PHASE II GEO-ENVIRONMENTAL ASSESSMENT REPORT

FINAL

Barry Waterfront, Ffordd Y Mileniwm

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hsp consulting

CIVIL | STRUCTURAL | GEOTECHNICAL & ENVIRONMENTAL | TRAFFIC AND TRANSPORT

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Barry Waterfront, Ffordd Y Mileniwm, Barry

Phase II Geo-Environmental Assessment Report

This report was produced by HSP Consulting Engineers Ltd for Gleeds Management Services Ltd the Phase II Geo-environmental Assessment Report for the proposed College to identify possible areas of contamination and provide an assessment of potential ground related development constraints to inform feasibility.

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Executive Summary

HSP Consulting has been commissioned by Gleeds Management Services Ltd to undertake an intrusive ground investigation at the site to confirm the existing ground conditions within a specific boundary and to provide information on likely constraints to the development, preliminary parameters for design and recommendations for any mitigation measures should they be required to inform a feasibility study.

The site is located off Ffordd Y Mileniwm, approximately 0.30 km south east of Barry town centre. The approximate National Grid Reference for the centre of the site is (NGR) 311115, 167399.

The exploratory methods of investigation were 12No. windowless sample boreholes. The ground conditions encountered generally comprised hardstanding or topsoil, overlying made ground deposits of fill, with natural Tidal Flats deposits encountered within four locations across the site underlying the made ground.

Due to variable and deep made ground (greater than 3.00m depth) and low strength Tidal Flat deposits, a traditional solution is unlikely to be feasible. Therefore, an alternate foundation solution in the form of piling is recommended. This should be designed and warranted by a specialist contractor. It is recommended that deeper rotary boreholes are advanced within the proposed building footprint on site to determine the depth of competent strata and provide information for initial pile design.

At this stage, it is considered appropriate to adopt a basic Design Sulphate Class of DS-1 together with and Aggressive Chemical Environment for Concrete (ACEC) of AC-1 within the made ground across the site and a basic Design Sulphate Class of DS-2 together with and Aggressive Chemical Environment for Concrete (ACEC) of AC-1s within the natural soils. An atypical result was encountered within WS02 at 2.80m which would be classified as DS- 4 with ACEC of AC - 4, further testing is recommended to confirm the above concrete classification.

The screening process for on-site human health receptors show that the relevant GACs, were exceeded for lead and Asbestos of Spray coted Chrysotile, Crocidolite and Amosite were identified. Mitigation measures in the form of a clean cover system within all soft landscaping areas will be required. Alternatively, the area of the lead exceedance and asbestos detection could be subject to delineation and removal off site to a suitable waste disposal facility.

Ground gas concentrations have been monitored on four occasions. Comparison of the results with Table 8.5 of the CIRIA document indicates the site falls in a Characteristic Situation 2 and therefore gas protection measures will be required for the proposed development.

The executive summary contains an overview of key findings and conclusions. However, no reliance should be placed on the executive summary until the whole of the report has been read. Other sections of the report may contain information which puts into context the findings noted within the executive summary.

1. Introduction

1.1 Background

It is understood that the intention is to provide a three storey college in the east of the site with associated hardstanding and car parking in the west of the site.

1.2 Client Brief & Scope

HSP Consulting has been commissioned by Gleeds Management Services Ltd to undertake an intrusive ground investigation at the site to investigate the existing ground conditions and provide information on likely constraints to the development, preliminary parameters for design and recommendations for any mitigation measures.

The report presents the following information:

- a summary of the previous Geo-environmental Reports (Section 1.5 below).
- details of the ground investigation undertaken and the ground conditions encountered.
- details and results of the geotechnical testing and contamination analysis.
- recommendations for mitigating constraints to the proposed redevelopment where appropriate and providing parameters for foundation design.

Where applicable, the fieldwork was undertaken in accordance with BS5930:2015 Code of Practice for Site Investigations and BS10175:2011+A1:2013 Investigation of Potentially Contaminated Sites.

1.3 Report Objectives

The objectives of this report are to:

- establish the geological and hydrogeological conditions using existing available/published information;
- summarise available information and identify site specific geotechnical and environmental hazards which may place a constraint upon the proposed site use;
- produce an updated Conceptual Site Model identifying potential pollution linkages between sources of contamination, pathways and receptors.

1.4 Limitations

The recommendations made in this report are based on the findings of the intrusive ground investigation undertaken by HSP Consulting Ltd on the 23rd to 24th June 2020.

1.5 Previous Reports

HSP Consulting Engineers Ltd has previously produced a Phase I Desk Study report for the site, details of which can be found below:

- HSP Consulting Engineers Limited, Barry Waterfront, Ffordd Y Mileniwm - Phase I Geo-Environmental Desk Study Report, July 2020, Ref: C3297/PI.

2. Review of Existing Information & Geoenvironmental Setting

2.1 The Site

2.1.1 Location

The site is located off Ffordd Y Mileniwm, approximately 0.30 km south east of Barry town centre. The approximate National Grid Reference for the centre of the site is (NGR) 311115, 167399. A Site Location Plan is included in Appendix I.

2.1.2 Description

The site is irregular in shape and is approximately 1.15Ha in area. The site is accessed via a gated Road off Ffordd Y Mileniwm to the south of the site.

The majority of the site is currently occupied by a temporary construction compounds for developments to the north of the site. The compounds include a temporary car park in the west, construction offices and storage area in the north east and north of the site respectively. The carpark area is a mixture of concrete hardstanding and weathered tarmacadam surface. Directly south of the fenced temporary compound is an area of undulating scrubland which has been used for stockpiling topsoil like materials and construction debris.

The site is bounded by a mixture of Heras and Palisade fencing with the temporary site compound in the east of the site bounded by further Heras Fencing. The sites topography is generally level in the west, centre and north east of the site. With the eastern scrubland at a higher elevation, approximately 1.5m compared to the rest of the site.

2.1.3 Surrounding Land Use

The main features of interest identified are:

North:	Mixed use, heritage rail line and station, commercial, retail and leisure use with residential properties beyond.
East:	Barry Docks.
South:	Supermarket and residential properties.
West:	Railway Lines and residential properties beyond.

2.1.4 Proposed End Use

It is understood that the intention is to provide a three storey college in the east of the site with associated hardstanding and car parking in the west of the site. A test to fit plan is presented within Appendix I.

2.2 Geology

2.2.1 Made Ground

The BGS mapping indicates that Made Ground (Undivided) is present across the site, this is described as an area where the land surface (natural or artificial) has been extensively remodelled, but where it is impractical or impossible to delineate separate zones of made ground, worked ground or disturbed ground of variable composition.

2.2.2 Superficial Deposits

The BGS mapping indicates the site is underlain by superficial deposits of Tidal Flats in the centre and east of the site, which comprise sands, gravels, silts and clays. Described by the BGS as '*Tidal flat deposits, including mud flat and sand flat deposits, are deposited on extensive nearly horizontal marshy land in the intertidal zone that is alternately covered and uncovered by the rise and fall of the tide. They consist of unconsolidated sediment, mainly mud and/or sand. They may form the top surface of a deltaic deposit. Normally a consolidated soft silty clay, with layers of sand, gravel and peat. Characteristically low relief*.' Superficial deposits are not expected in the west of the site.

2.2.3 Bedrock Geology

BGS bedrock mapping indicates the majority of the site is underlain by mudstone and interbedded limestones of the Penarth Group Mudstone and Limestone, Interbedded of the Triassic Period, described by the BGS as '*Grey to black mudstones with subordinate limestones and sandstones; predominantly marine in origin.'*

With the St Mary's Well Bay Member – Limestone and Mudstone, Interbedded of the Triassic and Jurassic Periods indicated in the extreme west of the site. A detailed description of this unit is not available from the BGS.

2.2 Pertinent Site Sensitivity Information

Based on the information collated for the desk study, the geo-environmental setting of the site is summarised as follows:

- The site is shown from earliest mapping (1878) to be part of tidal flats of *the Cadoxton River*. The site and surrounding area is shown as reclaimed from the 1898 mapping forming part of the Barry Docks, a large industrial area with associated railways, tracks, tanks and coal yards until the late 1990's where the site is disused.
- The surrounding land use is recorded as predominantly, industrial and residential. The town of Barry is located to the east of the site. Rapid industrial development in the early 1900s reaching its peak towards the 1970s, with a steady decline to present day. Recent developments include residential and commercial development to the north and south of the site.
- Superficial deposits comprising Tidal Flats with bedrock geology of the Penarth Group and St Mary's Well Bay Member are expected on site.
- Made Ground materials are expected across the site area as the site and surrounding area are recorded on the BGS mapping as Infilled Land
- The superficial geology of the Tidal Flats is designated as Secondary Undifferentiated with bedrock geologies of the Penarth Group and St Mary's Well Bay Member are designated as a Secondary (B) Aquifer and Secondary (A) Aquifer respectively.

Based on the above, the environmental sensitivity of the site can be considered to be Moderate at this stage.

3. Fieldwork & Factual Information

Site work was carried out on the 23rd to 24th of June 2020. Where applicable, the fieldwork was undertaken in accordance with BS5930:2015 Code of Practice for Site Investigations (Ref. 6) and BS10175:2011+A1:2013 Investigation of Potentially Contaminated Sites (Ref. 8).

The exploratory holes were positioned by HSP Consulting Engineers Limited to provide spatial coverage across the site and to provide preliminary information for foundation design and obtain representative soil samples for geotechnical and geo-environmental analysis.

3.1 Exploratory Methods

The exploratory methods are detailed in the table below.

Table 1 - Exploratory Methods

Type	Quantity	Maximum Depth (m)	Details
Windowless Sampling Borehole	12	4.00	WS01 to WS12

The exploratory holes were logged and sampled by an Engineer from HSP Consulting Ltd and the logs are presented in Appendix II. The exploratory hole locations are shown on the Ground Investigation Layout Plan presented in Appendix III.

Fragmentary bulk and disturbed samples were recovered from materials revealed within all the exploratory holes. Geo-environmental samples, placed in plastic tubs and glass jars supplied by the laboratory, were also obtained specifically for chemical analysis. The samples were taken to UKAS accredited laboratories for further examination and testing.

3.2 In-situ Testing

3.2.1 Standard Penetration Tests

Standard Penetration Tests (SPTs) were carried out at 1.00m intervals in the boreholes. The SPTs were undertaken in accordance with BS 1377:1990 and the results are included on the appended borehole logs (Appendix II).

3.3 Laboratory Testing

The laboratory testing schedules were prepared by HSP Consulting Ltd.

3.3.1 Geotechnical Testing

Geotechnical testing has been undertaken by a UKAS accredited laboratory as part of the works at the site:

- Plasticity Index
- Natural Moisture Contents

The laboratory testing was carried out by Apex Testing Solutions Ltd (UKAS accredited, laboratory No.7771) in accordance with BS1377:1990 using calibrated equipment specifically for the British Standard.

3.3.2 Chemical Analysis

The geo-environmental samples retained specifically for chemical analysis were stored in cooled containers until delivery to the laboratory by courier.

Chemical analysis was scheduled on eighteen samples for the presence of a selected suite of potential contaminants as outlined in the tables below:

Table 2a – Chemical Analysis

Exploratory Hole Location & Depth	Sample Description
WS01 0.10m	MADE GROUND[4,]
WS01 0.40m	MADE GROUND[1,2]
WS01 2.50m	MADE GROUND [3]
WS02 0.10m	MADE GROUND[,1]
WS02 0.60m	MADE GROUND[1,4,5]
WS02 2.80m	MADE GROUND[3]
WS04 0.40m	MADE GROUND[1,4]
WS04 1.40m	MADE GROUND[3]
WS05 0.65m	MADE GROUND[1,4]
WS06 0.40m	MADE GROUND[1,2,4]
WS07 0.50m	MADE GROUND[1,2,4]
WS08 0.10m	MADE GROUND[1,2]
WS10 0.10m	MADE GROUND [1,2,4]
WS11 0.80m	MADE GROUND [1,4]
WS11 2.00m	MADE GROUND [3]
WS12 0.10m	MADE GROUND[4]
WS12 0.50m	MADE GROUND [4]
WS12 1.40m	MADE GROUND[3]

[1] HSP Standard Suite, [2] Organic Matter, [3] BRE Sulphate Suite, [4] Asbestos Screen and ID [5] Asbestos Quantification

Table 2b – HSP Standard Geo-environmental Analysis Suite

Metals	Cadmium	Chromium (III & VI)	Copper
	Lead	Mercury	Nickel
	Zinc		
Semi Metals and Non-metals	Arsenic	Boron	Selenium
Others	pH		
Inorganic Chemicals	Cyanide	Sulphate	Sulphide
Organic Chemicals	PAH (US EPA 16)	TPH (CWG)	Phenol

The contamination analysis was carried out by Chemtest Ltd (UKAS accredited, laboratory No. 2183) during the period 26th June to 14th July 2020. The results are presented in Appendix IV.

3.4 Ground Conditions

3.4.1 Published Geology

The published geology indicates the site is underlain by superficial deposits of Tidal Flats with bedrock geology of the Penarth Group and St Mary's Well Member, as described in Sections 2.2.2 and 2.2.3 respectively.

3.4.2 Ground Conditions on site or General Geology & Revealed Strata

The exploratory hole data generally confirms the published information. It should be noted that many (8 of the 12) of the exploratory holes did not penetrate the base of made ground due to collapse or refusal on hard ground/obstructions during advancement of the boreholes. The superficial Tidal Flats were not fully penetrated where encountered and the depth to the bedrock geology was unproven. The strata generally comprises:

Table 3 – Encountered Ground Conditions

Strata		Depth Range (mbegl)	Max. Thickness (m)	Description
Anthropogenic	MADE GROUND (HARDSTANDING)	0.00 - 0.60	0.10	MADE GROUND comprising grey concrete asphalt.
			0.60	MADE GROUND comprising grey brown sandy gravel.
	MADE GROUND (TOPSOIL)	0.00 – 0.30	0.30	MADE GROUND comprising brown gravelly sandy clayey topsoil.
	MADE GROUND (FILL)	0.30 – 3.00	0.90	MADE GROUND comprising black sandy gravel.
			1.10	MADE GROUND comprising brown to dark grey slightly sandy gravelly clay.
			1.90	MADE GROUND comprising light brown to yellowish brown and grey mottled slightly sandy gravelly clay.
Superficial	TIDAL FLATS	0.80 – 4.00	2.20	Very soft to very stiff greyish brown sandy gravelly CLAY.

3.5 Groundwater Levels

Perched groundwater was encountered within made ground deposits in four exploratory locations during the intrusive works. The depth of encounters ranged between 2.50m and 2.60m begl.

Groundwater levels have been monitored on three of four occasions during the ground gas monitoring visits. Groundwater levels were encountered at depths between 1.80 and 2.94m begl.

3.6 Ground Gas Monitoring

Dual use gas and groundwater monitoring installations were constructed within three of the boreholes at the site (WS01, WS08 and WS11). Each well has been constructed using 50mm diameter HDPE pipe with the top one metre being plain and the remainder slotted. All of the borehole installations have a 6mm pea gravel surround to the slotted pipe with a bentonite seal above and a gas tap. The covers are cemented flush with ground level and are round lockable stopcock covers.

The results of the ground gas monitoring are discussed in Section 5.4 below.

3.7 Visual and Olfactory Evidence of Contamination

Visual evidence of contamination was encountered within the exploratory locations across the site, within the Made Ground deposits and generally comprised black clinker and ash.

No olfactory evidence of contamination was recorded during the intrusive investigation.

4. Geotechnical Assessment

4.1 Detailed Ground Model

For the purpose of this foundation assessment the information gained from the window sample boreholes has been included. The exploratory logs are presented in Appendix II.

4.1.1 Made Ground

Made ground materials were encountered in all exploratory locations across the site. The deposits can be characterised into three categories; topsoil, hardstanding and fill.

Topsoil

Topsoil like materials were encountered in the east of the site within the scrubland and generally comprised brown gravelly sandy CLAY to a maximum depth of 0.30m begl.

Hardstanding

Hardstanding of weathered asphalt concrete and concrete were encountered in four locations (WS01-WS04) in the west of the site and generally comprised greyish brown sandy GRAVEL or grey asphalt concrete. The deposits were encountered to a maximum depth of 0.60m begl.

Fill

Fill like deposits were encountered underlying the topsoil and hardstanding deposits across the site. The deposits were variable in composition but can be generally described as brown and black mottled sandy GRAVEL or greyish green and black mottled sandy gravelly CLAY and were encountered to a maximum depth of 3.50m. The base of the deposits was proven within WS01-WS04, the full depth of the fill was not penetrated within the remaining exploratory locations (WS05-WS12) in the east of the site in the location of the proposed development.

4.1.2 Superficial Deposits

Tidal Flat superficial deposits were encountered within four locations within the west of the site (WS01 – WS04). The deposits generally comprised very soft to soft greyish brown sandy gravelly CLAY and were encountered to a maximum depth of 4.00m begl. The deposits were not fully penetrated.

4.1.3 In-situ Testing and Assessment

A series of Standard Penetration Tests (SPT's) have been undertaken within all the boreholes. The following table summarises the N values at depth across the site.

Table 4 – SPT N Values

Depth (m)	Range of 'N' Values	Mean 'N' Value	Description
1.00	2 – 50	28	MADE GROUND / CLAY
2.00	4 – 8	6	MADE GROUND/ CLAY
3.00	1 – 50	13	SAND / BEDROCK / CLAY
4.00	14 - 21	12	CLAY

Four Plasticity Index tests have been undertaken to confirm the engineering behaviour of the soils. The results are presented within Appendix V.

The results indicate compliance with the definition of soils of intermediate plasticity (CL - CI) after the classification system of BS5930: 2015. Fine soils across the site are considered to be of a Low to Medium Volume Change potential in accordance with the National House Building Council (NHBC) Standards, Chapter 4.2: 2007.

Table 5 - Plasticity and Volume Change Potential

Sample Ref:	Laboratory Material Descriptions	LL (%)	PL (%)	PI (%)	% passing 425µm	Modified PI (%)*	Soil Class	MC (%)
WS04 @ 1.30	Yellowish grey slightly gravelly CLAY	49	17	32	73	23	CI	21*
WS06 @ 2.30m	Greyish brown slightly gravelly CLAY	37	17	20	75	15	CI	22*
WS07 @ 1.10m	Blackish grey gravelly CLAY	50	23	27	61	16	CI	27
WS10 @ 0.90m	Blackish grey gravelly CLAY	33	15	18	58	10	CI	11

* Rounded up

4.2 Earthworks

Current development proposals indicate the proposed development in the east of the site with associated car parking in the west. Current topographical levels indicated that the east of the site is approximately 2.00m higher than the west. Therefore, it is envisaged that limited earthworks may be required.

Should any earthworks be required, further investigation and materials testing of the near surface soils on site would be required to classify and make an assessment of the suitability for re-use as engineered fill.

4.3 Excavations

Excavations to proposed formation levels for new foundations and infrastructure should generally be readily achievable adopting standard excavation plant. However, instability was noted within most of the boreholes advanced across the site, in particular within the area of the proposed development. Therefore, random and potentially severe falls are anticipated from the faces of near vertically sided unsupported excavations carried out at the site. Where personnel are required to enter near vertically sided excavations, it is considered that support should be provided to the full depth of all excavations.

It is recommended that all support systems are continually assessed by fully trained or experienced personnel.

Some slight groundwater entries were noted during the intrusive works and subsequent monitoring. Should shallow groundwater entries be encountered at the site during groundwork operations traditional sump and pump dewatering should be sufficient if required. This is subject to the completion of the groundwater monitoring.

4.4 Foundations

Gleeds Management Services Ltd propose construction of a three storey college with associated hardstanding and soft landscaping. A test to fit plan is presented within Appendix I.

For the purpose of this foundation assessment the information gained from all the window sample boreholes has been included.

