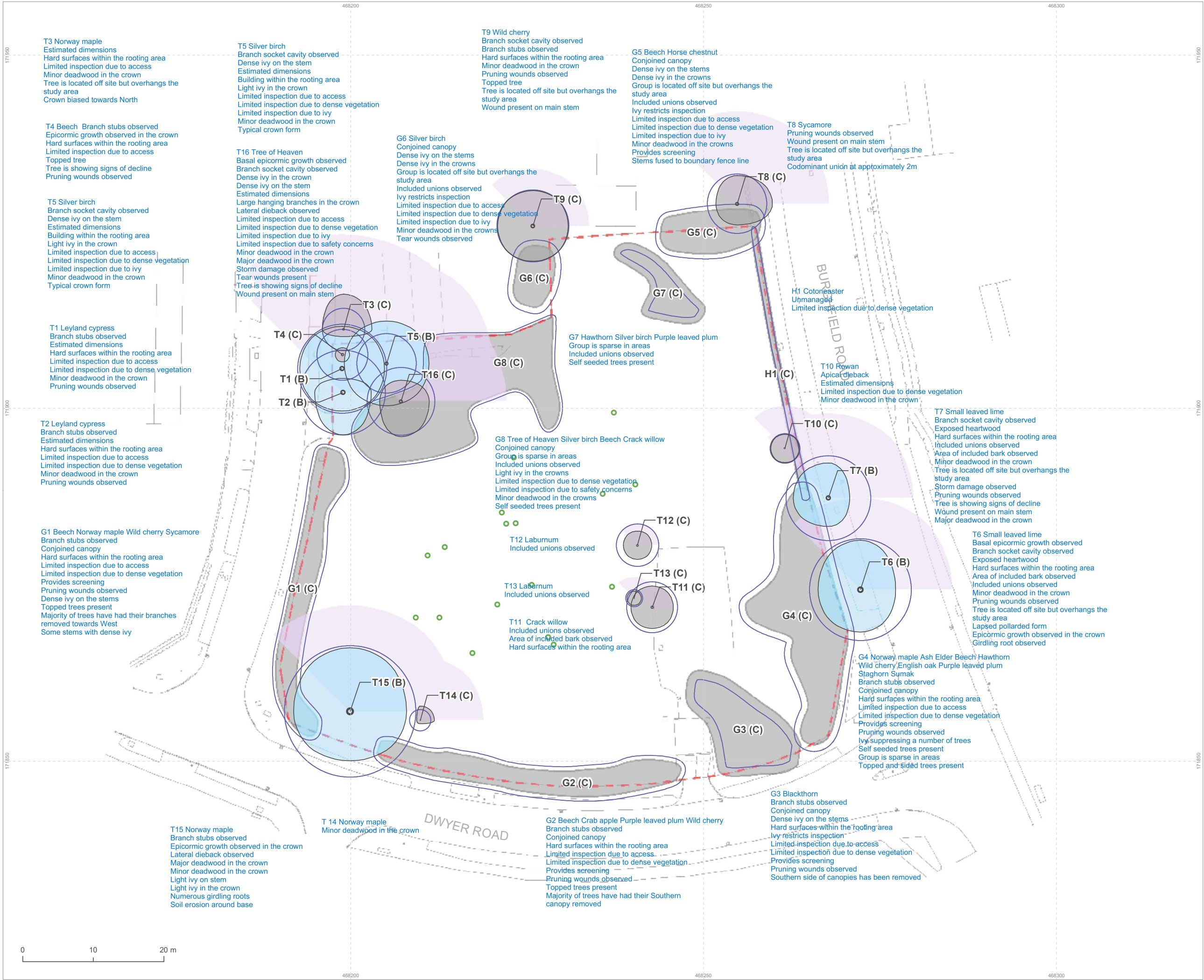
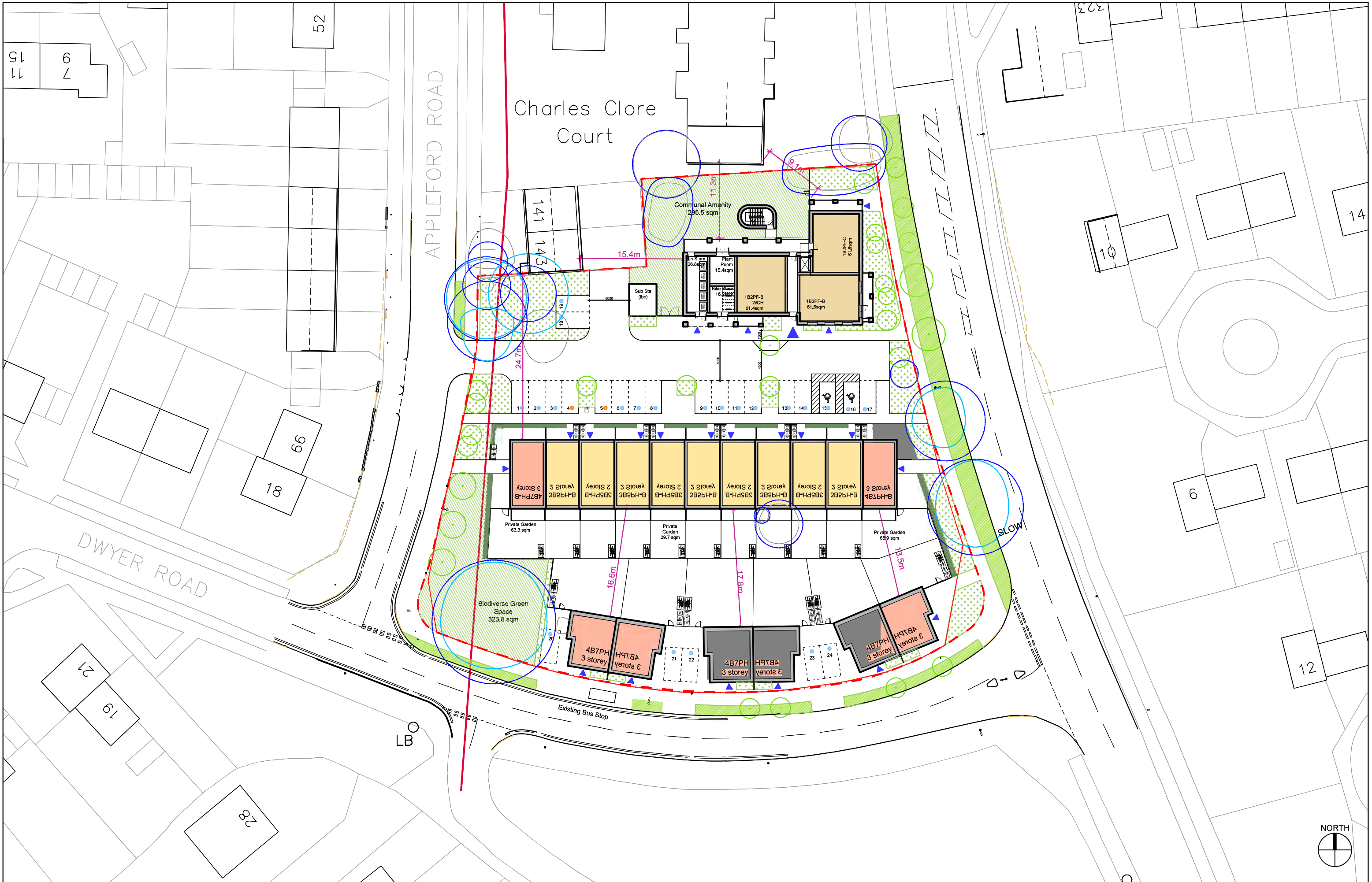
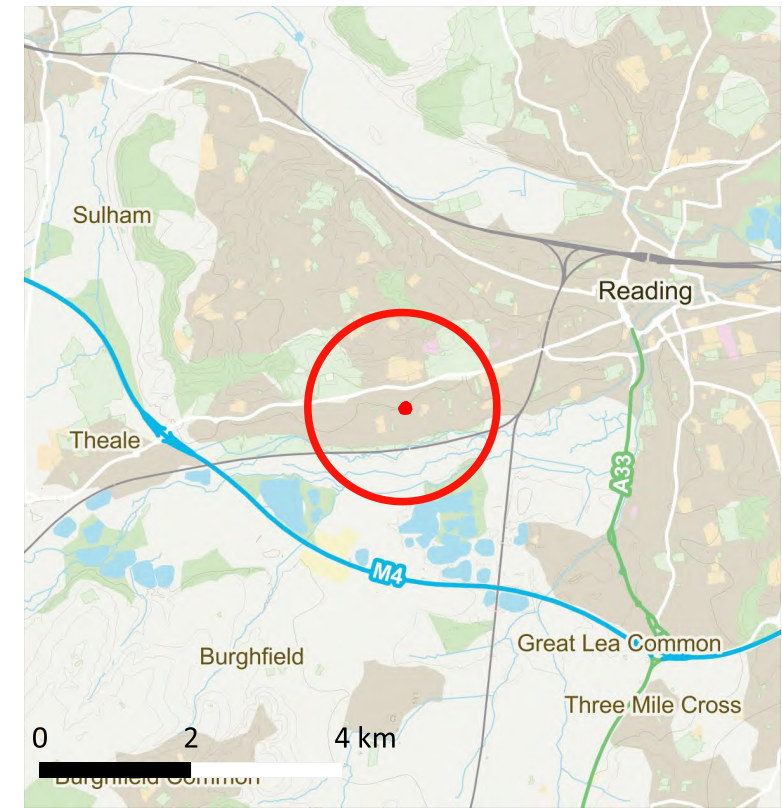
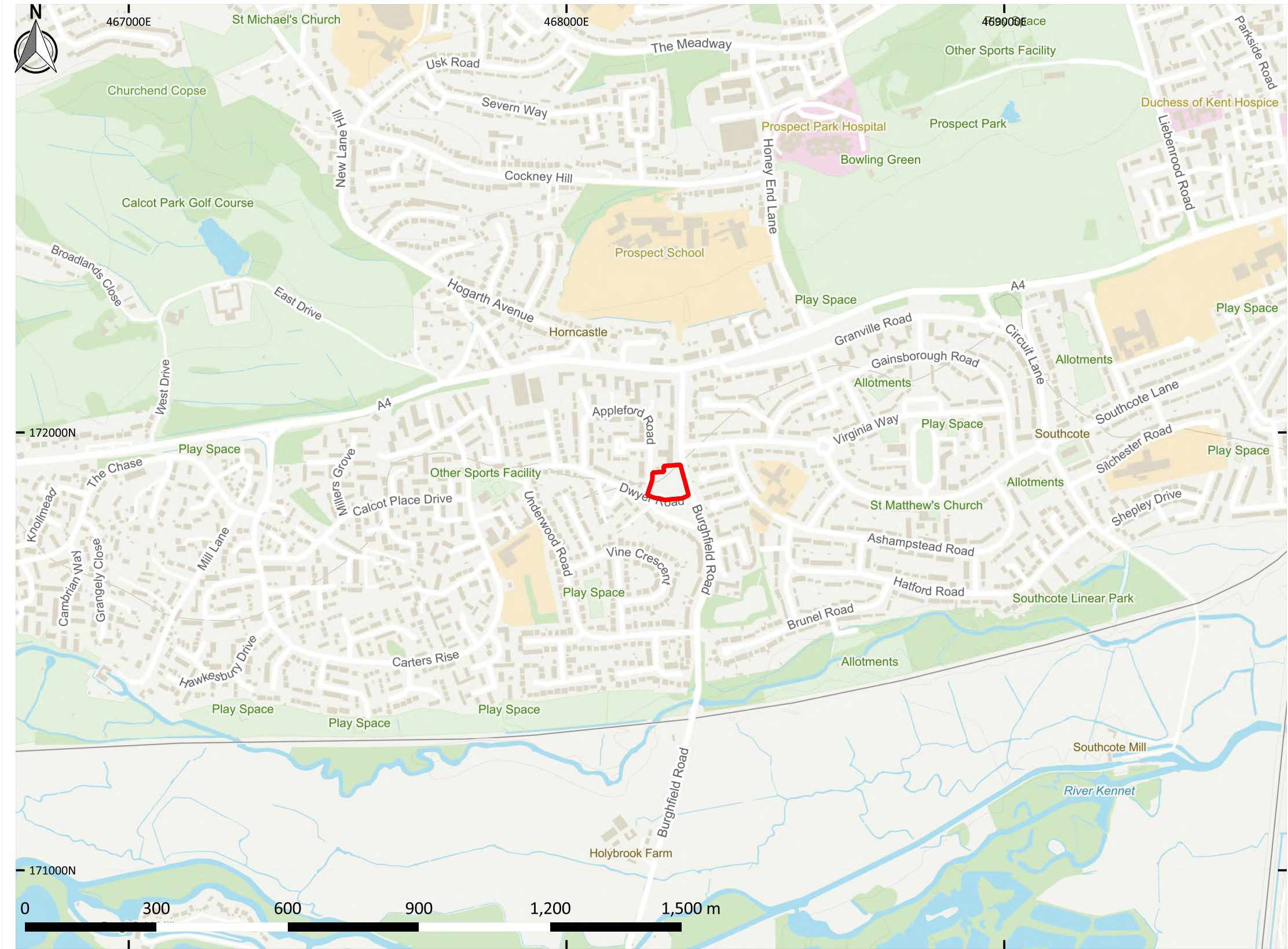


Appendix A Drawings







KEY PLAN



Site Boundary

NOTES

1. Contains OS data © Crown copyright and database right (2022)

REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	MW	SC	21/01/23	First issue



CLIENT
Reading Borough Council

PROJECT
Dwyer Road

TITLE

SITE LOCATION PLAN

HYDROCK PROJECT NO.
26888

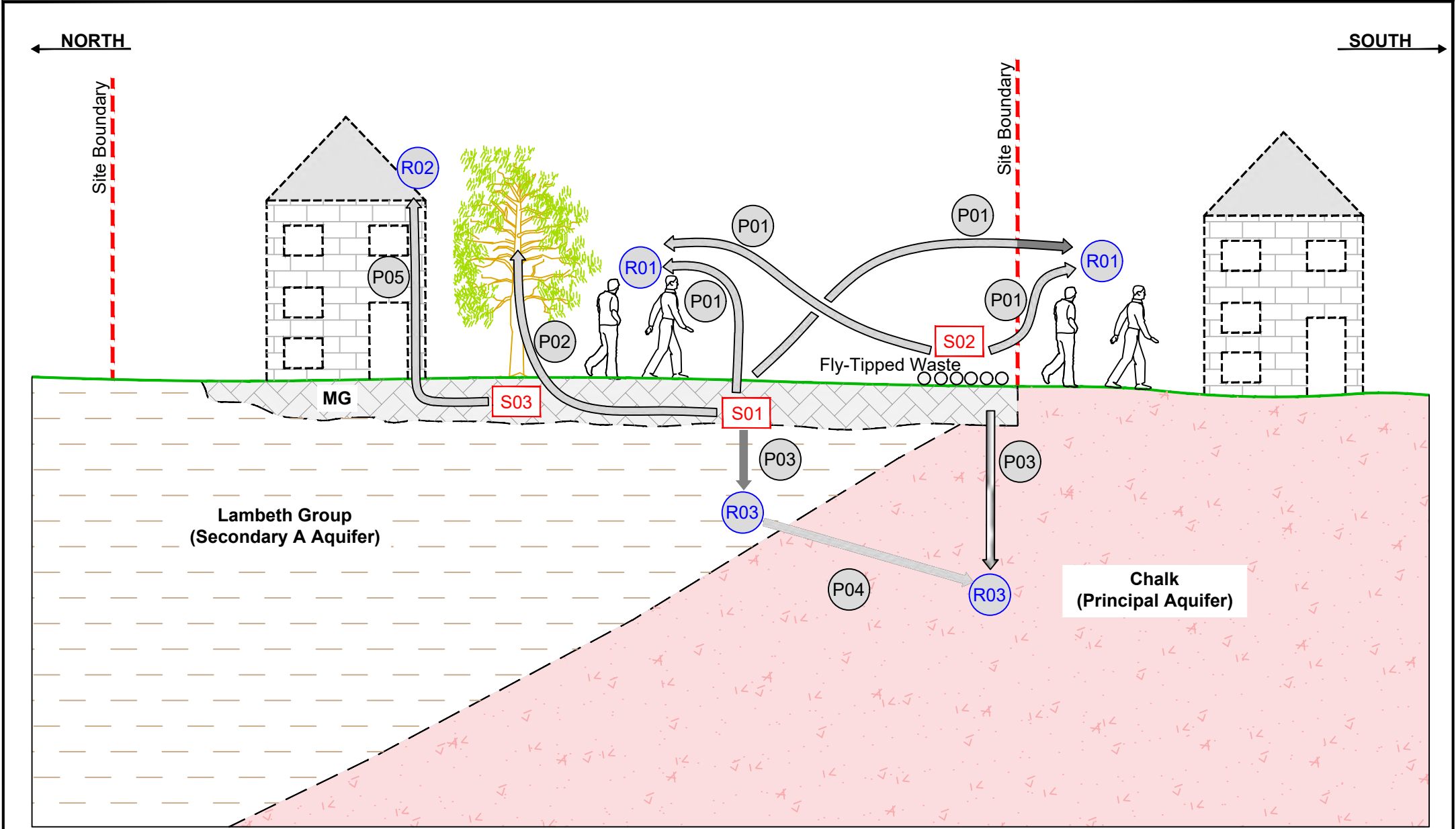
SCALE @ A3
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PURPOSE OF ISSUE
SUITABLE FOR INFORMATION

STATUS
S2

DRAWING NO.
26888-HYD-XX-XX-DR-GE-1000

REVISION
P01



Potential on-site sources of contamination

- S01. Made Ground and stockpiles associated with historical construction and demolition activities, possibly including elevated concentrations of metals, metalloids, asbestos fibres, asbestos containing materials, polycyclic aromatic hydrocarbons and petroleum hydrocarbons.
- S02. Fly-tipped waste materials, possibly including asbestos containing materials.
- S03. Ground gases (carbon dioxide and methane) from organic materials in the Made Ground.

Potential off-site sources of contamination

No off-site sources of contamination have been identified.

Potential receptors

The following potential receptors in relation to the proposed land use have been identified.

- R01. People (neighbours, site end users).
- R02. Development end use (buildings, utilities and landscaping).
- R03. Groundwater: Secondary A Aquifer status of the Lambeth Group and Principal Aquifer status of the Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated).

Potential pathways

The following potential pathways have been identified.

- P01. Ingestion, skin contact, inhalation of dust and outdoor air by people.
- P02. Root uptake by plant life.
- P03. Migration of contaminant via leachate migration into the aquifers of the Lambeth Group and Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated).
- P04. Migration of contaminants via base flow through the Lambeth Group and the Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated).
- P05. Migration and build-up of ground gases.

KEY Existing ground profile Conjectural geological boundary Made Ground Lambeth Group (Secondary A Aquifer) Chalk (Principal Aquifer)	NOTES 1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing. 2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.	Hydrock Over Court Barns Over Lane Almondsbury, Bristol BS32 4DF TEL: 01454 619 533 FAX: 01454 614 125 E-Mail: bristol@hydrock.com or visit www.hydrock.com CLIENT READING BOROUGH COUNCIL	TITLE CONCEPTUAL SITE MODEL	
		PROJECT DWYER ROAD		HYDROCK PROJECT NO. C-26888-C SCALE @ A3 NTS
		P1 FIRST ISSUE EP 23/01/23 MW 23/01/23 KS 23/01/23		PURPOSE OF ISSUE SUITABLE FOR INFORMATION STATUS S2
		REV REVISION NOTES/COMMENTS DRAWN BY DATE CHECKED BY DATE APPROVED BY DATE		DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 26888-HYD-XX-XX-DR-GE-1001 REVISION P1

Appendix B Factual Report

Dwyer Rd Tender Proposal

Dwyer Rd Phase 2 Ground Investigation

Ground investigation

The objective of the Phase 2 Ground Investigation is to establish a factual ground model for the site.

Sampling and logging of soils and reporting will be undertaken in accordance with BS 5930:2015 Code of Practice for Site Investigations and BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites — Code of Practice.

Works will also be undertaken in compliance with relevant British Standards, Guidance and Codes of Practice such as (but not exclusively): LCRM; BS1377:1990; NHBC Standards; BS8485:2015+A1:2019; CIRIA C665; and PPS 23.

Exploratory holes will be undertaken across the accessible areas of the site to determine ground and groundwater conditions, and allow collection of samples for geotechnical testing and chemical analysis and installation of gas and groundwater monitoring wells.

The following works are proposed:

- » Health and safety provision, surveying, welfare and service clearance survey.
- » Hand pitting of service inspection pits.
- » Two cable percussion boreholes with recovery of disturbed and "undisturbed" samples for geotechnical characterisation and chemical analysis and *in situ* (SPT) testing to initial estimated depths of 15mbgl and 20mbgl. These shall assess deeper ground conditions including depth and condition of underlying chalk. Provision shall be made to allow for the installation of gas/groundwater monitoring and sampling wells in the two bores together with undertaking falling head permeability tests in any chalk stratum met.
- » One day of dynamic probing (6 - 8 locations depending on depth) to determine ground strength profiles and investigate any evidence of shallow dissolution to a maximum depth of 10mbgl or refusal.
- » TRL DCP testing to correlate to CBRs for pavement design.
- » One day (up to five locations) of trial pitting by mechanical excavator with recovery of disturbed samples for geotechnical characterisation and chemical analysis, and *in situ* hand shear vane tests, to a depth of 3-4mbgl, to assess shallow ground conditions.
- » Subject to the findings of the falling head permeability tests undertaken in boreholes: Provision is to be made for a return visit to undertake soil infiltration rate testing at two specific trial pit locations to aid soakaway drainage design.
- » Preliminary ground gas concentration and groundwater level monitoring (initial three visits over 3 weeks).

Laboratory testing/analysis

Soil samples will be delivered to UKAS accredited laboratories for geotechnical testing or contamination analysis as appropriate. Based on the anticipated ground conditions, proposed methods of investigation, development proposals and anticipated past and current land uses, the following testing/analysis is allowed for.

