35	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-041-00-2	200-181-8	53-70-3						
36	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-883-8	191-24-2						
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	602-039-00-4	215-648-1	1336-36-3						
38	sulfur { sulfur }				1.9 mg/kg		1.696 mg/kg	0.00017 %	✓
	016-094-00-1	231-722-6	7704-34-9						
39	barium { barium diboron tetraoxide }				48 mg/kg	1.623	69.577 mg/kg	0.00696 %	✓
	056-005-00-3	237-222-4	13701-59-2						
40	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-881-7	191-07-1						
41	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
			P1186						
Total:								0.053 %	

RECEIVED: 18/10/2024

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 The soil had no liquid phase or liquid film meaning that the soil will not be flammable with TPH below 10,000 mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00551%)

RECEIVED: 18/03/2024

WAC results for sample: 24/02/5726-22/02/2024-

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample FAILS the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.3	3	5
2	LOI (loss on ignition)	%	7.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-
7	pH	pH	7.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.008	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.022	0.5	2
10	barium	mg/kg	0.083	20	100
11	cadmium	mg/kg	<0.0011	0.04	1
12	chromium	mg/kg	0.0064	0.5	10
13	copper	mg/kg	0.052	2	50
14	mercury	mg/kg	<0.0005	0.01	0.2
15	molybdenum	mg/kg	0.0069	0.5	10
16	nickel	mg/kg	0.015	0.4	10
17	lead	mg/kg	0.024	0.5	10
18	antimony	mg/kg	<0.005	0.06	0.7
19	selenium	mg/kg	0.005	0.1	0.5
20	zinc	mg/kg	0.18	4	50
21	chloride	mg/kg	14	800	15,000
22	fluoride	mg/kg	1.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	110	500	800
26	TDS (total dissolved solids)	mg/kg	830	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

RECEIVED: 18/10/2024

Classification of sample: 24/02/5727-22/02/2024-

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

Sample details

Sample name:	LoW Code:
24/02/5727-22/02/2024-	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
7.6%	Entry:
(dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.6% Dry 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394	mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				21 mg/kg	1.32	25.768	mg/kg	0.00258 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
3	boron { diboron trioxide }			11	<0.4 mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				38 mg/kg	1.462	51.616	mg/kg	0.00516 %	✓	
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				39 mg/kg	1.126	40.808	mg/kg	0.00408 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	75 mg/kg	1.56	108.723	mg/kg	0.00697 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				0.17 mg/kg	1.353	0.214	mg/kg	0.0000214 %	✓	
	080-010-00-X	231-299-8	7487-94-7								
10	molybdenum { molybdenum(VI) oxide }				0.6 mg/kg	1.5	0.837	mg/kg	0.0000837 %	✓	
	042-001-00-9	215-204-7	1313-27-5								
11	nickel { nickel chromate }				39 mg/kg	2.976	107.876	mg/kg	0.0108 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				0.49 mg/kg	2.554	1.163	mg/kg	0.000116 %	✓	
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				130 mg/kg	2.774	335.166	mg/kg	0.0335 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group				2.8 mg/kg		2.602	mg/kg	0.00026 %	✓	
			TPH								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	Conc. Not Used
	EU CLP index number	EC Number	CAS Number						
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	<LOD
	601-021-00-3	203-625-9	108-88-3						
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	<LOD
	601-023-00-4	202-849-4	100-41-4						
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %	<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]						
20	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %	<LOD
	006-007-00-5								
21	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-052-00-2	202-049-5	91-20-3						
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-917-1	208-96-8						
23	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		201-469-6	83-32-9						
24	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		201-695-5	86-73-7						
25	phenanthrene				0.24 mg/kg		0.223 mg/kg	0.0000223 %	✓
		201-581-5	85-01-8						
26	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		204-371-1	120-12-7						
27	fluoranthene				0.35 mg/kg		0.325 mg/kg	0.0000325 %	✓
		205-912-4	206-44-0						
28	pyrene				0.34 mg/kg		0.316 mg/kg	0.0000316 %	✓
		204-927-3	129-00-0						
29	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-033-00-9	200-280-6	56-55-3						
30	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-048-00-0	205-923-4	218-01-9						
31	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-034-00-4	205-911-9	205-99-2						
32	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-036-00-5	205-916-6	207-08-9						
33	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-032-00-3	200-028-5	50-32-8						
34	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-893-2	193-39-5						
35	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	601-041-00-2	200-181-8	53-70-3						
36	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-883-8	191-24-2						
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
	602-039-00-4	215-648-1	1336-36-3						
38	sulfur { sulfur }				1.5 mg/kg		1.394 mg/kg	0.000139 %	✓
	016-094-00-1	231-722-6	7704-34-9						
39	barium { barium diboron tetraoxide }				56 mg/kg	1.623	84.493 mg/kg	0.00845 %	✓
	056-005-00-3	237-222-4	13701-59-2						
40	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
		205-881-7	191-07-1						
41	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %	<LOD
			P1186						
Total:								0.073 %	

RECEIVED: 18/10/2024

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 The soil had no liquid phase or liquid film meaning that the soil will not be flammable with TPH below 10,000 mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00026%)

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WAC results for sample: 24/02/5727-22/02/2024-

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample **PASSES** the Inert (Inert waste landfill) criteria.

The sample **PASSES** the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.9	3	5
2	LOI (loss on ignition)	%	0.39	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-
7	pH	pH	10.4	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.006	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.07	0.5	2
10	barium	mg/kg	0.062	20	100
11	cadmium	mg/kg	<0.0011	0.04	1
12	chromium	mg/kg	0.039	0.5	10
13	copper	mg/kg	0.032	2	50
14	mercury	mg/kg	<0.0005	0.01	0.2
15	molybdenum	mg/kg	0.014	0.5	10
16	nickel	mg/kg	0.0058	0.4	10
17	lead	mg/kg	<0.005	0.5	10
18	antimony	mg/kg	0.012	0.06	0.7
19	selenium	mg/kg	0.012	0.1	0.5
20	zinc	mg/kg	0.091	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.5	10	150
23	sulphate	mg/kg	790	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	1700	4,000	60,000

Key

User supplied data

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Classification of sample: 24/02/5728-22/02/2024-

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

Sample details

Sample name:	LoW Code:
24/02/5728-22/02/2024-	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
7.9%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.9% Dry 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	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %			<LOD
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				8.3 mg/kg	1.32	10.156 mg/kg	0.00102 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
3	boron { diboron trioxide }			11	0.82 mg/kg	3.22	2.447 mg/kg	0.000245 %		✓	
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	29.8 mg/kg	0.00298 %		✓	
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %			<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				9.7 mg/kg	1.126	10.122 mg/kg	0.00101 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	19 mg/kg	1.56	27.467 mg/kg	0.00176 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
10	molybdenum { molybdenum(VI) oxide }				<0.5 mg/kg	1.5	<0.75 mg/kg	<0.000075 %			<LOD
	042-001-00-9	215-204-7	1313-27-5								
11	nickel { nickel chromate }				20 mg/kg	2.976	55.167 mg/kg	0.00552 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				<0.25 mg/kg	2.554	<0.638 mg/kg	<0.0000638 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				43 mg/kg	2.774	110.554 mg/kg	0.0111 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group				1 mg/kg		0.927 mg/kg	0.0000927 %		✓	
			TPH								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

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#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MCM Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
20	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 }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
21	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
23	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
24	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
25	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
26	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
27	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
28	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
29	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
38	sulfur { sulfur }				4.8 mg/kg		4.449 mg/kg	0.000445 %	✓	
	016-094-00-1	231-722-6	7704-34-9							
39	barium { barium diboron tetraoxide }				24 mg/kg	1.623	36.111 mg/kg	0.00361 %	✓	
	056-005-00-3	237-222-4	13701-59-2							
40	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
41	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
			P1186							
Total:								0.0285 %		

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	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 The soil had no liquid phase or liquid film meaning that the soil will not be flammable with TPH below 10,000 mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00009%)

RECEIVED: 18/03/2024

WAC results for sample: 24/02/5728-22/02/2024-

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample **PASSES** the Inert (Inert waste landfill) criteria.

The sample **PASSES** the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.3	3	5
2	LOI (loss on ignition)	%	1.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1	100	-
7	pH	pH	8.9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.005	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.014	0.5	2
10	barium	mg/kg	<0.05	20	100
11	cadmium	mg/kg	<0.0011	0.04	1
12	chromium	mg/kg	<0.005	0.5	10
13	copper	mg/kg	0.016	2	50
14	mercury	mg/kg	<0.0005	0.01	0.2
15	molybdenum	mg/kg	0.0022	0.5	10
16	nickel	mg/kg	<0.005	0.4	10
17	lead	mg/kg	0.0061	0.5	10
18	antimony	mg/kg	<0.005	0.06	0.7
19	selenium	mg/kg	<0.005	0.1	0.5
20	zinc	mg/kg	0.31	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	1.3	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	64	500	800
26	TDS (total dissolved solids)	mg/kg	450	4,000	60,000

Key

User supplied data

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Appendix A: Classifier defined and non EU CLP 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

• **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)

EU CLP index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

03 Jun 2015 - 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**

EU CLP 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):

14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

• **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

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■ **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

■ **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

EU CLP 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):
29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

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

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

■ **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

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings (edit as required)

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)

boron {diboron trioxide}

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

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)

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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) Worse 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 chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

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

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

sulfur {sulfur}

chemtest reports Elemental sulfur using this CAS

barium {barium diboron tetraoxide}

There was no Chromium VI detected in the sample.