Made Ground is not considered a suitable founding horizon. Due to variable and deep made ground (greater than 3.00m depth) and low strength Tidal Flat deposits, a traditional solution is unlikely to be feasible. Therefore, an alternate foundation solution in the form of piling is recommended. This should be designed and warranted by a specialist contractor.

We would recommend that deeper rotary boreholes are advanced within the proposed building footprint on site to determine the depth of competent strata and provide information for initial pile design. It would also be prudent to undertake some mechanically excavated trial pits to determine the nature of the obstructions indicated by the SPT refusals at shallow depth (<1.00m) within four of the twelve exploratory borehole locations, short term stability of excavations and the rate of inflow of the shallow / perched groundwater.

Ground improvement, such vibro stone columns could be considered, the advice of a specialist contractor should be sought as the near surface refusals/obstructions, intermittent / perched shallow groundwater and low SPTs within the Tidal Flat Deposits may preclude the use of ground improvement on this site.

Foundations should be designed in accordance with NHBC Standards Chapter 4.2 Building near Trees.

4.5 Ground Floor Slab

At this stage, based on the ground conditions encountered, a suspended floor slab should be assumed. In addition to the above, the use of ground bearing floor slabs would also be dependent on any associated ground gas protection measures, see section 5.6 below. Reference should also be made to NHBC Standards Chapter 4.2 to confirm the floor slab type.

4.6 Concrete Classification

The results of sulphate and pH testing carried out on selected soil samples taken during this investigation have been compared with the recommendations outlined in BRE Special Digest 1, Part 1: 2005. (Ref 12)

The guidelines given in BRE Special Digest 1 are based upon a site classification relating to its previous usage. It is considered appropriate to define this site as a ‘Brownfield Site’ location for the purposes of concrete classification.

On the basis of the above, it is considered appropriate to adopt a basic Design Sulphate Class of DS-1 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-1 within the made ground across the site.

For the natural soils encountered it is considered that a basic Design Sulphate Class of DS-2 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-1s may be feasible.

However, it must be noted that an atypical result was encountered within WS02 at 2.80m, this sample can be considered a basic Design Sulphate Class of DS-4 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-4. It is recommended that further testing is undertaken across the development area once the design proposals are more certain.

5. Environmental Assessment

5.1 Introduction

The approach to the human health risk assessment reported here follows the principals given in CLR 11, i.e. application of the following assessment hierarchy:

- Tier 1 risk screening by establishment of potential pollutant linkages, i.e. the preliminary conceptual site model (PCSM), or
- Tier 2 generic quantitative assessment using generic assessment criteria (GACs) that represent 'acceptably low' risk, or
- Tier 3 quantitative risk assessment using site specific assessment criteria (SSACs) that represent 'unacceptable risk', or where generic assessment criteria are not available or they are not applicable to the CSM.

The results of laboratory analysis have been screened against GACs including the Defra Category 4 Screening Levels (C4SL) and LQM and CIEH S4ULs for Human Health Risk Assessment (Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3180. All rights reserved). (Refs 10 and 11 respectively).

In the absence of a standard scenario for a school environment the standard exposure scenario of residential without home grown produce has been used to identify potential exposure pathways for human health receptors. Controlled water, flora and fauna and property receptors have also been included within the CSM. Our Tier 2 HHRAs for school sites are screened against the GACs representative of minimal risk for residential without home grown produce end use, we believe this to be appropriate based on the precautionary principle the CLR guidance advocates.

It should be noted that organic contamination (PAH, TPH and BTEX) have been screened against the GAC for 6% Soil Organic Matter (SOM).

The assessment of PAHs is undertaken using the surrogate marker approach; recommended by Health Protection Agency (2010) guidance (Ref 17), providing the PAH profile is sufficiently similar to the coal tars tested by Culp et al (1998). Where PAH profile is not sufficiently coal tar like the TEF method is adopted using the LQM and CIEH S4ULs. Prior to assessment a PAH profile is generated for all samples analysed for PAH using the LQM PAH Profiling Tool v1.3, the graphical output is presented in Appendix IV.

5.2 Assessment of Soil Analysis Results

Eighteen samples, as detailed in section 3.3.2, were scheduled for analysis from the development area. These provide a basis for characterising the soils to outline the potential impacts on human health and any environmental receptors from any contamination found.

The screening process for on-site human health receptors show that the GACs for a residential without home grown produce setting exceeded for lead in a single location. PAH ratios were

within acceptable limits for suggesting a “coal tar” source and therefore the surrogate marker approach has been used to screen PAH values and was not exceed.

Details of the exceedance can be seen in Table 6 below. The results for the remaining contaminants of concern were below the screening criteria for individual contaminant concentrations.

Table 6 – GAC Exceedances

Contaminant	GAC (mg/kg)	No. of exceedances	Concentration (mg/kg), sampling location and depth (m)
Lead	300[1]	1	510, WS02 @ 0.60m

[1] C4SL,

Twelve of the soil samples derived of Made Ground were submitted for asbestos screen and identification. Spray coated Chrysotile, Crocidolite and Amosite were identified within one sample, WS02 at 0.60m depth at a quantity of 0.20%.

5.3 Human Health Mitigation

Excluding the elevated concentrations identified within Table 6, Section 5.2, concentrations of potential contaminants recorded at the site did not exceed the GAC’s for a residential without plant uptake end use and are therefore not considered to pose an unacceptable level of harm to the proposed end users of the site.

The elevated concentrations identified within WS02 are located within variable Made Ground. Mitigation measures will be required in the form of either hard cover or a clean cover system within all soft landscaping areas will be required (if the area is proposed as soft landscaping once the proposed layout is more certain). In soft landscaping areas, this should be of a minimum of 300mm in thickness, comprising at least 150mm topsoil and 150mm subsoil, although it should be noted that the landscape architect may specify a greater depth of top and sub soil for planting.. Alternatively, the area of the lead exceedance and asbestos detection could be subject to delineation and removal off site to a suitable waste disposal facility.

Should the whole site development proposals alter significantly then a member of HSP’s Geo-environmental team should be informed so that the implications for this area of the site can be assessed and any necessary mitigation measures be determined.

Should any obvious evidence of unexpected contamination be encountered during the redevelopment works it should be reported to HSP so that an inspection can be made and appropriate sampling and assessment work be carried out.

Appropriate health and safety precautions should be adopted during any excavation works to avoid exposure to potentially contaminated soils and dust. Consideration should be given to the HSE document HSG 66 ‘Protection of workers and the General Public during Redevelopment of Contaminated Land’.

The approval of the local Environmental Health Officer should be sought with respect to the soil contamination assessment and mitigation proposals.

5.4 Ground Gas Risk Assessment

For the purpose of this assessment, the school is classified as Building Type B; as outlined in Table 3 of BS8485:2015 Code of Practice of the design of protective measures for methane and carbon dioxide ground gas for new buildings (Ref 14). This is a conservative assessment, subject to change once the building occupancy and maintenance controls are better defined.

Ground gas concentrations have been monitored on occasions in order to obtain an indication of the ground gas regime at the site. The results to date indicate that methane has not been recorded above the monitor's limit of detection (<0.1%vol). Carbon dioxide has been recorded at a maximum concentration of 16.3% vol in air in WS01. Steady state gas flows have not been recorded during the monitoring visits. From the results of above, the maximum steady state gas screening value (GSV) for the site is 0.0163l/hr.

The results have been assessed in line with the guidance provided in BS8485:2015+A1:2019 Code of Practice of the design of protective measures for methane and carbon dioxide ground gas for new buildings (Ref 14) and CIRIA Document C665 'Assessing Risks Posed by Hazardous Ground Gases to Buildings' (Ref 15). Comparison of the steady state gas screening value with Table 8.5 of the CIRIA document indicates that the site falls into a Characteristic Situation 1, However, the carbon dioxide concentrations in WS01 are consistently above the typical maximum concentration of 5% for a Characteristic Situation 1. Given the consistently elevated levels of carbon dioxide and depleted oxygen, it is considered appropriate to classify the site as a Characteristic Situation 2 and therefore ground gas protection measures will be required within any proposed development.

The gas protection score should be determine based on Characteristic Situation 2 and Building Type; as outlined in Tables 3 & 4 of BS8485:2015 +A1:2019 (Ref 14). The gas protection score will determine the combination of elements required from Tables 5 to 7 inclusive (Ref 14) to achieve the minimum recommended gas protection.

In accordance with the guidance provided in BS8485:2015+A1:2019 (Ref. 14) gas protection should provide 3.5 points, assuming a Type B building. The proposed protection measures should be confirmed at the detailed design stage once the building type, foundations and floor slab have been confirmed.

Depleted oxygen levels were observed within a number of the boreholes during the monitoring. This poses a risk of asphyxiation to construction and maintenance workers in confined spaces such as excavations or manhole chambers. A confined spaces risk assessment should be carried out prior to working in any buried structures or excavations

The results of the ground gas monitoring can be found within Appendix VII.

5.5 Water Supply

The environmental analysis for the site has been compared to the following document in order to assess the most appropriate pipe material that should be used upon the site for mains water supply:

> 'Guidance for the selection of water supply pipes to be used in Brownfield sites – UK Water Industry Research – Ref: 10/WM/03/21.' (Ref. 20)

The chemical results show exceedances of the threshold values for PE and PVC pipes. It is therefore considered that specialist materials are likely to be required for water supply pipes at the site. Confirmation of supply pipes should always be sought from utility providers.

5.6 Waste Classification

The results of the chemical testing have been assessed using web-based software for classifying hazardous waste, using HazWasteOnline™. The materials tested are likely to be classified as both non-hazardous and hazardous.

Please note the above classification provides an indication of how the material should be classified for removal off site; however, this should be used at the approved waste handler's discretion. The results are included in Appendix VII.

5.7 Updated Conceptual Site Model

The PCSM and Summary of plausible pollutant linkages was produced by undertaking a Source-Pathway-Receptor analysis of the site and is present in the Desk Study (Ref. 1). Based on the findings of this and the previous investigation the conceptual site model has been updated and is presented in the table below.

Table 9 – Updated Conceptual Site Model

Source	Pathway	Receptor	Consequence	Probability	Risk	Comments
On site **S1:** Historical and Contemporary land use: Railway – track/sidings, Coal Yard, Unknown Tanks, Made Ground (Infilled Land). **Off Site (within 250m)** **S2:** Historical & Contemporary Land Use: Barry Docks, Locomotive Repair Works, Steel Railway – lines/ sidings, historic Landfill, Coal Handling/Yard and Oil Storage Terminal	**P1:** Human uptake pathways • direct contact, • ingestion of soils and dust, • inhalation of fugitive dust.	**R1:** End Users **R2:** Construction and maintenance workers	Mild	Low	Low	Concentrations of lead were recorded above the relevant GACs and asbestos of Chrysotile, Crocidolite and Amosite were identified at concentrations within WS02 at 0.20%. Therefore, it is recommended that mitigation measures in the form of a clean cover system (soft landscaping) hard cover or delineation are required. With mitigation measures in place the risk to end users is considered to be LOW
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R3:** Controlled Water: Groundwater & Surface Water	Mild	Low	Very Low	The superficial geology of Tidal Flats is classified as a Secondary undifferentiated aquifer. And the bedrock geology of the Penarth Group Mudstone and St Mary's Wells Member are classified as Secondary A and Secondary B Aquifers respectively. Given the limited concentrations of contaminants of concern identified during the ground investigation and fine superficial deposits which would inhibit any migration into the underlying secondary A and B aquifers the risk to controlled water is considered to be VERY LOW.
	P5: Vertical and lateral migration of ground gases and/or vapour	**R1:** End Users **R5:** Adjacent Residential Properties	Mild	Unlikely	Very Low	Ground gas concentrations have been monitored on four occasions, in order to obtain an indication of the ground gas regime at the site. The results indicate the site characterises as CS2. Gas protection measures should provide in line with BS8485:2015+A1:2019. Provided these measures are installed the risk is considered to be VERY LOW.
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R4:** Property, services and substructures	Mild	Likely	Moderate	At this stage, it is considered appropriate to adopt a basic Design Sulphate Class of DS-1 together with and Aggressive Chemical Environment for Concrete (ACEC) of AC-1 within the made ground across the site and a basic Design Sulphate Class of DS-2 together with and Aggressive Chemical Environment for Concrete (ACEC) of AC-1s within the natural soils. Atypical results were encountered within WS02 at 2.80m which would be classified as DS- 4 with ACEC of AC - 4, further testing is recommended to confirm the above concrete classification. The chemical analysis of the soils indicates specialist materials are likely to be required for water supply pipes at the site.

						However, confirmation of supply pipes should be sought from utility providers.
	P6: Root uptake.	**R6:** Proposed Flora and fauna	Minor	Low	Very Low	Extensive planting is unlikely therefore the risk of uptake to proposed flora and fauna is VERY LOW.

6. References

1. HSP Consulting Engineers Limited, Barry Waterfront, Ffordd Y Mileniwm, Barry - Phase I Geo-Environmental Desk Study Report, July 2020, Ref: C3297/PI.
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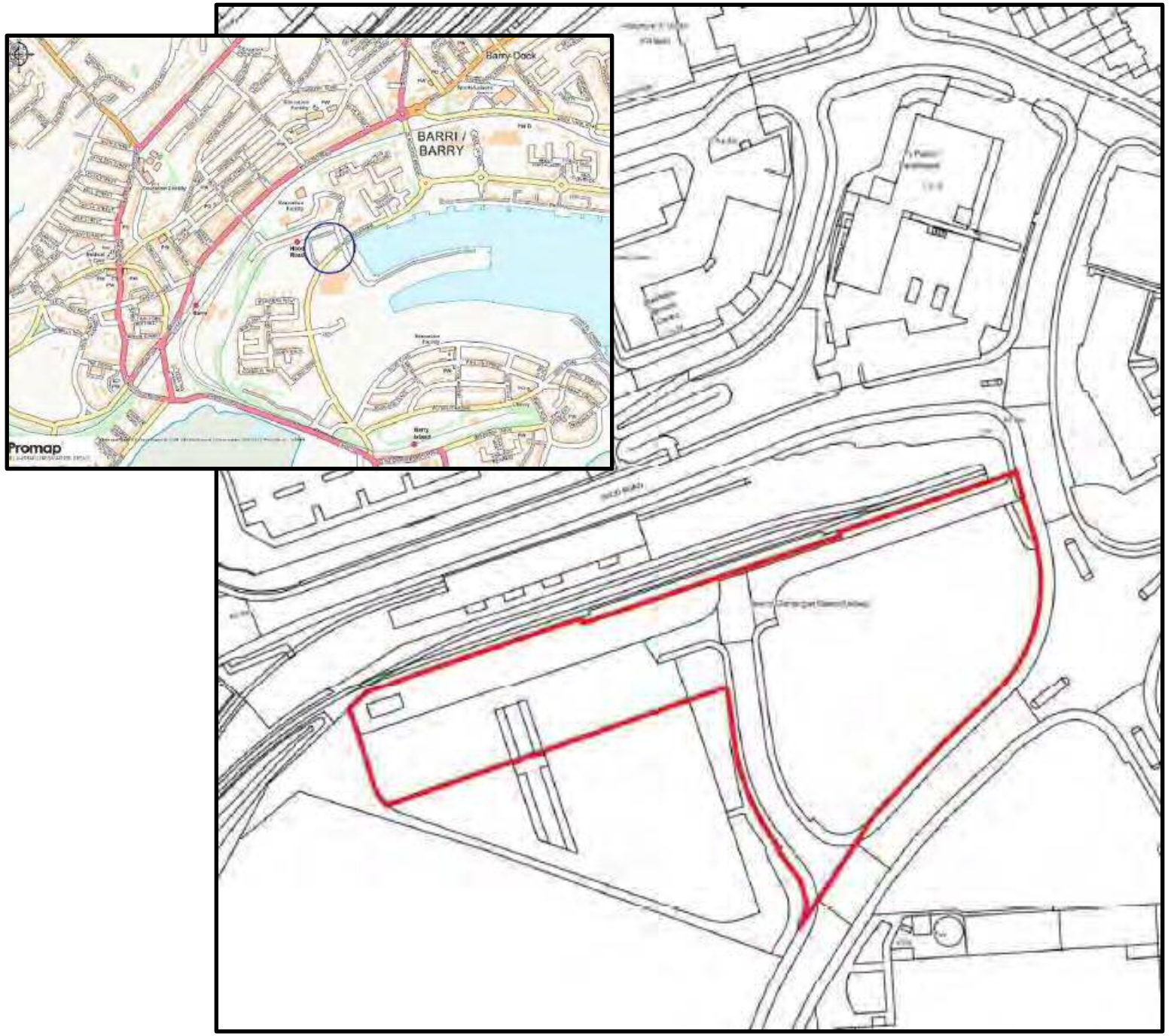
3. British Geological Survey Lexicon Search - http://www.bgs.ac.uk/lexicon/
4. Department of the Environment Industry Profiles.
5. Site Investigation in Construction, Volume 3, Specification for Ground Investigation 2nd Edition.
6. BS 5930:2015 Code of Practice for Ground Investigations.
7. BS 8576:2013 Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs)
8. BS10175:2011 +A1:2013 Investigation of Potentially Contaminated Sites - Code of Practice.
9. NHBC Standards, Chapter 4.2, Building near trees.
10. Department for Environment, Food and Rural Affairs and Contaminated Land: Applications in Real Environments (CL:AIRE) (December 2013). SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination.
11. Nathanail, C.P., McCaffrey, C., Gillett, A.G., Ogden, R.C. and Nathanail, J.F. 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham.
12. BRE Special Digest 1:Concrete in Aggressive Ground, 2005, Building Research Establishment.
13. CL:AIRE The definition of Waste: Development Industry Code of Practice, 2008.
14. BS8485:2015 + A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.
15. CIRIA C665 'Assessing Risks Posed by Hazardous Ground Gases to Buildings'
16. NHBC & RSK Group Plc, March 2007. Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present. Ed 4.
17. Department for Environment, Food and Rural Affairs and Contaminated Land: Applications in Real Environments (CL:AIRE) (December 2013). SP1010: Appendix E Provisional C4SLs for Benzo(a)pyrene as a surrogate marker for PAHs.
18. www.environment-agency.gov.uk
19. Environment Agency, Freshwater Environmental Quality Standards (EQS) contained in the Hydrogeological Risk Assessment for Landfills and the Derivation of Groundwater Control and Trigger Levels, 2015.
20. HMSO, Water Supply (Water Quality) Regulations, 2002.
21. Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 2
22. UK Water Industry Research, Guidance for the selection of water supply pipes to be used in Brownfield sites, Ref:10/WM/03/21.