[Subject to the findings, the following estimate of testing is anticipated.]

Geotechnical:

- » 10 natural moisture content
- » 5 Atterberg limits (plasticity)
- » 4 particle size distribution (wet sieve/sedimentation)
- » 6 sulfate and aggressive chemical environment classification for buried concrete classification (full BRE SD1 suite)
- » 10 single stage undrained triaxial compressive strength
- » 2 Optimum Moisture Content / Maximum Dry Density relationship (2.5kg rammer), with hand shear vane at each compaction point
- » 2 MCV vs MC relationship
- » 6 saturated moisture content, porosity & density testing of Chalk

Geo-environmental:

- » 10 minimum suite of contaminants comprising: As, B (water soluble), Be, Cd, Cr (total), Cr(VI), Cu, Hg, Ni, Pb, S (elemental), Se, V, Zn, cyanide (total), sulfide, pH, asbestos fibres, speciated polynuclear aromatic hydrocarbons (PAH, by GC-FID), total phenols, fraction of organic carbon and free and "complex" cyanide species, if high total cyanide is detected
- » 5 TPH Level 2 comprising carbon banding with aliphatic/aromatic split plus BTEX and MTBE
- » 1 polychlorinated biphenyls (PCB, total as Aroclors/WHO 12)
- » 10 asbestos screens
- » 2 coal tar test suites (speciated polynuclear aromatic hydrocarbons (PAH, by GC-FID), speciated phenols and speciated creosols)
- » 2 WAC inert & 2 Hazardous suite

If groundwater is encountered, it will be sampled and analysed. In the absence of groundwater samples, soil samples will be subject to laboratory leachate testing. The following water/leachate analyses are allowed for:

- » 2 minimum waters/soil leachate analysis suite comprising — Ag, Al, As, B, Ba, Cd, Co, Cr (III), Cr(VI), Cu, Fe, Hg, Mn, Mo, Na, Ni, Pb, Sb, Se, Sn, Zn, V, cyanide (total), phenols (total), ammonium, bromate, chloride, fluoride, nitrate, nitrite, sulfate, PAH (speciated), pH, EC and hardness
- » 2 TPH Level 2 comprising carbon banding with aliphatic/aromatic split plus BTEX and MTBE

MCERTS accreditation will be provided where available.

Should significant olfactory or visual evidence of contamination be encountered during the investigation the affected soil will be sampled and tested accordingly. Should asbestos fibres be identified in samples additional asbestos quantification analysis may be required.

Reporting

A Factual Ground Investigation Report will be prepared by the Tenderer, which will include the following:

- » Factual ground investigation data including:
 - » Record of observations made during the fieldwork

- » Logs of the exploratory holes
- » Exploratory hole location plan
- » Results of *in situ* and laboratory testing

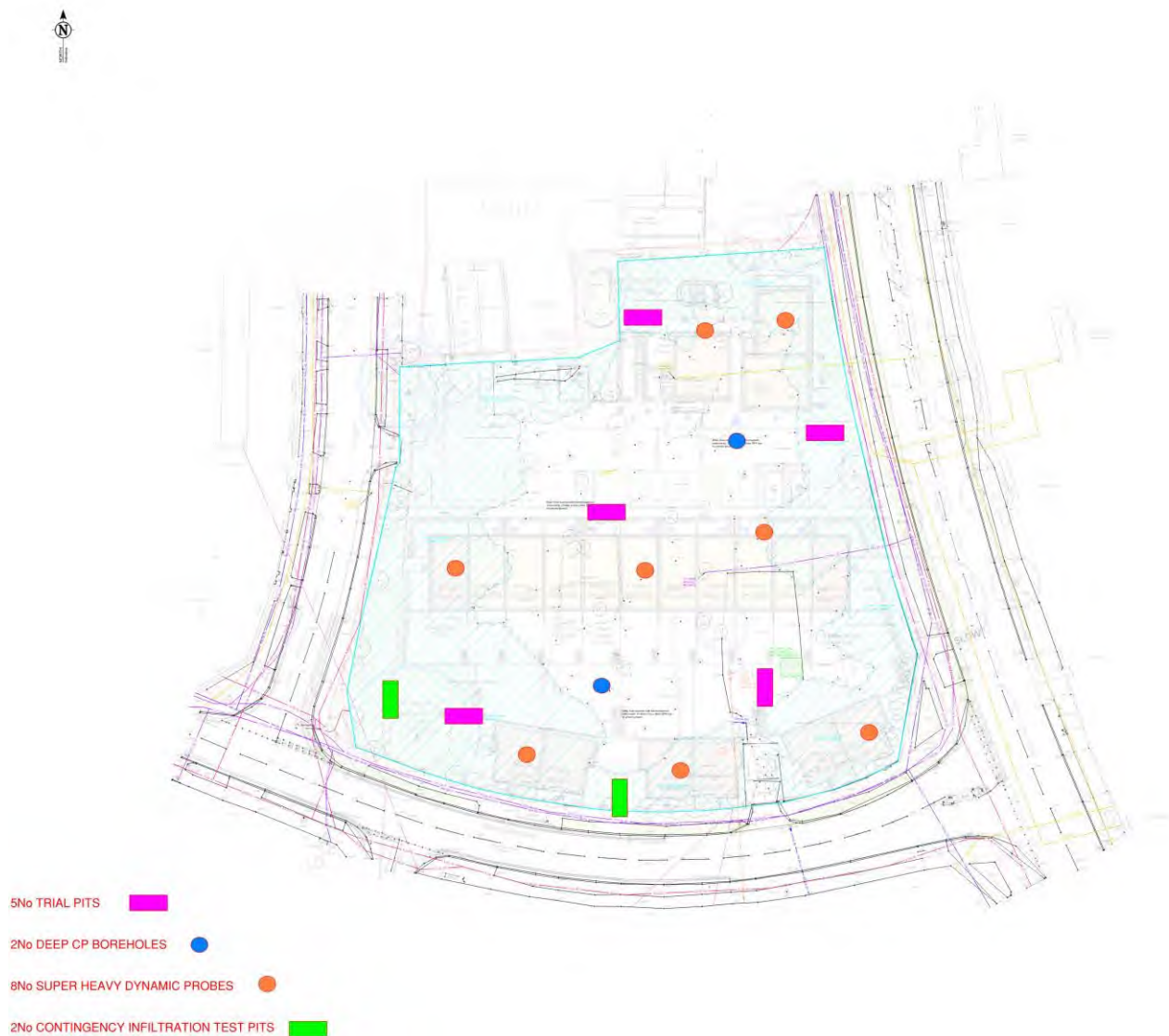
Table 2: Dwyer Rd Ground Investigation fees

Item	Description	Fee
M.	Site RAMs, Service GPR checks, H&S / Welfare / Temporary Storage.	
N.	2No Deep CP Boreholes (including SPT's, sampling, falling head tests and installations). [standard sampling intervals, alternating SPT/U100, allow 4No falling head tests in chalk, allow 1No 3m installation & 1No 20m deep standpipe]	
O.	1 day hand pitting of service inspection pits	
P.	1 day Dynamic Probing [allow for up to 8 disposable cones & torque readings]	
Q.	1 day Trial Pitting with JCB including breaker	
R.	1 day Shallow TRL DCP probing	
S.	Site Engineering Supervision & Logging	
T.	Laboratory geotechnical testing	
U.	Laboratory geo-environmental analysis	
V.	Monitoring (3 visits including any water sampling)	
W.	Combined Factual & Interpretative Reporting	
X.		
	Total (exc VAT)	
	<u>Contingency</u>	
	Infiltration testing in additional two Trial Pits & letter Report	

- » Phase 2 Ground Investigation
 - » Siteworks start — 23rd February.
 - » Siteworks period — anticipated 4 working days.
 - » Geotechnical laboratory results — working days after completion of fieldwork.
 - » Geo-environmental laboratory results — working days after completion of fieldwork.
 - » Final report issue — three working weeks after completion of fieldwork.

Preliminary findings and recommendations shall be provided to the design team shortly after site works including draft logs and any available test results.

PROPOSED EXPLORATORY HOLE LOCATION PLAN FOR DWYER RD





Factual Report

at

Dwyer Road, Reading, Berkshire RG30 3PN

for

Reading Borough Council

Reference: 20763/FR Rev I.0

May 2023

Control Document

Project

Dwyer Road, Reading, Berkshire RG30 3PN

Document Type

Factual Report

Document Reference

20763/FR Rev 1.0

Document Status

Final

Date

May 2023

Prepared by

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Second check by

R Biney BSc (Hons) MSc CEng MICE CEnv CSci MEnvSc MCMI MIET FGS RoGEP



This is not a valid document for use in the design of the project unless it is titled Final in the document status box.

Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.



Commission

This document comprises the Factual Report (FR) and incorporates the results to this intrusive works. General site data is recorded below:

Commission Record	
Client:	Reading Borough Council
Site Name:	Dwyer Road, Reading, Berkshire, RG30 3PN
Grid Reference:	SU 682 718
Soils Limited Quotation Ref:	Q27385 rev 102, dated 21 st February 2023
Clients Purchase Order:	Instruction via email, dated 21 st February by Gleeds Management Services Ltd on behalf of Reading Borough Council

The record of revision to this document is presented below:

Record Of Revisions		
Revision	Date	Reason
Rev1.0	25/05/2023	Issue to the Client

Note(s): The latest revised document supersedes all previous revisions of the FR produced by Soils Limited.

Documents associated with this development that must be referred to are given below.

Record Of Associated Documents			
Reference	Type	Date	Creator
26888-HYD-XX-XX-FP-GI-1000	Ground Investigation Specification	1 February 2023	Hydrock

Limitations and Disclaimers

The report was prepared solely for the brief described in Section 1.1 of this report.

The contents, recommendations and advice given in the report are subject to the Terms and Conditions given in Soils Limited's Quotation

Soils Limited disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report has been prepared by Soils Limited, with all reasonable skill, care and diligence within the terms of the Contract with the Client, incorporation of our General Conditions of Contract of Business and taking into account the resources devoted to us by agreement with the Client.

The report is personal and confidential to the Client and Soils Limited accept no responsibility of whatever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report wholly at its own risk.

The Client may not assign the benefit of the report or any part to any third party without the written consent of Soils Limited.

The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The investigation was prepared for the sole benefit of the Client in accordance with their brief. As such these do not necessarily address all aspects of ground behaviour at the site.

Current regulations and good practice were used in the preparation of this report.

If the term "competent person" is used in this report or any Soils Limited document, it means an engineering geologist or civil engineer with a minimum of three years post graduate experience in the understanding and application of the appropriate codes of practice.

This report is a Factual Report and is not a Ground Investigation Report as defined by EC7 (Eurocode 7 Part 1, §3.4, Part 2, §6.1) or a Geotechnical Design Report (Eurocode 7 Part 1, §2.8) as defined by Eurocode 7 and as such may not characterise the ground conditions and additional works may be required to comply with the requirements of EC7.

Within the report reference to ground level relates to the site level at the time of the investigation, unless otherwise stated.

Exploratory hole is a generic term used to describe a method of direct investigation. The term trial pit, borehole or window sample borehole implies the specific technique used to

produce an exploratory hole.

The geotechnical laboratory testing was performed by GEO Site & Testing Services Ltd (GSTL) in accordance with the methods given in BS 1377:1990 Parts 1 to 8 and their UKAS accredited test methods.

For the preparation of this report, the relevant BS code of practice were adopted for the geotechnical laboratory testing technical specifications, in the absence of the relevant Eurocode specifications (ref: ISO TS 17892).

The chemical analyses were undertaken by Derwentside Environmental Testing Services (DETS) in accordance with their UKAS and MCERTS accredited test methods or their documented in-house testing procedures. This investigation did not comprise an environmental audit of the site or its environs.

Ownership of copyright of all printed material including reports, survey data, drawings, laboratory test results, trial pit and borehole log sheets, including drillers log sheets remains with Soils Limited. License is for the sole use of the client and may not be assigned, transferred or given to a third party. This license is only valid once we have been paid in full for this engagement. In the event of non-payment for our services, we reserve the right to retract the license for all project data, preventing their use and any reliance upon such data by the client or any other third party. We may also contact parties other than the client to notify them of this retraction.

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Appendix D Chemical Laboratory Analyses

Appendix D.1 Chemical Laboratory Results Soil

Section I Introduction

I.1 Objective of Investigation

The Client commissioned Soils Limited to undertake an intrusive ground investigation and to prepare a Factual Report to supply the Client and their designers with information regarding ground conditions, to assist in preparing a foundation scheme for development that was appropriate to the settings present on the site.

The investigation was to be undertaken to provide data for the proposed development. The investigation was to be made by means of in-situ testing and geotechnical laboratory testing undertaken on soil samples taken from the exploratory holes.

No preliminary investigation or interpretive reporting was commissioned as part of this investigation.

Soils samples were taken for chemical laboratory testing, to a schedule provided by the Hydrock, to enable recommendations for the safe redevelopment of the site and the protection of site workers, end-users and the public from any contamination identified.

I.2 Site Description

The site was located on an undeveloped open land, approximately 0.5ha in area, to the immediate north of Dwyer Road. The site was soft landscaped, with mature trees seen across the perimeter of the site, as well as scattered around the site area. The site gently slopes downwards towards the south, with a slope gradient of $\sim 2^\circ$.

The site location plan is given in Figure 1. An aerial photograph of the site and its close environs has been included in Figure 2.

I.3 Proposed Development

The proposed development comprises a 4-storey apartment block and two-and three-storey houses with associated gardens, parking, and a biodiverse green space.

The recommendations provided within this report are made exclusively in relation to the scheme outlined above, and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined.

I.4 Anticipated Geology

The 1:50,000 BGS map showed the site to be located directly upon the bedrock Lambeth Group with no overlying superficial deposits. The Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated) underlies the Lambeth Group, potentially outcropping on the southernmost point of the site.

1.4.1 Lambeth Group

The Lambeth Group (formerly the Woolwich and Reading Beds) occurs in the London and Hampshire Basins, where it directly overlies the Chalk or Thanet Sand Formation, and is succeeded by the Harwich and London Clay Formations. Although generally less than 50 metres thick, its lithological variability and position beneath much of London has concerned tunnelling engineers since the early 19th century.

The relationship between the different depositional environments is seen in central and south-east London, where deposits of fine-grained sand, flint gravel beds, mottled clay, shell beds and altered beds form a complex interdigitating sequence, which is divided into three formations, the Woolwich and the Reading Formation, depending on the local succession, both overlying the Upnor Formation.

Vertically and laterally variable sequences mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate.

The top of the Lambeth Group is marked by the eroded or interburrowed surface at the base of the overlying Thames Group. The uppermost part of the Lambeth Group can be the Reading Formation or the Woolwich Formation, depending on the local succession, or the Upnor Formation, depending on the depth of pre-Thames Group erosion. The Lambeth Group is overlain by sands, silts, clays or gravel beds of the Harwich Formation, depending on the local sequences, or gravelly sandy clays at the base of the London Clay Formation.

The base of the Lambeth Group is taken at the base of the Upnor Formation. In the Hampshire Basin and the west of the London Basin, the Lambeth Group overlies the Chalk Group. In the centre and east of the London Basin it overlies the Thanet Formation, and in Suffolk the Ormesby Clay Member of the Lista Formation.

1.4.2 Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated)

Seaford Chalk Formation can be described as firm white chalk with conspicuous semi-continuous nodular and tabular flint seams. Hardgrounds and thin marls are known from the lowest beds. Some flint nodules are large to very large.

The Seaford Chalk Formation includes the Stockbridge Rock Member in the Hampshire Downs area, which is shown as a limestone unit.

The Newhaven Chalk Formation is a soft white friable microporous limestone composed of coccolith biomicrites with a varying proportion of larger shell fragments. At various levels clay sized material occurs as marl seams and partings. Close to the surface the upper few metres are invariably discoloured brown, due to leaching from the overlying strata. The interface with any overlying stratum is invariably extremely irregular as a result of localised weathering and general solution. Weathering by frost action may extend to a depth of several metres.

Chalk is a weak rock and as such it should be noted that the drilling, excavating and sampling process is detrimental to its fabric and structure. Chalk samples that have

been machine sampled will therefore appear to be of a lower descriptive grade, as given in CIRIA C574, than the in-situ chalk. Soil sampling and visual observations from open excavations i.e. trial pits would allow chalk description and classification in accordance with CIRIA 574 including commenting for any aperture and discontinuities in the chalk structure.

Erosional features, such as pipes, swallow holes and solution cavities, usually in-filled with drift deposits, are occasionally found in the chalk, sometimes manifesting themselves at the surface as shallow circular depressions. Solution features may be reactivated by the concentrated ingress of water from leaking drains or soakaways. Reactivation may lead to surface collapse.

Section 2 Site Works

2.1 Proposed Project Works

The proposed intrusive investigation was designed to provide information on the ground conditions to aid the development of the site. The intended investigation was set out within the ground investigation specification, ref. 26888-HYD-XX-XX-FP-GI-1000 provided by Hydrock.

The intrusive investigation was to include:

- Service clearance via EMF/GPR,
- 6-8No (up to) 10m deep dynamic probe DPSH,
- 1No 20m and 1No 15m deep cable percussive boreholes with alternate SPT/U100 testing at 1m centres for the top 5m and at 1.5m centres thereafter,
- 2No 10m deep monitoring well installations,
- Falling head soakage testing in chalk (if encountered),
- TRL DCP testing,
- 5No machine excavated trial pits,
- Hand shear vane testing,
- 3No gas monitoring visits,
- Laboratory geotechnical and contamination testing.

2.1.1 Actual Project Works

The actual project works were undertaken on 14th and 17th March 2023, with subsequent sample logging, laboratory testing, monitoring, and reporting. The actual works comprised:

- Service clearance via EMF/GPR,
- 6-8No (up to) 10m deep dynamic probe DPSH,
- 1No 20m and 1No 15m deep cable percussive boreholes with alternate SPT/U100 testing at 1m centres for the top 5m and at 1.5m centres thereafter,
- 2No monitoring well installations,
- Falling head soakage testing in chalk (if encountered),
- TRL DCP testing,
- 5No machine excavated trial pits,
- Hand shear vane testing,
- 3No gas monitoring visits (Ongoing),
- Laboratory geotechnical and contamination testing.

One cable percussive borehole (BH1) was backfilled with gravel and bentonite following

the installation of a monitoring well and the second borehole (BH2) was backfilled with a combination of arisings, gravel, and bentonite. All other exploratory holes were backfilled with arisings.

Following completion of site works the samples were sent to the laboratory for both contamination and geotechnical testing, as per schedules provided by Hydrock.

2.2 Service Clearance

Each exploratory hole location was service cleared using non-intrusive equipment including, radio detection locators (CAT) and ground penetrating radar (GPR). Visual observation was used to identify surface furniture/features and a combination of methods for locating buried services including, electromagnetic locator, direct connection/tracer cable, sonde, and induction.

2.3 Ground Conditions

Both cable percussive boreholes, trial pits, and dynamic probe locations were undertaken at locations provided by Hydrock, with TRL DCP locations provided by Soils Limited using development plans provided by the Client.

The maximum depths of exploratory holes have been included in Table 2.1.

All exploratory holes were scanned with a CAT and GENNY prior to excavation to ensure the health and safety of the operatives.

Table 2.1 Final Depth of Exploratory Holes

Exploratory Hole	Depth (m bgl)	Exploratory Hole	Depth (m bgl)
BH1 ^w	20.00	DPI	10.00
BH2 ^w	15.00	DP2	10.00
TP1	4.00	DP3	10.00
TP2	4.00	DP4	10.00
TP3	2.50	DP5	10.00
TP4	4.00	DP6	10.00
TP5	4.00	DP7	10.00
TPDP5	4.00	DP8	10.00

Note(s): The depths given in this table are taken from the ground level on-site at the time of investigation.

The soil conditions encountered were recorded and soil sampling commensurate with the purposes of the investigation was carried out. The depths given on the exploratory hole logs and quoted in this report were measured from ground level.

The soils encountered from immediately below ground surface have been described in the following manner. Where the soil incorporated an organic content such as either decomposing leaf litter or roots or has been identified as part of the in-situ weathering profile, it has been described as Topsoil both on the logs and within this report. Where man has clearly either placed the soil, or the composition altered, with say greater than

an estimated 5% of a non-natural constituent, it has been referred to as Made Ground both on the log and within this report.

For complete information on the ground conditions encountered and sampling see the exploratory hole logs presented in Appendix B.1.

2.3.1 Visual and Olfactory Evidence of Contamination

No visual or olfactory evidence of contamination was identified during the intrusive works.

Section 3 Groundwater & Ground Gas Monitoring

3.1 Groundwater

Groundwater was observed within 2No. of exploratory holes (BH1 and BH2), with all the other trial pits remaining dry during excavation. A summary of groundwater observations made during drilling are presented in Table 3.1.

Table 3.1 Groundwater Observations

Exploratory Hole	Strike Depth (m bgl)	Remarks
BH1	12.50	Water level at start of shift.
BH1	13.50	Water level at end of shift.
BH2	12.50	No rise in water level after 5 minutes.

50mm standpipe piezometers were installed into BH1 and BH2, as specified by Hydrock, with a summary of the standpipes presented in Table 3.2 and full details on the exploratory hole logs in Appendix B.1.

Table 3.2 Monitoring Standpipe Locations

Hole No.	Diameter (mm)	Final Depth (m bgl)
BH1	50	20.00
BH2	50	1.50
BH2	50	3.50

Note(s): Diameter refers to the pipe's internal diameter

The ground investigation included 3No of groundwater monitoring visits, and at the time of reporting one out of three visits had been undertaken. The groundwater observations undertaken to date have been presented below in Table 3.3.

Table 3.3 Groundwater Monitoring

Hole No.	Well Depth (m bgl)	Depth to Water (m bgl) 28/04/23
BH1	20.00	8.98
BH2	1.50	Dry
BH2	3.50	Dry

3.1.1 Groundwater Sampling

No groundwater sampling had been commissioned at the time of reporting.