Appendix C: Version

HazWasteOnline Classification Engine: EU WM3 1st Edition v1.1.NI using the EU LoW

HazWasteOnline Classification Engine Version: 2024.73.5982.11058 (13 Mar 2024)

HazWasteOnline Database: 2024.68.5980.11054 (09 Mar 2024)

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This classification utilises the following guidance and legislation:

WM3 v1.1.NI - Waste Classification - 1st Edition v1.1.NI - Jan 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

17th ATP - Regulation (EU) 2021/849 of 11 March 2021

18th ATP - Regulation (EU) 2022/692 of 16 February 2022

POPs Amendment 2022 - Regulation (EU) 2022/2400 of 23 November 2022

19th ATP - Regulation (EU) 2023/1434 of 25 April 2023

20th ATP - Regulation (EU) 2023/1435 of 25 2 May 2023

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APPENDIX 9.5

BRE 365 AND PLATE BEARING REPORT

VOLUME III

APPENDICES TO ENVIRONMENTAL IMPACT ASSESSMENT REPORT

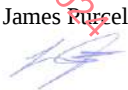
MAY 2024

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**McCarthy Browne
Greenore Port, Co. Louth
MF130940**

Document Issue Register

RECEIVED: 18/10/2023

Distribution	Report Status	Revision	Date of Issue	Prepared by	Approved by
Richard Browne	Final	A	1st March 2023	Enda Quinlan	James Rucell 

Contents

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4.0	Trial Hole Review	Page 5

BRE 365 Report	Appendix A
Pictures of each BRE 365 Test Hole	Appendix B
Plate Bearing Report	Appendix C

1.0 Project Overview

As part of some site investigation works for McCarthy Browne at Greenore Port, Co. Louth client was required to undertake BRE 365 Tests and Plate Bearing Tests to investigate the condition of the ground.

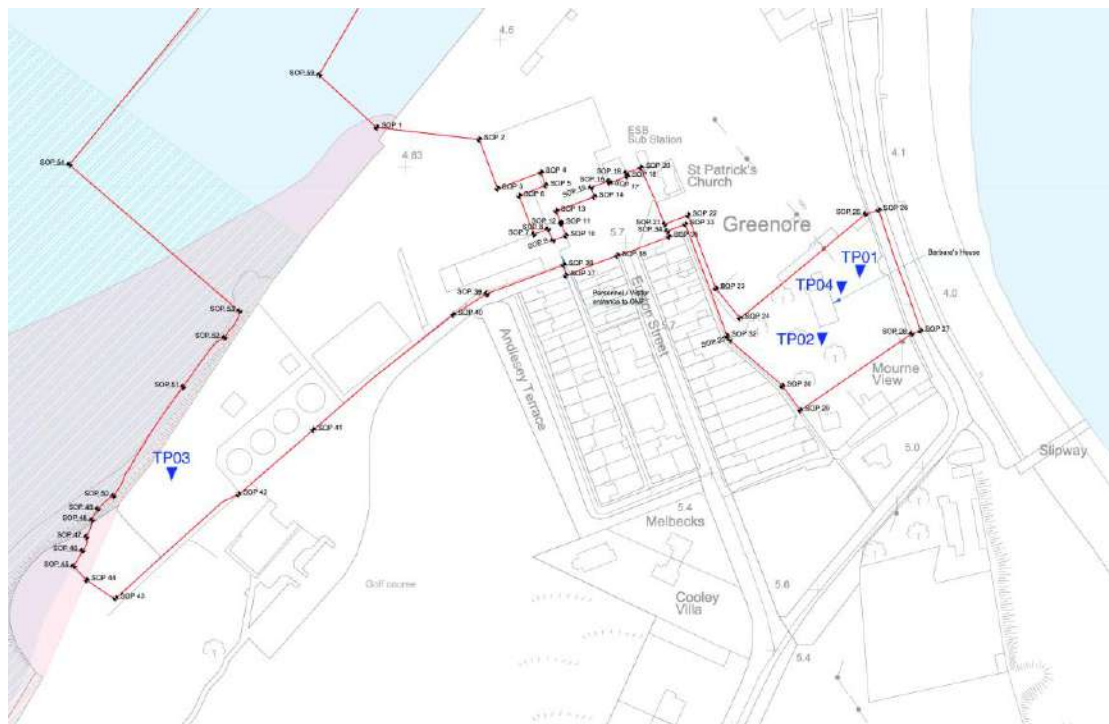
BHP was contracted by Richard Browne to provide these tests.

2.0 Project Requirements

The scope of work for these investigative works was as follows:

- BRE365 at 4No. location.
- Plate Bearing Tests.

3.0 Location of Works



	Location	Coordinates		Length (m)	Width (m)	Depth (m)
Soakaway Test Nr.1	TP01	54.032500 N	6.131667 W	2.2	2	1.85
Soakaway Test Nr.2	TP02	54.03213 N	6.13196 W	2.5	1.7	1.45
Soakaway Test Nr.3	TP03	54.0316 N	6.13690 W	1.9	1.6	0.725
Soakaway Test Nr.4	TP04	54.032389 N	6.131861 W	1.5	1.7	1.4

4.0 Trial Hole Review

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Summary of Trial Pit No. 1			
From	To	Description	Ground Water
1.85	1.6	Topsoil	Dry
1.6	1	Dark grey, loose, sandy soil, Cobles present	
1	0	Loose Light grey Gravelly soil, Cobles present	

Summary of Trial Pit No. 2			
From	To	Description	Ground Water
1.45	1.25	Topsoil (Roots Present)	Dry
1.6	1	Dark Brown, loose, granular soil, Cobles present, Roots Present	
1	0	Dark Brown, loose, granular soil, High level of cobles present,	

Summary of Trial Pit No. 3			
From	To	Description	Ground Water
0.725	0	Compacted Gravel	Dry

Summary of Trial Pit No. 4			
From	To	Description	Ground Water
1.4	0	Fractured Rock	Dry

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Appendix A

TEST REPORTAnalysing
Testing
Consulting
Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

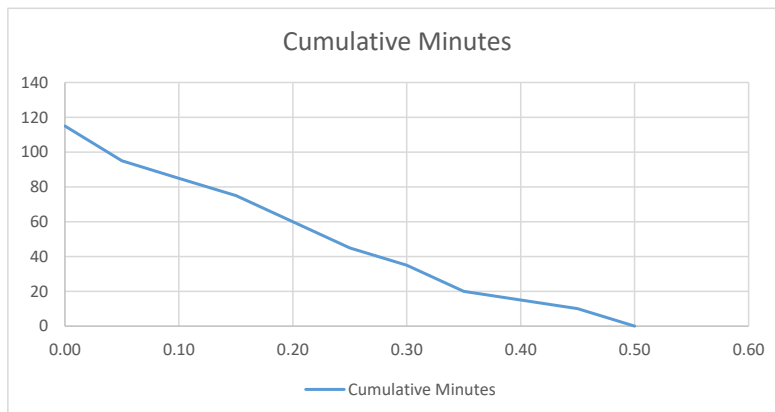
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Ireland
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Fax +353 61 455447

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Soakaway Pit to BRE 365, Test Pit 1 - Test 1

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	10	10
0.40	5	15
0.35	5	20
0.30	15	35
0.25	10	45
0.20	15	60
0.15	15	75
0.10	10	85
0.05	10	95
0.00	20	115

Pit Dimensions		
Length (M)	2.2	M
Width (M)	2	M
Depth Of Pit	1.85	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	1.1	M3
Area of Drainage		M2
Area of Drainage	6.5	M2
(75% - 25%) Time		
75% Full	17	Min
25% Full	80	Min
Time 75% to 25%	63	Min
Time 75% to 25%	3,780	Sec

**Result:****Soil Infiltration rate, F =**

4.477E-05

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

Issue Date: 1st March 2024

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Testing
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Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

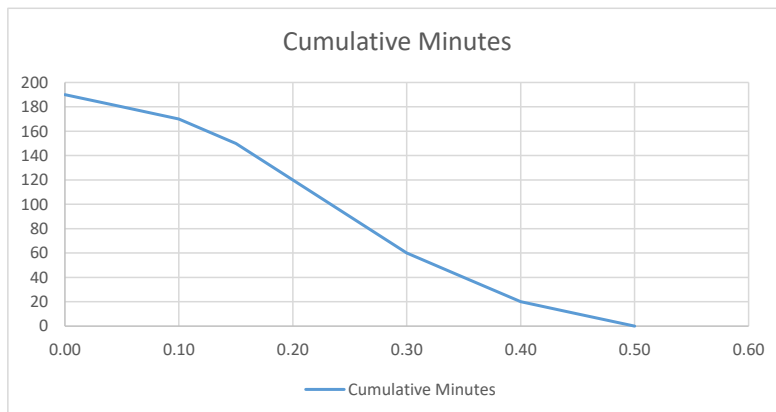
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Soakaway Pit to BRE 365, Test Pit 1 - Test 2