Appendix I



DO NOT SCALE

NOTES:

- Approximate Red Line Boundary

N

hsp consulting
Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:
Gleeds Management Services Ltd

PROJECT:
Southern IQ Development, Barry Waterfront

TITLE:
Site Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN :	DATE:
DRS	July 2020
PROJECT No:	DRAWING No:
C3297	501

Red line boundary

Pedestrian Access

Vehicular Access

Current Access Points

Main Vehicular Route

Drainage Ditches

Existing Trees

Existing Hedgerow

Noise

Overhead Cables

Foot Bridge

Existing Right of Way

Building for Demolition

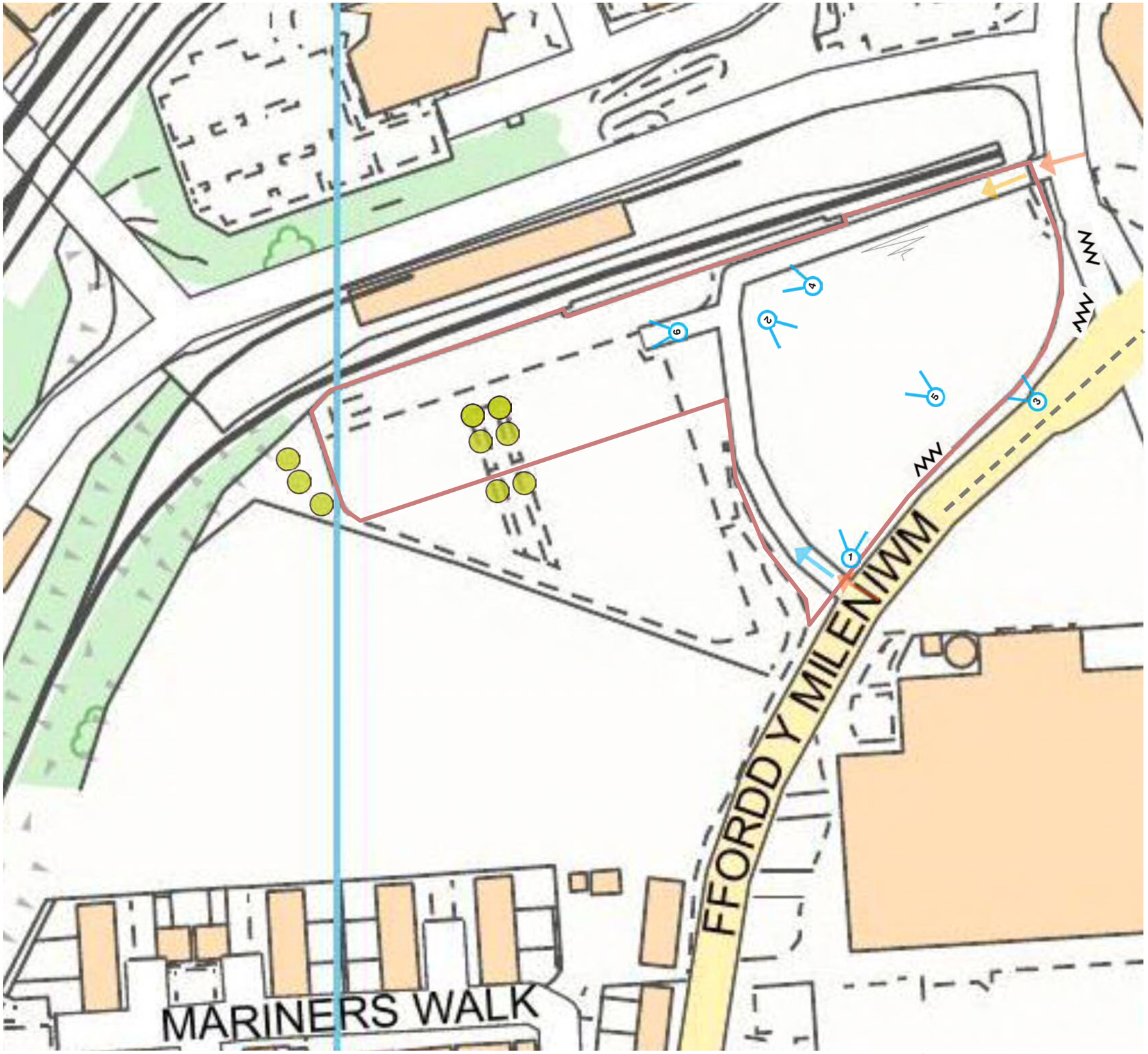
Photo View

Gradient / Embankment

+39.0m

Level

N



Scale: 1:1000 @ A3

0 5m 10m 20m 50m

Great site with ample space for the building and parking, good access and good civic presence to construct a new college building. Access is fine; the site topography would not be too challenging or costly to construct a building, being relatively flat. Surveys should be procured asap to support the options appraisal.

Points of Note.

- Reasonably large site with capacity to build new prior to clearing existing. **(24,710 m²)**
- Flat site with no significant changes in level across it.
- Adjacent plots are at a similar level and similar topography.
- Adjacent to the North of the site is the toursit railway station and plat
- Surrounding the East and Southern boundaries of the site are two major roads
- The portion of land adjacent to the vehicle entrance to the site is vacant and likely to be developed separately to the college site

Site Access.

- Vehicular access is only via Ffordd y Mileniwm.
- Current access includes:
  - Surface parking.
  - Single lane tracks from both Fford y Mileniwm and the extension of Hood road
- Railway sidings are a barrier to the North and North - Western edges of the site.
- Pedestrian route from the East, off Hood Road

Existing Buildings:

The following buildings are significant for the following reasons:

- Toursit Railway, Waterfront terminus is alongside the old Barry Railway Co's Hood Road goods shed
- Pump House building to the North of the site, it is another important structure and has been redeveloped to provide cafe and restaurant space.
- A hotel is directly East and a large supermarket is South of the site, these provide opportunity for accomodation, food and employment to students.

Utilities:

- Gas lines TBC
- Foul and Storm drainage TBC
- Electricity - sub-station - TBC

Surface water flooding

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Red line boundary

Pedestrian Access

Vehicular Access

Current Access Points

Main Vehicular Route

Drainage Ditches

Existing Trees

Existing Hedgerow

Noise

Overhead Cables

Foot Bridge

Existing Right of Way

Building for Demolition

1

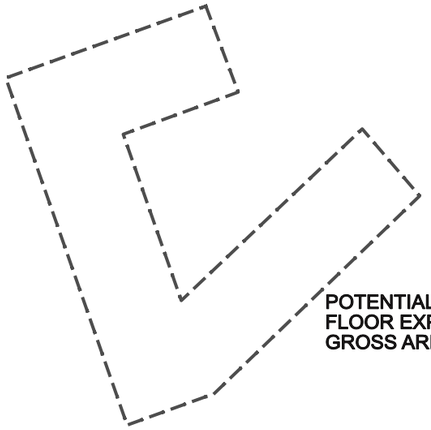
Photo View

Gradient / Embankment

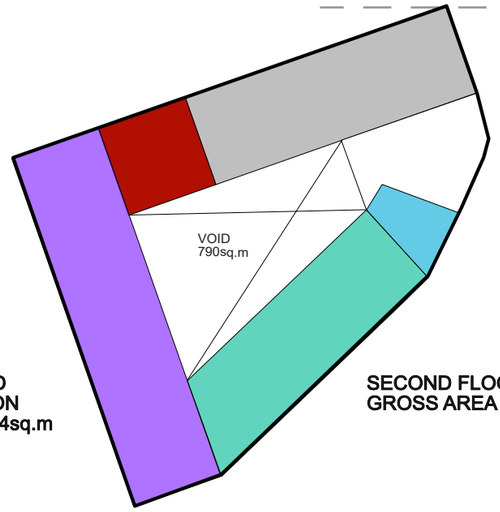
+39.0m

Level

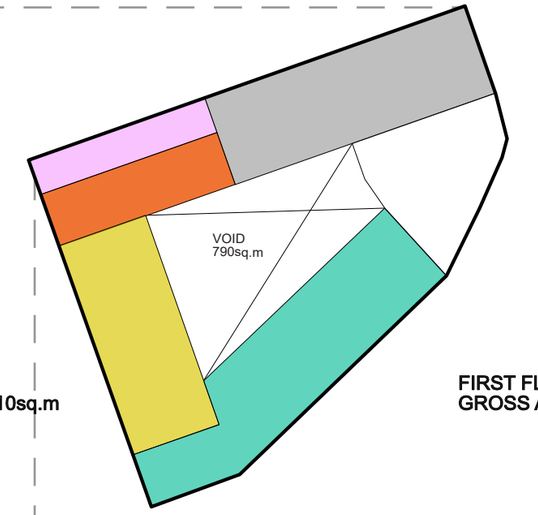
N



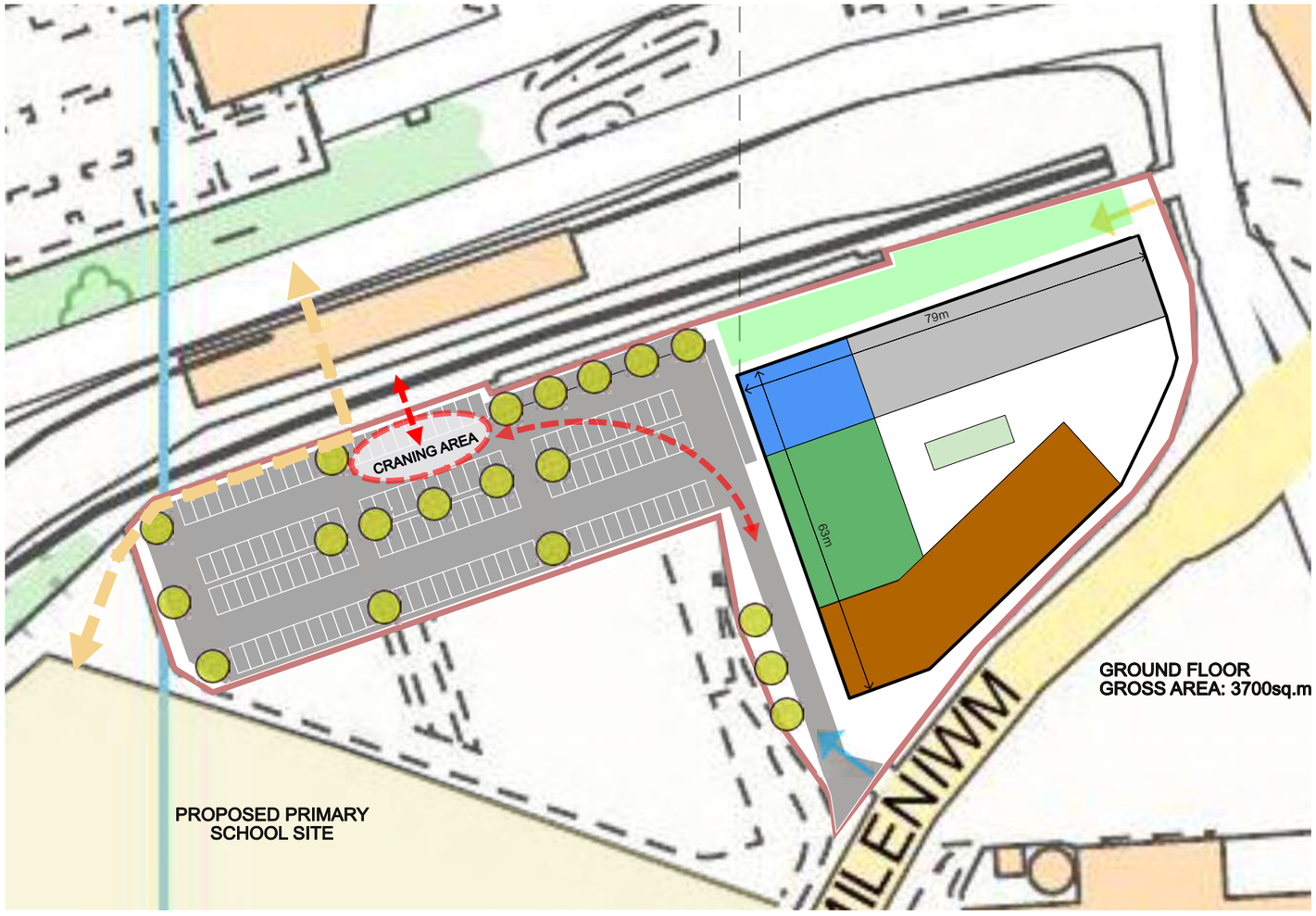
POTENTIAL THIRD FLOOR EXPANSION GROSS AREA 1904sq.m



SECOND FLOOR GROSS AREA 2910sq.m



FIRST FLOOR: GROSS AREA 2910sq.m



Cardiff and Vale College, Hood Road Campus			
College Specifics:			
No. of pupils	TBC		
FTE staff	TBC		
Total Building Area / m2			
	2,365	**Test Scheme**	**Difference**
Art & Design	616	615	-1
Wellbeing	951	950	+1
Nursery	292	290	-2
Hospitality	819	820	+1
Classrooms & General Education	860+120	980	0
Hair and Beauty	800	800	0
Student Services	80	80	0
Non-Curriculum	683	680	-3
Business & IT, Business Centre	1171+358	1530	+1
Independent living	218	220	+2
LSC	588	590	+2
Care	214	215	+1
Atrium & General Circulation	1750	1750	0
Total	**9,520**	**2,365**	**0**
Parking			
No. of Spaces		121	0

Scale: 1:1000 @ A3

0 5m 10m 20m 50m

Points of Note.

- Proposed layout on larger corner of the site, with parking at the rear
- Areas do not provide separate allowance for non-net, e.g. plant, risers, partitions and structure
- Adjacencies are to be developed with CAVC
- Building located to suit existing access, maximise civic presence and provide an efficient volume
- Three storey layout
- Buildings plan depth and adjacency to main road assumes mechanical ventilation systems
- Soft play located outside of all classrooms.

Site Access.

- Access off Morfa Avenue, similar to the current scenario.
- Pedestrian access from the north side of the railway line across the north-western edge of the site, for the new primary school.
- Car park to be used to access historic railway siding to move old engines onto lorries to then leave via proposed exit. Turning and lifting areas to be clear of trees, planting etc.
- Pedestrian access from the north east corner of the site

Phasing and Delivery.

- Clean site and new-build

Appendix II

Borehole Log

Borehole No. **WS01**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 23/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			MADE GROUND - Grey concrete asphalt.
		0.40	TJ		0.35			MADE GROUND - Brown sandy gravel. Gravel is fine to coarse and angular of mixed lithology.
		0.80	TJ		0.70			MADE GROUND - Dark grey sandy gravelly clay. Gravel is fine to coarse and angular of concrete brick and slag.
		1.00		N=11 (1,1/1,3,4,3)				MADE GROUND - Brown slightly sandy gravelly clay. Gravel is fine to coarse and angular of mixed lithology, brick concrete and occasional clinker.
		1.50	D					
		2.00		N=5 (1,1/2,1,1,1)	2.10			MADE GROUND - Greyish green and black mottled sandy gravelly clay. Gravel is fine to coarse and angular of mixed lithology, clinker and concrete.
		2.50	D					
		3.00		50 (9,13/50 for 225mm)	2.90 3.00			Very stiff grey slightly sandy gravelly CLAY. Gravel is coarse and subrounded of mixed lithology.
								End of borehole at 3.00 m

Remarks

AGS

Borehole Log

Borehole No. **WS02**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 23/06/2020 -	Logged By

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	TJ					MADE GROUND - Grey brown sandy gravel. Gravel is fine to coarse and angular of mixed lithology.
		0.60	TJ		0.45			MADE GROUND - Dark brown and black mottled sandy gravel. Gravel is fine to coarse and angular of mixed lithology clinker, slag and brick.
		1.00		N=7 (2,1/1,2,3,1)				
					1.20			MADE GROUND - Brown sandy gravel. Gravel is fine to coarse and angular of concrete.
					1.75			NO RECOVERY
		2.00		N=6 (3,2/2,2,1,1)	2.00			MADE GROUND - Orange and black mottled sandy gravel. Gravel is fine to coarse and angular of brick and concrete.
					2.40			MADE GROUND - Dark grey sandy gravel. Gravel is fine to coarse and angular of slate, clinker and slag.
		2.80	D					
		3.00		N=1 (3,2/0,1,0,0)				
	▼				3.50			Stiff grey gravelly slightly sandy CLAY.
		4.00		N=21 (3,3/4,6,5,6)	4.00			End of borehole at 4.00 m

Remarks

1. Borehole terminated on collapse at 3.40m - 4.00m depth.
2. Soils noted as wet from 3.40m depth.

Borehole Log

Borehole No. **WS03**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 23/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.40			MADE GROUND - Grey brown sandy gravel. Gravel is fine to coarse and angular of mixed lithology.
		1.00		N=22 (6,7/6,6,5,5)	1.30			MADE GROUND - Black sandy gravel. Gravel is fine to coarse and angular of mixed lithology coal, brick, slag and concrete.
		2.00		N=4 (2,1/1,1,1,1)				MADE GROUND - Light brown and grey mottled slightly sandy gravelly CLAY. Gravel is fine to coarse and angular of mixed lithology brick and concrete.
	▼	3.00		N=4 (0,1/1,2,1,0)	3.20			Soft to firm grey sandy gravelly CLAY. Gravel is fine to coarse and subrounded to angular of limestone and mudstone.
		3.50	D					
		3.70	B					
		4.00		N=14 (2,1/1,2,2,9)	4.00			End of borehole at 4.00 m

Remarks
1. Borehole terminated on collapse from 3.50m - 4.00m depth.
2. Soils noted as wet from 3.00m depth.

Borehole Log

Borehole No. **WS04**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 23/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.70	TJ		0.60			MADE GROUND - Grey sandy gravel. Gravel is fine to coarse and angular of mixed lithology and concrete.
		0.90	TJ		0.80			MADE GROUND - Brown and black mottled sandy gravel. Gravel is fine to coarse and angular of slag, clinker and concrete.
		1.00		N=2 (1,1/0,1,1,0)				Very soft greyish brown sandy gravelly CLAY. Gravel is fine to coarse and subrounded to angular of limestone and mudstone.
		1.30	B					
		1.40	D					
		2.00		N=4 (1,0/0,1,2,1)				
		3.00		N=3 (1,0/1,0,1,1)	3.00			End of borehole at 3.00 m

Remarks

1. Borehole terminated on collapse from 2.50m to 3.00m depth.

Borehole Log

Borehole No. **WS05**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 23/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
		0.65	TJ		0.60			MADE GROUND - Yellowish brown slightly sandy gravelly clay. Gravel is fine to coarse and angular of mixed lithology, brick and concrete.
		1.00		50 (3,6/50 for 210mm)	1.00			MADE GROUND - Grey and black mottled sandy gravel. Gravel is fine to coarse and angular of mixed lithology brick and concrete.
								End of borehole at 1.00 m

Remarks

Borehole Log

Borehole No. **WS06**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 23/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	TJ		0.20			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
		0.40	TJ		0.60			MADE GROUND - Brown and grey clayey sandy gravel. Gravel is fine to coarse and angular of mixed lithology brick and concrete.
		1.00		N=41 (2,4/4,8,18,11)	1.20			MADE GROUND - Brown and black mottled slightly sandy gravelly clay. Gravel is fine to coarse and angular of brick and concrete.
					1.60			MADE GROUND - Black sandy gravel. Gravel is fine to coarse and angular of clinker, meal fragments, concrete and slag.
		1.80	D		1.95			MADE GROUND - Brown and black mottled slightly sandy gravelly clay. Gravel is fine to coarse and angular of brick and concrete.
		2.00		N=8 (1,2/2,2,2,2)	2.20			MADE GROUND - Orangish brown sandy gravel. Gravel is fine to coarse and angular of mixed lithology brick and concrete.
	▼	2.30	B					MADE GROUND - Greyish brown gravelly sandy CLAY. Gravel is fine to coarse and subrounded to angular of mixed lithology and occasional clinker.
		3.00		N=12 (1,2/2,2,4,4)	3.00			End of borehole at 3.00 m

Remarks

1. Borehole terminated on collapse from 2.70m to 3.00m depth.

Borehole Log

Borehole No. **WS07**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 24/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
		0.50	TJ		0.60			MADE GROUND - Black slightly clayey sandy gravel. Gravel is fine to coarse and subangular to angular of mixed lithology, brick, concrete, coal and clinker.
		1.00		N=20 (2,2/4,6,6,4)				
		1.10	B					MADE GROUND - Dark grey slightly sandy gravelly CLAY. Gravel is fine to coarse and angular of mixed lithology, concrete, brick, slag and clinker.
					1.50			
					1.70			MADE GROUND - Brown and grey mottled sandy gravelly clay. Gravel is fine to coarse and angular of mixed lithology brick and concrete.
		1.90	D		1.95			
		2.00		N=8 (2,3/2,2,2,2)				MADE GROUND - Dark grey slightly sandy gravelly CLAY. Gravel is fine to coarse and angular of mixed lithology, concrete, brick, slag and clinker.
					2.45			
	▼				2.80			MADE GROUND - Black sandy gravel. Gravel is fine to coarse and angular of clinker and slag.
		3.00		N=7 (1,2/0,2,3,2)	3.00			MADE GROUND - Brown sandy gravel. Gravel is fine to coarse and angular of mixed lithology, brick and concrete.
								MADE GROUND - Brown sandy gravelly clay. Gravel is fine to medium and subrounded to angular of mixed lithology and occasional clinker.
								End of borehole at 3.00 m