3.2 Ground Gas Monitoring

Ground gas monitoring wells were installed into BH1 and BH2. The ground gas monitoring comprised a total of 3No. visits.

The monitoring was undertaken using a gas analyser connected in series with a portable photoionization detector (PID).

A total of 3No. monitoring visits were commissioned and completed between the 28th April and 23rd May 2023. The monitoring included, CH₄, LEL CH₄, CO₂, O₂, H₂S, CO, aP, VOC, DP, and flow rate, using a Gas Data GFM 435 gas analyser and Multirae M01C011991 PID (10.6ev bulb).

A radon assessment did not form part of this site investigation.

The gas monitoring data sheets are provided in Appendix B.2.

Section 4 Geotechnical In-Situ and Laboratory Testing

4.1 Standard Penetration Tests

A total of 23No. Standard Penetration Tests (SPTs) were undertaken at locations BH1, BH2. The SPT values are presented on the exploratory hole logs in Appendix B.1.

Table 4.1 presents the energy ratio for the SPT hammers.

Table 4.1 SPT Hammer Efficiency

SPT Hammer Ref	Energy Ratio Er (%)
SDAI	70

4.2 Dynamic Probe Tests

A total of 8No. super heavy dynamic probes (DP1 to DP8) were undertaken. The dynamic probe logs are presented in Appendix B.1.

Table 4.1 presents the energy ratio for the rig hammers.

Table 4.2 Rig Hammer Efficiency

Rig Hammer Ref	Energy Ratio Er (%)
I10-60	90.25

4.3 Dynamic Cone Penetrometer Tests

The Transport Research Laboratory (TRL), Dynamic Cone Penetrometer (DCP) was undertaken at six locations (DCP1 – DCP6).

The DCP results are presented in Appendix C.1.

4.4 Falling Head Soakage Tests

Five falling head soakage tests were undertaken between BH1 and BH2, at depths specified by Hydrock.

Full details and the data derived from the testing is presented in Appendix C.3.

4.5 Geotechnical Laboratory Testing

A range of geotechnical laboratory tests were undertaken as specified by Hydrock.

4.5.1 Moisture Content Tests

Moisture content testing was carried out on 4No. samples. Results of the moisture content testing are presented in Appendix C.4.

4.5.2 Atterberg Limit Tests

Atterberg Limit tests were carried out on 4No. samples. Results of the Atterberg Limit tests are presented in Appendix C.4.

4.5.3 Particle Size Distribution Testing

Particle size distribution (PSD) testing was carried out on 3No. samples using the wet sieve method. Results of the PSD tests are presented in Appendix C.4.

4.5.4 Unconsolidated-Undrained Triaxial Testing

Single stage unconsolidated undrained triaxial testing was carried out on 1No. sample. Results of the triaxial test are presented in Appendix C.4.

4.5.5 BRE Sulphate and pH Tests

9No. samples were submitted for water soluble sulphate (2:1) and pH testing in accordance with Building Research Establishment Special Digest 1, 2005, 'Concrete in Aggressive Ground'. The results of the sulphate and pH tests are presented in Appendix C.4.

4.5.6 Saturation Moisture Content Tests

Saturated Moisture Content (SMC) tests were performed on 5No. samples. The results of the sulphate and pH tests are presented in Appendix C.4.

Section 5 Environmental Laboratory Testing

5.1 Chemical Laboratory Testing – Soil

1No. soil samples taken from a combination of the BH and TP locations were tested for a range of general contaminating substances, as specified by Hydrock.

Table 5.1 summaries the chemical analysis undertaken, with full reports presented in Appendix D.1.

Table 5.1 Soil Chemical Analysis

Suite	No of Tests
Hydrock Suite	12
Hydrock TPH L2 Suite	2
Hydrock Leachate Suite	1
Waste Acceptance Criteria (WAC)	2

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Appendix B.2 Gas Monitoring

Appendix C Geotechnical In-Situ and Laboratory Testing

Appendix C.1 Dynamic Cone Penetrometer Results

Appendix C.3 Falling Head Results

Appendix C.4 Geotechnical Laboratory Report

Appendix D Chemical Laboratory Analyses

Appendix D.1 Chemical Laboratory Results Soil



Figure 1 – Site Location Map

Job Number
20763

Project
Dwyer Road, Reading, Berkshire,

Client
Reading Borough Council

Date
May 2023



Figure 2 – Aerial Photograph

Project

Dwyer Road, Reading, Berkshire,
RG30 3PN

Client

Reading Borough Council

Date

May 2023

Job Number

20763



Figure 3 – Exploratory Hole Plan

Project

Dwyer Road, Reading, Berkshire,
RG30 3PN

Client

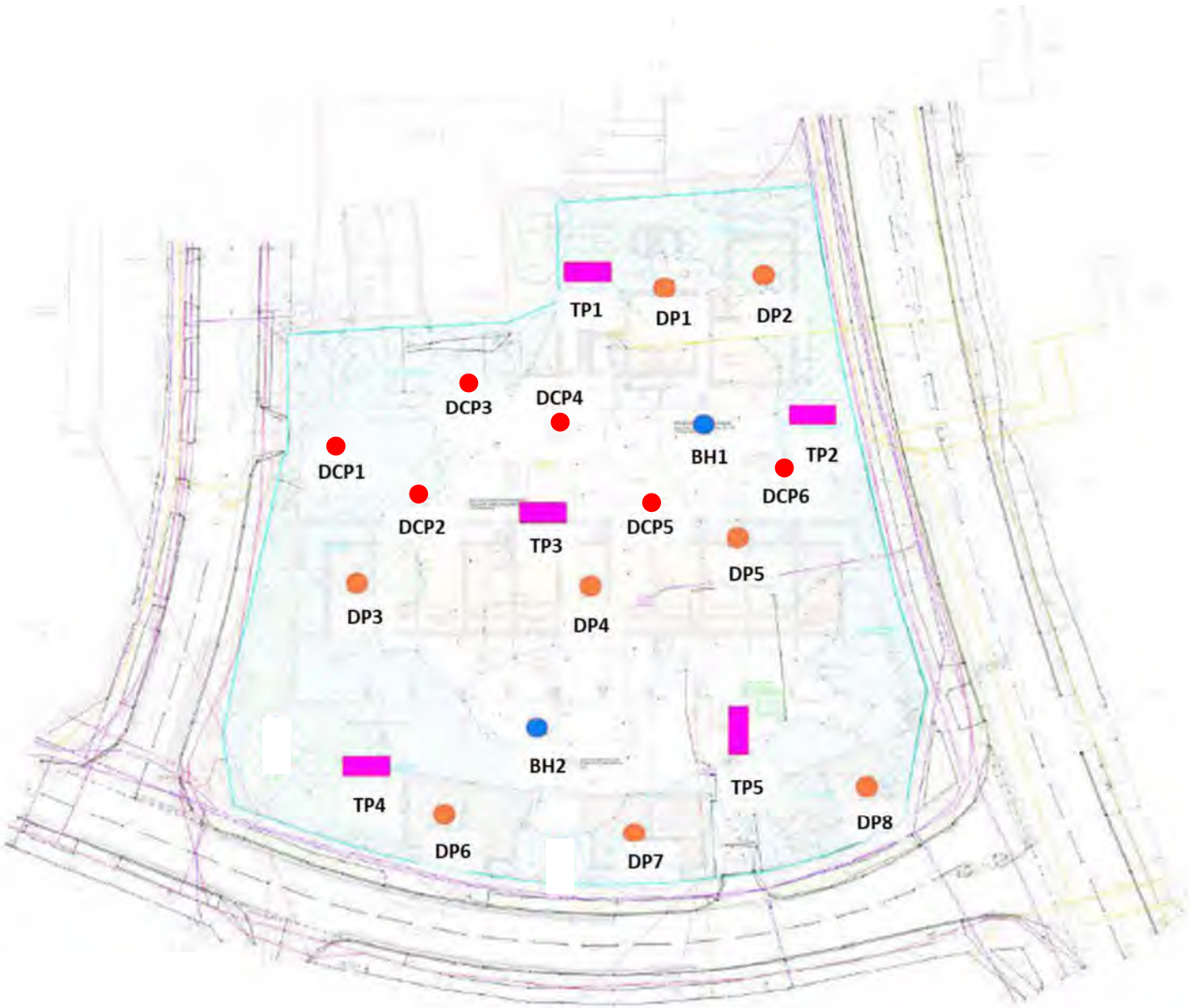
Reading Borough Council

Date

May 2023

Job Number

20763





Standards and Resources

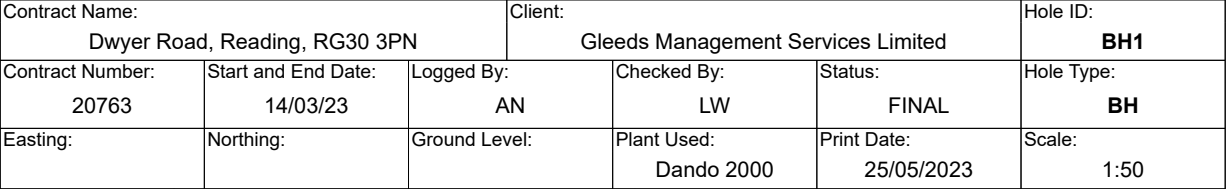
The site works, soil descriptions and geotechnical testing was undertaken in accordance with the following standards were applicable:

- BS 5930:2015 and BS EN ISO 22476-2 2005+A1:2011
- BS 5930:2015 and BS EN ISO 22476-2&3:2005+A1:2011
- BS 5930:2015 and BS EN ISO 22476-3:2005+A1:2011
- BS EN 1997-1:2004+A1:2013 Eurocode 7. Geotechnical design
- BS EN ISO 14688-1:2018 - Geotechnical investigation and testing - Identification and description
- BS EN ISO 14688-2:2018 - Geotechnical investigation and testing - Principles for a classification
- CIRIA C574, Engineering in Chalk; 2002
- Google Earth
- British Geological Survey Website & iGeology App



Site Works

Appendix B.1 Exploratory Hole Logs



Samples & In Situ Testing			Strata Details					Groundwater	
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description	Water Strike	Backfill/ Installation	
0.20	D	N=34 (4,5/6,9,9,10)		0.20		Yellowish brown sandy clayey GRAVEL. Sand is fine to medium. Gravel is subangular to subrounded, fine to coarse flint with fragments of concrete. Occasional rootlets. MADE GROUND			
0.50 - 1.00	B			(1.30)					Orangish brown ,slightly gravelly silty SAND. Sand is fine to medium, Gravel is angular to sub angular, fine to coarse flint.
1.20	D			1.50		Yellowish brown slightly gravelly, slightly clayey SAND with clay inclusions. Sand is fine to medium. Gravel is angular to sub angular, fine to medium flint.			
1.50	SPT			(3.00)					
1.70	D								
2.50	SPT	3							
3.20	D	N=12 (2,2/3,3,3,3)							
3.50	SPT								4
4.20	D								5
4.50	SPT	4.50							
5.50	D	(2.30)	6						
6.00 - 6.45	U	6.80	Structureless CHALK. Recovered as slightly black speckled and light brown stained, white, angular to sub-angular, fine to coarse gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix. Matrix is slightly light brown stained, white. Rare angular coarse gravel sized rinded flint nodules.						
6.00 - 6.50	B					7			
6.80 - 7.30	B					8			
8.20	D	N=11 (1,2/3,3,2,3)							
9.00	SPT							9	
								10	

Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
							19.50	150						
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	8.00	PLAIN	50	12.50			0	0.00	
					8.00	20.00	SLOTTED	50	13.30			0	0.00	
									Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.					

soils L I M I T E D			Contract Name: Dwyer Road, Reading, RG30 3PN				Client: Gleeds Management Services Limited				Hole ID: BH1			
			Contract Number: 20763		Start and End Date: 14/03/23		Logged By: AN		Checked By: LW		Status: FINAL		Hole Type: BH	
			Easting:		Northing:		Ground Level:		Plant Used: Dando 2000		Print Date: 25/05/2023		Scale: 1:50	
Weather: Fair				Termination: Reached required depth.				SPT Hammer: SDA1 Energy Ratio: 70%				Sheet 2 of 2		
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/Installation	
10.20	D	N=10 (1,2/3,3,2,2)				Structureless CHALK. Recovered as slightly black speckled and light brown stained, white, angular to sub-angular, fine to coarse gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix. Matrix is slightly light brown stained, white. Rare angular coarse gravel sized rinded flint nodules.						11		
10.50	SPT													
11.80	D	N=6 (4,3/2,1,1,2)										12	▼	
12.00	SPT													
13.20	D	N=11 (2,2/3,3,3,2)										13	▼	
13.50	SPT													
14.20	D											14		
15.00	SPT	N=10 (2,3/4,2,1,3)		(13.20)								15		
16.20	D	N=10 (4,3/1,3,3,3)										16		
16.50	SPT													
												17		
17.50	D											18		
18.00	SPT	N=14 (3,2/2,3,6,3)										19		
19.20	D	N=13 (2,2/3,4,3,3)										20		
19.50	SPT													
20.00	D			20.00		End of Borehole at 20.00m								
Start & End of Shift Observations				Borehole Diameter		Casing Diameter		Remarks:						
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)							Dia (mm)
							19.50							150
Chiselling				Installation				Water Strikes						
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	8.00	PLAIN	50	12.50			0	0.00	
					8.00	20.00	SLOTTED	50	13.30			0	0.00	
Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.														

	Contract Name: Dwyer Road, Reading, RG30 3PN				Client: Gleeds Management Services Limited			Hole ID: BH2						
	Contract Number: 20763		Start and End Date: 15/03/23		Logged By: AN		Checked By: LW		Status: FINAL		Hole Type: BH			
	Easting:		Northing:		Ground Level:		Plant Used: Dando 2000		Print Date: 25/05/2023		Scale: 1:50			
Weather: Fair				Termination: Reached required depth.				SPT Hammer: SDA1 Energy Ratio: 70%				Sheet 1 of 2		
Samples & In Situ Testing					Strata Details							Groundwater		
Depth	Type	Results		Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description					Water Strike	Backfill/ Installation	
0.20	D				0.20		Soft brown mottled reddish brown slightly sandy gravelly CLAY. Gravel is angular fine to coarse brick, clinker, concrete and flint. Rare rootlets. MADE GROUND Brown sandy very clayey GRAVEL. Gravel is subangular fine to coarse brick and concrete. MADE GROUND					1		
0.50 - 1.00	B				(1.30)									
1.20	D				1.50		Light yellowish brown slightly silty SAND. Sand is predominantly medium to coarse					2		
1.50 - 2.00	SPT B	N=15 (2,3/4,4,3,4)			(2.50)									
2.20	D				4.00		Yellowish brown slightly clayey slightly gravelly SAND. Gravel is fine flint. Rare clayey inclusions. Structureless CHALK. Recovered as slightly black speckled , white, angular to sub-angular, fine to coarse gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix of chalk. Matrix is cream stained, white. Rare angular medium to coarse gravel sized rinded flint nodules.					4		
2.50	SPT	N=35 (3,4/8,8,9,10)			(2.60)									
3.20	D				6.60							5		
3.50	SPT	N=21 (3,4/5,5,6)			(2.60)									
4.20	D				6.60							6		
4.50	SPT	N=21 (3,4/4,4,6,7)			(2.60)									
5.50	D				6.60							7		
6.00 - 6.50	SPT B	N=14 (3,6/7,3,2,2)			(2.60)									
6.60 - 7.10	B				6.60							8		
7.30	D				6.60									
7.50	SPT	N=9 (2,2/2,3,2,2)			6.60							9		
8.20	D				6.60									
9.00	SPT	N=9 (1,0/2,3,2,2)			6.60							10		
					6.60									
Start & End of Shift Observations					Borehole Diameter		Casing Diameter		Remarks:					
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
							15.00	150						
Chiselling					Installation				Water Strikes					
From (m)	To (m)	Duration	Remarks		Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks
					0.00	0.50	PLAIN	50	12.50			0	0.00	
					0.50	1.50	SLOTTED	50						
					0.00	2.50	PLAIN	50						
					2.50	3.50	SLOTTED	50						
Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.														

soils L I M I T E D	Contract Name: Dwyer Road, Reading, RG30 3PN				Client: Gleeds Management Services Limited				Hole ID: BH2					
	Contract Number: 20763		Start and End Date: 15/03/23		Logged By: AN		Checked By: LW		Status: FINAL		Hole Type: BH			
	Easting:		Northing:		Ground Level:		Plant Used: Dando 2000		Print Date: 25/05/2023		Scale: 1:50			
Weather: Fair			Termination: Reached required depth.				SPT Hammer: SDA1 Energy Ratio: 70%				Sheet 2 of 2			
Samples & In Situ Testing				Strata Details								Groundwater		
Depth	Type	Results	Level (mAOD)	Depth (m) (Thickness)	Legend	Strata Description						Water Strike	Backfill/Installation	
10.20	D	N=8 (1,2/2,2,2,2)		(8.40)		Structureless CHALK. Recovered as slightly black speckled , white, angular to sub-angular, fine to coarse gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix of chalk. Matrix is cream stained, white. Rare angular medium to coarse gravel sized rinded flint nodules.		11						
10.50	SPT													
11.20	D													
12.00	SPT	N=11 (2,2/2,3,4,2)												
13.20	D													
13.50	SPT	N=12 (2,3/4,3,2,3)												
14.20	D													
15.00	SPT	N=13 (3,2/3,3,3,4)												
End of Borehole at 15.00m											15			
											16			
											17			
											18			
											19			
											20			
Start & End of Shift Observations											Borehole Diameter		Casing Diameter	
Date	Time	Depth (m)	Casing (m)	Water (m)	Depth (m)	Dia (mm)	Depth (m)	Dia (mm)						
							15.00	150						
Chiselling				Installation				Water Strikes						
From (m)	To (m)	Duration	Remarks	Top (m)	Base (m)	Type	Dia (mm)	Strike (m)	Casing (m)	Sealed (m)	Time (mins)	Rose to (m)	Remarks	
				0.00	0.50	PLAIN	50	12.50			0	0.00		
				0.50	1.50	SLOTTED	50							
				0.00	2.50	PLAIN	50							
				2.50	3.50	SLOTTED	50							
Hand vane (HV), Hand penetrometer (HP) reported in kPa. PID reported in ppm.														

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Probe Log

Probe No.

DP1

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm					Torque (Nm)
	10	20	30	40		
3						10
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Remarks		Fall Height	760mm	Cone Base Diameter		50mm
		Hammer Weight	64kg	Final Depth		10m
		Probe Type	DPSH-B	Energy Ratio (Er)		90.25%





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Probe Log

Probe No.

DP2

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm					Torque (Nm)
	10	20	30	40		
	4					10
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Remarks		Fall Height 760mm		Cone Base Diameter 50mm		
		Hammer Weight 64kg		Final Depth 10m		
		Probe Type DPSH-B		Energy Ratio (Er) 90.25%		

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
1	1				5
2	2				5
3	3				5
4	4				10
5	5				10
6	6				10
7	7				10
8	8				10
9	9				10
10	10				

Remarks	Fall Height 760mm	Cone Base Diameter 50mm	
	Hammer Weight 64kg	Final Depth 10m	
	Probe Type DPSH-B	Energy Ratio (Er) 90.25%	

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Probe Log

Probe No.

DP3

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
	9				10
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
Remarks		Fall Height 760mm	Cone Base Diameter 50mm		
		Hammer Weight 64kg	Final Depth 10m		
		Probe Type DPSH-B	Energy Ratio (Er) 90.25%		



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Probe Log

Probe No.

DP4

Sheet 1 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
1	2				5
2	4				5
3	4				5
4	4				5
5	4				5
6	4				5
7	4				5
8	4				10
9	4				10
10	4				

Remarks

Fall Height 760mmCone Base Diameter 50mm

Hammer Weight 64kgFinal Depth 10m

Probe Type DPSH-BEnergy Ratio (Er) 90.25%

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Probe Log

Probe No.

DP4

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm					Torque (Nm)
	10	20	30	40		
	4					10
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Remarks		Fall Height 760mm		Cone Base Diameter 50mm		
		Hammer Weight 64kg		Final Depth 10m		
		Probe Type DPSH-B		Energy Ratio (Er) 90.25%		



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Probe Log

Probe No.

DP5

Sheet 1 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
0.0					
0.1					
0.2					
0.3					
0.4					
0.5					
0.6					
0.7					
0.8					
0.9					
1.0					5
1.1					
1.2					
1.3					
1.4					
1.5					
1.6					
1.7					
1.8					
1.9					
2.0					5
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
2.8					
2.9					
3.0					5
3.1					
3.2					
3.3					
3.4					
3.5					
3.6					
3.7					
3.8					
3.9					
4.0					5
4.1					
4.2					
4.3					
4.4					
4.5					
4.6					
4.7					
4.8					
4.9					
5.0					5
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
6.0					5
6.1					
6.2					
6.3					
6.4					
6.5					
6.6					
6.7					
6.8					
6.9					
7.0					5
7.1					
7.2					
7.3					
7.4					
7.5					
7.6					
7.7					
7.8					
7.9					
8.0					5
8.1					
8.2					
8.3					
8.4					
8.5					
8.6					
8.7					
8.8					
8.9					
9.0					5
9.1					
9.2					
9.3					
9.4					
9.5					
9.6					
9.7					
9.8					
9.9					
10.0					

Remarks	Fall Height	760mm	Cone Base Diameter	50mm	
	Hammer Weight	64kg	Final Depth	10m	
	Probe Type	DPSH-B	Energy Ratio (Er)	90.25%	

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Probe Log

Probe No.