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	10	10
0.40	10	20
0.35	20	40
0.30	20	60
0.25	30	90
0.20	30	120
0.15	30	150
0.10	20	170
0.05	10	180
0.00	10	190

Pit Dimensions		
Length (M)	2.2	M
Width (M)	2	M
Depth Of Pit	1.85	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	1.1	M3
Area of Drainage		M2
Area of Drainage	6.5	M2
(75% - 25%) Time		
75% Full	30	Min
25% Full	160	Min
Time 75% to 25%	130	Min
Time 75% to 25%	7,800	Sec

**Result:****Soil Infiltration rate, F =**

2.16963E-05

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

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Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
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F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test



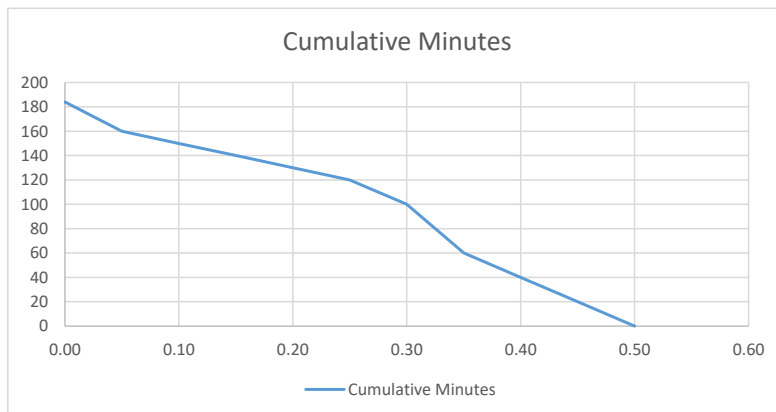
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Soakaway Pit to BRE 365, Test Pit 1 - Test 3

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	20	20
0.40	20	40
0.35	20	60
0.30	40	100
0.25	20	120
0.20	10	130
0.15	10	140
0.10	10	150
0.05	10	160
0.00	24	184

Pit Dimensions		
Length (M)	2.2	M
Width (M)	2	M
Depth Of Pit	1.85	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	1.1	M3
Area of Drainage		M2
Area of Drainage	6.5	M2
(75% - 25%) Time		
75% Full	50	Min
25% Full	145	Min
Time 75% to 25%	95	Min
Time 75% to 25%	5,700	Sec

**Result:****Soil Infiltration rate, F =**

2.96896E-05

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Deputy Laboratory Technical Manager
BHP Laboratories Limited

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Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
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Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

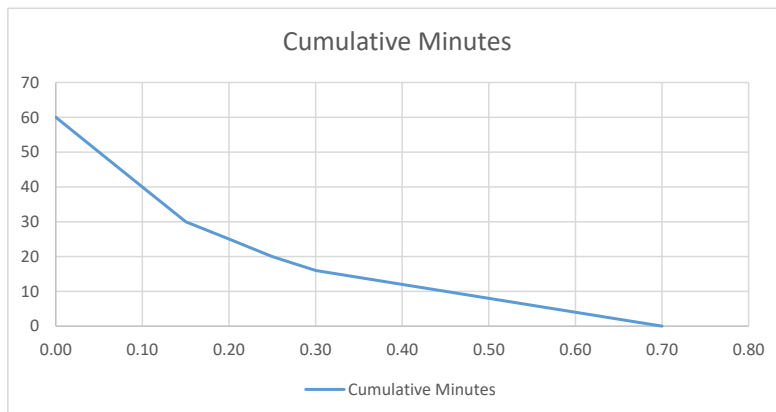
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Soakaway Pit to BRE 365, Test Pit 2 - Test 1

Depth of Water	Minutes	Cumulative Minutes
0.70	0	0
0.65	2	2
0.60	2	4
0.55	2	6
0.50	2	8
0.45	2	10
0.40	2	12
0.35	2	14
0.30	2	16
0.25	4	20
0.20	5	25
0.15	5	30
0.10	10	40
0.05	10	50
0.00	10	60

Pit Dimensions		
Length (M)	2.5	M
Width (M)	1.7	M
Depth Of Pit	1.45	M
Water		
Start Depth of Water	0.7	M
75% Full	0.52	M
25% Full	0.175	M
75% - 25% Full	0.345	M
Volume of water (75% - 25%)	1.46625	M3
Area of Drainage		M2
Area of Drainage	6.35	M2
(75% - 25%)		
Time		
75% Full	7	Min
25% Full	28	Min
Time 75% to 25%	21	Min
Time 75% to 25%	1,260	Sec

**Result:****Soil Infiltration rate, F =**

0.000183258

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James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

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Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

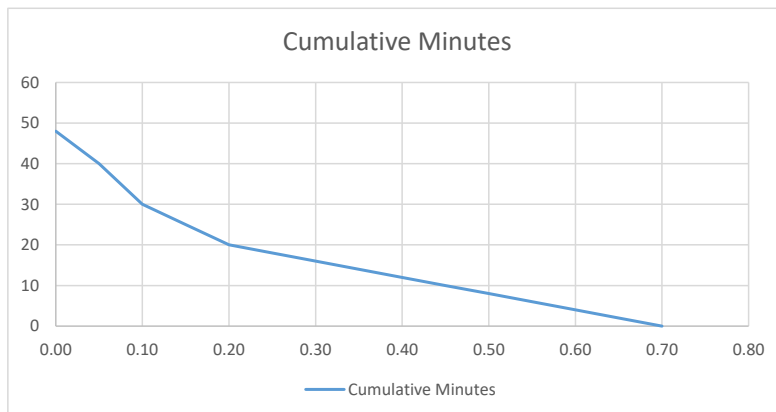
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Soakaway Pit to BRE 365, Test Pit 2 - Test 2

Depth of Water	Minutes	Cumulative Minutes
0.70	0	0
0.65	2	2
0.60	2	4
0.55	2	6
0.50	2	8
0.45	2	10
0.40	2	12
0.35	2	14
0.30	2	16
0.25	2	18
0.20	2	20
0.15	5	25
0.10	5	30
0.05	10	40
0.00	8	48

Pit Dimensions		
Length (M)	2.5	M
Width (M)	1.7	M
Depth Of Pit	1.45	M
Water		
Start Depth of Water	0.7	M
75% Full	0.52	M
25% Full	0.175	M
75% - 25% Full	0.345	M
Volume of water (75% - 25%)	1.46625	M3
Area of Drainage		M2
Area of Drainage	6.35	M2
(75% - 25%)		
Time		
75% Full	7	Min
25% Full	23	Min
Time 75% to 25%	16	Min
Time 75% to 25%	960	Sec

**Result:****Soil Infiltration rate, F =**

0.000240527

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James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

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F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test



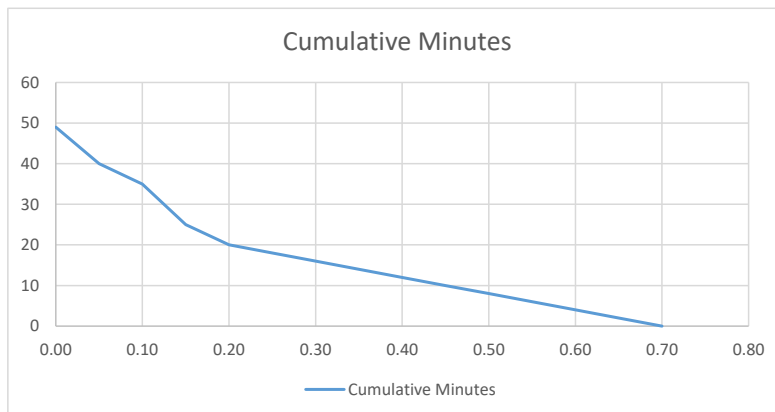
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Soakaway Pit to BRE 365, Test Pit 2 - Test 3

Depth of Water	Minutes	Cumulative Minutes
0.70	0	0
0.65	2	2
0.60	2	4
0.55	2	6
0.50	2	8
0.45	2	10
0.40	2	12
0.35	2	14
0.30	2	16
0.25	2	18
0.20	2	20
0.15	5	25
0.10	5	35
0.05	5	40
0.00	9	49

Pit Dimensions		
Length (M)	2.5	M
Width (M)	1.7	M
Depth Of Pit	1.45	M
Water		
Start Depth of Water	0.7	M
75% Full	0.52	M
25% Full	0.175	M
75% - 25% Full	0.345	M
Volume of water (75% - 25%)	1.46625	M3
Area of Drainage		M2
Area of Drainage (75% - 25%)	6.35	M2
Time		
75% Full	7	Min
25% Full	23	Min
Time 75% to 25%	16	Min
Time 75% to 25%	960	Sec

**Result:****Soil Infiltration rate, F =**

0.000240527

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

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TEST REPORTAnalysing
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Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