Remarks

1. Borehole terminated on collapse from 2.80m to 3.00m depth.
2. Groundwater encountered at 2.90m depth.

Borehole Log

Borehole No. **WS08**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 24/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	TJ		0.20			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
					0.60			MADE GROUND - Grey sandy gravel. Gravel is fine to coarse and angular brick, concrete, clinker and limestone.
					0.80			MADE GROUND - Grey sandy gravelly clay. Gravel is fine to coarse and angular of mixed lithology brick and concrete.
		1.00		50 (2,6/50 for 180mm)	1.00			MADE GROUND - Orangish brown sandy gravel. Gravel is fine to coarse and angular of brick and concrete.
								End of borehole at 1.00 m

Remarks

AGS

Borehole Log

Borehole No. **WS09**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 24/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	TJ		0.30			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
		1.00		50 (8,8/50 for 160mm)	1.00			MADE GROUND - Grey sandy very gravelly clay. Gravel is fine to coarse and angular of mixed lithology and concrete cobbles.
								End of borehole at 1.00 m

Remarks

Borehole Log

Borehole No. **WS10**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 24/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	TJ		0.30			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
		0.90 1.00	B	50 (25 for 140mm/50 for 150mm)	1.00			MADE GROUND - Dark grey and black mottled slightly sandy gravelly clay. End of borehole at 1.00 m

Remarks

Borehole Log

Borehole No. **WS11**

Sheet 1 of 1

Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 24/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30	TJ		0.15			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
		0.80	TJ		0.50			MADE GROUND - Brown and grey mottled very gravelly sandy clay. Gravel is fine to coarse and angular of mixed lithology, concrete, brick and clinker.
		1.00		N=25 (3,5/5,5,8,7)				
		1.20	D		1.10			MADE GROUND - Orangish brown very gravelly sandy clay. Gravel is fine to coarse and angular of mixed lithology, brick, concrete and occasional clinker.
					1.70			MADE GROUND - Black sandy gravel. Gravel is fine to coarse and angular of slag, coal and clinker.
		2.00	D		1.80			MADE GROUND - Grey sandy gravel. Gravel is fine to coarse and angular of concrete.
		2.00		N=10 (1,3/3,2,3,2)	2.00			MADE GROUND - Brown and black mottled gravelly sand. Gravel is fine to coarse and angular of coal and clinker.
								End of borehole at 2.00 m

Remarks

1. Borehole terminated on collapse from 1.60m to 2.00m

Borehole Log

Borehole No. **WS12**

Sheet 1 of 1

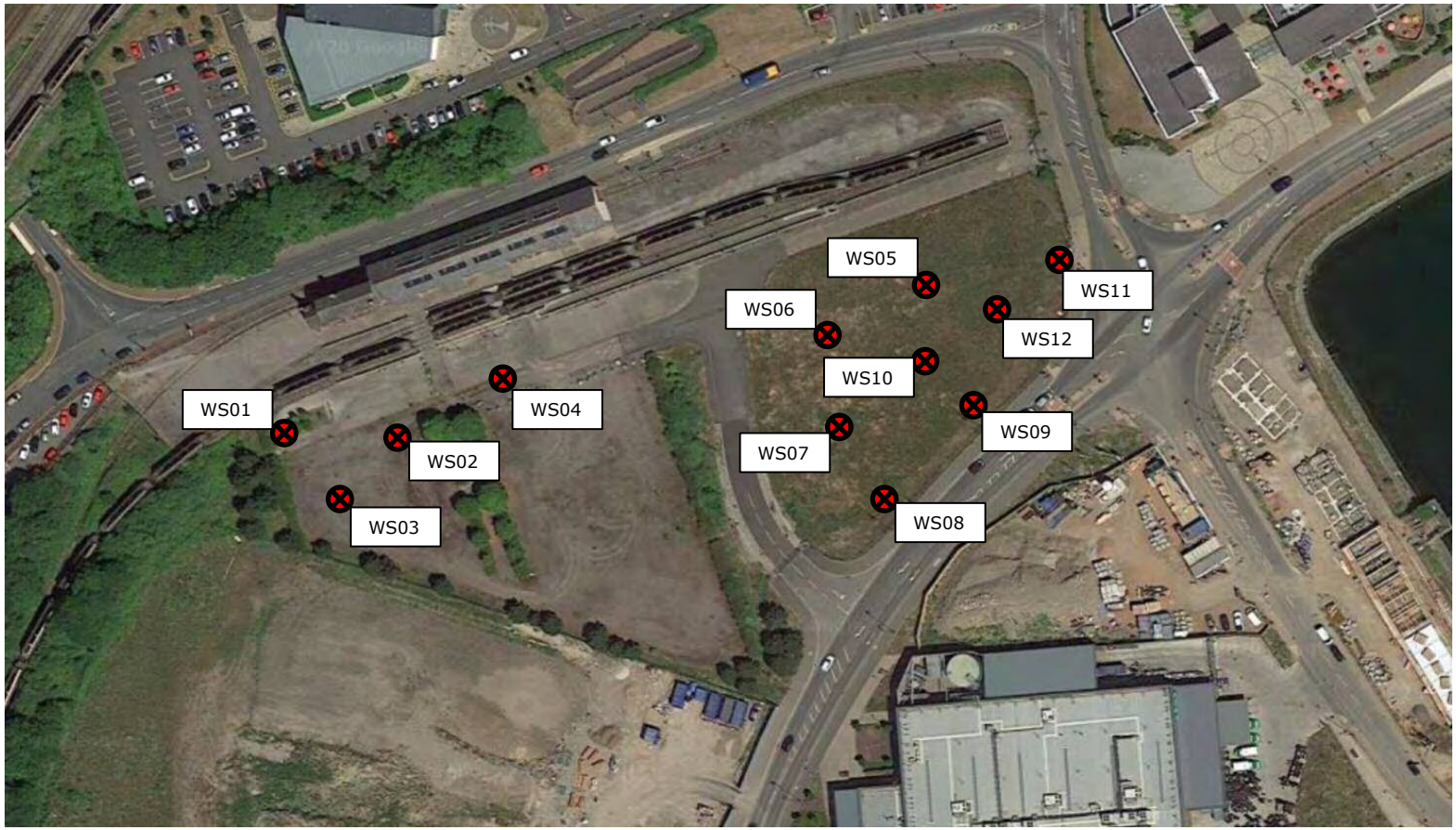
Project Name: Barry Waterfront	Project No. C3297	Co-ords: -	Hole Type WS
Location: Ffordd Y Mileniwm, Barry		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 24/06/2020 -	Logged By HEB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	TJ		0.15			MADE GROUND - Brown gravelly sandy clayey topsoil. Gravel is fine to coarse and angular of mixed lithology and brick fragments.
		0.50	TJ		0.50			MADE GROUND - Grey sandy gravel. Gravel is fine to coarse and angular of concrete.
		1.00		N=10 (3,2/3,3,2,2)	1.10			MADE GROUND - Grey and orange mottled very gravelly sandy clay. Gravel is fine to coarse and angular of mixed lithology, brick, concrete and clinker.
		1.40	D					MADE GROUND - Black sandy gravel. Gravel is fine to coarse and angular of clinker, slag and coal.
					1.70			MADE GROUND - Grey and black mottled sandy very gravelly clay. Gravel is fine to coarse and angular of mixed lithology, clinker, concrete and slag.
		2.00		N=6 (1,0/0,1,3,2)	2.00			End of borehole at 2.00 m

Remarks

1. Borehole terminated on collapse from 1.80m to 2.00m

Appendix III



DO NOT SCALE

NOTES:

N

- Approximate Window Sample Borehole Location

hsp consulting
Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:
Gleeds Management Services Ltd

PROJECT:
Barry Waterfront

TITLE:
Exploratory Location Plan

SCALE@SIZE :	ISSUE:
NTS	DRAFT
DESIGN/DRAWN :	DATE:
HEB	Sept. 2020
PROJECT No:	DRAWING No:
C3297	502

Appendix IV

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS EN ISO 17892-12:2018 Clauses 5.3/5.5/6.5

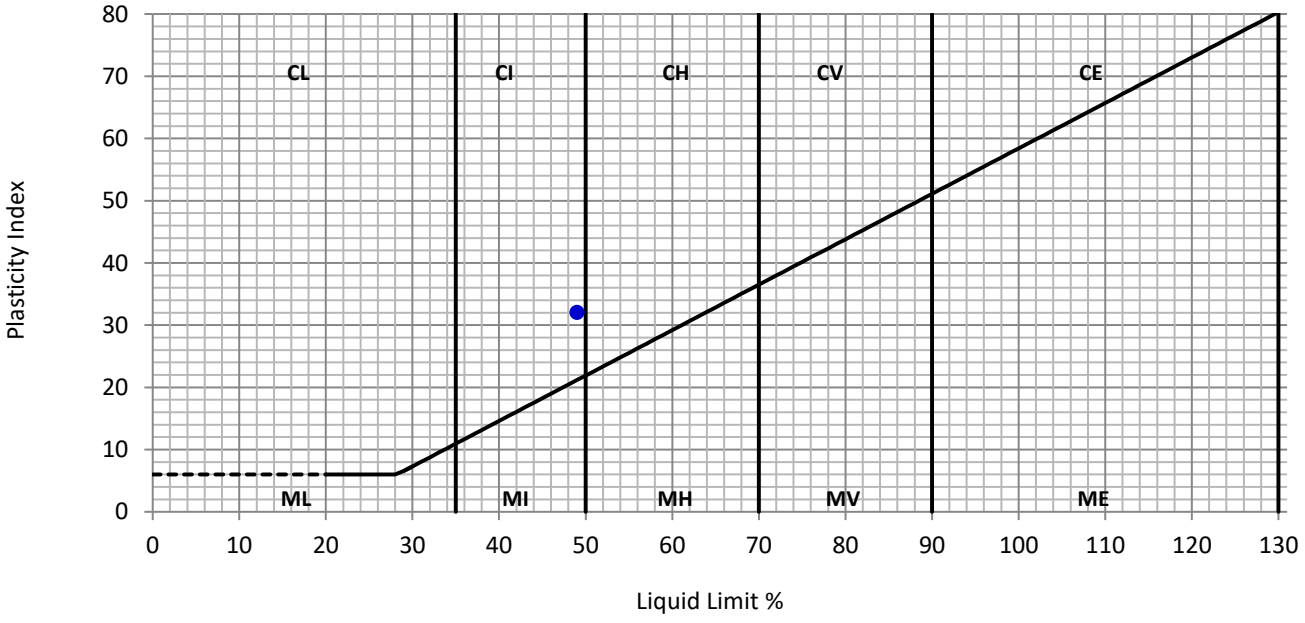
Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20736		

Site Ref / Hole ID:	WS04	**Depth (m):**	1.30
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Yellowish grey slightly gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	01 July 2020

Test Results

Liquid Limit	49	%
Plastic Limit	17	%
Plasticity Index	32	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	27	%



Remarks:

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20736		

Site Ref / Hole ID:	WS04	**Depth (m):**	1.30
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Yellowish grey slightly gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	26 June 2020

Test Results

Moisture Content (%)	20.8

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	L.Davis	03/07/2020	**MC**
			L Davis, Quality Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS EN ISO 17892-12:2018 Clauses 5.3/5.5/6.5

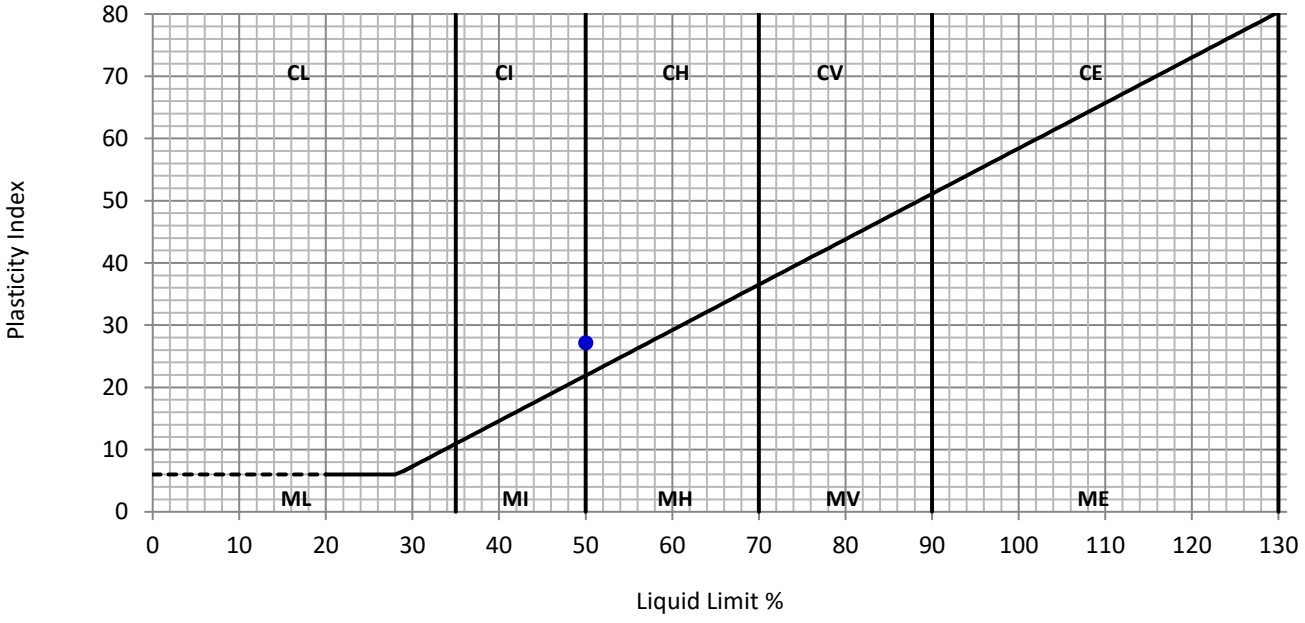
Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20738		

Site Ref / Hole ID:	WS07	**Depth (m):**	1.10
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Blackish grey gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	30 June 2020

Test Results

Liquid Limit	50	%
Plastic Limit	23	%
Plasticity Index	27	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	39	%



Remarks:

QA Ref. EN ISO 17892-12:2018:E	**Apex Testing Solutions** Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	Approver: L.Davis L Davis, Quality Manager	Date: 03/07/2020 Fig. **ATT**

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20738		

Site Ref / Hole ID:	WS07	**Depth (m):**	1.10
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Blackish grey gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	26 June 2020

Test Results

Moisture Content (%)	27.1

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	L.Davis	03/07/2020	**MC**
			L Davis, Quality Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS EN ISO 17892-12:2018 Clauses 5.3/5.5/6.5

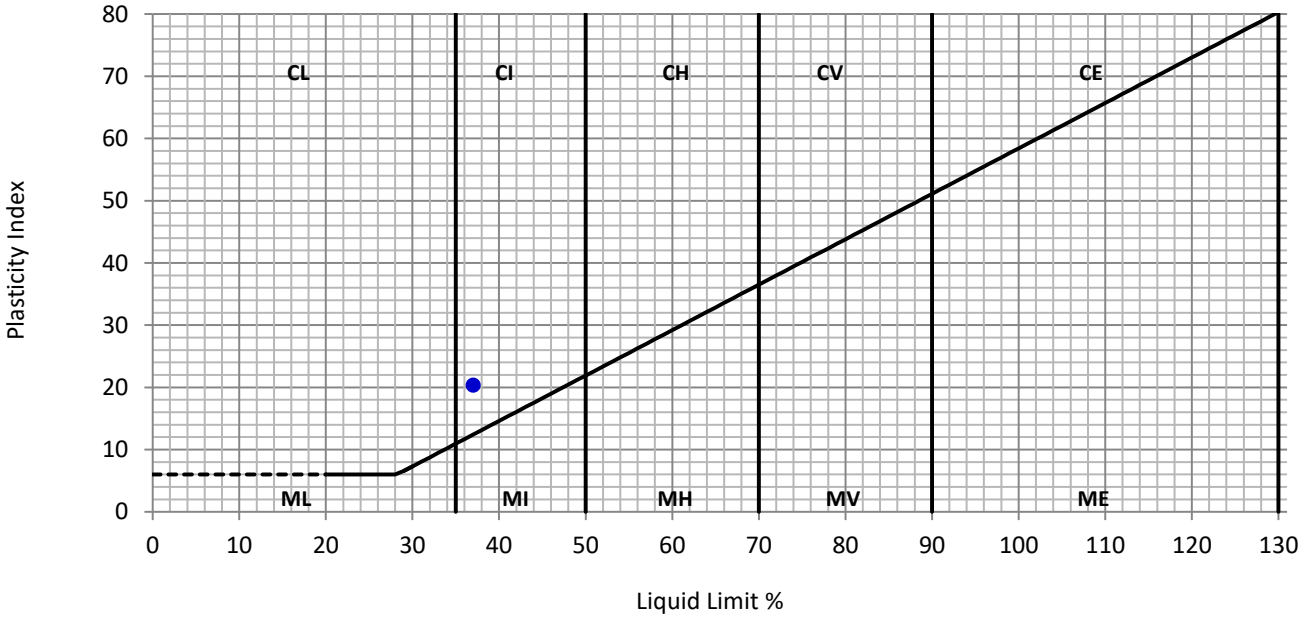
Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20737		

Site Ref / Hole ID:	WS06	**Depth (m):**	2.30
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Greyish brown slightly gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	30 June 2020

Test Results

Liquid Limit	37	%
Plastic Limit	17	%
Plasticity Index	20	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	25	%



Remarks:

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20737		

Site Ref / Hole ID:	WS06	**Depth (m):**	2.30
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Greyish brown slightly gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	26 June 2020

Test Results

Moisture Content (%)	21.6

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	L.Davis	03/07/2020	**MC**
			L Davis, Quality Manager		

TEST REPORT

LIQUID LIMIT, PLASTIC LIMIT & PLASTICITY INDEX

BS EN ISO 17892-12:2018 Clauses 5.3/5.5/6.5

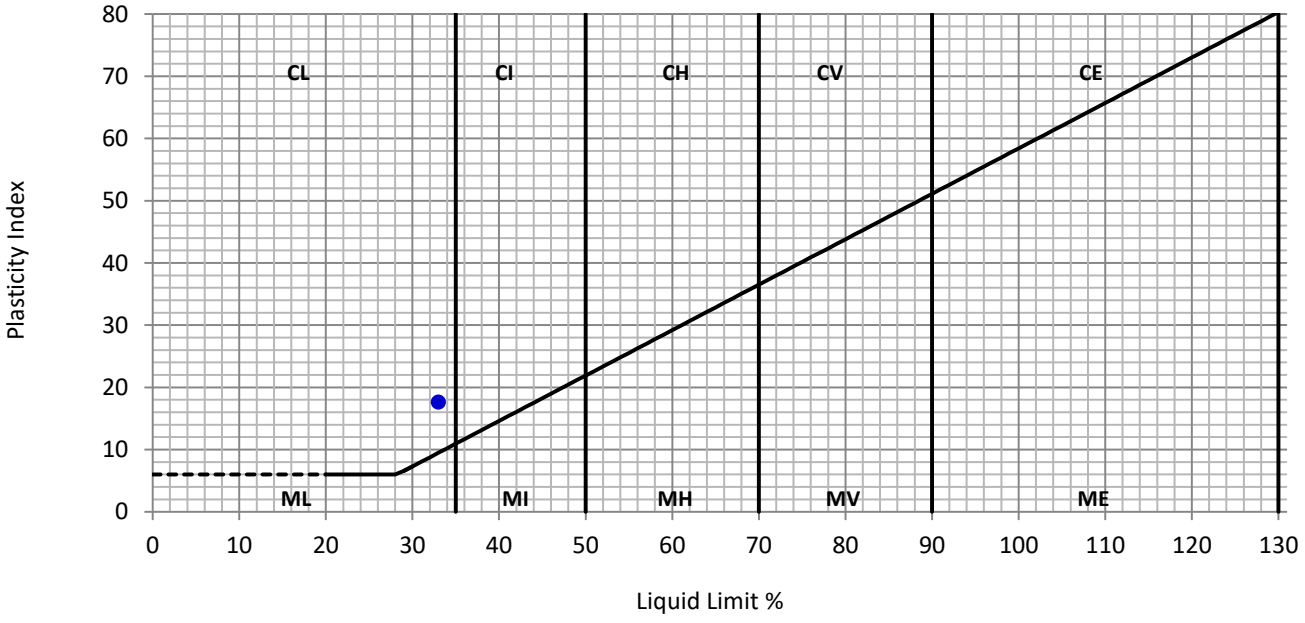
Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20739		