DP5

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm					Torque (Nm)
	10	20	30	40		
	3					5
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Remarks		Fall Height 760mm		Cone Base Diameter 50mm		
		Hammer Weight 64kg		Final Depth 10m		
		Probe Type DPSH-B		Energy Ratio (Er) 90.25%		

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
1	1				5
1	1				
2	2				5
2	4				
3	4				10
3	5				
4	3				5
4	2				
5	1				10
5	4				
6	4				5
6	6				
7	10				10
7	8				
8	5				10
8	4				
9	3				5
9	2				
10	3				10
10	3				
11	3				5
11	3				
12	3				10
12	3				
13	3				5
13	3				
14	3				10
14	3				
15	3				5
15	3				
16	3				10
16	3				
17	3				5
17	3				
18	3				10
18	3				
19	3				5
19	3				
20	3				10
20	3				
21	3				5
21	3				
22	3				10
22	3				
23	3				5
23	3				
24	3				10
24	3				
25	3				5
25	3				
26	3				10
26	3				
27	3				5
27	3				
28	3				10
28	3				
29	3				5
29	3				
30	3				10
30	3				
31	3				5
31	3				
32	3				10
32	3				
33	3				5
33	3				
34	3				10
34	3				
35	3				5
35	3				
36	3				10
36	3				
37	3				5
37	3				
38	3				10
38	3				
39	3				5
39	3				
40	3				10
40	3				
41	3				5
41	3				
42	3				10
42	3				
43	3				5
43	3				
44	3				10
44	3				
45	3				5
45	3				
46	3				10
46	3				
47	3				5
47	3				
48	3				10
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49	3				5
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50	3				10
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51	3				5
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52	3				10
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54	3				10
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56	3				10
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57	3				5
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58	3				10
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59	3				5
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63	3				5
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64	3				10
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70	3				10
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71	3				5
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72	3				10
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73	3				5
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74	3				10
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152	3				10
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159	3				5
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160	3				10
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162	3				10
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163	3				5
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164	3				10
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165	3				5
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166	3				10
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168	3				10
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169	3				5
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170	3				10
170	3				
171	3				5
171	3				
172	3				10
172	3				
173	3				5
173	3				
174	3				10
174	3				
175	3				5
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176	3				10
176	3				
177	3				5
177	3				
178	3				10
178	3				
179	3				5
179	3				
180	3				10
180	3				
181					

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Probe Log

Probe No.

DP6

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm					Torque (Nm)
	10	20	30	40		
5						10
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Remarks		Fall Height	760mm	Cone Base Diameter	50mm	
		Hammer Weight	64kg	Final Depth	10m	
		Probe Type	DPSH-B	Energy Ratio (Er)	90.25%	

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Probe Log

Probe No.

DP7

Sheet 1 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
0	2				5
1	2				5
2	2				5
3	2				5
4	2				5
5	2				5
6	2				5
7	2				5
8	2				10
9	2				10
10	2				

Remarks

Fall Height 760mmCone Base Diameter 50mm

Hammer Weight 64kgFinal Depth 10m

Probe Type DPSH-BEnergy Ratio (Er) 90.25%

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Probe Log

Probe No.

DP7

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm					Torque (Nm)
	10	20	30	40		
4						10
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
Remarks						
Fall Height		760mm		Cone Base Diameter 50mm		
Hammer Weight		64kg		Final Depth 10m		
Probe Type		DPSH-B		Energy Ratio (Er) 90.25%		

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Probe Log

Probe No.

DP8

Sheet 1 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm				Torque (Nm)
	10	20	30	40	
0	1				
0.1	3				
0.2	3				
0.3	5				
0.4	2				
0.5	2				
1	1				5
1.1	1				
1.2	1				
1.3	1				
1.4	2				
1.5	1				
1.6	2				
1.7	1				
1.8	2				
1.9	1				
2	1				5
2.1	1				
2.2	2				
2.3	1				
2.4	4				
2.5	2				
2.6	5				
2.7	13				
2.8	10				
2.9	5				
3	4				5
3.1	7				
3.2	4				
3.3	2				
3.4	2				
3.5	2				
3.6	2				
3.7	2				
3.8	2				
3.9	2				
4	3				5
4.1	2				
4.2	2				
4.3	2				
4.4	2				
4.5	3				
4.6	2				
4.7	2				
4.8	1				
5	2				10
5.1	2				
5.2	1				
5.3	2				
5.4	2				
5.5	1				
5.6	3				
5.7	2				
5.8	2				
5.9	2				
6	2				10
6.1	1				
6.2	2				
6.3	2				
6.4	1				
6.5	2				
6.6	1				
6.7	2				
6.8	2				
6.9	2				
7	1				10
7.1	2				
7.2	1				
7.3	1				
7.4	1				
7.5	2				
7.6	1				
7.7	2				
7.8	1				
8	2				5
8.1	1				
8.2	2				
8.3	2				
8.4	2				
8.5	3				
8.6	2				
8.7	3				
8.8	2				
8.9	2				
9	2				5
9.1	2				
9.2	2				
9.3	2				
9.4	3				
9.5	2				
9.6	3				
9.7	2				
9.8	2				
9.9	1				
10	1				
Remarks	Fall Height 760mm		Cone Base Diameter 50mm		
	Hammer Weight 64kg		Final Depth 10m		
	Probe Type DPSH-B		Energy Ratio (Er) 90.25%		

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Probe Log

Probe No.

DP8

Sheet 2 of 2

Project Name:	Dwyer Road, Reading, RG30 3PN	Project No.	20763	Co-ords:		Hole Type	DP
Location:	Dwyer Road, Reading, RG30 3PN	Level:	m AOD			Scale	1:50
Client:	Gleeds Management Services Limited	Dates:	14/03/2023			Logged By	

Depth (m)	Blows/100mm					Torque (Nm)	
	10	20	30	40			
2						10	
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
Remarks							
Fall Height		760mm		Cone Base Diameter 50mm			
Hammer Weight		64kg		Final Depth 10m			
Probe Type		DPSH-B		Energy Ratio (Er) 90.25%			

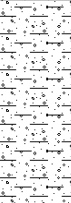
		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk		Trial Pit Log		Trial Pit No. TP1 Sheet 1 of 1	
Project Name: Dwyer Road, Reading, RG30 3PN		Project No.: 20763		Method: Machine Excavated		Hole Type	
Location: Dwyer Road, Reading, RG30 3PN				Plant: JCB		TP	
Client: Gleeds Management Services Limited		Trial Pit Length: m		Trial Pit Width: m		Scale	
Dates: 17/03/2023		Level:		Co-ords:		1:25	
						Logged By	
						JC	

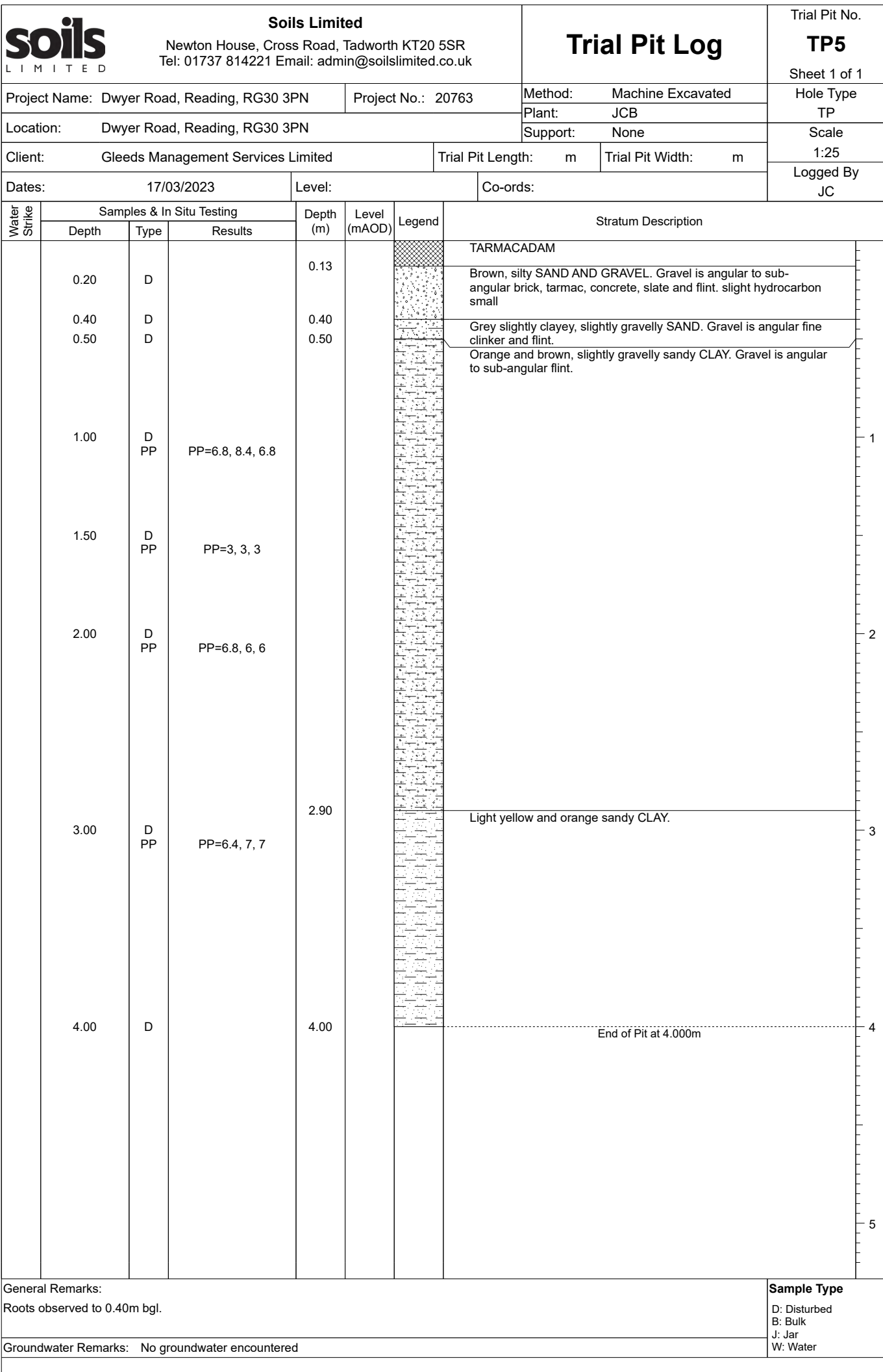
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description
	Depth	Type	Results				
	0.20	D		0.10		 Grass over brown, slightly gravelly SILT. Gravel is angular to well rounded, first ne to coarse flint. roots and rootlets.  Orange, slightly gravelly SAND. Gravel is angular to well rounded fine to coarse flint. Roots and rootlets.	
	0.50	D					
	1.00	D					
	1.50	D		1.30		 Orange, green and brown, slightly gravelly sandy CLAY. Gravel is angular to sub-angular, fine to coarse flint	
	1.60	PP	PP=4.4, 3.4, 3.6				
	2.00	D					
	2.50	D		2.10		 CHALK. Recovered as off white, angular to sub-angular, fine to medium gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix. Matrix is slightly orange stained, white. Rare angular coarse gravel sized rinded flint nodules.	
	3.00	D					
	3.50	D					
	3.80	D		3.80		 Black and red Gravelly Peat. Gravel is sub-angular coarse flint.	
	4.00	D		4.00		 CHALK. Recovered as off white, angular to sub-angular, fine to medium gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix. Matrix is slightly orange stained, white. Rare angular coarse gravel sized rinded flint nodules. End of Pit at 4.000m	

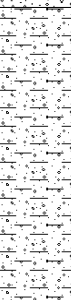
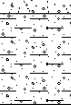
General Remarks: Roots observed to 1.30m bgl.		Sample Type D: Disturbed B: Bulk J: Jar W: Water
Groundwater Remarks: No groundwater encountered		

		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk			Trial Pit Log		Trial Pit No. TP2 Sheet 1 of 1		
Project Name: Dwyer Road, Reading, RG30 3PN				Project No.: 20763		Method: Machine Excavated		Hole Type TP	
Location: Dwyer Road, Reading, RG30 3PN						Plant: JCB			
						Support: None		Scale 1:25	
Client: Gleeds Management Services Limited				Trial Pit Length: m		Trial Pit Width: m			
Dates: 17/03/2023				Level:		Co-ords:		Logged By JC	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20	D	PP=6.0, 6.0, 6.4	0.25			Grass over brown, slightly gravelly SILT. Gravel is angular to well rounded, fine to coarse flint. roots and rootlets.		1 2 3 4 5
	0.50	D		Orange, green and brown, slightly gravelly sandy CLAY. Gravel is angular to sub-angular, fine to coarse flint					
	1.00	D PP		Orange and yellow slightly gravelly SAND. Gravel is angular to well rounded fine to coarse flint. Roots and rootlets.					
	2.00	D	PP=8, 8.4, 8.6	2.60			Brown, green and black sandy, slightly gravelly laminated CLAY. Gravel is angular fine to coarse flint.		
	2.70	D					Orange and brown, sandy slightly gravelly CLAY. Gravel is angular fine to coarse flint.		
	2.80	PP							
	3.00	D	3.00			CHALK. Recovered as off white, angular to sub-angular, fine to medium gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix. Matrix is slightly orange stained, white. Rare angular coarse gravel sized rinded flint nodules.			
	3.90	D	3.70			End of Pit at 4.000m			
								4.00	
	General Remarks: Roots observed to 1.70m bgl.								
Groundwater Remarks: No groundwater encountered									

		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk			Trial Pit Log		Trial Pit No. TP3 Sheet 1 of 1	
Project Name: Dwyer Road, Reading, RG30 3PN				Project No.: 20763		Method: Machine Excavated		Hole Type TP
Location: Dwyer Road, Reading, RG30 3PN						Plant: JCB		
Client: Gleeds Management Services Limited				Trial Pit Length: m		Trial Pit Width: m		Scale 1:25
Dates: 17/03/2023				Level:		Co-ords:		Logged By JC
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	D		0.30			Grass over brown, slightly gravelly SILT. Gravel is angular to well rounded, fine to coarse flint, concrete, limestone and occasional clay pipe. . roots and rootlets.	
	0.50	D					Orange and yellow slightly gravelly SAND. Gravel is angular to well rounded fine to coarse flint. Roots and rootlets.	
	1.00	D		2.50			End of Pit at 2.500m	
	2.00	D						
	2.50	D						
								1
								2
								3
								4
								5
General Remarks: Roots observed to 0.5m bgl.								Sample Type D: Disturbed B: Bulk J: Jar W: Water
Groundwater Remarks: No groundwater encountered								

		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk			Trial Pit Log		Trial Pit No. TP4 Sheet 1 of 1		
Project Name: Dwyer Road, Reading, RG30 3PN				Project No.: 20763		Method: Machine Excavated		Hole Type TP	
Location: Dwyer Road, Reading, RG30 3PN						Plant: JCB			
						Support: None		Scale 1:25	
Client: Gleeds Management Services Limited				Trial Pit Length: m		Trial Pit Width: m			
Dates: 17/03/2023				Level:		Co-ords:		Logged By JC	
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20	D					Grass over brown, slightly gravelly SILT. Gravel is angular to well rounded, fine to coarse flint, concrete, limestone and occasional clay pipe. . roots and rootlets.		
	0.50	D							
	1.00	D							
	1.80	D PP	PP=4.4, 4.4, 6.0	1.70			Orange, yellow and black sandy, slightly gravelly CLAY . Gravel is angular to well rounded fine to coarse flint.		
	2.00	D PP	PP=6.2, 5.2, 5.0						
	2.50	D PP	PP=8.8, 8.2, 8.4	2.40			Orange, brown green and black mottled slightly sandy, slightly gravelly CLAY. Gravel is angular to well-rounded, fine to coarse flint.		
				2.70			Brown, green and black sandy, slightly gravelly, laminated CLAY. Gravel is angular fine to coarse flint.		
	3.50	D					CHALK. Recovered as off white, angular to sub-angular, fine to medium gravel sized weak to moderately dense chalk clasts in a comminuted silty matrix. Matrix is slightly orange stained, white. Rare angular coarse gravel sized rinded flint nodules.		
	3.70	D		3.70			CHALK. Recovered as soft off white, angular to sub-angular, fine to medium gravel sized weak chalk clasts in a comminuted silty matrix. Matrix is slightly orange stained, white.		
	4.00	D		4.00			End of Pit at 4.000m		
General Remarks: Roots observed to 1.70m bgl.								Sample Type D: Disturbed B: Bulk J: Jar W: Water	
Groundwater Remarks: No groundwater encountered									



		Soils Limited Newton House, Cross Road, Tadworth KT20 5SR Tel: 01737 814221 Email: admin@soilslimited.co.uk			Trial Pit Log		Trial Pit No. TPDP5 Sheet 1 of 1		
Project Name: Dwyer Road, Reading, RG30 3PN				Project No.: 20763		Method: Machine Excavated		Hole Type TP	
Location: Dwyer Road, Reading, RG30 3PN						Plant: JCB			
						Support: None		Scale 1:25	
Client: Gleeds Management Services Limited				Trial Pit Length: m		Trial Pit Width: m		Logged By JC	
Dates: 17/03/2023				Level:		Co-ords:			
Water Strike	Samples & In Situ Testing			Depth (m)	Level (mAOD)	Legend	Stratum Description		
	Depth	Type	Results						
				0.50			Grass over brown, slightly gravelly SILT. Gravel is angular to well rounded, fine to coarse flint, concrete, limestone and occasional clay pipe. . roots and rootlets.		
				1.60			Brown slightly clayey, slightly silty SAND AND GRAVEL. Gravel ia angular to well-rounded flint. roots and rootlets		
				2.60			Light brown and grey, sandy, slightly gravelly CLAY. Gravel is angular to well rounded, fine to coarse flint.		
				3.30			Light orange, yellow slightly clayey, slightly gravelly SAND. Gravel is sub-angular fine to medium flint.		
				3.70			Light orange, yellow slightly slightly gravelly SAND. Gravel is sub-angular fine to medium flint. occasional coarse clay lumps.		
				4.00			Brown, green and black sandy, slightly gravelly, laminated CLAY. Gravel is angular fine to coarse flint.		
							End of Pit at 4.000m		
General Remarks: Roots observed to 1.70m bgl.								Sample Type D: Disturbed B: Bulk J: Jar W: Water	
Groundwater Remarks: No groundwater encountered									

Appendix B.2 Gas Monitoring

Job Number:	20763			Weather			
Site Name:	Dwyer Road			Wind		Light	
BH/WS ID:	BH1			Cloud Cover			Overcast
Date:	28/04/2023			Precipitation	Dry		
Start Time:	2:29:38 PM			Ground Conditions		Moist	

Gas Monitor:	Gas Data GFM 435 11555	
PID:	Poli Mp400p	
Dip meter:	Single Phase	

Depth to Water (m bgl)		Base of Hole (m bgl)	
8.98		17.68	

Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere			Atmosphere	0.0	0	0.0	21.1	0	0	1008	0	13
Borehole measurement	00:00:05		Borehole measurement	00:00:05								
	00:00:30			00:00:30								
	00:01:00			00:01:00								
	00:02:00			00:02:00								
	00:03:00			00:03:00								
	00:04:00			00:04:00								
	00:05:00			00:05:00								
	00:06:00			00:06:00								
	00:07:00			00:07:00								
	00:08:00			00:08:00								
00:09:00		00:09:00										
00:10:00		00:10:00										

Samples		Notes;
1 Litre Plastic	None	Unable to gas read due to surface water flooding.
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763			Weather				
Site Name:	Dwyer Road			Wind		Light		
BH/WS ID:	BH2 (1.5)			Cloud Cover				Overcast
Date:	28/04/2023			Precipitation	Dry			
Start Time:	2:08:42 PM			Ground Conditions		Moist		

Gas Monitor:	Gas Data GFM 435 11555	
PID:*	Poli Mp400p	
Dip meter:*	Single Phase	

Depth to Water (m bgl)		Base of Hole (m bgl)	
Dry		1.54	

Monitoring interval		Flow L/hr	DP Pa	Monitoring interval		CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere		0.0	0	Atmosphere		0.0	0	0.0	21.1	0	0	1008	0	13
Borehole measurement	00:00:05	0.0	0	Borehole measurement	00:00:05	0.0	0	0.3	20.8	0	0	1008	0	
	00:00:30	0.0	0		00:00:30	0.0	0	3.5	16.5	0	0	1008	0	
	00:01:00	0.0	0		00:01:00	0.0	0	3.5	16.2	0	1	1008	0	
	00:02:00				00:02:00	0.0	0	3.5	16.1	0	0	1007		
	00:03:00				00:03:00									
	00:04:00				00:04:00									
	00:05:00				00:05:00									
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
00:09:00			00:09:00											
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763		Weather			
Site Name:	Dwyer Road		Wind		Light	
BH/WS ID:	BH2 (3.5)		Cloud Cover			Overcast
Date:	28/04/2023		Precipitation	Dry		
Start Time:	2:18:52 PM		Ground Conditions		Moist	

Gas Monitor:	Gas Data GFM 435 11555
PID:*	Poli Mp400p
Dip meter:*	Single Phase

Depth to Water (m bgl)		Base of Hole (m bgl)	
Dry		5.89	

Monitoring interval		Flow L/hr	DP Pa	Monitoring interval		CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere		0.0	0	Atmosphere		0.0	0	0.0	21.1	0	0	1008	0	13
Borehole measurement	00:00:05	0.0	0	Borehole measurement	00:00:05	0.0	0	0.6	20.4	0	1	1007	0	
	00:00:30	0.0	0		00:00:30	0.0	0	3.3	16.5	0	0	1007	1	
	00:01:00	0.0	0		00:01:00	0.0	0	3.3	16.2	0	0	1008	1	
	00:02:00				00:02:00	0.0	0	3.4	16.1	0	1			
	00:03:00				00:03:00									
	00:04:00				00:04:00									
	00:05:00				00:05:00									
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
00:09:00			00:09:00											
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763			Weather				
Site Name:	Dwyer Road			Wind		Light		
BH/WS ID:	BH1			Cloud Cover			Cloudy	Overcast
Date:	10.5.23			Precipitation	Dry			
Start Time:	12:09PM			Ground Conditions		Moist		