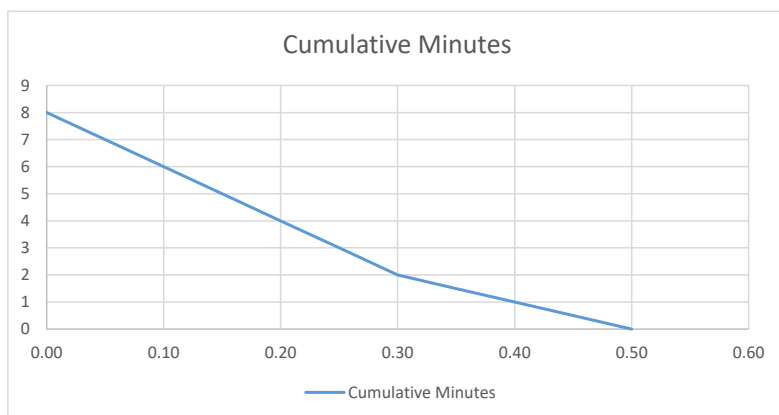
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Soakaway Pit to BRE 365, Test Pit 3 - Test 1

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	0.5	0.5
0.40	0.5	1
0.35	0.5	1.5
0.30	0.5	2
0.25	1	3
0.20	1	4
0.15	1	5
0.10	1	6
0.05	1	7
0.00	1	8

Pit Dimensions		
Length (M)	1.9	M
Width (M)	1.6	M
Depth Of Pit	0.725	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	0.76	M3
Area of Drainage		M2
Area of Drainage	4.79	M2
(75% - 25%) Time		
75% Full	1.2	Min
25% Full	5.5	Min
Time 75% to 25%	4.3	Min
Time 75% to 25%	258	Sec

**Result:****Soil Infiltration rate, F =**

0.000614976

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

Issue Date: 1st March 2024

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Unit 1B, Sycamore House
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Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

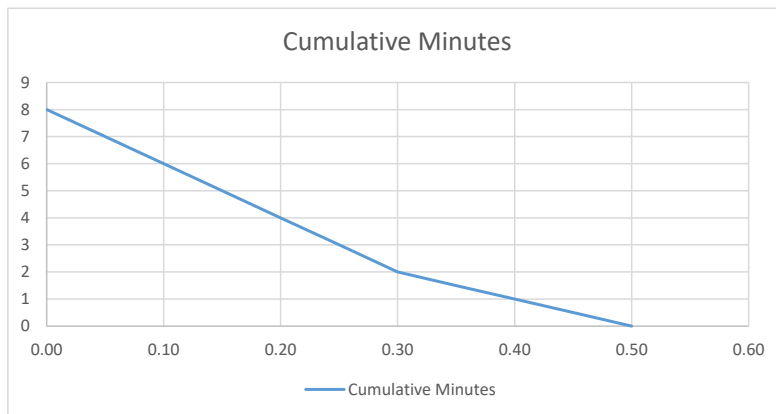
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Soakaway Pit to BRE 365, Test Pit 3 - Test 2

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	0.5	0.5
0.40	0.5	1
0.35	0.5	1.5
0.30	0.5	2
0.25	1	3
0.20	1	4
0.15	1	5
0.10	1	6
0.05	1	7
0.00	1	8

Pit Dimensions		
Length (M)	1.9	M
Width (M)	1.6	M
Depth Of Pit	0.725	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	0.76	M3
Area of Drainage		M2
Area of Drainage	4.79	M2
(75% - 25%) Time		
75% Full	1.2	Min
25% Full	5.5	Min
Time 75% to 25%	4.3	Min
Time 75% to 25%	258	Sec

**Result:****Soil Infiltration rate, F =**

0.000614976

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

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Consulting
Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

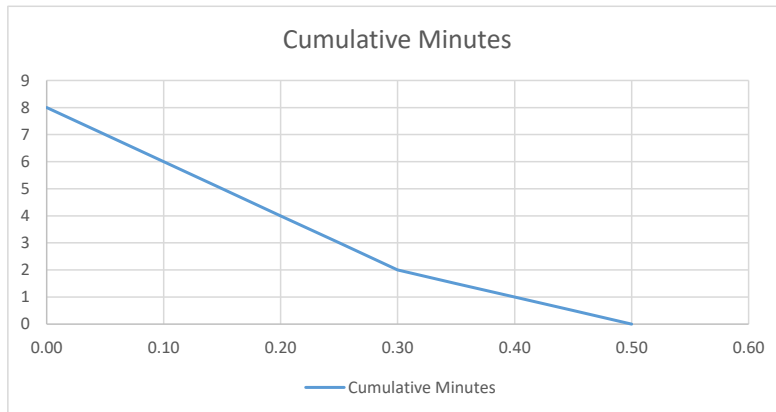
BHP Laboratories Ltd
New road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax +353 61 455447

RECEIVED: 18/10/2024

Soakaway Pit to BRE 365, Test Pit 3 - Test 3

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	0.5	0.5
0.40	0.5	1
0.35	0.5	1.5
0.30	0.5	2
0.25	1	3
0.20	1	4
0.15	1	5
0.10	1	6
0.05	1	7
0.00	1	8

Pit Dimensions		
Length (M)	1.9	M
Width (M)	1.6	M
Depth Of Pit	0.725	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	0.76	M3
Area of Drainage		M2
Area of Drainage	4.79	M2
(75% - 25%) Time		
75% Full	1.2	Min
25% Full	5.5	Min
Time 75% to 25%	4.3	Min
Time 75% to 25%	258	Sec

**Result:****Soil Infiltration rate, F =**

0.000614976

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

Issue Date: 1st March 2024

Tested by BHP Laboratories, Limerick (c/o above address) Phone:(061) 455399. This test report shall not be duplicated in full without the permission of the test laboratory.

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TEST REPORTAnalysing
Testing
Consulting
Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

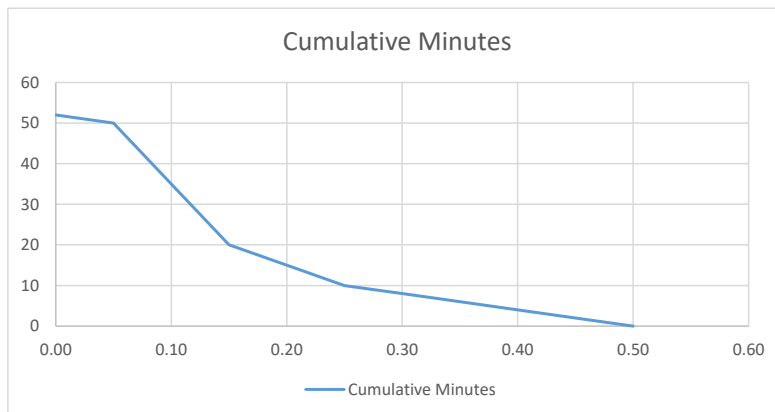
BHP Laboratories Ltd
New road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax +353 61 455447

RECEIVED: 18/10/2024

Soakaway Pit to BRE 365, Test Pit 4 - Test 1

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	2	2
0.40	2	4
0.35	2	6
0.30	2	8
0.25	2	10
0.20	5	15
0.15	5	20
0.10	15	35
0.05	15	50
0.00	2	52

Pit Dimensions		
Length (M)	1.5	M
Width (M)	1.7	M
Depth Of Pit	1.4	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	0.6375	M3
Area of Drainage		M2
Area of Drainage	4.15	M2
(75% - 25%) Time		
75% Full	7	Min
25% Full	30	Min
Time 75% to 25%	23	Min
Time 75% to 25%	1,380	Sec

**Result:****Soil Infiltration rate, F =** 0.000111315

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

Issue Date: 1st March 2024

Tested by BHP Laboratories, Limerick (c/o above address) Phone:(061) 455399. This test report shall not be duplicated in full without the permission of the test laboratory.

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TEST REPORTAnalysing
Testing
Consulting
Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

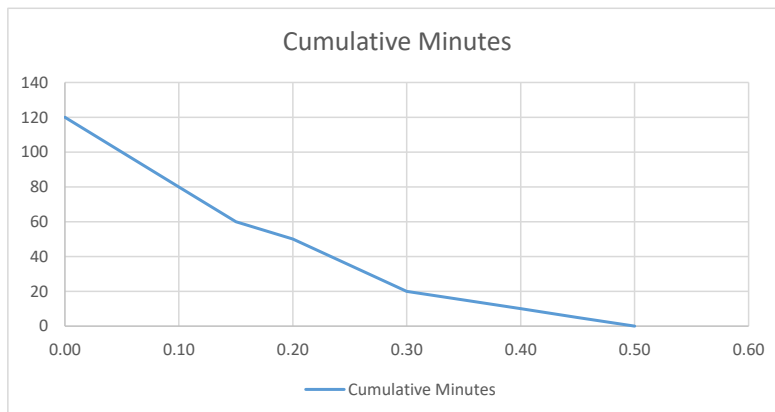
BHP Laboratories Ltd
New road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax +353 61 455447

RECEIVED: 18/10/2024

Soakaway Pit to BRE 365, Test Pit 4 - Test 2

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	5	5
0.40	5	10
0.35	5	15
0.30	5	20
0.25	15	35
0.20	15	50
0.15	10	60
0.10	20	80
0.05	20	100
0.00	20	120

Pit Dimensions		
Length (M)	1.5	M
Width (M)	1.7	M
Depth Of Pit	1.4	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	0.6375	M3
Area of Drainage		M2
Area of Drainage	4.15	M2
(75% - 25%) Time		
75% Full	12	Min
25% Full	70	Min
Time 75% to 25%	58	Min
Time 75% to 25%	3,480	Sec

**Result:****Soil Infiltration rate, F =**

4.41421E-05

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

Issue Date: 1st March 2024

Tested by BHP Laboratories, Limerick (c/o above address) Phone:(061) 455399. This test report shall not be duplicated in full without the permission of the test laboratory.