Site Ref / Hole ID:	WS10	**Depth (m):**	0.90
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Blackish grey gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	30 June 2020

Test Results

Liquid Limit	33	%
Plastic Limit	15	%
Plasticity Index	18	%

Preparation:	4.2.4 Sieved Specimen	
Proportion retained on 425µm sieve:	42	%



Remarks:

TEST REPORT

Determination Of Water Content

ISO 17892-1: 2014

Project No:	D20197	**Client:**	HSP Consulting
Project Name:	Barry Waterfront	**Address**	Lawrence House, Meadowbank Way, Nottingham, NG16 3SB
ATS Sample No:	20739		

Site Ref / Hole ID:	WS10	**Depth (m):**	0.90
Sample No:		**Sample Type:**	Bulk
Sampling Certificate Received:	No	**Material Description:**	Blackish grey gravelly CLAY
Location in Works:	Unknown	**Material Source:**	N/A
Date Sampled:	24 June 2020	**Material Supplier:**	N/A
Sampled By:	HSP	**Specification:**	
Date Received:	25 June 2020	**Date Tested:**	26 June 2020

Test Results

Moisture Content (%)	11.3

Remarks:

QA Ref.	**Apex Testing Solutions**		Approver	Date	Fig
EN ISO 17892-1:2014 E	Sturmi Way, Village Farm Industrial Est, Pyle, Bridgend, CF33 6BZ Tel: 01656 746762 Fax: 01656 749096	7771	L.Davis	03/07/2020	**MC**
			L Davis, Quality Manager		

Appendix V

eurofins | Chemtest
Eurofins Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Amended Report

Report No.:	20-16245-2		
Initial Date of Issue:	02-Jul-2020	**Date of Re-Issue:**	14-Jul-2020
Client	HSP Consulting Engineers Limited		
Client Address:	Lawrence House Meadowbank Way Eastwood Nottinghamshire NG16 3SB		
Contact(s):	Hallam Brown		
Project	C3297 Barry Waterfront		
Quotation No.:		**Date Received:**	26-Jun-2020
Order No.:	SC13377	**Date Instructed:**	26-Jun-2020
No. of Samples:	18		
Turnaround (Wkdays):	13	**Results Due:**	14-Jul-2020
Date Approved:	14-Jul-2020		
Approved By:	[redacted]		
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: C3297 Barry Waterfront

Client: HSP Consulting Engineers Limited					**Chemtest Job No.:**	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245
Quotation No.:					**Chemtest Sample ID.:**	1022729	1022730	1022731	1022732	1022733	1022734	1022736	1022738	1022739
					Sample Location:	WS01	WS01	WS01	WS02	WS02	WS02	WS04	WS04	WS05
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.1	0.4	2.5	0.1	0.6	2.8	0.4	1.4	0.65
					Date Sampled:	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020
					Asbestos Lab:	COVENTRY			COVENTRY	COVENTRY		COVENTRY		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
ACM Type	U	2192		N/A		-			-	sprayed coating		-		-
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected			No Asbestos Detected	Amosite Chrysotile Crocidolite		No Asbestos Detected		No Asbestos Detected
ACM Detection Stage	U	2192		N/A		-			-	Stereo Microscopy		-		-
Asbestos by Gravimetry	U	2192	%	0.001						0.20				
Total Asbestos	N	2192	%	0.001						0.20				
Moisture	N	2030	%	0.020		13	15	1.2	10	11	7.4	11	4.1	
pH	U	2010		4.0		8.2	8.0	8.4	8.2	8.2	8.1	8.1	8.8	
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40		0.44		0.43	0.66		0.62		0.65	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010		0.010	0.083	0.024	0.029	0.054	0.044	0.025	0.063	
Total Sulphur	U	2175	%	0.010			0.22			0.53		0.14		
Sulphur (Elemental)	U	2180	mg/kg	1.0		81		26	72		90		77	
Cyanide (Free)	U	2300	mg/kg	0.50		< 0.50		< 0.50	< 0.50		< 0.50		< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50		6.0		3.9	7.2		9.3		6.4	
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50		4.7		3.8	2.8		7.8		12	
Sulphate (Acid Soluble)	U	2430	%	0.010			0.088			0.061		0.061		
Arsenic	U	2450	mg/kg	1.0		18		28	< 1.0		23		23	
Cadmium	U	2450	mg/kg	0.10		0.42		0.13	< 0.10		0.26		0.21	
Chromium	U	2450	mg/kg	1.0		8.8		9.1	18		14		15	
Copper	U	2450	mg/kg	0.50		37		6.7	1600		80		69	
Mercury	U	2450	mg/kg	0.10		0.36		0.10	< 0.10		0.48		0.42	
Nickel	U	2450	mg/kg	0.50		14		7.6	35		19		18	
Lead	U	2450	mg/kg	0.50		81		13	510		74		56	
Selenium	U	2450	mg/kg	0.20		< 0.20		< 0.20	0.86		< 0.20		< 0.20	
Zinc	U	2450	mg/kg	0.50		81		27	260		120		190	
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50		< 0.50		< 0.50	
Organic Matter	U	2625	%	0.40		22								
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0		< 1.0	24		< 1.0		< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0		52		< 1.0	51		< 1.0		27	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0	

Results - Soil

Project: C3297 Barry Waterfront

Client: HSP Consulting Engineers Limited					Chemtest Job No.:	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245
Quotation No.:					Chemtest Sample ID.:	1022729	1022730	1022731	1022732	1022733	1022734	1022736	1022738	1022739
					Sample Location:	WS01	WS01	WS01	WS02	WS02	WS02	WS04	WS04	WS05
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.1	0.4	2.5	0.1	0.6	2.8	0.4	1.4	0.65
					Date Sampled:	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020
					Asbestos Lab:	COVENTRY			COVENTRY	COVENTRY		COVENTRY		COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0		52		< 5.0	75		< 5.0		27
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0		2.6		< 1.0	38		< 1.0		< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		77		< 1.0	1100		< 1.0		2.7
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0		< 1.0	49		< 1.0		120
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		80		< 5.0	1100		< 5.0		120
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		130		< 10	1200		< 10		150
Naphthalene	U	2700	mg/kg	0.10		13		2.9	9.3		9.6		8.5
Acenaphthylene	U	2700	mg/kg	0.10		0.92		0.18	0.68		0.45		0.39
Acenaphthene	U	2700	mg/kg	0.10		1.3		0.17	0.77		0.47		0.34
Fluorene	U	2700	mg/kg	0.10		2.2		0.30	1.2		1.0		0.89
Phenanthrene	U	2700	mg/kg	0.10		4.9		0.88	5.3		3.4		2.4
Anthracene	U	2700	mg/kg	0.10		1.0		0.28	1.3		0.80		0.56
Fluoranthene	U	2700	mg/kg	0.10		3.3		0.70	7.7		4.0		2.6
Pyrene	U	2700	mg/kg	0.10		3.6		0.90	7.6		4.6		2.8
Benzo[a]anthracene	U	2700	mg/kg	0.10		1.7		< 0.10	4.1		2.7		1.8
Chrysene	U	2700	mg/kg	0.10		2.2		< 0.10	4.0		2.5		1.7
Benzo[b]fluoranthene	U	2700	mg/kg	0.10		1.7		< 0.10	4.3		2.8		1.6
Benzo[k]fluoranthene	U	2700	mg/kg	0.10		1.2		< 0.10	2.1		1.6		1.0
Benzo[a]pyrene	U	2700	mg/kg	0.10		1.3		< 0.10	3.7		2.5		1.5
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10		0.82		< 0.10	2.7		1.9		1.1
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10		0.41		< 0.10	1.1		0.82		0.65
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10		0.98		< 0.10	3.0		2.3		1.3
Total Of 16 PAH's	U	2700	mg/kg	2.0		41		6.3	59		41		29
Benzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Toluene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Ethylbenzene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
m & p-Xylene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
o-Xylene	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0		< 1.0		< 1.0	< 1.0		< 1.0		< 1.0
Total Phenols	U	2920	mg/kg	0.30		< 0.30		< 0.30	< 0.30		< 0.30		< 0.30

Results - Soil

Project: C3297 Barry Waterfront

Client: HSP Consulting Engineers Limited					**Chemtest Job No.:**	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245
Quotation No.:					**Chemtest Sample ID.:**	1022740	1022742	1022744	1022746	1022748	1022750	1022751	1022752	1022753
					Sample Location:	WS06	WS07	WS08	WS10	WS11	WS11	WS12	WS12	WS12
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.4	0.5	0.1	0.1	0.8	2.0	0.1	0.5	1.4
					Date Sampled:	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020
					Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY		COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**										
ACM Type	U	2192		N/A		-	-	-	-	-		-	-	
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	
ACM Detection Stage	U	2192		N/A		-	-	-	-	-		-	-	
Asbestos by Gravimetry	U	2192	%	0.001										
Total Asbestos	N	2192	%	0.001										
Moisture	N	2030	%	0.020		20	8.7	16	21	6.3	13			14
pH	U	2010		4.0		8.1	8.1	7.9	7.5	8.0	7.9			8.0
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40		0.70	0.46	0.61	0.67	0.50				
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010		0.025	< 0.010	0.022	0.036	< 0.010	0.011			0.022
Total Sulphur	U	2175	%	0.010							0.057			0.19
Sulphur (Elemental)	U	2180	mg/kg	1.0		63	76	63	50	41				
Cyanide (Free)	U	2300	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50				
Cyanide (Total)	U	2300	mg/kg	0.50		8.4	3.3	6.6	6.0	4.4				
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50		7.7	14	8.5	8.4	5.0				
Sulphate (Acid Soluble)	U	2430	%	0.010							0.045			0.11
Arsenic	U	2450	mg/kg	1.0		19	25	25	17	26				
Cadmium	U	2450	mg/kg	0.10		0.24	0.65	0.67	0.41	0.91				
Chromium	U	2450	mg/kg	1.0		16	17	18	18	21				
Copper	U	2450	mg/kg	0.50		52	63	68	46	47				
Mercury	U	2450	mg/kg	0.10		0.58	0.41	0.32	0.20	0.25				
Nickel	U	2450	mg/kg	0.50		18	20	19	20	24				
Lead	U	2450	mg/kg	0.50		57	240	120	64	98				
Selenium	U	2450	mg/kg	0.20		< 0.20	< 0.20	< 0.20	< 0.20	< 0.20				
Zinc	U	2450	mg/kg	0.50		140	170	130	110	120				
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50				
Organic Matter	U	2625	%	0.40		7.1	7.2	7.4	4.7					
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0	3.4	3.7	< 1.0	< 1.0				
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0		31	52	56	32	36				
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				

Results - Soil

Project: C3297 Barry Waterfront

Client: HSP Consulting Engineers Limited			**Chemtest Job No.:**		20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245	20-16245
Quotation No.:			**Chemtest Sample ID.:**		1022740	1022742	1022744	1022746	1022748	1022750	1022751	1022752	1022753
			Sample Location:		WS06	WS07	WS08	WS10	WS11	WS11	WS12	WS12	WS12
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.4	0.5	0.1	0.1	0.8	2.0	0.1	0.5	1.4
			Date Sampled:		24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020	24-Jun-2020
			Asbestos Lab:		COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY		COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	31	55	60	32	36				
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.8				
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	4.0	5.5	12	160	340				
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	290	600	660	< 1.0	< 1.0				
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	290	610	670	160	350				
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	320	660	730	200	390				
Naphthalene	U	2700	mg/kg	0.10	6.8	8.1	6.9	5.7	5.9				
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	0.55	0.44	0.33	0.26				
Acenaphthene	U	2700	mg/kg	0.10	0.31	0.56	0.49	0.34	0.36				
Fluorene	U	2700	mg/kg	0.10	0.74	0.98	0.72	0.42	0.47				
Phenanthrene	U	2700	mg/kg	0.10	2.0	4.7	3.1	1.9	1.5				
Anthracene	U	2700	mg/kg	0.10	0.57	1.6	0.90	0.58	0.44				
Fluoranthene	U	2700	mg/kg	0.10	2.4	7.0	4.0	2.3	2.2				
Pyrene	U	2700	mg/kg	0.10	2.5	7.4	4.3	2.3	2.3				
Benzo[a]anthracene	U	2700	mg/kg	0.10	1.6	4.9	2.5	1.4	1.4				
Chrysene	U	2700	mg/kg	0.10	1.6	4.7	2.4	1.4	1.5				
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	1.8	5.4	2.8	1.9	2.0				
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	1.1	2.8	1.5	0.90	0.87				
Benzo[a]pyrene	U	2700	mg/kg	0.10	1.6	4.6	2.3	1.2	1.3				
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	1.3	3.7	1.9	0.98	1.2				
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	0.75	1.4	0.71	0.42	0.58				
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	1.2	3.9	2.2	1.2	1.3				
Total Of 16 PAH's	U	2700	mg/kg	2.0	26	62	37	23	24				
Benzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Toluene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
o-Xylene	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	0.65	< 0.30				

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
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
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
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	Allkaline 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.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
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.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

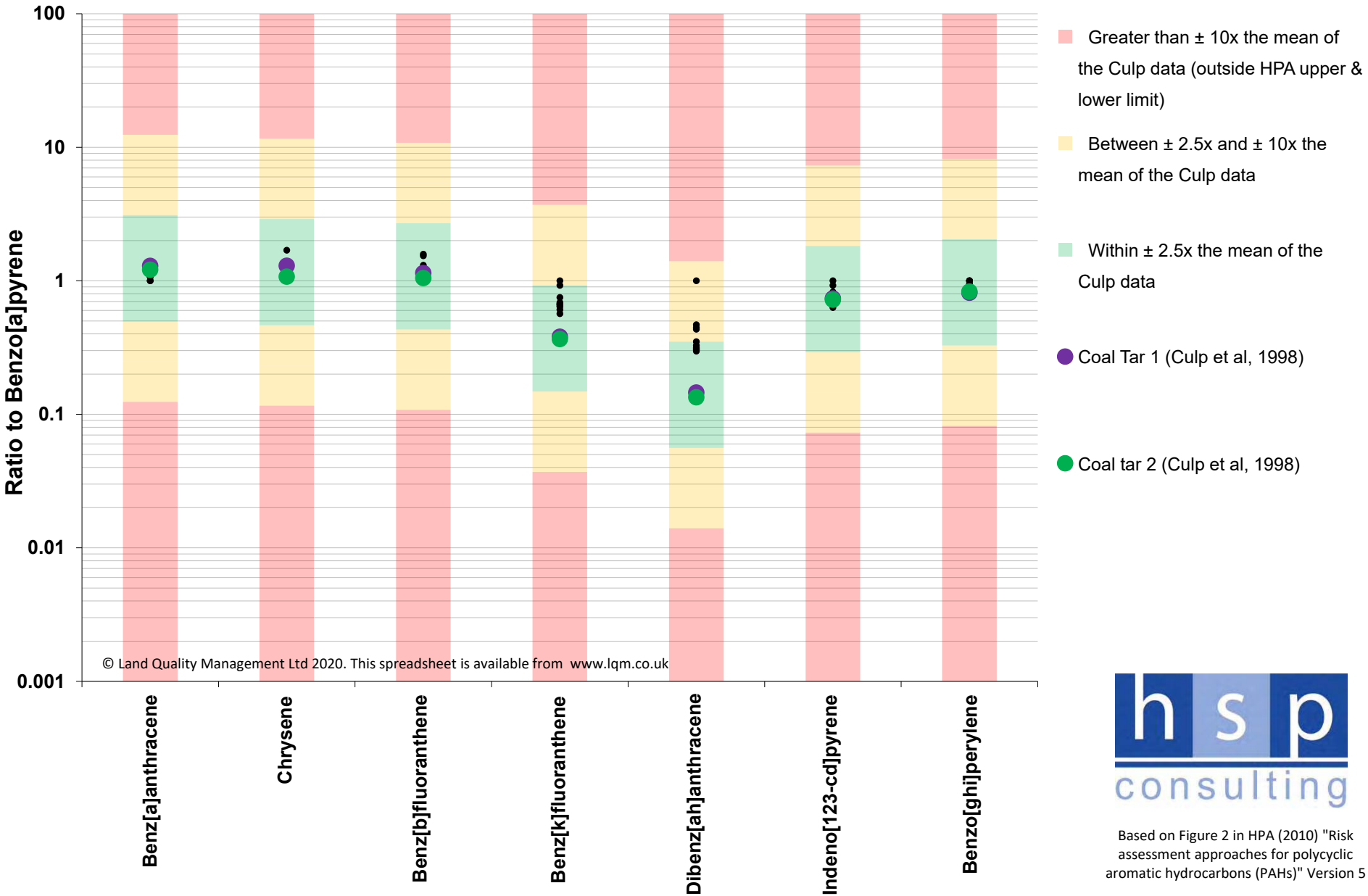
A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

P:\C3297 - Barry Waterfront (Welsh Schools)\6.0 Geotechnical\Reports\Phase II\HSP PAH profiling v1.3 Template



hsp consulting

Based on Figure 2 in HPA (2010) "Risk assessment approaches for polycyclic aromatic hydrocarbons (PAHs)" Version 5

Appendix VI

Waste Classification Report

A3LZ4-W5VSC-SC2GZ

Job name

C3297 - Barry Waterfront

Description/Comments

Project

C3297 - Barry Waterfront

Site

Barry Waterfront

Related Documents

#	Name	Description
1	HWOL_20-16245-20200714 094011.hwol	.hwol file used to create the Job

Waste Stream Template

Example waste stream template for contaminated soils

Classified by

Name:
Howard Daley
Date:
29 Sep 2020 20:03 GMT
Telephone:
01773 535555

Company:
HSP Consulting Engineers Limited
Lawrence House 4 Meadowbank Way
Eastwood
4 Meadowbank Way, Eastwood
Nottingham
NG16 3SB

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	11 Feb 2020
Advanced Hazardous Waste Classification	12 Feb 2020

Report

Created by: Howard Daley
Created date: 29 Sep 2020 20:03 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01-24/06/2020-0.4	0.4	Non Hazardous		3
2	WS01-24/06/2020-2.5	2.5	Non Hazardous		6
3	WS02-24/06/2020-0.1	0.1	Non Hazardous		7
4	WS02-24/06/2020-0.6	0.6	Hazardous	HP 3(i), HP 7, HP 11	10
5	WS02-24/06/2020-2.8	2.8	Non Hazardous		13
6	WS04-24/06/2020-0.4	0.4	Non Hazardous		14
7	WS04-24/06/2020-1.4	1.4	Non Hazardous		17
8	WS05-24/06/2020-0.65	0.65	Non Hazardous		18
9	WS06-24/06/2020-0.4	0.4	Non Hazardous		21
10	WS07-24/06/2020-0.5	0.5	Non Hazardous		24
11	WS08-24/06/2020-0.1	0.1	Non Hazardous		27

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
12	WS10-24/06/2020-0.1	0.1	Non Hazardous		30
13	WS11-24/06/2020-0.8	0.8	Non Hazardous		33
14	WS11-24/06/2020-2.0	2.0	Non Hazardous		36
15	WS12-24/06/2020-1.4	1.4	Non Hazardous		37

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	38
Appendix B: Rationale for selection of metal species	39
Appendix C: Version	40