Gas Monitor:	Gas Data GFM 435 11555	
PID:	Poli Mp400p	
Dip meter:	Dual Phase	

Depth to Water (m bgl)		Base of Hole (m bgl)	
9.1		17.65	

Monitoring interval		Flow L/hr	DP Pa	Monitoring interval		CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere				Atmosphere										
Borehole measurement	00:00:05	0.0	0	Borehole measurement	00:00:05	0.0	0	0.0	20.4	0	0	1009	0	17
	00:00:30	0.0	0		00:00:30	0.0	0	0.0	14.0	0	0	1009	0	17
	00:01:00	0.0	0		00:01:00	0.0	0	0.0	14.1	0	0	1009	0	17
	00:02:00	0.0	0		00:02:00	0.0	0	0.0	14.8	0	0	1009	0	17
	00:03:00	0.0	0		00:03:00	0.0	0	0.0	16.2	0	0	1009	0	17
	00:04:00	0.0	0		00:04:00	0.0	0	0.0	16.5	0	0	1009	0	17
	00:05:00	0.0	0		00:05:00	0.0	0	0.0	16.7	0	0	1009	0	17
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
	00:09:00				00:09:00									
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763		Weather			
Site Name:	Dwyer Road		Wind		Light	
BH/WS ID:	BH1		Cloud Cover		Cloudy	Overcast
Date:	10.5.23		Precipitation	Dry		
Start Time:	12:19PM		Ground Conditions		Moist	

Gas Monitor:	Gas Data GFM 435 11555
PID:	Poli Mp400p
Dip meter:	Dual Phase

Depth to Water (m bgl)	Base of Hole (m bgl)
1.64	1.65

Monitoring interval	Flow L/hr	DP Pa	Monitoring interval	CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)	
Atmosphere			Atmosphere										
Borehole measurement	00:00:05	0.0	0	00:00:05	0.0	0	0.0	18.0	0	0	1008	0	17
	00:00:30	0.0	0	00:00:30	0.0	0	1.7	18.6	0	0	1008	0	17
	00:01:00	0.0	0	00:01:00	0.0	0	2.1	18.0	0	0	1008	0	17
	00:02:00	0.0	0	00:02:00	0.0	0	2.4	17.5	0	0	1008	0	17
	00:03:00	0.0	0	00:03:00	0.0	0	2.3	17.7	0	0	1008	0	17
	00:04:00	0.0	0	00:04:00	0.0	0	2.5	17.4	0	0	1008	0	17
	00:05:00	0.0	0	00:05:00	0.0	0	2.5	17.4	0	0	1008	0	17
	00:06:00			00:06:00									
	00:07:00			00:07:00									
	00:08:00			00:08:00									
00:09:00			00:09:00										
00:10:00			00:10:00										

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763			Weather			
Site Name:	Dwyer Road			Wind		Light	
BH/WS ID:	BH1			Cloud Cover		Cloudy	Overcast
Date:	10.5.23			Precipitation	Dry		
Start Time:	12:26PM			Ground Conditions		Moist	

Gas Monitor:	Gas Data GFM 435 11555	
PID:	Poli Mp400p	
Dip meter:	Dual Phase	

Depth to Water (m bgl)		Base of Hole (m bgl)	
5.83		6.1	

Monitoring interval		Flow L/hr	DP Pa	Monitoring interval		CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere				Atmosphere										
Borehole measurement	00:00:05	0.0	0	Borehole measurement	00:00:05	0.0	0	2.1	18.3	0	0	1010	0	17
	00:00:30	0.0	0		00:00:30	0.0	0	1.9	18.4	0	0	1010	0	17
	00:01:00	0.0	0		00:01:00	0.0	0	2.1	18.1	0	0	1010	0	17
	00:02:00	0.0	0		00:02:00	0.0	0	2.2	17.8	0	0	1010	0	17
	00:03:00	0.0	0		00:03:00	0.0	0	2.3	17.7	0	0	1010	0	17
	00:04:00	0.0	0		00:04:00	0.0	0	2.3	17.6	0	0	1010	0	17
	00:05:00	0.0	0		00:05:00	0.0	0	2.4	17.6	0	0	1010	0	17
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
	00:09:00				00:09:00									
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763			Weather					
Site Name:	Dwyer Road			Wind	Still				
BH/WS ID:	BH1			Cloud Cover	None				
Date:	23/05/2023			Precipitation	Dry				
Start Time:	14:55			Ground Conditions	Dry				

Gas Monitor:	Gas Data GFM 435 11555	
PID:	Poli Mp400p	
Dip meter:	Single Phase	

Depth to Water (m bgl)		Base of Hole (m bgl)	
9.17		17.7	

Monitoring interval		Flow L/hr	DP Pa
Atmosphere		0.0	0
Borehole measurement	00:00:05	0.0	0
	00:00:30	0.0	0
	00:01:00	0.0	0
	00:02:00	0.0	0
	00:03:00	0.0	0
	00:04:00	0.0	0
	00:05:00		
	00:06:00		
	00:07:00		
	00:08:00		
00:09:00			
00:10:00			

Monitoring interval		CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere		0.0	0	0.0	20.8	0	0	1014	0	15
Borehole measurement	00:00:05	0.0	0	0.0	21.2	0	0	1014	0	
	00:00:30	0.0	0	0.0	21.0	0	0	1014	0	
	00:01:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:02:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:03:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:04:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:05:00									
	00:06:00									
	00:07:00									
	00:08:00									
00:09:00										
00:10:00										

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763			Weather					
Site Name:	Dwyer Road			Wind	Still				
BH/WS ID:	BH1			Cloud Cover	None				
Date:	23/05/2023			Precipitation	Dry				
Start Time:	15:05			Ground Conditions	Dry				

Gas Monitor:	Gas Data GFM 435 11555	
PID:	Poli Mp400p	
Dip meter:	Single Phase	

Depth to Water (m bgl)		Base of Hole (m bgl)	
Dry		1.55	

Monitoring interval		Flow L/hr	DP Pa	Monitoring interval		CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere		0.0	0	Atmosphere		0.0	0	0.0	20.8	0	0	1014	0	15
Borehole measurement	00:00:05	0.0	0	Borehole measurement	00:00:05	0.0	0	0.0	21.2	0	0	1014	0	
	00:00:30	0.0	0		00:00:30	0.0	0	0.0	21.0	0	0	1014	0	
	00:01:00	0.0	0		00:01:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:02:00	0.0	0		00:02:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:03:00	0.0	0		00:03:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:04:00	0.0	0		00:04:00	0.0	0	0.1	21.0	0	0	1014	0	
	00:05:00				00:05:00									
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
00:09:00			00:09:00											
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	

Job Number:	20763			Weather					
Site Name:	Dwyer Road			Wind	Still				
BH/WS ID:	BH1			Cloud Cover	None				
Date:	23/05/2023			Precipitation	Dry				
Start Time:	15:15			Ground Conditions	Dry				

Gas Monitor:	Gas Data GFM 435 11555	
PID:	Poli Mp400p	
Dip meter:	Single Phase	

Depth to Water (m bgl)		Base of Hole (m bgl)	
Dry		6	

Monitoring interval		Flow L/hr	DP Pa	Monitoring interval		CH ₄ % v/v	LEL CH ₄ %	CO ₂ % v/v	O ₂ % v/v	H ₂ S ppm	Co ppm	aP mb	VOC (PPM)	Temp (°C)
Atmosphere				Atmosphere		0.0	0	0.0	20.8	0		1014		15
Borehole measurement	00:00:05	0.0	0	Borehole measurement	00:00:05	0.0	0	2.4	17.5	0	1	1014	0	
	00:00:30	0.0	0		00:00:30	0.0	0	2.4	17.5	0	1	1014	0	
	00:01:00	0.0	0		00:01:00	0.0	0	2.4	17.4	0	1	1014	0	
	00:02:00	0.0	0		00:02:00	0.0	0	2.4	17.4	0	1	1014	0	
	00:03:00	0.0	0		00:03:00	0.0	0	2.4	17.4	0	1	1014	1	
	00:04:00	0.0	0		00:04:00	0.0	0	2.4	17.4	0	1	1014	1	
	00:05:00				00:05:00									
	00:06:00				00:06:00									
	00:07:00				00:07:00									
	00:08:00				00:08:00									
00:09:00			00:09:00											
00:10:00			00:10:00											

Samples		Notes;
1 Litre Plastic	None	
1 Litre Glass	None	
40ml Vial	None	
Gas sample (Tedlar bag etc)	None	



Geotechnical In-Situ and Laboratory Testing

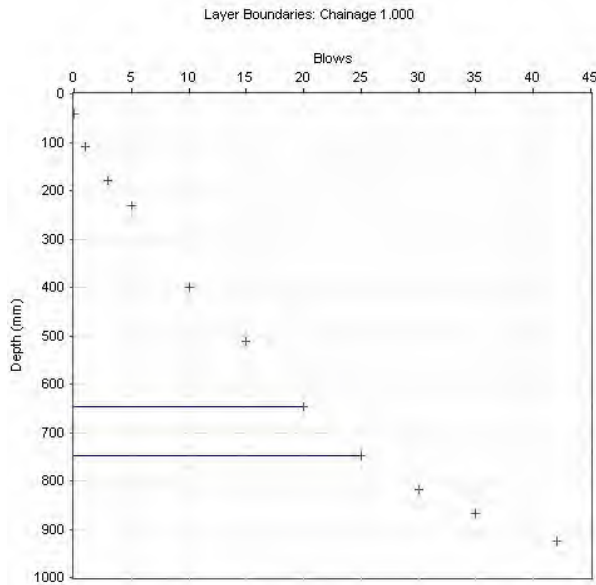
Appendix C.1 Dynamic Cone Penetrometer Results

DCP Layer Strength Analysis Report

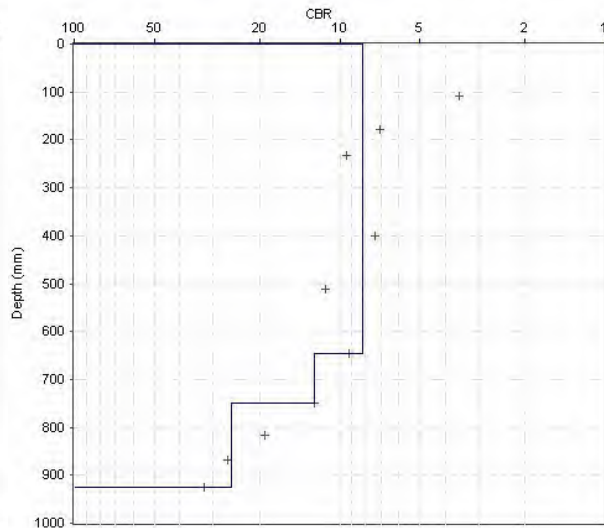
Project Name: 20763_Dwyer Road_DCP 1-6

Chainage (km): 1.000
 Direction: 0
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 25
 Test Date: 14/03/2023

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	30.25	8	647	647
2	20.40	12	102	749
3	10.35	26	176	925

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

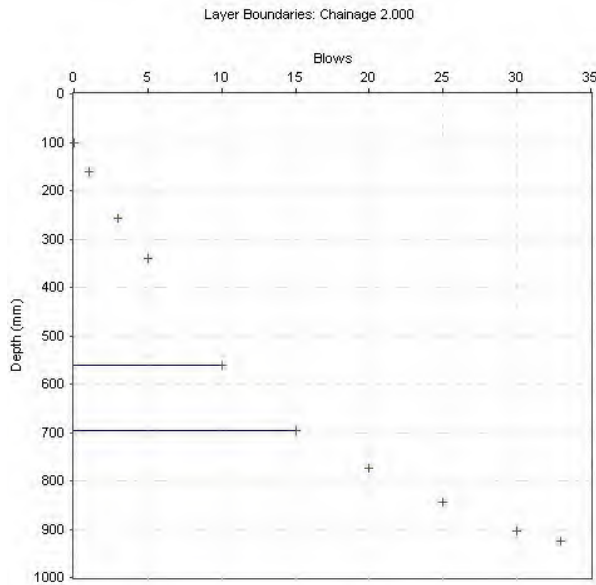
Report produced by

DCP Layer Strength Analysis Report

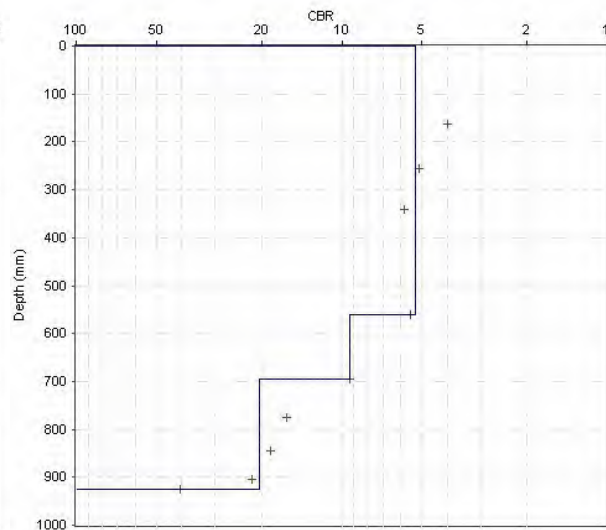
Project Name: 20763_Dwyer Road_DCP 1-6

Chainage (km): 2.000
 Direction: 0
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 25
 Test Date: 14/03/2023

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	45.90	5	561	561
2	26.80	9	134	695
3	12.78	20	230	925

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

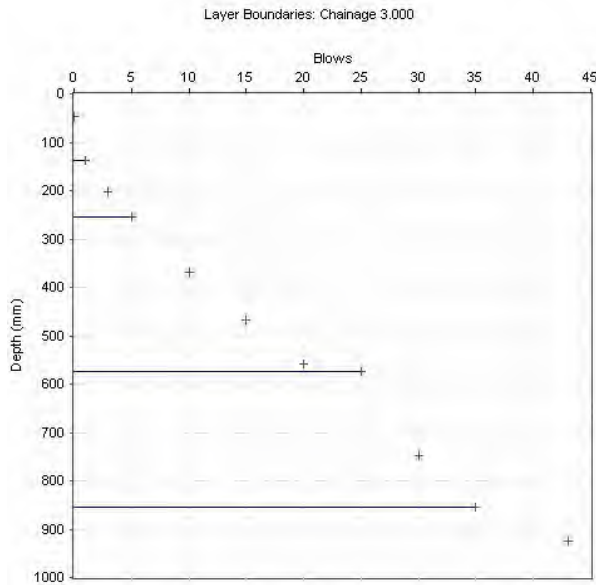
Report produced by

DCP Layer Strength Analysis Report

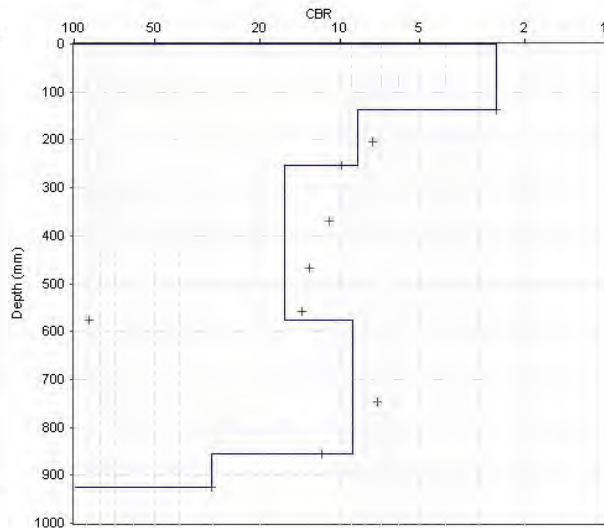
Project Name: 20763_Dwyer Road_DCP 1-6

Chainage (km): 3.000
 Direction: 0
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 25
 Test Date: 14/03/2023

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	91.00	3	137	137
2	29.25	9	117	254
3	16.05	16	321	575
4	28.00	9	280	855
5	8.75	30	70	925

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

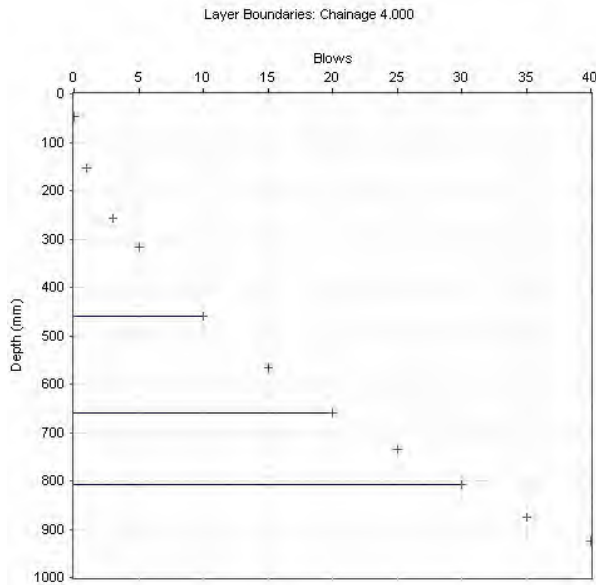
Report produced by

DCP Layer Strength Analysis Report

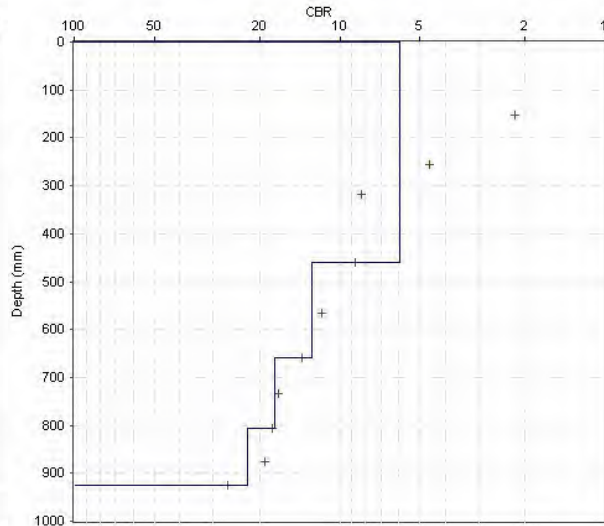
Project Name: 20763_Dwyer Road_DCP 1-6

Chainage (km): 4.000
 Direction: 0
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 25
 Test Date: 14/03/2023

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	41.30	6	459	459
2	20.00	13	200	659
3	14.80	17	148	807
4	11.80	22	118	925

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

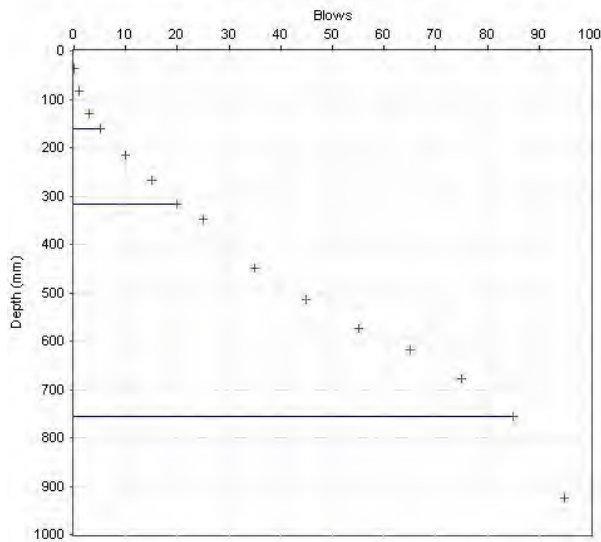
DCP Layer Strength Analysis Report

Project Name: 20763_Dwyer Road_DCP 1-6

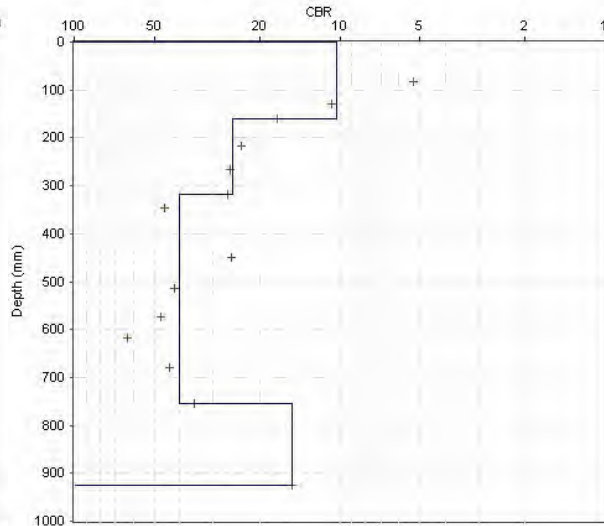
Chainage (km): 5.000
 Direction: 0
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 25
 Test Date: 14/03/2023

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 5.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	24.60	10	160	160
2	10.47	25	157	317
3	6.74	40	438	755
4	17.00	15	170	925

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

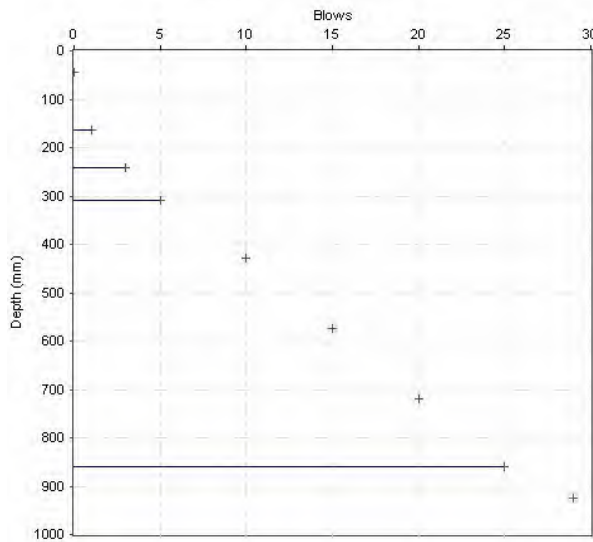
DCP Layer Strength Analysis Report

Project Name: 20763_Dwyer Road_DCP 1-6

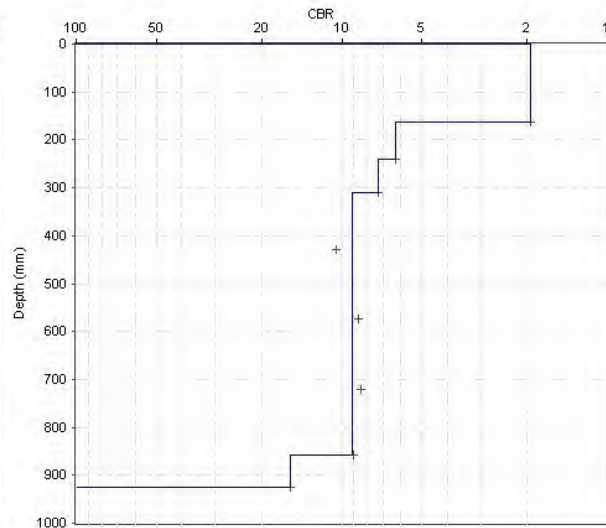
Chainage (km): 6.000
 Direction: 0
 Location/Offset: Carriageway
 Cone Angle: 60 degrees
 Zero Error (mm): 25
 Test Date: 14/03/2023