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TEST REPORTAnalysing
Testing
Consulting
Calibration

Client: McCarthy Browne
Unit 1B, Sycamore House
Millennium Park,
Naas,
Co. Kildare

F.T.A.O.: David Onireti

Project: Greenore Port, Co. Louth

Client Ref: Soakaway Pit to BRE 365

BHP Ref. No.: 24/02/170

Order No.: N/A

Date Tested: 21/02/2024

Test Spec.: Client Spec.

Item: BRE 365 Test

BHP

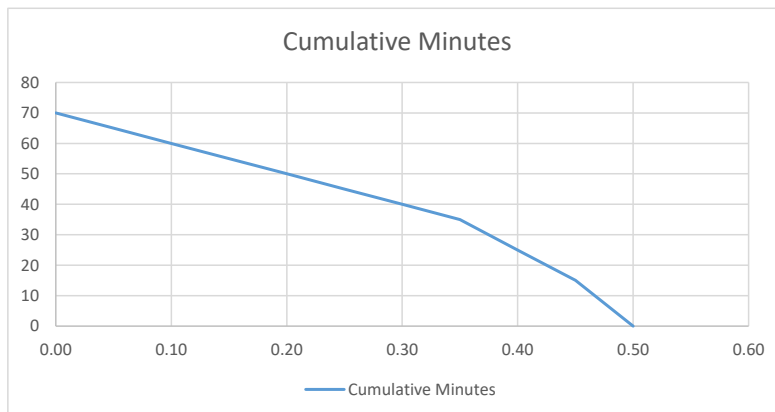
BHP Laboratories Ltd
New road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax +353 61 455447

RECEIVED: 18/10/2024

Soakaway Pit to BRE 365, Test Pit 4 - Test 3

Depth of Water	Minutes	Cumulative Minutes
0.50	0	0
0.45	15	15
0.40	10	25
0.35	5	35
0.30	5	40
0.25	5	45
0.20	5	50
0.15	5	55
0.10	5	60
0.05	5	65
0.00	5	70

Pit Dimensions		
Length (M)	1.5	M
Width (M)	1.7	M
Depth Of Pit	1.4	M
Water		
Start Depth of Water	0.5	M
75% Full	0.375	M
25% Full	0.125	M
75% - 25% Full	0.25	M
Volume of water (75% - 25%)	0.6375	M3
Area of Drainage		M2
Area of Drainage	4.15	M2
(75% - 25%) Time		
75% Full	30	Min
25% Full	58	Min
Time 75% to 25%	28	Min
Time 75% to 25%	1,680	Sec

**Result:****Soil Infiltration rate, F =**

9.14372E-05

Authorised by:

James Purcell
Deputy Laboratory Technical Manager
BHP Laboratories Limited

Issue Date: 28th February 2024

Tested by BHP Laboratories, Limerick (c/o above address) Phone:(061) 455399. This test report shall not be duplicated in full without the permission of the test laboratory.

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BRE 365 – Trial Pit 1



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BRE 365 – Trial Pit 2

RECEIVED: 18/10/2024



BRE 365 – Trial Pit 3

RECEIVED: 18/10/2024



BRE 365 – Trial Pit 4

RECEIVED: 18/10/2024



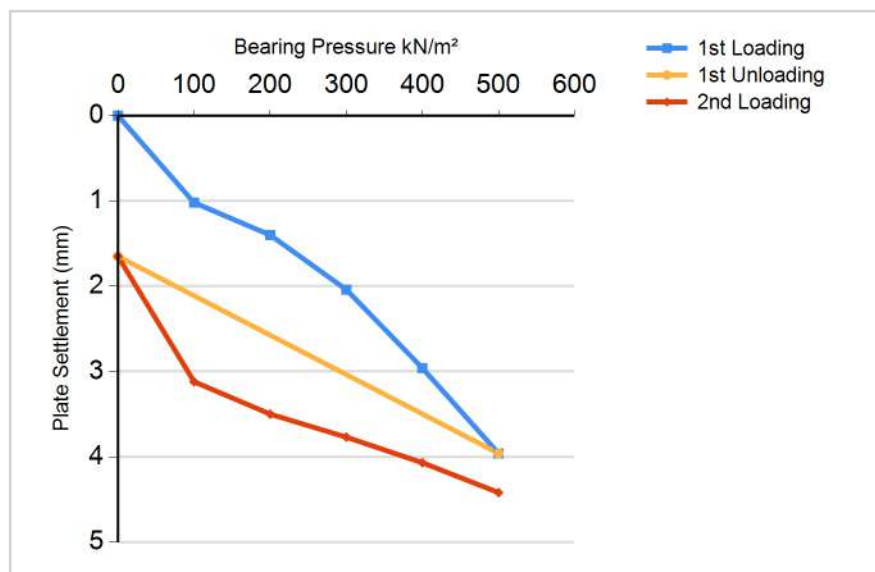
Client: McCarthy Browne
Unit 1B Sycamore House,
Millennium Park, Naas, Co. Kildare.

Co. Kildare
FAO: David Onireti

BHP Ref No: 24/02/4950
Order No: N/A
Date Tested: 22/02/2024
Test Specification: client spec
Item: Sub-Formation

Project: Greenore Port, Co. Louth
Location Reference: Test2
Type of Reaction Load: Track Machine
Plate Diameter: 450
BS 1377:Part 9:1990, CL4.1 (Plate Loading Test)

Bearing Pressure (kN/m ²)	Plate Settlement (mm)
0	0.00
100	1.02
200	1.40
300	2.04
400	2.96
500	3.96
0	1.65
100	3.12
200	3.50
300	3.77
400	4.07
500	4.42



Maximum Applied Pressure (kN/m ²)	500
Maximum Deformation (mm)	3.96
Estimated CBR % @ 1.25mm deformation	19
K = (KN/m ² /m) @ 1.25mm deformation	79856
K = (MN/m ² /m) @ 1.25mm deformation	79

Remarks:

CBR calculated in accordance with Part 2 DMRB Vule 7 : Part 2 HD 25/94
Time recorded at each interval was 3 minutes.

Where the deformation does not exceed 1.25mm during the test, the CBR and K values have been estimated and are not included under our scope of accreditation. Information identifying the 'Client', 'FTAO', 'Project', 'Client Ref.', 'Order No.' & information regarding the supply of a 'Sampling Certificate', has been supplied by the customer.

Approved By:	Signature:
Enda Quinlan - Field Service Manager	

For and On Behalf of BHP Laboratories

Issue Date: 14/03/2024

Tested by BHP Laboratories, New Road, Thomondgate, Limerick Phone:(061) 455399 Email: jamespurcell@bhp.ie

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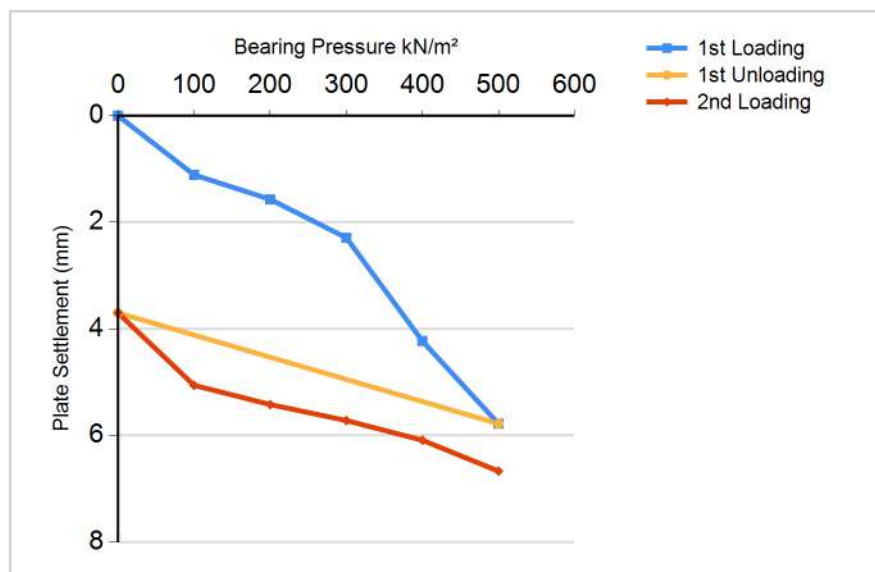
Client: McCarthy Browne
Unit 1B Sycamore House,
Millennium Park, Naas, Co. Kildare.