Classification of sample: WS01-24/06/2020-0.4

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

Sample details

Sample Name:
WS01-24/06/2020-0.4
Sample Depth:
0.4 m
Moisture content:
13%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		18 mg/kg	1.32	20.676 mg/kg	0.00207 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.44 mg/kg	3.22	1.233 mg/kg	0.000123 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.42 mg/kg	1.142	0.417 mg/kg	0.0000417 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8.8 mg/kg	1.462	11.19 mg/kg	0.00112 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		37 mg/kg	1.126	36.242 mg/kg	0.00362 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	81 mg/kg	1.56	109.92 mg/kg	0.00705 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.36 mg/kg	1.353	0.424 mg/kg	0.0000424 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		14 mg/kg	2.976	36.251 mg/kg	0.00363 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		81 mg/kg	2.774	195.494 mg/kg	0.0195 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		130 mg/kg		113.1 mg/kg	0.0113 %	✓	
13	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**

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
18		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				6	mg/kg	1.884	9.834	mg/kg	0.000983 %	✓	
19		pH			PH		8.2	pH		8.2	pH	8.2 pH		
20		naphthalene	601-052-00-2	202-049-5	91-20-3		13	mg/kg		11.31	mg/kg	0.00113 %	✓	
21		acenaphthylene		205-917-1	208-96-8		0.92	mg/kg		0.8	mg/kg	0.00008 %	✓	
22		acenaphthene		201-469-6	83-32-9		1.3	mg/kg		1.131	mg/kg	0.000113 %	✓	
23		fluorene		201-695-5	86-73-7		2.2	mg/kg		1.914	mg/kg	0.000191 %	✓	
24		phenanthrene		201-581-5	85-01-8		4.9	mg/kg		4.263	mg/kg	0.000426 %	✓	
25		anthracene		204-371-1	120-12-7		1	mg/kg		0.87	mg/kg	0.000087 %	✓	
26		fluoranthene		205-912-4	206-44-0		3.3	mg/kg		2.871	mg/kg	0.000287 %	✓	
27		pyrene		204-927-3	129-00-0		3.6	mg/kg		3.132	mg/kg	0.000313 %	✓	
28		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.7	mg/kg		1.479	mg/kg	0.000148 %	✓	
29		chrysene	601-048-00-0	205-923-4	218-01-9		2.2	mg/kg		1.914	mg/kg	0.000191 %	✓	
30		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.7	mg/kg		1.479	mg/kg	0.000148 %	✓	
31		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.2	mg/kg		1.044	mg/kg	0.000104 %	✓	
32		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.3	mg/kg		1.131	mg/kg	0.000113 %	✓	
33		indeno[123-cd]pyrene		205-893-2	193-39-5		0.82	mg/kg		0.713	mg/kg	0.0000713 %	✓	
34		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.41	mg/kg		0.357	mg/kg	0.0000357 %	✓	
35		benzo[ghi]perylene		205-883-8	191-24-2		0.98	mg/kg		0.853	mg/kg	0.0000853 %	✓	
36		sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		81	mg/kg		70.47	mg/kg	0.00705 %	✓	
											Total:	0.0603 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
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 No Free Product Identified

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0113%)

Classification of sample: WS01-24/06/2020-2.5

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

Sample details

Sample Name:
WS01-24/06/2020-2.5
Sample Depth:
2.5 m
Moisture content:
15%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
1	●	pH		PH		8	pH		8	pH	8pH		
										Total:	0%		

Key

	User supplied data
●	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS02-24/06/2020-0.1

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

Sample details

Sample Name:
WS02-24/06/2020-0.1
Sample Depth:
0.1 m
Moisture content:
1.2%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 1.2% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		28 mg/kg	1.32	36.525 mg/kg	0.00365 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.43 mg/kg	3.22	1.368 mg/kg	0.000137 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.13 mg/kg	1.142	0.147 mg/kg	0.0000147 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9.1 mg/kg	1.462	13.141 mg/kg	0.00131 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		6.7 mg/kg	1.126	7.453 mg/kg	0.000745 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	13 mg/kg	1.56	20.034 mg/kg	0.00128 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.1 mg/kg	1.353	0.134 mg/kg	0.0000134 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		7.6 mg/kg	2.976	22.348 mg/kg	0.00223 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		27 mg/kg	2.774	74.003 mg/kg	0.0074 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
13	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**

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
18		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				3.9	mg/kg	1.884	7.259	mg/kg	0.000726 %	✓	
19		pH			PH		8.4	pH		8.4	pH	8.4 pH		
20		naphthalene	601-052-00-2	202-049-5	91-20-3		2.9	mg/kg		2.865	mg/kg	0.000287 %	✓	
21		acenaphthylene		205-917-1	208-96-8		0.18	mg/kg		0.178	mg/kg	0.0000178 %	✓	
22		acenaphthene		201-469-6	83-32-9		0.17	mg/kg		0.168	mg/kg	0.0000168 %	✓	
23		fluorene		201-695-5	86-73-7		0.3	mg/kg		0.296	mg/kg	0.0000296 %	✓	
24		phenanthrene		201-581-5	85-01-8		0.88	mg/kg		0.869	mg/kg	0.0000869 %	✓	
25		anthracene		204-371-1	120-12-7		0.28	mg/kg		0.277	mg/kg	0.0000277 %	✓	
26		fluoranthene		205-912-4	206-44-0		0.7	mg/kg		0.692	mg/kg	0.0000692 %	✓	
27		pyrene		204-927-3	129-00-0		0.9	mg/kg		0.889	mg/kg	0.0000889 %	✓	
28		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
29		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
30		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<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		sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		26	mg/kg		25.688	mg/kg	0.00257 %	✓	
											Total:	0.0219 %		

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

Classification of sample: WS02-24/06/2020-0.6

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

Sample details

Sample Name:
WS02-24/06/2020-0.6
Sample Depth:
0.6 m
Moisture content:
10%
(wet weight correction)

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

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.108%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.108%)

Hazard properties (substances considered hazardous until shown otherwise)

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"

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.108%)

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		<1 mg/kg	1.32	<1.32 mg/kg	<0.000132 %		<**LOD**
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.66 mg/kg	3.22	1.913 mg/kg	0.000191 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
3		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									
4		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	23.677	mg/kg	0.00237 %	✓	
			215-160-9	1308-38-9									
5		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
6		copper { dicopper oxide; copper (I) oxide }				1600	mg/kg	1.126	1621.279	mg/kg	0.162 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
7		lead { lead chromate }			1	510	mg/kg	1.56	715.955	mg/kg	0.0459 %	✓	
		082-004-00-2	231-846-0	7758-97-6									
8		mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
9		nickel { nickel chromate }				35	mg/kg	2.976	93.752	mg/kg	0.00938 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.86	mg/kg	2.554	1.976	mg/kg	0.000198 %	✓	
		034-002-00-8											
11		zinc { zinc chromate }				260	mg/kg	2.774	649.15	mg/kg	0.0649 %	✓	
		024-007-00-3	236-878-9	13530-65-9									
12		TPH (C6 to C40) petroleum group				1200	mg/kg		1080	mg/kg	0.108 %	✓	
				TPH									
13		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									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		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]									
18		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 }				7.2	mg/kg	1.884	12.208	mg/kg	0.00122 %	✓	
		006-007-00-5											
19		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
20		naphthalene				9.3	mg/kg		8.37	mg/kg	0.000837 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.68	mg/kg		0.612	mg/kg	0.0000612 %	✓	
			205-917-1	208-96-8									
22		acenaphthene				0.77	mg/kg		0.693	mg/kg	0.0000693 %	✓	
			201-469-6	83-32-9									
23		fluorene				1.2	mg/kg		1.08	mg/kg	0.000108 %	✓	
			201-695-5	86-73-7									
24		phenanthrene				5.3	mg/kg		4.77	mg/kg	0.000477 %	✓	
			201-581-5	85-01-8									
25		anthracene				1.3	mg/kg		1.17	mg/kg	0.000117 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				7.7	mg/kg		6.93	mg/kg	0.000693 %	✓	
			205-912-4	206-44-0									
27		pyrene				7.6	mg/kg		6.84	mg/kg	0.000684 %	✓	
			204-927-3	129-00-0									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
28		benzo[a]anthracene				4.1	mg/kg		3.69	mg/kg	0.000369 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				4	mg/kg		3.6	mg/kg	0.00036 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				4.3	mg/kg		3.87	mg/kg	0.000387 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				2.1	mg/kg		1.89	mg/kg	0.000189 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				3.7	mg/kg		3.33	mg/kg	0.000333 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				2.7	mg/kg		2.43	mg/kg	0.000243 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				1.1	mg/kg		0.99	mg/kg	0.000099 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				3	mg/kg		2.7	mg/kg	0.00027 %	✓	
			205-883-8	191-24-2									
36		sulfur { sulfur }				72	mg/kg		64.8	mg/kg	0.00648 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.406 %		

Key

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

Classification of sample: WS02-24/06/2020-2.8

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

Sample details

Sample Name:
WS02-24/06/2020-2.8
Sample Depth:
2.8 m
Moisture content:
11%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
1	●	pH				8.2 pH		8.2 pH	8.2 pH		
				PH							
								Total:	0%		

Key

	User supplied data
●	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS04-24/06/2020-0.4

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

Sample details

Sample Name:
WS04-24/06/2020-0.4
Sample Depth:
0.4 m
Moisture content:
7.4%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 7.4% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		23 mg/kg	1.32	28.12 mg/kg	0.00281 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	boron { diboron trioxide; boric oxide }		0.62 mg/kg	3.22	1.849 mg/kg	0.000185 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
3	cadmium { cadmium oxide }		0.26 mg/kg	1.142	0.275 mg/kg	0.0000275 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		14 mg/kg	1.462	18.948 mg/kg	0.00189 %	✓	
	/ 215-160-9 / 1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }		80 mg/kg	1.126	83.406 mg/kg	0.00834 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead chromate }	1	74 mg/kg	1.56	106.885 mg/kg	0.00685 %	✓	
	082-004-00-2 / 231-846-0 / 7758-97-6							
8	mercury { mercury dichloride }		0.48 mg/kg	1.353	0.602 mg/kg	0.0000602 %	✓	
	080-010-00-X / 231-299-8 / 7487-94-7							
9	nickel { nickel chromate }		19 mg/kg	2.976	52.364 mg/kg	0.00524 %	✓	
	028-035-00-7 / 238-766-5 / 14721-18-7							
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
	034-002-00-8 / /							
11	zinc { zinc chromate }		120 mg/kg	2.774	308.263 mg/kg	0.0308 %	✓	
	024-007-00-3 / 236-878-9 / 13530-65-9							
12	TPH (C6 to C40) petroleum group		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	/ / TPH							
13	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							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
17		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]									
18		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 }				9.3	mg/kg	1.884	16.225	mg/kg	0.00162 %	✓	
		006-007-00-5											
19		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
20		naphthalene				9.6	mg/kg		8.89	mg/kg	0.000889 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.45	mg/kg		0.417	mg/kg	0.0000417 %	✓	
			205-917-1	208-96-8									
22		acenaphthene				0.47	mg/kg		0.435	mg/kg	0.0000435 %	✓	
			201-469-6	83-32-9									
23		fluorene				1	mg/kg		0.926	mg/kg	0.0000926 %	✓	
			201-695-5	86-73-7									
24		phenanthrene				3.4	mg/kg		3.148	mg/kg	0.000315 %	✓	
			201-581-5	85-01-8									
25		anthracene				0.8	mg/kg		0.741	mg/kg	0.0000741 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				4	mg/kg		3.704	mg/kg	0.00037 %	✓	
			205-912-4	206-44-0									
27		pyrene				4.6	mg/kg		4.26	mg/kg	0.000426 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				2.7	mg/kg		2.5	mg/kg	0.00025 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				2.5	mg/kg		2.315	mg/kg	0.000231 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				2.8	mg/kg		2.593	mg/kg	0.000259 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				1.6	mg/kg		1.482	mg/kg	0.000148 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				2.5	mg/kg		2.315	mg/kg	0.000231 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				1.9	mg/kg		1.759	mg/kg	0.000176 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.82	mg/kg		0.759	mg/kg	0.0000759 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				2.3	mg/kg		2.13	mg/kg	0.000213 %	✓	
			205-883-8	191-24-2									
36		sulfur { sulfur }				90	mg/kg		83.34	mg/kg	0.00833 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0712 %		

Key

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

Classification of sample: WS04-24/06/2020-1.4

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

Sample details

Sample Name:
WS04-24/06/2020-1.4
Sample Depth:
1.4 m
Moisture content:
11%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
1		pH		PH		8.1 pH		8.1 pH	8.1 pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS05-24/06/2020-0.65

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

Sample details

Sample Name:
WS05-24/06/2020-0.65
Sample Depth:
0.65 m
Moisture content:
4.1%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 4.1% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		23 mg/kg	1.32	29.122 mg/kg	0.00291 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	boron { diboron trioxide; boric oxide }		0.65 mg/kg	3.22	2.007 mg/kg	0.000201 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
3	cadmium { cadmium oxide }		0.21 mg/kg	1.142	0.23 mg/kg	0.000023 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		15 mg/kg	1.462	21.024 mg/kg	0.0021 %	✓	
	/ 215-160-9 / 1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }		69 mg/kg	1.126	74.501 mg/kg	0.00745 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead chromate }	1	56 mg/kg	1.56	83.768 mg/kg	0.00537 %	✓	
	082-004-00-2 / 231-846-0 / 7758-97-6							
8	mercury { mercury dichloride }		0.42 mg/kg	1.353	0.545 mg/kg	0.0000545 %	✓	
	080-010-00-X / 231-299-8 / 7487-94-7							
9	nickel { nickel chromate }		18 mg/kg	2.976	51.376 mg/kg	0.00514 %	✓	
	028-035-00-7 / 238-766-5 / 14721-18-7							
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
	034-002-00-8 / /							
11	zinc { zinc chromate }		190 mg/kg	2.774	505.477 mg/kg	0.0505 %	✓	
	024-007-00-3 / 236-878-9 / 13530-65-9							
12	TPH (C6 to C40) petroleum group		150 mg/kg		143.85 mg/kg	0.0144 %	✓	
	/ / TPH							
13	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							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
		601-023-00-4	202-849-4	100-41-4									
17		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]									
18		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 }				6.4	mg/kg	1.884	11.563	mg/kg	0.00116 %	✓	
		006-007-00-5											
19		pH				8.8	pH		8.8	pH	8.8 pH		
				PH									
20		naphthalene				8.5	mg/kg		8.152	mg/kg	0.000815 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.39	mg/kg		0.374	mg/kg	0.0000374 %	✓	
			205-917-1	208-96-8									
22		acenaphthene				0.34	mg/kg		0.326	mg/kg	0.0000326 %	✓	
			201-469-6	83-32-9									
23		fluorene				0.89	mg/kg		0.854	mg/kg	0.0000854 %	✓	
			201-695-5	86-73-7									
24		phenanthrene				2.4	mg/kg		2.302	mg/kg	0.00023 %	✓	
			201-581-5	85-01-8									
25		anthracene				0.56	mg/kg		0.537	mg/kg	0.0000537 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				2.6	mg/kg		2.493	mg/kg	0.000249 %	✓	
			205-912-4	206-44-0									
27		pyrene				2.8	mg/kg		2.685	mg/kg	0.000269 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				1.8	mg/kg		1.726	mg/kg	0.000173 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				1.7	mg/kg		1.63	mg/kg	0.000163 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				1.6	mg/kg		1.534	mg/kg	0.000153 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				1	mg/kg		0.959	mg/kg	0.0000959 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				1.5	mg/kg		1.439	mg/kg	0.000144 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				1.1	mg/kg		1.055	mg/kg	0.000105 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.65	mg/kg		0.623	mg/kg	0.0000623 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				1.3	mg/kg		1.247	mg/kg	0.000125 %	✓	
			205-883-8	191-24-2									
36		sulfur { sulfur }				77	mg/kg		73.843	mg/kg	0.00738 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0997 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
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 No Free Product Identified

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0144%)

Classification of sample: WS06-24/06/2020-0.4

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

Sample details

Sample Name:
WS06-24/06/2020-0.4
Sample Depth:
0.4 m
Moisture content:
20%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 20% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19 mg/kg	1.32	20.069 mg/kg	0.00201 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.7 mg/kg	3.22	1.803 mg/kg	0.00018 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.24 mg/kg	1.142	0.219 mg/kg	0.0000219 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	18.708 mg/kg	0.00187 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		52 mg/kg	1.126	46.837 mg/kg	0.00468 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	57 mg/kg	1.56	71.128 mg/kg	0.00456 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.58 mg/kg	1.353	0.628 mg/kg	0.0000628 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		18 mg/kg	2.976	42.858 mg/kg	0.00429 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		140 mg/kg	2.774	310.704 mg/kg	0.0311 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		320 mg/kg		256 mg/kg	0.0256 %	✓	
13	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**

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
18		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				8.4	mg/kg	1.884	12.66	mg/kg	0.00127 %	✓	
19		pH			PH		8.1	pH		8.1	pH	8.1 pH		
20		naphthalene	601-052-00-2	202-049-5	91-20-3		6.8	mg/kg		5.44	mg/kg	0.000544 %	✓	
21		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
22		acenaphthene		201-469-6	83-32-9		0.31	mg/kg		0.248	mg/kg	0.0000248 %	✓	
23		fluorene		201-695-5	86-73-7		0.74	mg/kg		0.592	mg/kg	0.0000592 %	✓	
24		phenanthrene		201-581-5	85-01-8		2	mg/kg		1.6	mg/kg	0.00016 %	✓	
25		anthracene		204-371-1	120-12-7		0.57	mg/kg		0.456	mg/kg	0.0000456 %	✓	
26		fluoranthene		205-912-4	206-44-0		2.4	mg/kg		1.92	mg/kg	0.000192 %	✓	
27		pyrene		204-927-3	129-00-0		2.5	mg/kg		2	mg/kg	0.0002 %	✓	
28		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.6	mg/kg		1.28	mg/kg	0.000128 %	✓	
29		chrysene	601-048-00-0	205-923-4	218-01-9		1.6	mg/kg		1.28	mg/kg	0.000128 %	✓	
30		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.8	mg/kg		1.44	mg/kg	0.000144 %	✓	
31		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.1	mg/kg		0.88	mg/kg	0.000088 %	✓	
32		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.6	mg/kg		1.28	mg/kg	0.000128 %	✓	
33		indeno[123-cd]pyrene		205-893-2	193-39-5		1.3	mg/kg		1.04	mg/kg	0.000104 %	✓	
34		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.75	mg/kg		0.6	mg/kg	0.00006 %	✓	
35		benzo[ghi]perylene		205-883-8	191-24-2		1.2	mg/kg		0.96	mg/kg	0.000096 %	✓	
36		sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		63	mg/kg		50.4	mg/kg	0.00504 %	✓	
											Total:	0.0829 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
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 No Free Product Identified

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0256%)

Classification of sample: WS07-24/06/2020-0.5

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

Sample details

Sample Name:
WS07-24/06/2020-0.5
Sample Depth:
0.5 m
Moisture content:
8.7%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 8.7% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		25 mg/kg	1.32	30.136 mg/kg	0.00301 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.46 mg/kg	3.22	1.352 mg/kg	0.000135 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.65 mg/kg	1.142	0.678 mg/kg	0.0000678 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	22.685 mg/kg	0.00227 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		63 mg/kg	1.126	64.76 mg/kg	0.00648 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	240 mg/kg	1.56	341.787 mg/kg	0.0219 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.41 mg/kg	1.353	0.507 mg/kg	0.0000507 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		20 mg/kg	2.976	54.347 mg/kg	0.00543 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		170 mg/kg	2.774	430.575 mg/kg	0.0431 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		660 mg/kg		602.58 mg/kg	0.0603 %	✓	
13	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