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 6.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	118.00	2	163	163
2	39.00	6	78	241
3	34.00	7	68	309
4	27.50	9	550	859
5	16.50	16	66	925

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

Appendix C.3 Falling Head Results

Falling Head Field Record Sheet			
Job No.:	20763	Date:	14/03/2023
Job Name:	Dwyer Rd	Engineer / Tech:	JC
Location ID:	BH1		
Diameter of borehole (mm):	150.00		
WS Liner sizes used (if applicable):	NA		
Test carried out in open hole or well?	Open hole		
Base of borehole (m bgl):	10.00		
Depth to groundwater (m bgl):	-		
Depth of casing (m bgl):	7.00		
Volume of water added (L):	400		
Recorded Time	Elapsed Time	Depth to Water	
(HH:MM:SS)	(seconds)	(m bgl)	
2:48:00 PM	0	6.00	
2:49:00 PM	60	9.70	
2:49:30 PM	90	10.00	
Notes:			

Falling Head Field Record Sheet			
Job No.:	20763	Date:	14/03/2023
Job Name:	Dwyer Rd	Engineer / Tech:	JC
Location ID:	BH1		
Diameter of borehole (mm):	150.00		
WS Liner sizes used (if applicable):	NA		
Test carried out in open hole or well?	Open hole		
Base of borehole (m bgl):	10.00		
Depth to groundwater (m bgl):	-		
Depth of casing (m bgl):	7.00		
Volume of water added (L):	400		
Recorded Time	Elapsed Time	Depth to Water	
(HH:MM:SS)	(seconds)	(m bgl)	
2:55:00 PM	0	9.50	
2:56:00 PM	60	10.00	
Notes:			

Falling Head Field Record Sheet			
Job No.:	20763	Date:	15/03/2023
Job Name:	Dwyer Rd	Engineer / Tech:	JC
Location ID:	BH1		
Diameter of borehole (mm):	150.00		
WS Liner sizes used (if applicable):	NA		
Test carried out in open hole or well?	Open hole		
Base of borehole (m bgl):	20.00		
Depth to groundwater (m bgl):	13.30		
Depth of casing (m bgl):	19.50		
Volume of water added (L):	400		
Recorded Time	Elapsed Time	Depth to Water	
(HH:MM:SS)	(seconds)	(m bgl)	
11:04:00 AM	0	0.35	
11:05:00 AM	60	0.43	
11:08:00 AM	240	0.56	
11:10:00 AM	360	0.64	
11:12:00 AM	480	0.67	
11:15:00 AM	660	0.72	
11:18:00 AM	840	0.76	
11:24:00 AM	1200	0.76	
11:31:00 AM	1620	0.76	
11:40:00 AM	2160	0.77	
11:48:00 AM	2640	0.77	
12:03:00 PM	3540	0.78	
Notes:			

Falling Head Field Record Sheet			
Job No.:	20763	Date:	16/03/2023
Job Name:	Dwyer Rd	Engineer / Tech:	JC
Location ID:	BH2		
Diameter of borehole (mm):	150.00		
WS Liner sizes used (if applicable):	NA		
Test carried out in open hole or well?	Open hole		
Base of borehole (m bgl):	10.00		
Depth to groundwater (m bgl):	-		
Depth of casing (m bgl):	7.00		
Volume of water added (L):	500		
Recorded Time	Elapsed Time	Depth to Water	
(HH:MM:SS)	(seconds)	(m bgl)	
10:15:00 AM	0	7.00	
10:17:00 AM	120	8.10	
10:18:00 AM	180	10.00	
Notes:			

Falling Head Field Record Sheet			
Job No.:	20763	Date:	16/03/2023
Job Name:	Dwyer Rd	Engineer / Tech:	JC
Location ID:	BH2		
Diameter of borehole (mm):	150.00		
WS Liner sizes used (if applicable):	NA		
Test carried out in open hole or well?	Open hole		
Base of borehole (m bgl):	20.00		
Depth to groundwater (m bgl):	13.00		
Depth of casing (m bgl):	15.00		
Volume of water added (L):	200		
Recorded Time	Elapsed Time	Depth to Water	
(HH:MM:SS)	(seconds)	(m bgl)	
12:17:00 PM	0	4.00	
12:18:00 PM	60	4.00	
12:20:00 PM	180	4.00	
12:23:00 PM	360	4.00	
12:29:00 PM	720	4.00	
12:34:00 PM	1020	4.00	
12:48:00 PM	1860	4.00	
12:58:00 PM	2460	4.00	
1:08:00 PM	3060	4.00	
Notes:			

Appendix C.4 Geotechnical Laboratory Report



Laboratory Report



Contract Number: 65600

Client Ref: **20763**

Client PO: **20763**

Date Received: **30-03-2023**

Date Completed: **13-04-2023**

Report Date: **13-04-2023**

Client: **Soils Limited**
Newton House
Cross Road
Tadworth
Surrey
KT20 5SR

This report has been checked and approved by:



Brendan Evans
Office Administrator

Contract Title: **Dwyer Rd**

For the attention of: **Andrew Yuen**

Test Description	Qty
Samples Received - @ Non Accredited Test	17
Moisture Content of Soil BS1377 : Part 2 : Clause 3.2 : 1990 - * UKAS	4
4 Point Liquid & Plastic Limit BS 1377:1990 - Part 2 : 4.3 & 5.3 - * UKAS	4
PSD Wet & Dry Sieve method BS 1377:1990 - Part 2 : 9.2 - * UKAS	3
Saturated moisture content of chalk BS1377 : Part 2 : Clause 3.3 : 1990 - * UKAS	5
Disposal of samples for job	1

Notes: Observations and Interpretations are outside the UKAS Accreditation

* - denotes test included in laboratory scope of accreditation

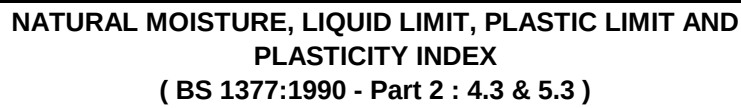
- denotes test carried out by approved contractor

@ - denotes non accredited tests

This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This test report/certificate shall not be reproduced except in full, without the approval of GEO Site & Testing Services Ltd. Any opinions or interpretations stated - within this report/certificate are excluded from the laboratories UKAS accreditation.

Approved Signatories:

Brendan Evans (Office Administrator) - Darren Bourne (Quality Senior Technician) - Paul Evans (Director)
Richard John (Quality/Technical Manager) - Shaun Jones (Laboratory manager) - Shaun Thomas (Site Manager)
Wayne Honey (Human Resources/ Health and Safety Manager)



Contract Number	65600	
Project Name	Dwyer Rd	
Date Tested	08/04/2023	
	DESCRIPTIONS	

[illegible]

Operator

Clayton Jenkins

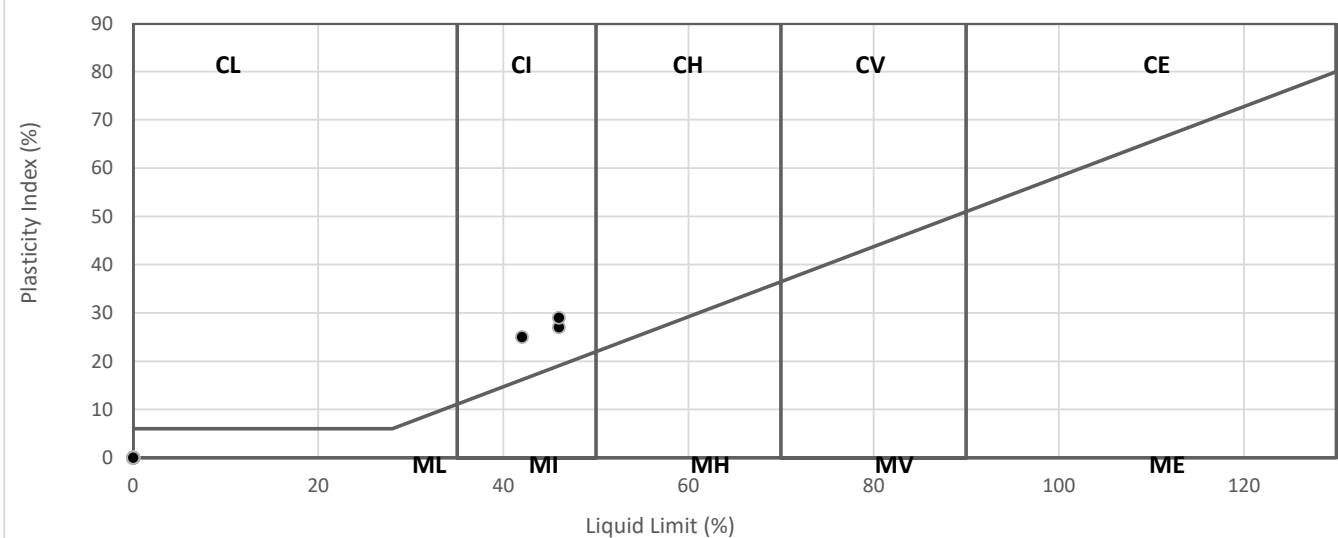
**NATURAL MOISTURE, LIQUID LIMIT, PLASTIC LIMIT AND
PLASTICITY INDEX
(BS 1377:1990 - Part 2 : 4.3 & 5.3)**

Contract Number	65600	
Project Name	Dwyer Rd	
Date Tested	08/04/2023	

[illegible]

Symbols: NP : Non Plastic # : Liquid Limit and Plastic Limit Wet Sieved

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION BS 5930:2015+A1:2020

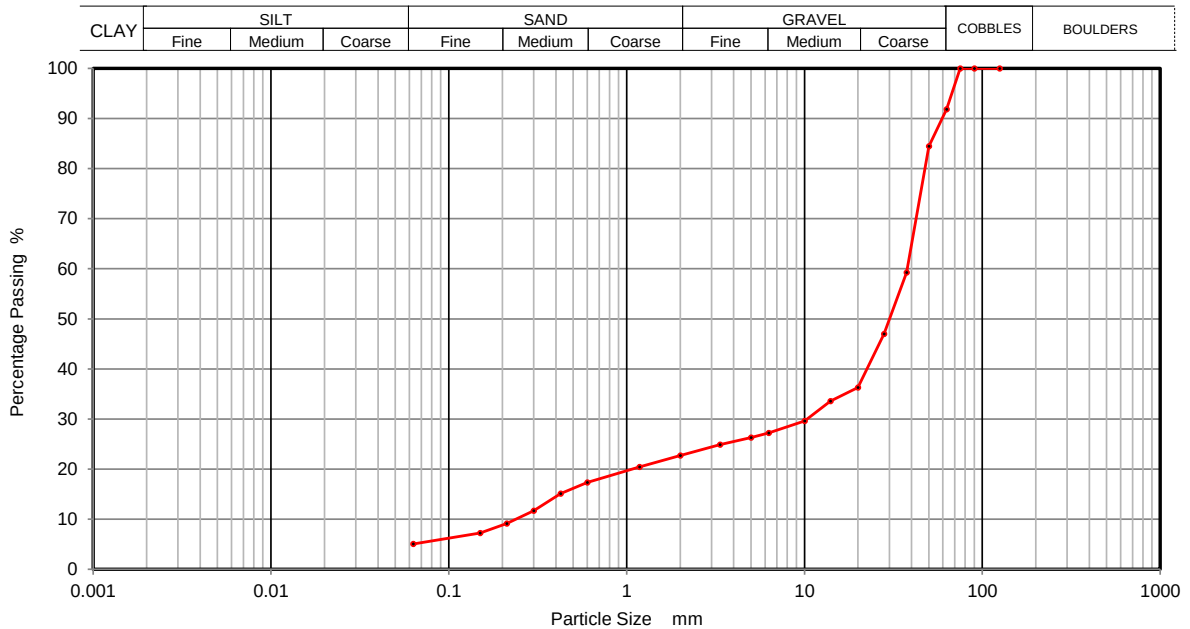


Operator

Clayton Jenkins



	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	65600
		Borehole/Pit No.	BH1
Project Name	Dwyer Rd	Sample No.	
Soil Description	Brown slightly silty/ clayey fine to coarse sandy fine to coarse GRAVEL with cobbles	Depth Top	0.50
		Depth Base	1.00
Date Tested	11/04/2023	Sample Type	B



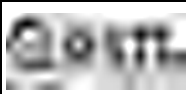
Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	92		
50	84		
37.5	59		
28	47		
20	36		
14	34		
10	30		
6.3	27		
5	26		
3.35	25		
2	23		
1.18	20		
0.6	17		
0.425	15		
0.3	12		
0.212	9		
0.15	7		
0.063	5		

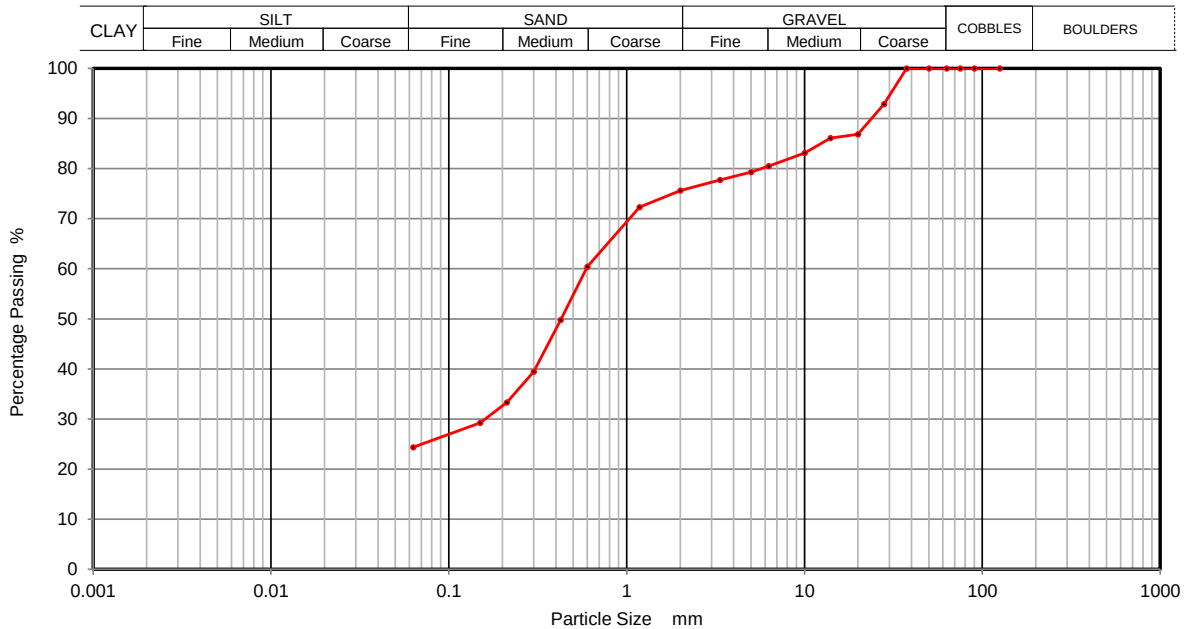
Sample Proportions	% dry mass
Cobbles	8
Gravel	69
Sand	18
Silt and Clay	5

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards



	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	65600
		Borehole/Pit No.	BH2
Project Name	Dwyer Rd	Sample No.	
Soil Description	Brown silty/ clayey fine to coarse gravelly fine to coarse SAND	Depth Top	0.50
		Depth Base	1.00
Date Tested	11/04/2023	Sample Type	B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	93		
20	87		
14	86		
10	83		
6.3	80		
5	79		
3.35	78		
2	76		
1.18	72		
0.6	60		
0.425	50		
0.3	39		
0.212	33		
0.15	29		
0.063	24		

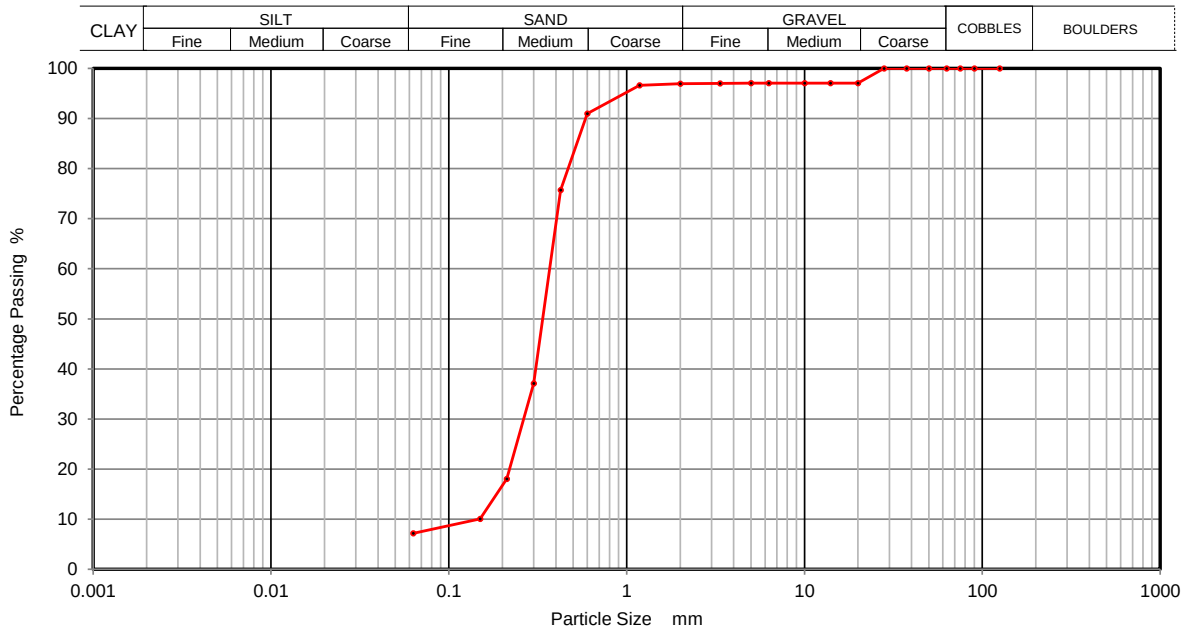
Sample Proportions	% dry mass
Cobbles	0
Gravel	24
Sand	52
Silt and Clay	24

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards



	PARTICLE SIZE DISTRIBUTION BS 1377 Part 2:1990 Wet Sieve, Clause 9.2	Contract Number	65600
		Borehole/Pit No.	TP1
Project Name	Dwyer Rd	Sample No.	
Soil Description	Brown slightly gravelly slightly silty/ clayey fine to coarse SAND	Depth Top	0.50
		Depth Base	
Date Tested	11/04/2023	Sample Type	B



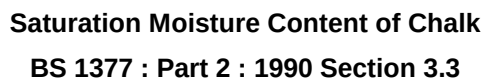
Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	97		
10	97		
6.3	97		
5	97		
3.35	97		
2	97		
1.18	97		
0.6	91		
0.425	76		
0.3	37		
0.212	18		
0.15	10		
0.063	7		

Sample Proportions	% dry mass
Cobbles	0
Gravel	3
Sand	90
Silt and Clay	7

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Operator
David Edwards







**Single Stage Unconsolidated-Undrained Triaxial
Test
BS 1377 : 1990 Part 7 : 8**

Contract Number 65600

Borehole/Pit No. BH1

Project Name Dwyer Rd

Sample No.