Co. Kildare
FAO: David Onireti

BHP Ref No: 24/02/4951
Order No: N/A
Date Tested: 22/02/2024
Test Specification: client spec
Item: Sub-Formation

Project: Greenore Port, Co. Louth
Location Reference: Test1
Type of Reaction Load: Track Machine
Plate Diameter: 450
BS 1377:Part 9:1990, CL4.1 (Plate Loading Test)

Bearing Pressure (kN/m ²)	Plate Settlement (mm)
0	0.00
100	1.11
200	1.57
300	2.29
400	4.23
500	5.78
0	3.70
100	5.06
200	5.42
300	5.72
400	6.09
500	6.67



Maximum Applied Pressure (kN/m²)	500
Maximum Deformation (mm)	5.78
Estimated CBR % @ 1.25mm deformation	13
K = (KN/m²/m) @ 1.25mm deformation	64480
K = (MN/m²/m) @ 1.25mm deformation	64

Remarks:

CBR calculated in accordance with Part 2 DMRB Vule 7 : Part 2 HD 25/94
Time recorded at each interval was 3 minutes.

Where the deformation does not exceed 1.25mm during the test, the CBR and K values have been estimated and are not included under our scope of accreditation. Information identifying the 'Client', 'FTAO', 'Project', 'Client Ref.', 'Order No.' & information regarding the supply of a 'Sampling Certificate', has been supplied by the customer.

Approved By:	Signature:
Enda Quinlan - Field Service Manager	

For and On Behalf of BHP Laboratories

Issue Date: 14/03/2024

Tested by BHP Laboratories, New Road, Thomondgate, Limerick Phone:(061) 455399 Email: jamespurcell@bhp.ie

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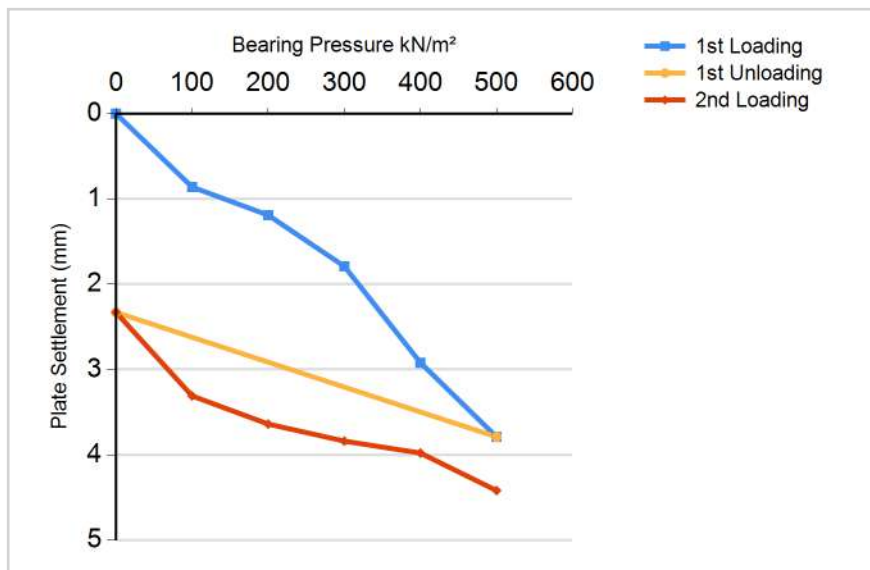
BHP MTI F1309 V 1.0 04/07/2022

Client: McCarthy Browne
Unit 1B Sycamore House,
Millennium Park, Naas, Co. Kildare.

Co. Kildare
FAO: David Onireti

BHP Ref No: 24/02/4952
Order No: N/A
Date Tested: 22/02/2024
Test Specification: client spec
Item: Fill Material

Project: Greenore Port, Co. Louth
Location Reference: Test3
Type of Reaction Load: Track Machine
Plate Diameter: 450
BS 1377:Part 9:1990, CL4.1 (Plate Loading Test)



Bearing Pressure (kN/m²)	Plate Settlement (mm)
0	0.00
100	0.86
200	1.19
300	1.79
400	2.92
500	3.79
0	2.33
100	3.31
200	3.64
300	3.84
400	3.98
500	4.42

Maximum Applied Pressure (kN/m²)	500
Maximum Deformation (mm)	4.42
Estimated CBR % @ 1.25mm deformation	30
K = (KN/m²/m) @ 1.25mm deformation	104160
K = (MN/m²/m) @ 1.25mm deformation	104

Remarks:

CBR calculated in accordance with Part 2 DMRB Vule 7 : Part 2 HD 25/94
Time recorded at each interval was 3 minutes.

Where the deformation does not exceed 1.25mm during the test, the CBR and K values have been estimated and are not included under our scope of accreditation. Information identifying the 'Client', 'FTAO', 'Project', 'Client Ref.', 'Order No.' & information regarding the supply of a 'Sampling Certificate', has been supplied by the customer.

Approved By:	Signature:
Enda Quinlan - Field Service Manager	

For and On Behalf of BHP Laboratories

Issue Date: 14/03/2024

Tested by BHP Laboratories, New Road, Thomondgate, Limerick Phone:(061) 455399 Email: jamespurcell@bhp.ie

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Supplementary to **BHP Test Report 280172**

Reason for reissue: Change Material Type

RECEIVED: 18/10/2024

APPENDIX 9.6

WAC LABORATORY REPORT

VOLUME III

APPENDICES TO

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

MAY 2024



Final Report

Report No.: 24-06781-1
Initial Date of Issue: 12-Mar-2024

Re-Issue Details:

Client McCarthy Browne
Client Address: Unit 1B Sycamore House, Millennium
Co. Kildare
Kildare
Limerick
Ireland
Contact(s): Richard Browne
Project Greenore Port, Co. Louth Site
Investigation Works

Order No.:
No. of Samples: 4
Turnaround (Wkdays): 15
Date Approved: 12-Mar-2024
Approved By:

Details: Stuart Henderson, Technical Manager

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: BHP-MTI

Client: BHP Laboratories	Chemtest Job No.:					24-06781	24-06781	24-06781	24-06781
Quotation No.:	Chemtest Sample ID.:					1775728	1775729	1775730	1775731
Order No.:	Client Sample Ref.:					TP1	TP2	TP3	TP4
	Client Sample ID.:					24/02/5725	24/02/5726	24/02/5727	24/02/5728
	Sample Type:					SOIL	SOIL	SOIL	SOIL
	Date Sampled:					22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
Determinand	Accred.	SOP	Type	Units	LOD				
Ammonium	U	1220	10:1	mg/l	0.050	0.17	0.13	< 0.050	0.071
Ammonium	N	1220	10:1	mg/kg	0.10	1.7	1.4	1.5	1.0

RECEIVED: 18/10/2024

Results - Soil

Project: BHP-MTI

Client: BHP Laboratories		Chemtest Job No.:		24-06781	24-06781	24-06781	24-06781
Quotation No.:		Chemtest Sample ID.:		1775728	1775729	1775730	1775731
Order No.:		Client Sample Ref.:		TP1	TP2	TP3	TP4
		Client Sample ID.:		24/02/5725	24/02/5726	24/02/5727	24/02/5728
		Sample Type:		SOIL	SOIL	SOIL	SOIL
		Date Sampled:		22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
ACM Type		U	2192		N/A	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected
Moisture		N	2030	%	0.020	17	12
Soil Colour		N	2040		N/A	Brown	Brown
Other Material		N	2040		N/A	Stones and Roots	Stones
Soil Texture		N	2040		N/A	Sand	Sand
Boron (Hot Water Soluble)		M	2120	mg/kg	0.40	1.3	2.5
Sulphur (Elemental)		M	2180	mg/kg	1.0	2.8	1.9
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	0.50
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	2.9	3.6
Sulphate (Total)		U	2430	%	0.010	0.15	0.16
Arsenic		M	2455	mg/kg	0.5	14	9.1
Barium		M	2455	mg/kg	0.5	47	48
Cadmium		M	2455	mg/kg	0.10	0.20	0.14
Chromium		M	2455	mg/kg	0.5	22	23
Molybdenum		M	2455	mg/kg	0.5	0.5	< 0.5
Antimony		N	2455	mg/kg	2.0	< 2.0	< 2.0
Copper		M	2455	mg/kg	0.50	25	23
Mercury		M	2455	mg/kg	0.05	0.17	0.14
Nickel		M	2455	mg/kg	0.50	21	21
Lead		M	2455	mg/kg	0.50	79	70
Selenium		M	2455	mg/kg	0.25	0.59	0.39
Zinc		M	2455	mg/kg	0.50	81	83
Chromium (Trivalent)		N	2490	mg/kg	1.0	22	23
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	0.17	< 0.05
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	5.1	4.0
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	< 1.0	< 1.0
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	< 2.0	< 2.0
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	8.5	12
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	< 10	10
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	14	16
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05