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
17		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]									
18		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 }				3.3	mg/kg	1.884	5.676	mg/kg	0.000568 %	✓	
		006-007-00-5											
19		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
20		naphthalene				8.1	mg/kg		7.395	mg/kg	0.00074 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.55	mg/kg		0.502	mg/kg	0.0000502 %	✓	
			205-917-1	208-96-8									
22		acenaphthene				0.56	mg/kg		0.511	mg/kg	0.0000511 %	✓	
			201-469-6	83-32-9									
23		fluorene				0.98	mg/kg		0.895	mg/kg	0.0000895 %	✓	
			201-695-5	86-73-7									
24		phenanthrene				4.7	mg/kg		4.291	mg/kg	0.000429 %	✓	
			201-581-5	85-01-8									
25		anthracene				1.6	mg/kg		1.461	mg/kg	0.000146 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				7	mg/kg		6.391	mg/kg	0.000639 %	✓	
			205-912-4	206-44-0									
27		pyrene				7.4	mg/kg		6.756	mg/kg	0.000676 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				4.9	mg/kg		4.474	mg/kg	0.000447 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				4.7	mg/kg		4.291	mg/kg	0.000429 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				5.4	mg/kg		4.93	mg/kg	0.000493 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				2.8	mg/kg		2.556	mg/kg	0.000256 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				4.6	mg/kg		4.2	mg/kg	0.00042 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				3.7	mg/kg		3.378	mg/kg	0.000338 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				1.4	mg/kg		1.278	mg/kg	0.000128 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				3.9	mg/kg		3.561	mg/kg	0.000356 %	✓	
			205-883-8	191-24-2									
36		sulfur { sulfur }				76	mg/kg		69.388	mg/kg	0.00694 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.156 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
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 No Free Product Identified

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0603%)

Classification of sample: WS08-24/06/2020-0.1

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

Sample details

Sample Name:
WS08-24/06/2020-0.1
Sample Depth:
0.1 m
Moisture content:
16%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		25 mg/kg	1.32	27.727 mg/kg	0.00277 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.61 mg/kg	3.22	1.65 mg/kg	0.000165 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.67 mg/kg	1.142	0.643 mg/kg	0.0000643 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18 mg/kg	1.462	22.099 mg/kg	0.00221 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		68 mg/kg	1.126	64.311 mg/kg	0.00643 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	120 mg/kg	1.56	157.229 mg/kg	0.0101 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.32 mg/kg	1.353	0.364 mg/kg	0.0000364 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		19 mg/kg	2.976	47.501 mg/kg	0.00475 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		130 mg/kg	2.774	302.937 mg/kg	0.0303 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		730 mg/kg		613.2 mg/kg	0.0613 %	✓	
13	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**

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		benzene	601-020-00-8	200-753-7	71-43-2		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
15		toluene	601-021-00-3	203-625-9	108-88-3		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
16		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
17		xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
18		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				6.6	mg/kg	1.884	10.445	mg/kg	0.00104 %	✓	
19		pH			PH		7.9	pH		7.9	pH	7.9 pH		
20		naphthalene	601-052-00-2	202-049-5	91-20-3		6.9	mg/kg		5.796	mg/kg	0.00058 %	✓	
21		acenaphthylene		205-917-1	208-96-8		0.44	mg/kg		0.37	mg/kg	0.000037 %	✓	
22		acenaphthene		201-469-6	83-32-9		0.49	mg/kg		0.412	mg/kg	0.0000412 %	✓	
23		fluorene		201-695-5	86-73-7		0.72	mg/kg		0.605	mg/kg	0.0000605 %	✓	
24		phenanthrene		201-581-5	85-01-8		3.1	mg/kg		2.604	mg/kg	0.00026 %	✓	
25		anthracene		204-371-1	120-12-7		0.9	mg/kg		0.756	mg/kg	0.0000756 %	✓	
26		fluoranthene		205-912-4	206-44-0		4	mg/kg		3.36	mg/kg	0.000336 %	✓	
27		pyrene		204-927-3	129-00-0		4.3	mg/kg		3.612	mg/kg	0.000361 %	✓	
28		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		2.5	mg/kg		2.1	mg/kg	0.00021 %	✓	
29		chrysene	601-048-00-0	205-923-4	218-01-9		2.4	mg/kg		2.016	mg/kg	0.000202 %	✓	
30		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		2.8	mg/kg		2.352	mg/kg	0.000235 %	✓	
31		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.5	mg/kg		1.26	mg/kg	0.000126 %	✓	
32		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2.3	mg/kg		1.932	mg/kg	0.000193 %	✓	
33		indeno[123-cd]pyrene		205-893-2	193-39-5		1.9	mg/kg		1.596	mg/kg	0.00016 %	✓	
34		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.71	mg/kg		0.596	mg/kg	0.0000596 %	✓	
35		benzo[ghi]perylene		205-883-8	191-24-2		2.2	mg/kg		1.848	mg/kg	0.000185 %	✓	
36		sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		63	mg/kg		52.92	mg/kg	0.00529 %	✓	
											Total:	0.128 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
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 No Free Product Identified

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0613%)

Classification of sample: WS10-24/06/2020-0.1

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

Sample details

Sample Name:
WS10-24/06/2020-0.1
Sample Depth:
0.1 m
Moisture content:
21%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	arsenic { arsenic trioxide }		17 mg/kg	1.32	17.732 mg/kg	0.00177 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	boron { diboron trioxide; boric oxide }		0.67 mg/kg	3.22	1.704 mg/kg	0.00017 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
3	cadmium { cadmium oxide }		0.41 mg/kg	1.142	0.37 mg/kg	0.000037 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		18 mg/kg	1.462	20.783 mg/kg	0.00208 %	✓	
	/ 215-160-9 / 1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }		46 mg/kg	1.126	40.915 mg/kg	0.00409 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead chromate }	1	64 mg/kg	1.56	78.864 mg/kg	0.00506 %	✓	
	082-004-00-2 / 231-846-0 / 7758-97-6							
8	mercury { mercury dichloride }		0.2 mg/kg	1.353	0.214 mg/kg	0.0000214 %	✓	
	080-010-00-X / 231-299-8 / 7487-94-7							
9	nickel { nickel chromate }		20 mg/kg	2.976	47.025 mg/kg	0.0047 %	✓	
	028-035-00-7 / 238-766-5 / 14721-18-7							
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
	034-002-00-8 / /							
11	zinc { zinc chromate }		110 mg/kg	2.774	241.073 mg/kg	0.0241 %	✓	
	024-007-00-3 / 236-878-9 / 13530-65-9							
12	TPH (C6 to C40) petroleum group		200 mg/kg		158 mg/kg	0.0158 %	✓	
	/ / TPH							
13	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							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
17		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]									
18		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 }				6	mg/kg	1.884	8.93	mg/kg	0.000893 %	✓	
		006-007-00-5											
19		pH				7.5	pH		7.5	pH	7.5 pH		
				PH									
20		naphthalene				5.7	mg/kg		4.503	mg/kg	0.00045 %	✓	
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				0.33	mg/kg		0.261	mg/kg	0.0000261 %	✓	
			205-917-1	208-96-8									
22		acenaphthene				0.34	mg/kg		0.269	mg/kg	0.0000269 %	✓	
			201-469-6	83-32-9									
23		fluorene				0.42	mg/kg		0.332	mg/kg	0.0000332 %	✓	
			201-695-5	86-73-7									
24		phenanthrene				1.9	mg/kg		1.501	mg/kg	0.00015 %	✓	
			201-581-5	85-01-8									
25		anthracene				0.58	mg/kg		0.458	mg/kg	0.0000458 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				2.3	mg/kg		1.817	mg/kg	0.000182 %	✓	
			205-912-4	206-44-0									
27		pyrene				2.3	mg/kg		1.817	mg/kg	0.000182 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				1.4	mg/kg		1.106	mg/kg	0.000111 %	✓	
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				1.4	mg/kg		1.106	mg/kg	0.000111 %	✓	
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				1.9	mg/kg		1.501	mg/kg	0.00015 %	✓	
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				0.9	mg/kg		0.711	mg/kg	0.0000711 %	✓	
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				1.2	mg/kg		0.948	mg/kg	0.0000948 %	✓	
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				0.98	mg/kg		0.774	mg/kg	0.0000774 %	✓	
			205-893-2	193-39-5									
34		dibenz[a,h]anthracene				0.42	mg/kg		0.332	mg/kg	0.0000332 %	✓	
		601-041-00-2	200-181-8	53-70-3									
35		benzo[ghi]perylene				1.2	mg/kg		0.948	mg/kg	0.0000948 %	✓	
			205-883-8	191-24-2									
36		sulfur { sulfur }				50	mg/kg		39.5	mg/kg	0.00395 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0647 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
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 No Free Product Identified

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0158%)

Classification of sample: WS11-24/06/2020-0.8

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

Sample details

Sample Name:
WS11-24/06/2020-0.8
Sample Depth:
0.8 m
Moisture content:
6.3%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 6.3% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26 mg/kg	1.32	32.166 mg/kg	0.00322 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.509 mg/kg	0.000151 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.91 mg/kg	1.142	0.974 mg/kg	0.0000974 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21 mg/kg	1.462	28.759 mg/kg	0.00288 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		47 mg/kg	1.126	49.583 mg/kg	0.00496 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	98 mg/kg	1.56	143.232 mg/kg	0.00918 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.25 mg/kg	1.353	0.317 mg/kg	0.0000317 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		24 mg/kg	2.976	66.93 mg/kg	0.00669 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<**LOD**
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		120 mg/kg	2.774	311.925 mg/kg	0.0312 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		390 mg/kg		365.43 mg/kg	0.0365 %	✓	
13	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**

#		Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number / EC Number / CAS Number							
14		benzene 601-020-00-8 / 200-753-7 / 71-43-2		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
15		toluene 601-021-00-3 / 203-625-9 / 108-88-3		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
16		ethylbenzene 601-023-00-4 / 202-849-4 / 100-41-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**LOD**
17		xylene 601-022-00-9 / 202-422-2 [1], 203-396-5 [2], 203-576-3 [3], 215-535-7 [4] / 95-47-6 [1], 106-42-3 [2], 108-38-3 [3], 1330-20-7 [4]		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<**LOD**
18		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		4.4 mg/kg	1.884	7.767 mg/kg	0.000777 %	✓	
19		pH PH		8 pH		8 pH	8pH		
20		naphthalene 601-052-00-2 / 202-049-5 / 91-20-3		5.9 mg/kg		5.528 mg/kg	0.000553 %	✓	
21		acenaphthylene 205-917-1 / 208-96-8		0.26 mg/kg		0.244 mg/kg	0.0000244 %	✓	
22		acenaphthene 201-469-6 / 83-32-9		0.36 mg/kg		0.337 mg/kg	0.0000337 %	✓	
23		fluorene 201-695-5 / 86-73-7		0.47 mg/kg		0.44 mg/kg	0.000044 %	✓	
24		phenanthrene 201-581-5 / 85-01-8		1.5 mg/kg		1.406 mg/kg	0.000141 %	✓	
25		anthracene 204-371-1 / 120-12-7		0.44 mg/kg		0.412 mg/kg	0.0000412 %	✓	
26		fluoranthene 205-912-4 / 206-44-0		2.2 mg/kg		2.061 mg/kg	0.000206 %	✓	
27		pyrene 204-927-3 / 129-00-0		2.3 mg/kg		2.155 mg/kg	0.000216 %	✓	
28		benzo[a]anthracene 601-033-00-9 / 200-280-6 / 56-55-3		1.4 mg/kg		1.312 mg/kg	0.000131 %	✓	
29		chrysene 601-048-00-0 / 205-923-4 / 218-01-9		1.5 mg/kg		1.406 mg/kg	0.000141 %	✓	
30		benzo[b]fluoranthene 601-034-00-4 / 205-911-9 / 205-99-2		2 mg/kg		1.874 mg/kg	0.000187 %	✓	
31		benzo[k]fluoranthene 601-036-00-5 / 205-916-6 / 207-08-9		0.87 mg/kg		0.815 mg/kg	0.0000815 %	✓	
32		benzo[a]pyrene; benzo[def]chrysene 601-032-00-3 / 200-028-5 / 50-32-8		1.3 mg/kg		1.218 mg/kg	0.000122 %	✓	
33		indeno[123-cd]pyrene 205-893-2 / 193-39-5		1.2 mg/kg		1.124 mg/kg	0.000112 %	✓	
34		dibenz[a,h]anthracene 601-041-00-2 / 200-181-8 / 53-70-3		0.58 mg/kg		0.543 mg/kg	0.0000543 %	✓	
35		benzo[ghi]perylene 205-883-8 / 191-24-2		1.3 mg/kg		1.218 mg/kg	0.000122 %	✓	
36		sulfur { sulfur } 016-094-00-1 / 231-722-6 / 7704-34-9		41 mg/kg		38.417 mg/kg	0.00384 %	✓	
						Total:	0.102 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
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 No Free Product Identified

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0365%)

Classification of sample: WS11-24/06/2020-2.0

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

Sample details

Sample Name:
WS11-24/06/2020-2.0
Sample Depth:
2.0 m
Moisture content:
13%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
1		pH		PH		7.9 pH		7.9 pH	7.9 pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS12-24/06/2020-1.4

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

Sample details

Sample Name:
WS12-24/06/2020-1.4
Sample Depth:
1.4 m
Moisture content:
14%
(wet weight correction)

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

Hazard properties

None identified

Determinands

Moisture content: 14% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
1		pH		PH		8 pH		8 pH	8pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Appendix A: Classifier defined and non CLP determinands

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

Conversion factor: 1.462
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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

- **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: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

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

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
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**

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
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: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

- **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: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

- **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 Chronic 1 H410 , Aquatic Acute 1 H400

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: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

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: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

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 Chronic 1 H410 , Aquatic Acute 1 H400

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

boron {diboron trioxide; boric oxide}

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

cadmium {cadmium oxide}

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

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

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

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

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

nickel {nickel chromate}

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

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

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

Elemental sulfur most likely to be worst case scenario hazardous

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2020.270.4480.8732 (26 Sep 2020)
HazWasteOnline Database: 2020.270.4480.8732 (26 Sep 2020)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
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 Wastes 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
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

Appendix VII

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS1

	Detection Limit								
	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl
00:00	<0.1	<<<<	<0.1	19.7	<0.1	<1	<1		3.07	2.96
00:15	<0.1	<<<<	<0.1	18.3	2.1	<1	<1			
00:30	<0.1	<<<<	<0.1	17.6	2.3	<1	<1			
00:45	<0.1	<<<<	<0.1	17.1	2.7	<1	<1			
01:00	<0.1	<<<<	<0.1	16.7	3.3	<1	<1			
01:15	<0.1	<<<<	<0.1	16.0	3.8	<1	<1			
01:30	<0.1	<<<<	<0.1	15.5	4.1	<1	<1			
01:45	<0.1	<<<<	<0.1	15.1	4.4	<1	<1			
02:00	<0.1	<<<<	<0.1	14.7	4.7	<1	<1			
02:15	<0.1	<<<<	<0.1	14.4	4.8	<1	<1			
02:30	<0.1	<<<<	<0.1	14.0	5.1	<1	<1			
02:45	<0.1	<<<<	<0.1	13.6	5.4	<1	<1			
03:00	<0.1	<<<<	<0.1	13.2	5.8	<1	<1			
03:15		<<<<	<0.1	12.8	6.2	<1	<1			
03:30		<<<<	<0.1	12.5	6.4	<1	<1			
03:45		<<<<	<0.1	12.2	6.7	<1	<1			
04:00		<<<<	<0.1	11.8	6.9	<1	<1			
04:15		<<<<	<0.1	11.5	7.2	<1	<1			
04:30		<<<<	<0.1	11.1	7.6	<1	<1			
04:45		<<<<	<0.1	10.6	8.1	<1	<1			
05:00		<<<<	<0.1	10.5	8.2	<1	<1			
Steady	**<0.1**	**<<<<**	**<0.1**	**10.5**	**8.2**	**<1**	**<1**	#####	**3.07**	**2.96**
Peak	**0.0**	**0.0**	**0.0**	**19.7**	**8.2**	**0.0**	**0.0**	**0.0**	**3.07**	**2.96**

Date	Notes:			
30.06.2020	Engineer	DRS	Barometric Pressure, mbar	1006
			Pressure Trend	Falling
	Equipment	GFM430	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS9

		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm	Depth of Installation. (mbgl)	Depth of Groundwater (mbg
00:00	<0.1	<<<<	<0.1	20.2	<0.1	<1	<1		1.00	DRY
00:15	<0.1	<<<<	<0.1	19.9	0.9	<1	<1			
00:30	<0.1	<<<<	<0.1	19.7	0.9	<1	<1			
00:45	<0.1	<<<<	<0.1	19.5	1.1	<1	<1			
01:00	<0.1	<<<<	<0.1	19.4	1.2	<1	<1			
01:15	<0.1	<<<<	<0.1	19.4	1.3	<1	<1			
01:30	<0.1	<<<<	<0.1	19.3	1.4	<1	<1			
01:45	<0.1	<<<<	<0.1	19.2	1.5	<1	<1			
02:00	<0.1	<<<<	<0.1	19.2	1.6	<1	<1			
02:15	<0.1	<<<<	<0.1	19.1	1.7	<1	<1			
02:30	<0.1	<<<<	<0.1	19.1	1.8	<1	<1			
02:45	<0.1	<<<<	<0.1	19.1	1.8	<1	<1			
03:00	<0.1	<<<<	<0.1	19.1	1.8	<1	<1			
03:15		<<<<	<0.1	19.1	1.8	<1	<1			
03:30		<<<<	<0.1	19.1	1.8	<1	<1			
03:45										
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<<<<**	**<0.1**	**19.1**	**1.8**	**<1**	**<1**	**#####**	**1.00**	**DRY**
Peak	**0.0**	**0.0**	**0.0**	**20.2**	**1.8**	**0.0**	**0.0**	**0.0**	**1.00**	**0.00**

Date	Notes:			
30.06.2020	Engineer	DRS	Barometric Pressure, mbar	1006
			Pressure Trend	Falling
	Equipment	GFM430	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS11

			Detection Limit	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1	
	Time		Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
	00:00		<0.1	<<<<	<0.1	20.2	<0.1	<1	<1		1.84	1.80
	00:15		<0.1	<<<<	<0.1	20.6	<0.1	<1	<1			
	00:30		<0.1	<<<<	<0.1	20.4	<0.1	<1	<1			
	00:45		<0.1	<<<<	<0.1	20.4	<0.1	<1	<1			
	01:00		<0.1	<<<<	<0.1	20.4	<0.1	<1	<1			
	01:15		<0.1	<<<<	<0.1	20.4	<0.1	<1	<1			
	01:30		<0.1	<<<<	<0.1	20.4	<0.1	<1	<1			
	<0.1	<	<0.1	<<<<	<0.1	20.3	0.1	<1	<1			
	02:00		<0.1	<<<<	<0.1	20.3	0.1	<1	<1			
	02:15		<0.1	<<<<	<0.1	20.2	0.2	<1	<1			
	02:30		<0.1	<<<<	<0.1	20.2	0.2	<1	<1			
	02:45		<0.1	<<<<	<0.1	20.1	0.3	<1	<1			
	03:00		<0.1	<<<<	<0.1	20.1	0.3	<1	<1			
	03:15			<<<<	<0.1	20.0	0.4	<1	<1			
	03:30			<<<<	<0.1	19.9	0.4	<1	<1			
	03:45			<<<<	<0.1	19.8	0.5	<1	<1			
	04:00			<<<<	<0.1	19.7	0.5	<1	<1			
W	N/A	/	N/A	<<<<	<0.1	19.6	0.6	<1	<1			
W	N/A	/	N/A	<<<<	<0.1	19.6	0.6	<1	<1			
W	N/A	/	N/A	<<<<	<0.1	19.6	0.6	<1	<1			
	05:00			<<<<	<0.1	19.6	0.6	<1	<1			
	Steady		**0.0**	**<<<<**	**<0.1**	**19.6**	**0.6**	**<1**	**<1**	#####	**1.84**	**1.80**
	Peak		**0.0**	**0.0**	**0.0**	**20.6**	**0.6**	**0.0**	**0.0**	**0.0**	**1.84**	**1.80**