Soil Description Brown fine to medium gravelly sandy silty CLAY

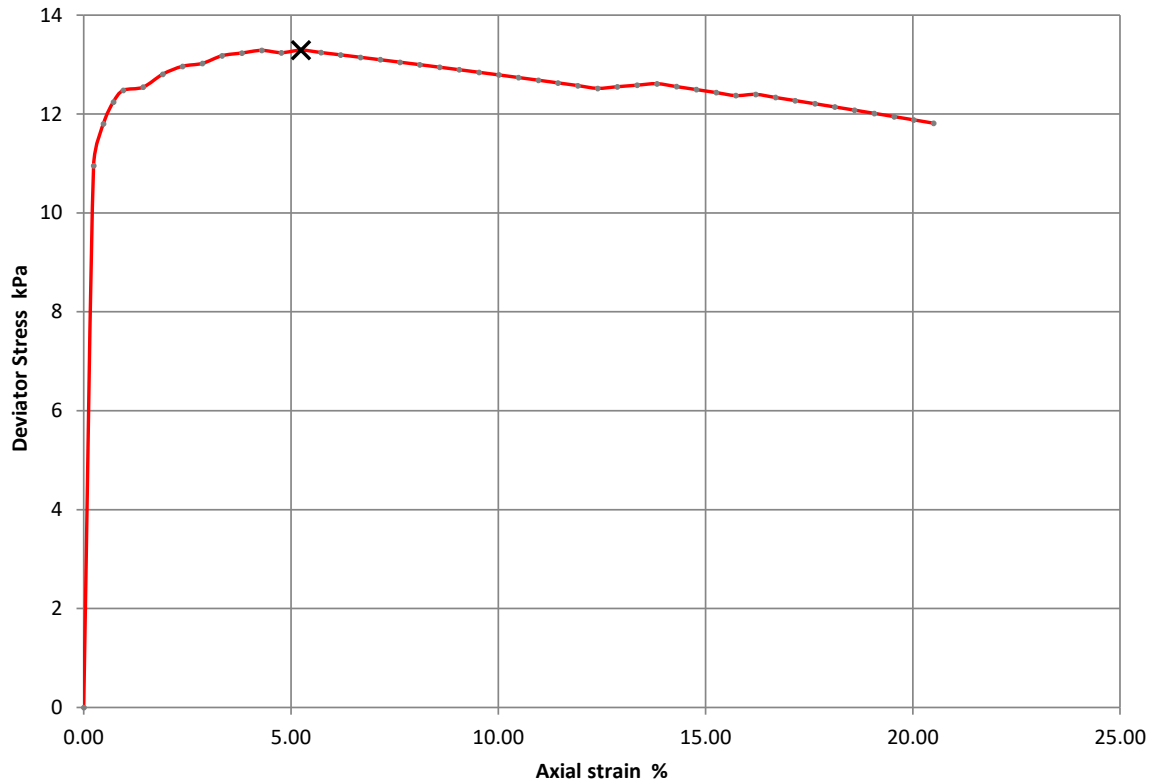
Depth Top (m) 6.00

Depth Base (m) 6.45

Date Tested 09/05/2023

Sample Type B

Operator Jordan



Moisture Content (%)	8.8
Bulk Density (Mg/m ³)	1.79
Dry Density (Mg/m ³)	1.64
Specimen Length (mm)	209.74
Specimen Diameter (mm)	104.21
Cell Pressure (kPa)	120
Deviator Stress (kPa)	13
Undrained Shear Strength (kPa)	7
Failure Strain (%)	5
Mode Of Failure	Plastic
Membrane Used/Thickness	Rubber/0.3mm
Rate of Strain (%/min)	1.43





ANALYTICAL TEST REPORT

Contract no: 121827

Contract name: Dwyer Road

Client reference: 20763

Clients name: Geo Site and Testing Services

Clients address: Unit 3 and 4 Heol Aur
Dafen Industrial Estate, Dafen
Llanelli, Carmarthenshire
SA14 8QN

Samples received: 20 April 2023

Analysis started: 20 April 2023

Analysis completed: 27 April 2023

Report issued: 27 April 2023

Key

U	UKAS accredited test
M	MCERTS & UKAS accredited test
\$	Test carried out by an approved subcontractor
I/S	Insufficient sample to carry out test
N/S	Sample not suitable for testing

Approved by:



Abbie Neasham-Bourn
Senior Reporting Administrator

Chemtech Environmental Limited

SOILS

Lab number			121827-1	121827-2	121827-3	121827-4	121827-5	121827-6
Sample id			BH01	BH01	TP01	TP01	TP02	TP02
Depth (m)			8.20	1.00	1.50	0.50	1.00	0.50
Sample Type			B	B	B	B	B	B
Date sampled			-	-	-	-	-	-
Test	Method	Units						
pH	CE004 ^U	units	8.5	8.4	8.5	9.4	9.4	8.6
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	41	37	27	38	171	243
Sulphate (acid extractable)	CE062 ^U	mg/kg SO ₄	1920	587	261	399	1296	899
Sulphate (acid extractable)	CE062 ^U	% w/w SO ₄	0.19	0.06	0.03	0.04	0.13	0.09
Sulphur (total)	CE119	mg/kg S	720	288	122	202	346	380
Sulphur (total)	CE119	% w/w S	0.07	0.03	0.01	0.02	0.03	0.04

Chemtech Environmental Limited

SOILS

Lab number			121827-7	121827-8	121827-9
Sample id			TP03	TP04	TP05
Depth (m)			1.80	1.00	5.50
Sample Type			B	B	B
Date sampled			-	-	-
Test	Method	Units			
pH	CE004 ^U	units	9.4	8.8	8.1
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	200	59	54
Sulphate (acid extractable)	CE062 ^U	mg/kg SO ₄	1044	445	434
Sulphate (acid extractable)	CE062 ^U	% w/w SO ₄	0.10	0.04	0.04
Sulphur (total)	CE119	mg/kg S	439	197	261
Sulphur (total)	CE119	% w/w S	0.04	0.02	0.03

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE004	pH	Based on BS 1377, pH Meter	As received	U	-	units
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO ₄
CE062	Sulphate (acid extractable)	HCl extract, analysed by ICP-OES	Dry	U	100	mg/kg SO ₄
CE062	Sulphate (acid extractable)	HCl extract, analysed by ICP-OES	Dry	U	0.01	% w/w SO ₄
CE119	Sulphur (total)	Aqua regia digest, analysed by ICP-OES	Dry		100	mg/kg S
CE119	Sulphur (total)	Aqua regia digest, analysed by ICP-OES	Dry		0.01	% w/w S

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
121827-1	BH01	8.20	Y	All (NSD)
121827-2	BH01	1.00	Y	All (NSD)
121827-3	TP01	1.50	Y	All (NSD)
121827-4	TP01	0.50	Y	All (NSD)
121827-5	TP02	1.00	Y	All (NSD)
121827-6	TP02	0.50	Y	All (NSD)
121827-7	TP03	1.80	Y	All (NSD)
121827-8	TP04	1.00	Y	All (NSD)
121827-9	TP05	5.50	Y	All (NSD)

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

For soils and solids, all results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

Analytical results are inclusive of stones, where applicable.



Chemical Laboratory Analyses

Appendix D.1 Chemical Laboratory Results Soil



Andrew Yuen
Soils Ltd
Newton House
Cross Road
Tadworth
Surrey
KT20 5SR

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 23-04495

Site Reference: Dwver Road

Project / Job Ref: 20763

Order No: 20763

Sample Receipt Date: 28/03/2023

Sample Scheduled Date: 30/03/2023

Report Issue Number: 1

Reporting Date: 11/04/2023

Authorised by:

A handwritten signature in black ink, appearing to read "Kevin Old", written over a horizontal line.

Kevin Old
Operations Director

Dates of laboratory activities for each tested analyte are available upon request.

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

For Topsoil and WAC analysis the expanded uncertainty measurement should be considered while evaluating results against compliance values.



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	14/03/23	17/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP5	TP5	TP5	BH1	TP3
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	0.20	0.40	1.00	0.20	0.20
Reporting Date: 11/04/2023	DETS Sample No	644437	644438	644439	644440	644441

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.7	7.9	7.5	8.6	7.5
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Elemental Sulphur	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	< 5
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.002	0.013	0.004	0.002	0.002
Arsenic (As)	mg/kg	< 2	MCERTS	3	22	7	5	8
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.6	0.5	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	8	14	14	6	5
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	< 4	19	7	< 4	< 4
Lead (Pb)	mg/kg	< 3	MCERTS	4	54	13	< 3	4
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	< 3	11	6	3	< 3
Vanadium (V)	mg/kg	< 1	MCERTS	14	26	27	10	10
Zinc (Zn)	mg/kg	< 3	MCERTS	6	35	27	7	14
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
EPH (C10 - C40) : EH 1D Total	mg/kg	< 6	MCERTS	152				< 6
Tentative Petroleum Type : EH_1D	N/a	N/a	NONE	Typical of PAHs and lubricating oil range organics				N/a
Coal Tar Presence / Absence	N/a	N/a	NONE	Absent				Absent

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	17/03/23	17/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP3	TP2	TP1	TP4	TP4
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	1.00	0.50	0.20	1.00	1.00
Reporting Date: 11/04/2023	DETS Sample No	644442	644443	644444	644445	644446

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	
pH	pH Units	N/a	MCERTS	7.5	7.5	7.7	7.6	
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	
Elemental Sulphur	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	
Sulphide	mg/kg	< 5	NONE	< 5	< 5	< 5	< 5	
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.002	0.004	0.002	0.009	
Arsenic (As)	mg/kg	< 2	MCERTS	6	8	18	8	
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	< 0.5	< 0.5	< 0.5	
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.5	0.5	0.4	
Chromium (Cr)	mg/kg	< 2	MCERTS	3	14	9	9	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
Copper (Cu)	mg/kg	< 4	MCERTS	< 4	7	9	11	
Lead (Pb)	mg/kg	< 3	MCERTS	< 3	9	7	33	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	< 3	5	7	6	
Vanadium (V)	mg/kg	< 1	MCERTS	4	26	20	18	
Zinc (Zn)	mg/kg	< 3	MCERTS	6	28	22	41	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
EPH (C10 - C40) : EH 1D Total	mg/kg	< 6	MCERTS					
Tentative Petroleum Type : EH_1D	N/a	N/a	NONE					
Coal Tar Presence / Absence	N/a	N/a	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate						
DETS Report No: 23-04495	Date Sampled	15/03/23	17/03/23	17/03/23		
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Dwyer Road	TP / BH No	BH2	TP3	TP2		
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: 20763	Depth (m)	0.20	0.50	0.20		
Reporting Date: 11/04/2023	DETS Sample No	644447	644448	644449		

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected		Not Detected	
pH	pH Units	N/a	MCERTS	7.7		6.8	
Total Cyanide	mg/kg	< 1	NONE	< 1		< 1	
Elemental Sulphur	mg/kg	< 10	NONE	< 10		< 10	
Sulphide	mg/kg	< 5	NONE	< 5		< 5	
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.005		0.012	
Arsenic (As)	mg/kg	< 2	MCERTS	15		10	
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5		< 0.5	
W/S Boron	mg/kg	< 1	NONE	< 1		< 1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.5		0.4	
Chromium (Cr)	mg/kg	< 2	MCERTS	12		9	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2	
Copper (Cu)	mg/kg	< 4	MCERTS	10		14	
Lead (Pb)	mg/kg	< 3	MCERTS	46		39	
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	6		7	
Vanadium (V)	mg/kg	< 1	MCERTS	24		18	
Zinc (Zn)	mg/kg	< 3	MCERTS	52		53	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2		< 2	
EPH (C10 - C40) : EH 1D Total	mg/kg	< 6	MCERTS				
Tentative Petroleum Type : EH_1D		N/a	NONE				
Coal Tar Presence / Absence	N/a	N/a	NONE				

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	14/03/23	17/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP5	TP5	TP5	BH1	TP3
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	0.20	0.40	1.00	0.20	0.20
Reporting Date: 11/04/2023	DETS Sample No	644437	644438	644439	644440	644441

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.28	0.60	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	0.19	0.47	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	2.82	5.65	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	1.03	1.94	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	8.22	15.20	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	6.15	11.30	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	4.83	8.31	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	5.09	8.20	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	7.48	10.50	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	2.20	3.74	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	5.56	8.77	< 0.1	0.10	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	3.42	5.20	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.93	1.37	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	2.73	4.25	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	50.9	85.4	< 1.6	< 1.6	< 1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	17/03/23	15/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP3	TP2	TP1	TP4	BH2
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	1.00	0.50	0.20	1.00	0.20
Reporting Date: 11/04/2023	DETS Sample No	644442	644443	644444	644445	644447

Determinand	Unit	RL	Accreditation					
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.20	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.72	0.14
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.68	0.13
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.37	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.40	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.49	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.26	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.46	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.32	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	0.32	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	4.2	< 1.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-04495	Date Sampled	17/03/23				
Soils Ltd	Time Sampled	None Supplied				
Site Reference: Dwyer Road	TP / BH No	TP2				
Project / Job Ref: 20763	Additional Refs	None Supplied				
Order No: 20763	Depth (m)	0.20				
Reporting Date: 11/04/2023	DETS Sample No	644449				

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1			
Acenaphthylene	mg/kg	< 0.1	MCERTS	0.12			
Acenaphthene	mg/kg	< 0.1	MCERTS	0.57			
Fluorene	mg/kg	< 0.1	MCERTS	0.41			
Phenanthrene	mg/kg	< 0.1	MCERTS	4.62			
Anthracene	mg/kg	< 0.1	MCERTS	1.38			
Fluoranthene	mg/kg	< 0.1	MCERTS	5.53			
Pyrene	mg/kg	< 0.1	MCERTS	4.85			
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	2.21			
Chrysene	mg/kg	< 0.1	MCERTS	2.26			
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	2.76			
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.83			
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	2.48			
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	1.46			
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.27			
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	1.29			
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	31			



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23			
Soils Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Dwyer Road	TP / BH No	TP5	TP3			
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied			
Order No: 20763	Depth (m)	0.20	0.20			
Reporting Date: 11/04/2023	DETS Sample No	644437	644441			

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1		
Acenaphthene	mg/kg	< 0.1	MCERTS	0.28	< 0.1		
Fluorene	mg/kg	< 0.1	MCERTS	0.19	< 0.1		
Phenanthrene	mg/kg	< 0.1	MCERTS	2.82	< 0.1		
Anthracene	mg/kg	< 0.1	MCERTS	1.03	< 0.1		
Fluoranthene	mg/kg	< 0.1	MCERTS	8.22	< 0.1		
Pyrene	mg/kg	< 0.1	MCERTS	6.15	< 0.1		
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	4.83	< 0.1		
Chrysene	mg/kg	< 0.1	MCERTS	5.09	< 0.1		
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	7.48	< 0.1		
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	2.20	< 0.1		
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	5.56	< 0.1		
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	3.42	< 0.1		
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.93	< 0.1		
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	2.73	< 0.1		
Coronene	mg/kg	< 0.1	NONE	0.76	< 0.1		
Total Oily Waste PAHs	mg/kg	< 1	MCERTS	29.5	< 1		
Total Dutch 10 PAHs	mg/kg	< 1	MCERTS	35.9	< 1		
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	50.9	< 1.6		
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	51.7	< 1.7		



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	14/03/23	17/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP5	TP5	TP5	BH1	TP3
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	0.20	0.40	1.00	0.20	0.20
Reporting Date: 11/04/2023	DETS Sample No	644437	644438	644439	644440	644441

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	20	33	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	74	148	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	94	184	< 21	< 21	< 21
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	94	184	< 42	< 42	< 42



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	17/03/23	17/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP3	TP2	TP1	TP4	TP4
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	1.00	0.50	0.20	1.00	1.00
Reporting Date: 11/04/2023	DETS Sample No	644442	644443	644444	644445	644446

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	



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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 23-04495	Date Sampled	15/03/23	17/03/23	17/03/23		
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Dwyer Road	TP / BH No	BH2	TP3	TP2		
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: 20763	Depth (m)	0.20	0.50	0.20		
Reporting Date: 11/04/2023	DETS Sample No	644447	644448	644449		

Determinand	Unit	RL	Accreditation					
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01		< 0.01		
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05		< 0.05		
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2		< 2		
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3		< 3		
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10		< 10		
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21		< 21		
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01		< 0.01		
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05		< 0.05		
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		< 2		
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2		2		
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3		17		
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10		36		
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	< 21		55		
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	< 42		55		



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	14/03/23	17/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP5	TP5	TP5	BH1	TP3
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	0.20	0.40	1.00	0.20	0.20
Reporting Date: 11/04/2023	DETS Sample No	644437	644438	644439	644440	644441

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	17/03/23	15/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP3	TP2	TP1	TP4	BH2
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	1.00	0.50	0.20	1.00	0.20
Reporting Date: 11/04/2023	DETS Sample No	644442	644443	644444	644445	644447

Determinand	Unit	RL	Accreditation					
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-04495	Date Sampled	17/03/23				
Soils Ltd	Time Sampled	None Supplied				
Site Reference: Dwyer Road	TP / BH No	TP2				
Project / Job Ref: 20763	Additional Refs	None Supplied				
Order No: 20763	Depth (m)	0.20				
Reporting Date: 11/04/2023	DETS Sample No	644449				

Determinand	Unit	RL	Accreditation				
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5			
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2			
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5			



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Soil Analysis Certificate - PCB (12 Congeners)						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	14/03/23	17/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP5	TP5	TP5	BH1	TP3
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	0.20	0.40	1.00	0.20	0.20
Reporting Date: 11/04/2023	DETS Sample No	644437	644438	644439	644440	644441

Determinand	Unit	RL	Accreditation					
PCB Congener 77	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 81	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 105	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 114	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 123	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 126	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 156	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 157	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 167	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 169	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 189	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Total PCB (12 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - PCB (12 Congeners)						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	17/03/23	15/03/23
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Dwyer Road	TP / BH No	TP3	TP2	TP1	TP4	BH2
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: 20763	Depth (m)	1.00	0.50	0.20	1.00	0.20
Reporting Date: 11/04/2023	DETS Sample No	644442	644443	644444	644445	644447

Determinand	Unit	RL	Accreditation					
PCB Congener 77	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 81	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 105	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 114	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 123	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 126	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 156	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 157	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 167	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 169	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 189	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Total PCB (12 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Soil Analysis Certificate - PCB (12 Congeners)						
DETS Report No: 23-04495	Date Sampled	17/03/23				
Soils Ltd	Time Sampled	None Supplied				
Site Reference: Dwyer Road	TP / BH No	TP2				
Project / Job Ref: 20763	Additional Refs	None Supplied				
Order No: 20763	Depth (m)	0.20				
Reporting Date: 11/04/2023	DETS Sample No	644449				

Determinand	Unit	RL	Accreditation				
PCB Congener 77	mg/kg	0.008	NONE	< 0.008			
PCB Congener 81	mg/kg	0.008	NONE	< 0.008			
PCB Congener 105	mg/kg	0.008	NONE	< 0.008			
PCB Congener 114	mg/kg	0.008	NONE	< 0.008			
PCB Congener 118	mg/kg	0.008	NONE	< 0.008			
PCB Congener 123	mg/kg	0.008	NONE	< 0.008			
PCB Congener 126	mg/kg	0.008	NONE	< 0.008			
PCB Congener 156	mg/kg	0.008	NONE	< 0.008			
PCB Congener 157	mg/kg	0.008	NONE	< 0.008			
PCB Congener 167	mg/kg	0.008	NONE	< 0.008			
PCB Congener 169	mg/kg	0.008	NONE	< 0.008			
PCB Congener 189	mg/kg	0.008	NONE	< 0.008			
Total PCB (12 Congeners)	mg/kg	< 0.1	NONE	< 0.1			

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C



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Leachate Analysis Certificate						
DETS Report No: 23-04495	Date Sampled	17/03/23	17/03/23	17/03/23	17/03/23	
Soils Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Dwyer Road	TP / BH No	TP5	TP3	TP4	TP3	
Project / Job Ref: 20763	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	
Order No: 20763	Depth (m)	0.20	0.20	1.00	0.50	
Reporting Date: 11/04/2023	DETS Sample No	644437	644441	644446	644448	

Determinand	Unit	RL	Accreditation				
pH	pH Units	N/a	ISO17025			7.6	
Total Cyanide	ug/l	< 5	ISO17025			9	
Sulphur	mg/l	< 1	NONE			< 1.0	
Elemental Sulphur	ug/l	< 84	NONE			< 84.0	
Arsenic	ug/l	< 5	ISO17025			< 5	
Beryllium	ug/l	< 3	ISO17025			< 3	
Boron	ug/l	< 5	ISO17025			17	
Cadmium	ug/l	< 0.4	ISO17025			< 0.4	
Chromium	ug/l	< 5	ISO17025			< 5	
Chromium (hexavalent)	ug/l	< 20	NONE			< 20	
Copper	ug/l	< 5	ISO17025			< 5	
Lead	ug/l	< 5	ISO17025			< 5	
Mercury	ug/l	< 0.05	ISO17025			< 0.05	
Nickel	ug/l	< 5	ISO17025			< 5	
Vanadium	ug/l	< 5	ISO17025			< 5	
Zinc	ug/l	< 2	ISO17025			19	

Subcontracted analysis ⁽⁵⁾



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Leachate Analysis Certificate - Speciated PAH						
DETS Report No: 23-04495	Date Sampled	17/03/23				
Soils Ltd	Time Sampled	None Supplied				
Site Reference: Dwyer Road	TP / BH No	TP4				
Project / Job Ref: 20763	Additional Refs	None Supplied				
Order No: 20763	Depth (m)	1.00				
Reporting Date: 11/04/2023	DETS Sample No	644446				

Determinand	Unit	RL	Accreditation				
Naphthalene	ug/l	< 0.01	NONE	0.11			
Acenaphthylene	ug/l	< 0.01	NONE	< 0.01			
Acenaphthene	ug/l	< 0.01	NONE	0.15			
Fluorene	ug/l	< 0.01	NONE	0.12			
Phenanthrene	ug/l	< 0.01	NONE	0.12			
Anthracene	ug/l	< 0.01	NONE	0.03			
Fluoranthene	ug/l	< 0.01	NONE	0.02			
Pyrene	ug/l	< 0.01	NONE	0.02			
Benzo(a)anthracene	ug/l	< 0.01	NONE	< 0.01			
Chrysene	ug/l	< 0.01	NONE	< 0.01			
Benzo(b)fluoranthene	ug/l	< 0.01	NONE	< 0.01			
Benzo(k)fluoranthene	ug/l	< 0.01	NONE	< 0.01			
Benzo(a)pyrene	ug/l	< 0.01	NONE	< 0.01			
Indeno(1,2,3-cd)pyrene	ug/l	< 0.01	NONE	< 0.01			
Dibenz(a,h)anthracene	ug/l	< 0.01	NONE	< 0.01			
Benzo(ghi)perylene	ug/l	0.008	NONE	< 0.008			
Total EPA-16 PAHs	ug/l	< 0.16	NONE	0.57			



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Leachate Analysis Certificate - TPH CWG Banded						
DETS Report No: 23-04495	Date Sampled	17/03/23				
Soils Ltd	Time Sampled	None Supplied				
Site Reference: Dwyer Road	TP / BH No	TP4				
Project / Job Ref: 20763	Additional Refs	None Supplied				
Order No: 20763	Depth (m)	1.00				
Reporting Date: 11/04/2023	DETS Sample No	644446				

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10			
Aliphatic >C6 - C8 : HS_1D_MS_AL	ug/l	< 10	NONE	< 10			
Aliphatic >C8 - C10 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10			
Aliphatic >C10 - C12 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10			
Aliphatic >C12 - C16 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10			
Aliphatic >C16 - C21 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10			
Aliphatic >C21 - C34 : EH_CU_1D_AL	ug/l	< 10	NONE	< 10			
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	ug/l	< 70	NONE	< 70			
Aromatic >C5 - C7 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10			
Aromatic >C7 - C8 : HS_1D_MS_AR	ug/l	< 10	NONE	< 10			
Aromatic >C8 - C10 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10			
Aromatic >C10 - C12 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10			
Aromatic >C12 - C16 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10			
Aromatic >C16 - C21 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10			
Aromatic >C21 - C35 : EH_CU_1D_AR	ug/l	< 10	NONE	< 10			
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	ug/l	< 70	NONE	< 70			
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	ug/l	< 140	NONE	< 140			