RECEIVED: 18/10/2024

Results - Soil

Project: BHP-MTI

Client: BHP Laboratories		Chemtest Job No.:		24-06781	24-06781	24-06781	24-06781
Quotation No.:		Chemtest Sample ID.:		1775728	1775729	1775730	1775731
Order No.:		Client Sample Ref.:		TP1	TP2	TP3	TP4
		Client Sample ID.:		24/02/5725	24/02/5726	24/02/5727	24/02/5728
		Sample Type:		SOIL	SOIL	SOIL	SOIL
		Date Sampled:		22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
		Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	HWOL Code	Accred.	SOP	Units	LOD		
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05	< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	< 0.25	< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	< 1.0	< 1.0
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	5.6	7.2
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	9.7	22
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	3.5	6.7
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	15	29
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	< 0.50	< 0.50
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	29	45
Mineral Oil EPH	EH_CU_1D_Total	N	2670	mg/kg	10	14	16
Benzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Toluene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0	< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0	< 1.0
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Phenanthrene		M	2800	mg/kg	0.10	0.35	< 0.10
Anthracene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Fluoranthene		M	2800	mg/kg	0.10	0.59	< 0.10
Pyrene		M	2800	mg/kg	0.10	0.50	< 0.10
Benzo[a]anthracene		M	2800	mg/kg	0.10	0.30	< 0.10
Chrysene		M	2800	mg/kg	0.10	0.27	< 0.10
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	0.43	< 0.10
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	0.15	< 0.10
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	< 0.10
Coronene		N	2800	mg/kg	0.10	< 0.10	< 0.10
Total Of 17 PAH's Lower		N	2800	mg/kg	1.0	2.6	< 1.0
PCB 28		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 52		U	2815	mg/kg	0.010	< 0.010	< 0.010
PCB 101		U	2815	mg/kg	0.010	< 0.010	< 0.010

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Results - Soil

Project: BHP-MTI

Client: BHP Laboratories		Chemtest Job No.:				24-06781	24-06781	24-06781	24-06781
Quotation No.:		Chemtest Sample ID.:				1775728	1775729	1775730	1775731
Order No.:		Client Sample Ref.:				TP1	TP2	TP3	TP4
		Client Sample ID.:				24/02/5725	24/02/5726	24/02/5727	24/02/5728
		Sample Type:				SOIL	SOIL	SOIL	SOIL
		Date Sampled:				22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
		Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
PCB 118		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 153		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 138		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 180		U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total PCBs (7 Congeners)		U	2815	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

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Results - Single Stage WAC

Project: BHP-MTI

Chemtest Job No: 24-06781						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1775728						Inert Waste Landfill	Limits	
Sample Ref: TP1							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID: 24/02/5725								
Sample Location: Greenore Port , Co. Louth								
Top Depth(m): Not Supplied								
Bottom Depth(m): Not Supplied								
Sampling Date: 22-Feb-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	3.0	3	5	6
Loss On Ignition	2610		M	%	5.4	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0040	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0017	0.017	0.5	2	25
Barium	1455		U	0.012	0.12	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0014	0.014	0.5	10	70
Copper	1455		U	0.0049	0.049	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0005	0.0049	0.5	10	30
Nickel	1455		U	0.0019	0.019	0.4	10	40
Lead	1455		U	0.0065	0.065	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.048	0.48	4	50	200
Chloride	1220		U	1.8	18	800	15000	25000
Fluoride	1220		U	0.22	2.2	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	89	890	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	11	110	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: BHP-MTI

Chemtest Job No: 24-06781						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1775729						Limits		
Sample Ref: TP2						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID: 24/02/5726								
Sample Location: Greenore Port , Co. Louth								
Top Depth(m): Not Supplied								
Bottom Depth(m): Not Supplied								
Sampling Date: 22-Feb-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	4.3	3	5	6
Loss On Ignition	2610		M	%	7.2	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		7.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis						Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
				10:1 Eluate mg/l	10:1 Eluate mg/kg			
Arsenic	1455		U	0.0022	0.022	0.5	2	25
Barium	1455		U	0.008	0.083	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0006	0.0064	0.5	10	70
Copper	1455		U	0.0052	0.052	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0007	0.0069	0.5	10	30
Nickel	1455		U	0.0015	0.015	0.4	10	40
Lead	1455		U	0.0024	0.024	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	0.0005	0.0050	0.1	0.5	7
Zinc	1455		U	0.018	0.18	4	50	200
Chloride	1220		U	1.4	14	800	15000	25000
Fluoride	1220		U	0.19	1.9	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	84	830	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	11	110	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: BHP-MTI

Chemtest Job No: 24-06781						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1775730						Limits		
Sample Ref: TP3						Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID: 24/02/5727								
Sample Location: Greenore Port , Co. Louth								
Top Depth(m): Not Supplied								
Bottom Depth(m): Not Supplied								
Sampling Date: 22-Feb-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.9	3	5	6
Loss On Ignition	2610		M	%	0.39	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		10.4	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0060	--	To evaluate	To evaluate
Eluate Analysis						Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
				10:1 Eluate mg/l	10:1 Eluate mg/kg			
Arsenic	1455		U	0.0070	0.070	0.5	2	25
Barium	1455		U	0.006	0.062	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	0.0039	0.039	0.5	10	70
Copper	1455		U	0.0032	0.032	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0014	0.014	0.5	10	30
Nickel	1455		U	0.0006	0.0058	0.4	10	40
Lead	1455		U	< 0.0005	< 0.0050	0.5	10	50
Antimony	1455		U	0.0012	0.012	0.06	0.7	5
Selenium	1455		U	0.0012	0.012	0.1	0.5	7
Zinc	1455		U	0.009	0.091	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.15	1.5	10	150	500
Sulphate	1220		U	79	790	1000	20000	50000
Total Dissolved Solids	1020		N	170	1700	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	3.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.1

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: BHP-MTI

Chemtest Job No: 24-06781						Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1775731						Inert Waste Landfill	Limits	
Sample Ref: TP4							Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID: 24/02/5728								
Sample Location: Greenore Port , Co. Louth								
Top Depth(m): Not Supplied								
Bottom Depth(m): Not Supplied								
Sampling Date: 22-Feb-2024								
Determinand	SOP	HWOL Code	Accred.	Units				
Total Organic Carbon	2625		M	%	1.3	3	5	6
Loss On Ignition	2610		M	%	1.8	--	--	10
Total BTEX	2760		M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815		M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	EH_CU_1D_Total	M	mg/kg	< 10	500	--	--
Total (of 17) PAHs						100	--	--
pH at 20C	2010		M		8.9	--	>6	--
Acid Neutralisation Capacity	2015		N	mol/kg	0.0050	--	To evaluate	To evaluate
Eluate Analysis					10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg	
Arsenic	1455		U	0.0014	0.014	0.5	2	25
Barium	1455		U	< 0.005	< 0.050	20	100	300
Cadmium	1455		U	< 0.00011	< 0.0011	0.04	1	5
Chromium	1455		U	< 0.0005	< 0.0050	0.5	10	70
Copper	1455		U	0.0016	0.016	2	50	100
Mercury	1455		U	< 0.00005	< 0.00050	0.01	0.2	2
Molybdenum	1455		U	0.0002	0.0022	0.5	10	30
Nickel	1455		U	< 0.0005	< 0.0050	0.4	10	40
Lead	1455		U	0.0006	0.0061	0.5	10	50
Antimony	1455		U	< 0.0005	< 0.0050	0.06	0.7	5
Selenium	1455		U	< 0.0005	< 0.0050	0.1	0.5	7
Zinc	1455		U	0.031	0.31	4	50	200
Chloride	1220		U	< 1.0	< 10	800	15000	25000
Fluoride	1220		U	0.13	1.3	10	150	500
Sulphate	1220		U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020		N	45	450	4000	60000	100000
Phenol Index	1920		U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610		U	6.4	64	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.3