Date	Notes:			
30.06.2020	Engineer	DRS	Barometric Pressure, mbar	1006
			Pressure Trend	Falling
	Equipment	GFM430	Air Temp (˚C)	17

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS1

	Detection Limit								
	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl
00:00	<0.1	<0.1	<0.1	20.2	1.8	<1	1		3.10	DRY
00:15	<0.1	<0.1	<0.1	20.2	1.8	<1	<1			
00:30	<0.1	<0.1	<0.1	20.2	1.8	<1	<1			
00:45	<0.1	<0.1	<0.1	20.2	1.8	<1	<1			
01:00	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
01:15	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
01:30	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
01:45	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
02:00	<0.1	<0.1	<0.1	18.9	1.7	<1	3			
02:15	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
02:30	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
02:45	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
03:00	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
03:15		<0.1	<0.1	18.9	1.7	<1	<1			
03:30		<0.1	<0.1	18.9	1.7	<1	<1			
03:45		<0.1	<0.1	18.9	1.7	<1	<1			
04:00		<0.1	<0.1	18.9	1.7	<1	1			
04:15		<0.1	<0.1	18.9	1.7	<1	<1			
04:30		<0.1	<0.1	18.9	1.7	<1	<1			
04:45		<0.1	<0.1	18.9	1.7	<1	<1			
05:00		<0.1	<0.1	18.9	1.7	<1	<1			
Steady	**<0.1**	**<0.1**	**<0.1**	**18.9**	**1.7**	**<1**	**<1**	**#####**	**3.10**	**DRY**
Peak	**0.0**	**0.0**	**0.0**	**20.2**	**1.8**	**0.0**	**3.0**	**0.0**	**3.10**	**0.00**

Date	Notes:			
07.07.2020	Engineer	LAB	Barometric Pressure, mbar	1015
			Pressure Trend	Falling
	Equipment	GFM430	Air Temp (˚C)	14

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS9

		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppr	Depth of Installation. (mbgl)	Depth of Groundwater (mbg
00:00	<0.1	<0.1	<0.1	20.2	1.8	<1	1		1.00	DRY
00:15	<0.1	<0.1	<0.1	20.2	1.8	<1	<1			
00:30	<0.1	<0.1	<0.1	20.2	1.8	<1	<1			
00:45	<0.1	<0.1	<0.1	20.2	1.8	<1	<1			
01:00	<0.1	<0.1	<0.1	18.9	1.7	<1	1			
01:15	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
01:30	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
01:45	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
02:00	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
02:15	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
02:30	<0.1	<0.1	<0.1	18.9	1.7	<1	1			
02:45	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
03:00	<0.1	<0.1	<0.1	18.9	1.7	<1	<1			
03:15		<0.1	<0.1	18.9	1.7	<1	<1			
03:30		<0.1	<0.1	18.9	1.7	<1	<1			
03:45		<0.1	<0.1	18.9	1.7	<1	<1			
04:00		<0.1	<0.1	18.9	1.7	<1	<1			
04:15		<0.1	<0.1	18.9	1.7	<1	<1			
04:30		<0.1	<0.1	18.9	1.7	<1	1			
04:45		<0.1	<0.1	18.9	1.7	<1	<1			
05:00		<0.1	<0.1	18.9	1.7	<1	<1			
Steady	**<0.1**	**<0.1**	**<0.1**	**18.9**	**1.7**	**<1**	**<1**	#####	**1.00**	**DRY**
Peak	**0.0**	**0.0**	**0.0**	**20.2**	**1.8**	**0.0**	**1.0**	**0.0**	**1.00**	**0.00**

Date	Notes:			
07.07.2020	Engineer	LAB	Barometric Pressure, mbar	1015
			Pressure Trend	Falling
	Equipment	GFM430	Air Temp (˚C)	14

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS11

			Detection Limit								
			<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
	Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
	00:00	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1		1.84	1.67
	00:15	<0.1	<0.1	<0.1	20.8	<0.1	<1	3			
	00:30	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	00:45	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	01:00	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	01:15	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	01:30	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	<0.1	< <0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	02:00	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	02:15	<0.1	<0.1	<0.1	20.8	<0.1	<1	1			
	02:30	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	02:45	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	03:00	<0.1	<0.1	<0.1	20.8	<0.1	<1	<1			
	03:15		<0.1	<0.1	20.8	<0.1	<1	<1			
	03:30		<0.1	<0.1	20.8	<0.1	<1	<1			
	03:45		<0.1	<0.1	20.8	<0.1	<1	<1			
	04:00		<0.1	<0.1	20.8	<0.1	<1	3			
WS	N/A	/ N/A	<0.1	<0.1	20.8	<0.1	<1	<1			
WS	N/A	/ N/A	<0.1	<0.1	20.8	<0.1	<1	<1			
WS	N/A	/ N/A	<0.1	<0.1	20.8	<0.1	<1	<1			
	05:00		<0.1	<0.1	20.8	<0.1	<1	<1			
	Steady	**0.0**	**<0.1**	**<0.1**	**20.8**	**<0.1**	**<1**	**<1**	#####	**1.84**	**1.67**
	Peak	**0.0**	**0.0**	**0.0**	**20.8**	**0.0**	**0.0**	**3.0**	**0.0**	**1.84**	**1.67**

Date	Notes:			
07.07.2020	Engineer	LAB	Barometric Pressure, mbar	1015
			Pressure Trend	Falling
	Equipment	GFM430	Air Temp (˚C)	14

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS1

	Detection Limit								
	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl
00:00	<0.1	<0.1	<0.1	20.4	<0.1	<1	<1		3.10	DRY
00:15	<0.1	<0.1	<0.1	20.2	1.8	<1	<1			
00:30	<0.1	<0.1	<0.1	20.1	1.7	<1	<1			
00:45	<0.1	<0.1	<0.1	19.7	1.6	<1	<1			
01:00	<0.1	<0.1	<0.1	19.3	1.6	<1	<1			
01:15	<0.1	<0.1	<0.1	18.9	1.6	<1	<1			
01:30	<0.1	<0.1	<0.1	18.9	1.6	<1	<1			
01:45	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
02:00	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
02:15	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
02:30	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
02:45	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
03:00	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
03:15	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
03:30	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
03:45	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
04:00	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
04:15	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
04:30	<0.1	<0.1	<0.1	18.8	1.6	<1	<1			
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**18.8**	**1.6**	**<1**	**<1**	#####	**3.10**	**DRY**
Peak	**0.0**	**0.0**	**0.0**	**20.4**	**1.8**	**0.0**	**0.0**	**0.0**	**3.10**	**0.00**

Date	Notes:			
20/07/2020	Engineer	DRS	Barometric Pressure, mbar	1024
			Pressure Trend	Steady
	Equipment	GFM430	Air Temp (˚C)	18

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS9

	Detection Limit								
	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm	Depth of Installation. (mbgl)	Depth of Groundwater (mbg
00:00	<0.1	<0.1	<0.1	20.4	<0.1	<1	<1		1.00	DRY
00:15	<0.1	<0.1	<0.1	19.3	1.8	<1	<1			
00:30	<0.1	<0.1	<0.1	19.3	1.8	<1	<1			
00:45	<0.1	<0.1	<0.1	19.2	1.8	<1	<1			
01:00	<0.1	<0.1	<0.1	19.1	1.9	<1	<1			
01:15	<0.1	<0.1	<0.1	19.1	1.9	<1	<1			
01:30	<0.1	<0.1	<0.1	19.1	1.9	<1	<1			
01:45	<0.1	<0.1	<0.1	19.1	1.9	<1	<1			
02:00	<0.1	<0.1	<0.1	19.0	1.9	<1	<1			
02:15	<0.1	<0.1	<0.1	19.0	1.8	<1	<1			
02:30	<0.1	<0.1	<0.1	19.0	1.8	<1	<1			
02:45	<0.1	<0.1	<0.1	19.0	1.8	<1	<1			
03:00	<0.1	<0.1	<0.1	19.1	1.8	<1	<1			
03:15	<0.1	<0.1	<0.1	19.1	1.8	<1	<1			
03:30	<0.1	<0.1	<0.1	19.1	1.8	<1	<1			
03:45	<0.1	<0.1	<0.1	19.1	1.8	<1	<1			
04:00	<0.1	<0.1	<0.1	19.2	1.8	<1	<1			
04:15										
04:30										
04:45										
05:00										
Steady	**<0.1**	**<0.1**	**<0.1**	**19.2**	**1.8**	**<1**	**<1**	**#####**	**1.00**	**DRY**
Peak	**0.0**	**0.0**	**0.0**	**20.4**	**1.9**	**0.0**	**0.0**	**0.0**	**1.00**	**0.00**

Date	Notes:			
20/07/2020	Engineer	DRS	Barometric Pressure, mbar	1024
			Pressure Trend	Steady
	Equipment	GFM430	Air Temp (˚C)	18

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS11

	Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
	Detection Limit		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
	00:00	<0.1	<0.1	<0.1	20.4	<0.1	<1	<1		2.70	2.60
	00:15	<0.1	<0.1	<0.1	18.7	1.5	<1	<1			
	00:30	<0.1	<0.1	<0.1	18.7	1.5	<1	<1			
	00:45	<0.1	<0.1	<0.1	18.6	1.5	<1	<1			
	01:00	<0.1	<0.1	<0.1	18.6	1.5	<1	<1			
	01:15	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	01:30	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	<0.1	< <0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	02:00	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	02:15	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	02:30	<0.1	<0.1	<0.1	18.5	1.6	2	<1			
	02:45	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	03:00	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	03:15	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	03:30	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	03:45	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
	04:00	<0.1	<0.1	<0.1	18.5	1.6	<1	<1			
W	N/A	/ N/A	<0.1	<0.1	18.5	1.6	<1	<1			
W	N/A	/ N/A	<0.1	<0.1	18.5	1.6	1	1			
W	N/A	/ N/A									
	05:00										
	Steady	**N/A**	**<0.1**	**<0.1**	**18.5**	**1.6**	**1.0**	**1.0**	**#####**	**2.70**	**2.60**
	Peak	**0.0**	**0.0**	**0.0**	**20.4**	**1.6**	**2.0**	**1.0**	**0.0**	**2.70**	**2.60**

Date	Notes:			
20/07/2020	Engineer	DRS	Barometric Pressure, mbar	1024
			Pressure Trend	Steady
	Equipment	GFM430	Air Temp (˚C)	18

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS1

	Detection Limit								
	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl
00:00	0.0	<0.1	<0.1	20.3	<0.1	<1	<1		3.03	2.78
00:15	0.0	<0.1	<0.1	1.0	15.5	<1	4			
00:30	0.0	<0.1	<0.1	<0.1	15.8	<1	1			
00:45	0.0	<0.1	<0.1	<0.1	15.9	<1	1			
01:00	0.0	<0.1	<0.1	<0.1	16.1	<1	1			
01:15	0.0	<0.1	<0.1	<0.1	16.2	<1	1			
01:30	0.0	<0.1	<0.1	<0.1	16.3	<1	1			
01:45	0.0	<0.1	<0.1	<0.1	16.3	<1	<1			
02:00	0.0	<0.1	<0.1	<0.1	16.3	<1	1			
02:15	0.0	<0.1	<0.1	<0.1	16.3	<1	1			
02:30	0.0	<0.1	<0.1	<0.1	16.4	<1	1			
02:45	0.0	<0.1	<0.1	<0.1	16.3	<1	<1			
03:00	0.0	<0.1	<0.1	<0.1	16.3	<1	1			
03:15		<0.1	<0.1	<0.1	16.3	<1	1			
03:30		<0.1	<0.1	<0.1	16.3	<1	1			
03:45		<0.1	<0.1	<0.1	16.3	<1	<1			
04:00										
04:15										
04:30										
04:45										
05:00										
Steady	**0.0**	**<0.1**	**<0.1**	**<0.1**	**16.3**	**<1**	**<1**	**#####**	**3.03**	**2.78**
Peak	**0.0**	**0.0**	**0.0**	**20.3**	**16.4**	**0.0**	**4.0**	**0.0**	**3.03**	**2.78**

Date	Notes:			
13.10.2020	Engineer	DRS	Barometric Pressure, mbar	1009
			Pressure Trend	Steady
	Equipment	GFM430	Air Temp (˚C)	12

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS9

		Detection Limit								
		<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm	Depth of Installation. (mbgl)	Depth of Groundwater (mbg
00:00	0.0	<0.1	<0.1	19.5	0.3	<1	<1		1.04	DRY
00:15	0.0	<0.1	<0.1	19.1	0.8	<1	1			
00:30	0.0	<0.1	<0.1	18.8	0.8	<1	<1			
00:45	0.0	<0.1	<0.1	18.7	0.8	<1	1			
01:00	0.0	<0.1	<0.1	18.7	0.8	<1	1			
01:15	0.0	<0.1	<0.1	18.7	0.8	2	<1			
01:30	0.0	<0.1	<0.1	18.8	0.8	<1	<1			
01:45	0.0	<0.1	<0.1	18.8	0.8	<1	<1			
02:00	0.0	<0.1	<0.1	18.8	0.8	<1	<1			
02:15	0.0	<0.1	<0.1	18.8	0.8	<1	<1			
02:30	0.0	<0.1	<0.1	18.9	0.8	<1	<1			
02:45	0.0	<0.1	<0.1	19.0	0.8	<1	<1			
03:00	0.0	<0.1	<0.1	19.0	0.8	<1	<1			
03:15		<0.1	<0.1	19.1	0.7	<1	<1			
03:30		<0.1	<0.1	19.2	0.7	<1	<1			
03:45		<0.1	<0.1	19.2	0.7	<1	<1			
04:00		<0.1	<0.1	19.3	0.7	<1	<1			
04:15		<0.1	<0.1	19.4	0.7	<1	<1			
04:30		<0.1	<0.1	19.4	0.7	2	<1			
04:45		<0.1	<0.1	19.5	0.7	<1	<1			
05:00		<0.1	<0.1	19.5	0.7	<1	<1			
Steady	**0.0**	**<0.1**	**<0.1**	**19.5**	**0.7**	**<1**	**<1**	**#####**	**1.04**	**DRY**
Peak	**0.0**	**0.0**	**0.0**	**19.5**	**0.8**	**2.0**	**1.0**	**0.0**	**1.04**	**0.00**

Date	Notes:			
13.10.2020	Engineer	DRS	Barometric Pressure, mbar	1009
			Pressure Trend	Steady
	Equipment	GFM430	Air Temp (˚C)	12

Gas Monitoring Certificate

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

WS11

	Detection Limit								
	<0.1	<0.1	<0.1	<0.1	<1	<1	<0.1		
Time	Gas Flow Rate. (l/hr)	Methane. (%LEL)	Methane. (%vol)	Oxygen. (%vol)	Carbon Dioxide. (%vol)	Hydrogen Sulphide. (ppm)	Carbon Monoxide. (ppm)	Volatile Organic Carbon (ppm)	Depth of Installation. (mbgl)	Depth of Groundwater (mbgl)
00:00	0.0	<0.1	<0.1	20.4	<0.1	<1	<1		1.95	1.84
00:15	0.0	<0.1	<0.1	18.4	1.3	<1	3			
00:30	0.0	<0.1	<0.1	17.9	1.4	<1	3			
00:45	0.0	<0.1	<0.1	17.9	1.4	<1	1			
01:00	0.0	<0.1	<0.1	17.9	1.4	<1	<1			
01:15	0.0	<0.1	<0.1	17.8	1.4	<1	<1			
01:30	0.0	<0.1	<0.1	17.8	1.4	<1	1			
01:45	0.0	<0.1	<0.1	17.8	1.4	<1	1			
02:00	0.0	<0.1	<0.1	17.7	1.4	<1	<1			
02:15	0.0	<0.1	<0.1	17.7	1.5	<1	<1			
02:30	0.0	<0.1	<0.1	17.7	1.5	<1	<1			
02:45	0.0	<0.1	<0.1	17.7	1.5	<1	<1			
03:00	0.0	<0.1	<0.1	17.6	1.5	<1	<1			
03:15		<0.1	<0.1	17.6	1.5	<1	<1			
03:30		<0.1	<0.1	17.6	1.5	<1	<1			
03:45		<0.1	<0.1	17.6	1.5	<1	1			
04:00		<0.1	<0.1	17.5	1.6	<1	1			
04:15		<0.1	<0.1	17.5	1.6	<1	<1			
04:30		<0.1	<0.1	17.4	1.6	<1	<1			
04:45		<0.1	<0.1	17.3	1.6	<1	<1			
05:00		<0.1	<0.1	17.2	1.7	<1	<1			
Steady	**0.0**	**<0.1**	**<0.1**	**17.2**	**1.7**	**<1**	**<1**	**#####**	**1.95**	**1.84**
Peak	**0.0**	**0.0**	**0.0**	**20.4**	**1.7**	**0.0**	**3.0**	**0.0**	**1.95**	**1.84**

Date	Notes:			
13.10.2020	Engineer	DRS	Barometric Pressure, mbar	1009
			Pressure Trend	Steady
	Equipment	GFM430	Air Temp (˚C)	12

Gas Testing Summary

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

Methane. (%LEL)						
WS1	<<<<	<0.1	<0.1	<0.1	0	0
WS9	<<<<	<0.1	<0.1	<0.1	0	0
WS11	<<<<	<0.1	<0.1	<0.1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Methane. (%vol)						
WS1	<0.1	<0.1	<0.1	<0.1	0	0
WS9	<0.1	<0.1	<0.1	<0.1	0	0
WS11	<0.1	<0.1	<0.1	<0.1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Oxygen. (%vol)						
WS1	10.5	18.9	18.8	<0.1	0	0
WS9	19.1	18.9	19.2	19.5	0	0
WS11	19.6	20.8	18.5	17.2	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Gas Testing Summary

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

Carbon Dioxide. (%vol)						
WS1	8.2	1.7	1.6	16.3	0	0
WS9	1.8	1.7	1.8	0.7	0	0
WS11	0.6	<0.1	1.6	1.7	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Hydrogen Sulphide. (ppm)						
WS1	<1	<1	<1	<1	0	0
WS9	<1	<1	<1	<1	0	0
WS11	<1	<1	1	<1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Carbon Monoxide. (ppm)						
WS1	<1	<1	<1	<1	0	0
WS9	<1	<1	<1	<1	0	0
WS11	<1	<1	1	<1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Gas Testing Summary

Project Number	C3297
Project Name	Barry Waterfront, Barry
Client	Gleeds Management Services Ltd

Gas Flow Rate (l/hr)						
WS1	<0.1	<0.1	<0.1	<0.1	0	0
WS9	<0.1	<0.1	<0.1	<0.1	0	0
WS11	<0.1	<0.1	<0.1	<0.1	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Volatile Organic Carbons (ppm)						
WS1	N/A	N/A	N/A	N/A	0	0
WS9	N/A	N/A	N/A	N/A	0	0
WS11	N/A	N/A	N/A	N/A	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0

Atmospheric Pressure Range						
	1006	0	0	0	0	0

Max Methane Concentration (%vol)	<0.1
Max Carbon Dioxide Concentration (%vol)	16.3
Max Carbon Monoxide Concentration (ppm)	1
Max Hydrogen Sulphide Concentration (ppm)	1
Max Flow Rate (l/hr)	0
Max Volatile Organic Carbon Concentration (ppm)	0

Methane Gas Screening Value	0.1
Carbon Dioxide Gas Screening Value	0.0163

Carbon Monoxide Gas Screening Value	<1
Hydrogen Sulphide Gas Screening Value	<1
Maximum Gas Screening Value	0.016
Characteristic Situation 1	FAIL
Characteristic Situation 2	PASS
Characteristic Situation 3	PASS
Characteristic Situation 4	PASS
Characteristic Situation 5	PASS
Characteristic Situation 6	PASS
Hydrocarbon Vapour Barrier Required?	NO