Waste Acceptance Criteria

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

Result Dates

Project: BHP-MTI

Client: BHP Laboratories	Chemtest Job No.:				24-06781	24-06781	24-06781	24-06781
Quotation No.:	Chemtest Sample ID.:				1775728	1775729	1775730	1775731
Order No.:	Client Sample Ref.:				TP1	TP2	TP3	TP4
	Client Sample ID.:				24/02/5725	24/02/5726	24/02/5727	24/02/5728
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Date Sampled:				22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
	Time Sampled:							
Determinand	Accred.	WAC	Units	SOP				
ACM Type	U	N		2192	07/03/24	07/03/24	07/03/24	07/03/24
Asbestos Identification	U	N		2192	07/03/24	07/03/24	07/03/24	07/03/24
Moisture	N	N	%	2030	07/03/24	07/03/24	07/03/24	07/03/24
Soil Colour	N	N		2040	06/03/24	06/03/24	06/03/24	06/03/24
Other Material	N	N		2040	06/03/24	06/03/24	06/03/24	06/03/24
Soil Texture	N	N		2040	06/03/24	06/03/24	06/03/24	06/03/24
pH at 20C	M	Y		2010	08/03/24	08/03/24	08/03/24	08/03/24
Acid Neutralisation Capacity	N	N	mol/kg	2015	12/03/24	12/03/24	12/03/24	12/03/24
Boron (Hot Water Soluble)	M	N	mg/kg	2120	10/03/24	10/03/24	10/03/24	10/03/24
Sulphur (Elemental)	M	N	mg/kg	2180	08/03/24	08/03/24	08/03/24	08/03/24
Cyanide (Total)	M	N	mg/kg	2300	12/03/24	12/03/24	12/03/24	12/03/24
Sulphide (Easily Liberatable)	N	N	mg/kg	2325	11/03/24	11/03/24	11/03/24	11/03/24
Sulphate (Total)	U	N	%	2430	11/03/24	11/03/24	11/03/24	11/03/24
Arsenic	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Barium	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Cadmium	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Chromium	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Molybdenum	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Antimony	N	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Copper	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Mercury	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Nickel	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Lead	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Selenium	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Zinc	M	N	mg/kg	2455	08/03/24	08/03/24	08/03/24	08/03/24
Chromium (Trivalent)	N	N	mg/kg	2490	10/03/24	10/03/24	10/03/24	10/03/24
Chromium (Hexavalent)	N	N	mg/kg	2490	10/03/24	10/03/24	10/03/24	10/03/24
Aliphatic VPH >C5-C6	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Aliphatic VPH >C6-C7	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Aliphatic VPH >C7-C8	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Aliphatic VPH >C8-C10	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Total Aliphatic VPH >C5-C10	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Aliphatic EPH >C10-C12 MC	M	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aliphatic EPH >C12-C16 MC	M	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aliphatic EPH >C16-C21 MC	M	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aliphatic EPH >C21-C35 MC	M	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aliphatic EPH >C35-C40 MC	N	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24

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Result Dates

Project: BHP-MTI

Client: BHP Laboratories	Chemtest Job No.:				24-06781	24-06781	24-06781	24-06781
Quotation No.:	Chemtest Sample ID.:				1775728	1775729	1775730	1775731
Order No.:	Client Sample Ref.:				TP1	TP2	TP3	TP4
	Client Sample ID.:				24/02/5725	24/02/5726	24/02/5727	24/02/5728
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Date Sampled:				22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
	Time Sampled:							
Determinand	Accred.	WAC	Units	SOP				
Total Aliphatic EPH >C10-C35 MC	M	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aromatic VPH >C5-C7	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Aromatic VPH >C7-C8	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Aromatic VPH >C8-C10	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Total Aromatic VPH >C5-C10	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Aromatic EPH >C10-C12 MC	U	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aromatic EPH >C12-C16 MC	U	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aromatic EPH >C16-C21 MC	U	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aromatic EPH >C21-C35 MC	U	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Aromatic EPH >C35-C40 MC	N	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Total Aromatic EPH >C10-C35 MC	U	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Total VPH >C5-C10	U	N	mg/kg	2780	07/03/24	07/03/24	07/03/24	07/03/24
Total EPH >C10-C35 MC	U	N	mg/kg	2690	11/03/24	11/03/24	11/03/24	11/03/24
Loss On Ignition	M	Y	%	2610	08/03/24	08/03/24	08/03/24	08/03/24
Total Organic Carbon	M	Y	%	2625	08/03/24	08/03/24	08/03/24	08/03/24
Mineral Oil EPH	N	N	mg/kg	2670	11/03/24	11/03/24	11/03/24	11/03/24
TPH Total WAC	M	Y	mg/kg	2670	11/03/24	11/03/24	11/03/24	11/03/24
Benzene	M	N	µg/kg	2760	08/03/24	08/03/24	08/03/24	08/03/24
Total BTEX	M	Y	mg/kg	2760	08/03/24	08/03/24	08/03/24	08/03/24
Toluene	M	N	µg/kg	2760	08/03/24	08/03/24	08/03/24	08/03/24
Ethylbenzene	M	N	µg/kg	2760	08/03/24	08/03/24	08/03/24	08/03/24
m & p-Xylene	M	N	µg/kg	2760	08/03/24	08/03/24	08/03/24	08/03/24
o-Xylene	M	N	µg/kg	2760	08/03/24	08/03/24	08/03/24	08/03/24
Methyl Tert-Butyl Ether	M	N	µg/kg	2760	08/03/24	08/03/24	08/03/24	08/03/24
Naphthalene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Acenaphthylene	N	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Acenaphthene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Fluorene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Phenanthrene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Anthracene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Fluoranthene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Pyrene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Benzo[a]anthracene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Chrysene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Benzo[b]fluoranthene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Benzo[k]fluoranthene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Benzo[a]pyrene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Indeno(1,2,3-c,d)Pyrene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Dibenz(a,h)Anthracene	N	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24

Result Dates

Project: BHP-MTI

Client: BHP Laboratories	Chemtest Job No.:				24-06781	24-06781	24-06781	24-06781
Quotation No.:	Chemtest Sample ID.:				1775728	1775729	1775730	1775731
Order No.:	Client Sample Ref.:				TP1	TP2	TP3	TP4
	Client Sample ID.:				24/02/5725	24/02/5726	24/02/5727	24/02/5728
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Date Sampled:				22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
	Time Sampled:							
Determinand	Accred.	WAC	Units	SOP				
Benzo[g,h,i]perylene	M	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Coronene	N	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
Total Of 17 PAH's Lower	N	N	mg/kg	2800	08/03/24	08/03/24	08/03/24	08/03/24
PCB 28	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
PCB 52	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
PCB 101	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
PCB 118	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
PCB 153	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
PCB 138	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
PCB 180	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
Total PCBs (7 Congeners)	U	N	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
Total PCBs (7 Congeners)	M	Y	mg/kg	2815	08/03/24	08/03/24	08/03/24	08/03/24
Total Phenols	M	N	mg/kg	2920	11/03/24	11/03/24	11/03/24	11/03/24
Ammonium	U	N	mg/l	1220	12/03/24	12/03/24	12/03/24	12/03/24
Ammonium	N	N	mg/kg	1220	12/03/24	12/03/24	12/03/24	12/03/24
Dry Mass Of Test Portion	N	Y	kg	640	07/03/24	07/03/24	07/03/24	07/03/24
Moisture	N	Y	% dry weight	640	07/03/24	07/03/24	07/03/24	07/03/24
Volume Of C10 Leachant	N	Y	l	640	07/03/24	07/03/24	07/03/24	07/03/24
Total Dissolved Solids	N	Y	mg/l	1020	12/03/24	12/03/24	11/03/24	11/03/24
Total Dissolved Solids	N	Y	mg/kg	1020	12/03/24	12/03/24	11/03/24	11/03/24
Chloride	U	Y	mg/l	1220	12/03/24	12/03/24	12/03/24	12/03/24
Fluoride	U	Y	mg/l	1220	12/03/24	12/03/24	12/03/24	12/03/24
Sulphate	U	Y	mg/l	1220	12/03/24	12/03/24	12/03/24	12/03/24
Chloride	U	Y	mg/kg	1220	12/03/24	12/03/24	12/03/24	12/03/24
Fluoride	U	Y	mg/kg	1220	12/03/24	12/03/24	12/03/24	12/03/24
Sulphate	U	Y	mg/kg	1220	12/03/24	12/03/24	12/03/24	12/03/24
Arsenic	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Boron	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Arsenic	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Boron	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Barium	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Barium	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Cadmium	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Cadmium	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Chromium	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Chromium	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Copper	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Copper	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24

Result Dates

Project: BHP-MTI

Client: BHP Laboratories	Chemtest Job No.:				24-06781	24-06781	24-06781	24-06781
Quotation No.:	Chemtest Sample ID.:				1775728	1775729	1775730	1775731
Order No.:	Client Sample Ref.:				TP1	TP2	TP3	TP4
	Client Sample ID.:				24/02/5725	24/02/5726	24/02/5727	24/02/5728
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Date Sampled:				22-Feb-2024	22-Feb-2024	22-Feb-2024	22-Feb-2024
	Time Sampled:							
Determinand	Accred.	WAC	Units	SOP				
Mercury	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Mercury	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Molybdenum	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Molybdenum	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Nickel	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Nickel	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Lead	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Lead	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Antimony	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Antimony	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Selenium	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Selenium	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Zinc	U	Y	mg/l	1455	12/03/24	12/03/24	12/03/24	12/03/24
Zinc	U	Y	mg/kg	1455	12/03/24	12/03/24	12/03/24	12/03/24
Dissolved Organic Carbon	U	Y	mg/l	1610	11/03/24	11/03/24	11/03/24	11/03/24
Dissolved Organic Carbon	U	Y	mg/kg	1610	11/03/24	11/03/24	11/03/24	11/03/24
Phenol Index	U	Y	mg/l	1920	12/03/24	12/03/24	12/03/24	12/03/24
Phenol Index	U	Y	mg/kg	1920	12/03/24	12/03/24	12/03/24	12/03/24

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Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC-FID detection	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Diben[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

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Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

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

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

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

Charges may apply to extended sample storage

Water Sample Category Key for Accreditation

- DW - Drinking Water
- GW - Ground Water
- LE - Land Leachate
- NA - Not Applicable
- PL - Prepared Leachate
- PW - Processed Water

Report Information

RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

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Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

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

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