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Leachate Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-04495	Date Sampled	17/03/23				
Soils Ltd	Time Sampled	None Supplied				
Site Reference: Dwyer Road	TP / BH No	TP4				
Project / Job Ref: 20763	Additional Refs	None Supplied				
Order No: 20763	Depth (m)	1.00				
Reporting Date: 11/04/2023	DETS Sample No	644446				

Determinand	Unit	RL	Accreditation				
Benzene : HS_1D_MS	ug/l	< 1	ISO17025	< 1			
Toluene : HS_1D_MS	ug/l	< 5	ISO17025	< 5			
Ethylbenzene : HS_1D_MS	ug/l	< 5	ISO17025	< 5			
p & m-xylene : HS_1D_MS	ug/l	< 10	ISO17025	< 10			
o-xylene : HS_1D_MS	ug/l	< 5	ISO17025	< 5			
MTBE : HS_1D_MS	ug/l	< 10	ISO17025	< 10			



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Leachate Analysis Certificate - PCB (12 Congeners)						
DETS Report No: 23-04495	Date Sampled	17/03/23				
Soils Ltd	Time Sampled	None Supplied				
Site Reference: Dwyer Road	TP / BH No	TP4				
Project / Job Ref: 20763	Additional Refs	None Supplied				
Order No: 20763	Depth (m)	1.00				
Reporting Date: 11/04/2023	DETS Sample No	644446				

Determinand	Unit	RL	Accreditation				
PCB Congener 77	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 81	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 105	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 114	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 118	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 123	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 126	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 156	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 157	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 167	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 169	ug/l	< 0.1	NONE	< 0.1			
PCB Congener 189	ug/l	< 0.1	NONE	< 0.1			
Total PCB (12 Congeners)	ug/l	< 0.7	NONE	< 0.7			



Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3									
DETS Report No: 23-04495		Date Sampled	17/03/23		Inert Waste Landfill Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill Hazardous Waste Landfill				
Soils Ltd		Time Sampled	None Supplied						
Site Reference: Dwyer Road		TP / BH No	TP5						
Project / Job Ref: 20763		Additional Refs	None Supplied						
Order No: 20763		Depth (m)	0.20						
Reporting Date: 11/04/2023		DETS Sample No	644437						
Determinand	Unit	MDL			Inert Waste Landfill Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill Hazardous Waste Landfill				
TOC ^{MU}	%	< 0.1	0.2						
Loss on Ignition ^{MU}	%	< 0.01	1.08						
BTEX ^{MU}	mg/kg	< 0.05	< 0.05						
Sum of PCBs	mg/kg	< 0.1	< 0.1						
Mineral Oil ^{MU}	mg/kg	< 10	< 10						
Total PAH ^{MU}	mg/kg	< 1.7	51.7						
pH ^{MU}	pH Units	N/a	7.7						
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1						
Eluate Analysis			2:1 mg/l	8:1 mg/l					
Arsenic ^U			< 0.01	< 0.01		< 0.2	0.5	2	25
Barium ^U			< 0.02	< 0.02		< 0.1	20	100	300
Cadmium ^U			< 0.0005	< 0.0005		< 0.02	0.04	1	5
Chromium ^U			< 0.005	< 0.005		< 0.20	0.5	10	70
Copper ^U			< 0.01	< 0.01		< 0.5	2	50	100
Mercury ^U			< 0.0005	< 0.0005		< 0.005	0.01	0.2	2
Molybdenum ^U			0.001	< 0.001		< 0.1	0.5	10	30
Nickel ^U			< 0.007	< 0.007		< 0.2	0.4	10	40
Lead ^U			< 0.005	< 0.005		< 0.2	0.5	10	50
Antimony ^U			< 0.005	< 0.005		< 0.05	0.06	0.7	5
Selenium ^U			< 0.005	< 0.005		< 0.05	0.1	0.5	7
Zinc ^U			0.018	0.030		0.3	4	50	200
Chloride ^U			2	2		19	800	15000	25000
Fluoride ^U			< 0.5	< 0.5		< 1	10	150	500
Sulphate ^U			3	2		22	1000	20000	50000
TDS			65	44		465	4000	60000	100000
Phenol Index			< 0.01	< 0.01		< 0.5	1	-	-
DOC			9	19.7			185	500	800
Leach Test Information									
Stage 1									
Volume Eluate L2 (litres)			0.34						
Filtered Eluate VE1 (litres)			0.21						

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion

Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation

M Denotes MCERTS accredited test

U Denotes ISO17025 accredited test



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Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3																																							
DETS Report No: 23-04495		Date Sampled	17/03/23		<table border="1"> <thead> <tr> <th colspan="3">Landfill Waste Acceptance Criteria Limits</th> </tr> <tr> <th>Inert Waste Landfill</th> <th>Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</th> <th>Hazardous Waste Landfill</th> </tr> </thead> <tbody> <tr> <td>3%</td> <td>5%</td> <td>6%</td> </tr> <tr> <td>--</td> <td>--</td> <td>10%</td> </tr> <tr> <td>6</td> <td>--</td> <td>--</td> </tr> <tr> <td>1</td> <td>--</td> <td>--</td> </tr> <tr> <td>500</td> <td>--</td> <td>--</td> </tr> <tr> <td>100</td> <td>--</td> <td>--</td> </tr> <tr> <td>--</td> <td>>6</td> <td>--</td> </tr> <tr> <td>--</td> <td>To be evaluated</td> <td>To be evaluated</td> </tr> </tbody> </table>					Landfill Waste Acceptance Criteria Limits			Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill	3%	5%	6%	--	--	10%	6	--	--	1	--	--	500	--	--	100	--	--	--	>6	--	--	To be evaluated	To be evaluated
Landfill Waste Acceptance Criteria Limits																																							
Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill																																					
3%	5%	6%																																					
--	--	10%																																					
6	--	--																																					
1	--	--																																					
500	--	--																																					
100	--	--																																					
--	>6	--																																					
--	To be evaluated	To be evaluated																																					
Soils Ltd		Time Sampled	None Supplied																																				
Site Reference: Dwyer Road		TP / BH No	TP3																																				
Project / Job Ref: 20763		Additional Refs	None Supplied																																				
Order No: 20763		Depth (m)	0.50																																				
Reporting Date: 11/04/2023		DETS Sample No	644448																																				
Determinand	Unit	MDL																																					
TOC ^{MU}	%	< 0.1	0.2																																				
Loss on Ignition ^{MU}	%	< 0.01	0.40																																				
BTEX ^{MU}	mg/kg	< 0.05	< 0.05																																				
Sum of PCBs	mg/kg	< 0.1	< 0.1																																				
Mineral Oil ^{MU}	mg/kg	< 10	< 10																																				
Total PAH ^{MU}	mg/kg	< 1.7	< 1.7																																				
pH ^{MU}	pH Units	N/a	6.9																																				
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1																																				
Eluate Analysis			2:1 mg/l	8:1 mg/l		Cumulative 10:1 mg/kg	Limit values for compliance leaching test using BS EN 12457-3 at L/S 10 l/kg (mg/kg)																																
Arsenic ^U		< 0.01	< 0.01		< 0.2	0.5	2	25																															
Barium ^U		< 0.02	< 0.02		< 0.1	20	100	300																															
Cadmium ^U		< 0.0005	< 0.0005		< 0.02	0.04	1	5																															
Chromium ^U		< 0.005	< 0.005		< 0.20	0.5	10	70																															
Copper ^U		< 0.01	< 0.01		< 0.5	2	50	100																															
Mercury ^U		< 0.0005	< 0.0005		< 0.005	0.01	0.2	2																															
Molybdenum ^U		< 0.001	< 0.001		< 0.1	0.5	10	30																															
Nickel ^U		< 0.007	< 0.007		< 0.2	0.4	10	40																															
Lead ^U		< 0.005	< 0.005		< 0.2	0.5	10	50																															
Antimony ^U		< 0.005	< 0.005		< 0.05	0.06	0.7	5																															
Selenium ^U		< 0.005	< 0.005		< 0.05	0.1	0.5	7																															
Zinc ^U		0.019	0.014		< 0.2	4	50	200																															
Chloride ^U		< 1	2		18	800	15000	25000																															
Fluoride ^U		< 0.5	< 0.5		< 1	10	150	500																															
Sulphate ^U		3	2		< 20	1000	20000	50000																															
TDS		27	22		227	4000	60000	100000																															
Phenol Index		< 0.01	< 0.01		< 0.5	1	-	-																															
DOC		6.3	10.4		98.3	500	800	1000																															
Leach Test Information																																							
Sample Mass (kg)			0.19																																				
Dry Matter (%)			94.6																																				
Moisture (%)			5.8																																				
Stage 1																																							
Volume Eluate L2 (litres)			0.34																																				
Filtered Eluate VE1 (litres)			0.25																																				
Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation M Denotes MCERTS accredited test U Denotes ISO17025 accredited test																																							



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Tel : 01622 850410



Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-04495	
Soils Ltd	
Site Reference: Dwyer Road	
Project / Job Ref: 20763	
Order No: 20763	
Reporting Date: 11/04/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
\$ 644437	TP5	None Supplied	0.20	7	Brown sandy clay with stones
\$ 644438	TP5	None Supplied	0.40	11.5	Brown sandy clay with stones and concrete
\$ 644439	TP5	None Supplied	1.00	6.6	Brown sandy clay with stones
\$ 644440	BH1	None Supplied	0.20	3.6	Brown sandy clay with stones
\$ 644441	TP3	None Supplied	0.20	7.5	Brown sandy clay with stones
\$ 644442	TP3	None Supplied	1.00	6.3	Brown sandy clay
\$ 644443	TP2	None Supplied	0.50	10.5	Brown sandy clay with stones
\$ 644444	TP1	None Supplied	0.20	7	Brown sandy clay with stones
\$ 644445	TP4	None Supplied	1.00	10.6	Brown sandy clay with stones
\$ 644447	BH2	None Supplied	0.20	13.5	Brown sandy clay with stones and vegetation
\$ 644448	TP3	None Supplied	0.50	5.4	Light brown sandy clay
\$ 644449	TP2	None Supplied	0.20	11.7	Brown sandy clay

Moisture content is part of procedure E003 & is not an accredited test

Insufficient Sample ^{I/S}

Unsuitable Sample ^{U/S}

\$ samples exceeded recommended holding times



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Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-04495

Soils Ltd

Site Reference: Dwyer Road

Project / Job Ref: 20763

Order No: 20763

Reporting Date: 11/04/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 - C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received



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Water Analysis Certificate - Methodology & Miscellaneous Information	
DETS Report No: 23-04495	
Soils Ltd	
Site Reference: Dwyer Road	
Project / Job Ref: 20763	
Order No: 20763	
Reporting Date: 11/04/2023	

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Water	UF	Alkalinity	Determination of alkalinity by titration against hydrochloric acid using bromocresol green as the end point	E103
Water	F	Ammoniacal Nitrogen	Determination of ammoniacal nitrogen by discrete analyser.	E126
Water	UF	BTEX	Determination of BTEX by headspace GC-MS	E101
Water	F	Cations	Determination of cations by filtration followed by ICP-MS	E102
Water	UF	Chemical Oxygen Demand (COD)	Determination using a COD reactor followed by colorimetry	E112
Water	F	Chloride	Determination of chloride by filtration & analysed by ion chromatography	E109
Water	F	Chromium - Hexavalent	Determination of hexavalent chromium by acidification, addition of 1,5 diphenylcarbazide followed by	E116
Water	UF	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E115
Water	UF	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E115
Water	UF	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through liquid:liquid extraction with cyclohexane	E111
Water	F	Diesel Range Organics (C10 - C24)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	Dissolved Organic Content (DOC)	Determination of DOC by filtration followed by low heat with persulphate addition followed by IR dete	E110
Water	UF	Electrical Conductivity	Determination of electrical conductivity by electrometric measurement	E123
Water	F	EPH (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID	E104
Water	F	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of liquid:liquid extraction with hexane followed by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E104
Water	F	Fluoride	Determination of Fluoride by filtration & analysed by ion chromatography	E109
Water	F	Hardness	Determination of Ca and Mg by ICP-MS followed by calculation	E102
Leachate	F	Leachate Preparation - NRA	Based on National Rivers Authority leaching test 1994	E301
Leachate	F	Leachate Preparation - WAC	Based on BS EN 12457 Pt1, 2, 3	E302
Water	F	Metals	Determination of metals by filtration followed by ICP-MS	E102
Water	F	Mineral Oil (C10 - C40)	Determination of liquid:liquid extraction with hexane followed by GI-FID	E104
Water	F	Nitrate	Determination of nitrate by filtration & analysed by ion chromatography	E109
Water	UF	Monohydric Phenol	Determination of phenols by distillation followed by colorimetry	E121
Water	F	PAH - Speciated (EPA 16)	Determination of PAH compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E105
Water	F	PCB - 7 Congeners	Determination of PCB compounds by concentration through SPE cartridge, collection in dichloromethane	E108
Water	UF	Petroleum Ether Extract (PEE)	Gravimetrically determined through liquid:liquid extraction with petroleum ether	E111
Water	UF	pH	Determination of pH by electrometric measurement	E107
Water	F	Phosphate	Determination of phosphate by filtration & analysed by ion chromatography	E109
Water	UF	Redox Potential	Determination of redox potential by electrometric measurement	E113
Water	F	Sulphate (as SO4)	Determination of sulphate by filtration & analysed by ion chromatography	E109
Water	UF	Sulphide	Determination of sulphide by distillation followed by colorimetry	E118
Water	F	SVOC	Determination of semi-volatile organic compounds by concentration through SPE cartridge, collection in dichloromethane followed by GC-MS	E106
Water	UF	Toluene Extractable Matter (TEM)	Gravimetrically determined through liquid:liquid extraction with toluene	E111
Water	UF	Total Organic Carbon (TOC)	Low heat with persulphate addition followed by IR detection	E110
Water	F	TPH CWG (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C35. C5 to C8 by headspace GC-MS	E104
Water	F	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of liquid:liquid extraction with hexane, fractionating with SPE followed by GC-FID for C8 to C44. C5 to C8 by headspace GC-MS	E104
Water	UF	VOCs	Determination of volatile organic compounds by headspace GC-MS	E101
Water	UF	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E101

Key

F Filtered
UF Unfiltered



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List of HWOL Acronyms and Operators

DETS Report No: 23-04495

Soils Ltd

Site Reference: Dwyer Road

Project / Job Ref: 20763

Order No: 20763

Reporting Date: 11/04/2023

Acronym	Description
HS	Headspace analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up - e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

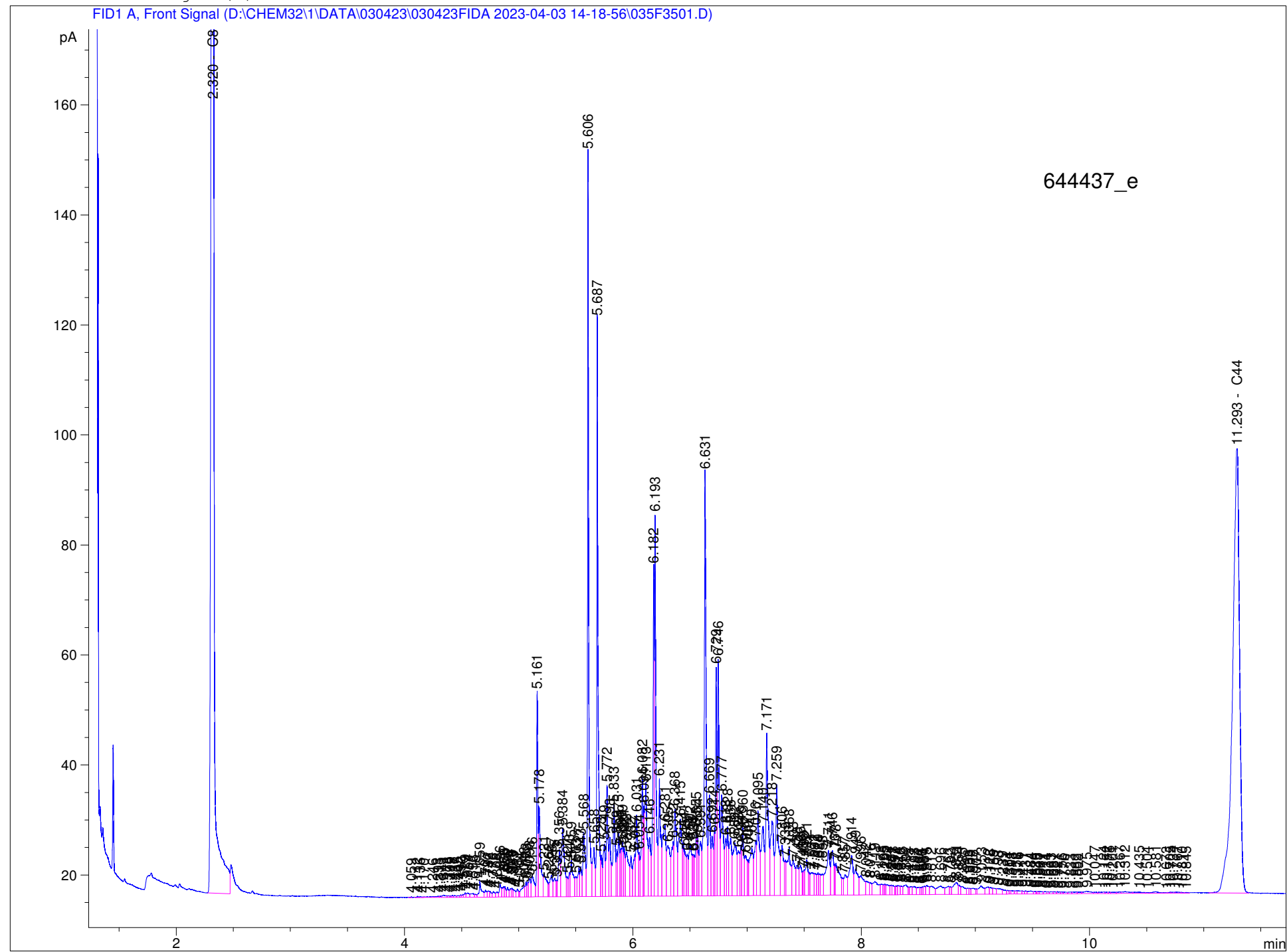
Det - Acronym

Benzene - HS_1D_MS
EPH (C10 - C40) - EH_1D_Total
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
Mineral Oil (C10 - C40) (BS EN 12457-3) - EH_CU_1D_AL
TPH CWG - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH CWG - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH CWG - Aliphatic >C16 - C21 - EH_CU_1D_AL
TPH CWG - Aliphatic >C21 - C34 - EH_CU_1D_AL
TPH CWG - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH CWG - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH CWG - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH CWG - Aliphatic C5 - C34 - HS_1D_MS+EH_CU_1D_AL
TPH CWG - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH CWG - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH CWG - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH CWG - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH CWG - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH CWG - Aromatic C5 - C35 - HS_1D_MS+EH_CU_1D_AR
TPH CWG - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
Tentative Petroleum Type - EH_1D
Toluene - HS_1D_MS
Total BTEX (BS EN 12457-3) - HS_1D_MS_Total
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Parameter	Matrix Type	Suite Reference	Expanded Uncertainty Measurement	Unit
TOC	Soil	BS EN 12457	10.4	%
Loss on Ignition	Soil	BS EN 12457	16.9	%
BTEX	Soil	BS EN 12457	14.0	%
Sum of PCBs	Soil	BS EN 12457	21.1	%
Mineral Oil	Soil	BS EN 12457	9.0	%
Total PAH	Soil	BS EN 12457	17.9	%
pH	Soil	BS EN 12457	0.282	Units
Acid Neutralisation Capacity	Soil	BS EN 12457	18.0	%
Arsenic	Leachate	BS EN 12457	19.5	%
Barium	Leachate	BS EN 12457	12.2	%
Cadmium	Leachate	BS EN 12457	17.2	%
Chromium	Leachate	BS EN 12457	20.7	%
Copper	Leachate	BS EN 12457	14.1	%
Mercury	Leachate	BS EN 12457	16.7	%
Molybdenum	Leachate	BS EN 12457	13.3	%
Nickel	Leachate	BS EN 12457	14.0	%
Lead	Leachate	BS EN 12457	12.1	%
Antimony	Leachate	BS EN 12457	16.1	%
Selenium	Leachate	BS EN 12457	15.5	%
Zinc	Leachate	BS EN 12457	14.0	%
Chloride	Leachate	BS EN 12457	15.7	%
Fluoride	Leachate	BS EN 12457	19.1	%
Sulphate	Leachate	BS EN 12457	27.6	%
TDS	Leachate	BS EN 12457	10.0	%
Phenol Index	Leachate	BS EN 12457	12.9	%
DOC	Leachate	BS EN 12457	20.4	%
Clay Content	Soil	BS 3882: 2015	15.0	%
Silt Content	Soil	BS 3882: 2015	14.0	%
Sand Content	Soil	BS 3882: 2015	13.0	%
Loss on Ignition	Soil	BS 3882: 2015	16.9	%
pH	Soil	BS 3882: 2015	0.282	Units
Carbonate	Soil	BS 3882: 2015	12.0	%
Total Nitrogen	Soil	BS 3882: 2015	12.0	%
Phosphorus (Extractable)	Soil	BS 3882: 2015	24.0	%
Potassium (Extractable)	Soil	BS 3882: 2015	20.0	%
Magnesium (Extractable)	Soil	BS 3882: 2015	26.0	%
Zinc	Soil	BS 3882: 2015	19.8	%
Copper	Soil	BS 3882: 2015	23.2	%
Nickel	Soil	BS 3882: 2015	32.6	%
Available Sodium	Soil	BS 3882: 2015	23.0	%
Available Calcium	Soil	BS 3882: 2015	23.0	%
Electrical Conductivity	Soil	BS 3882: 2015	10.0	%

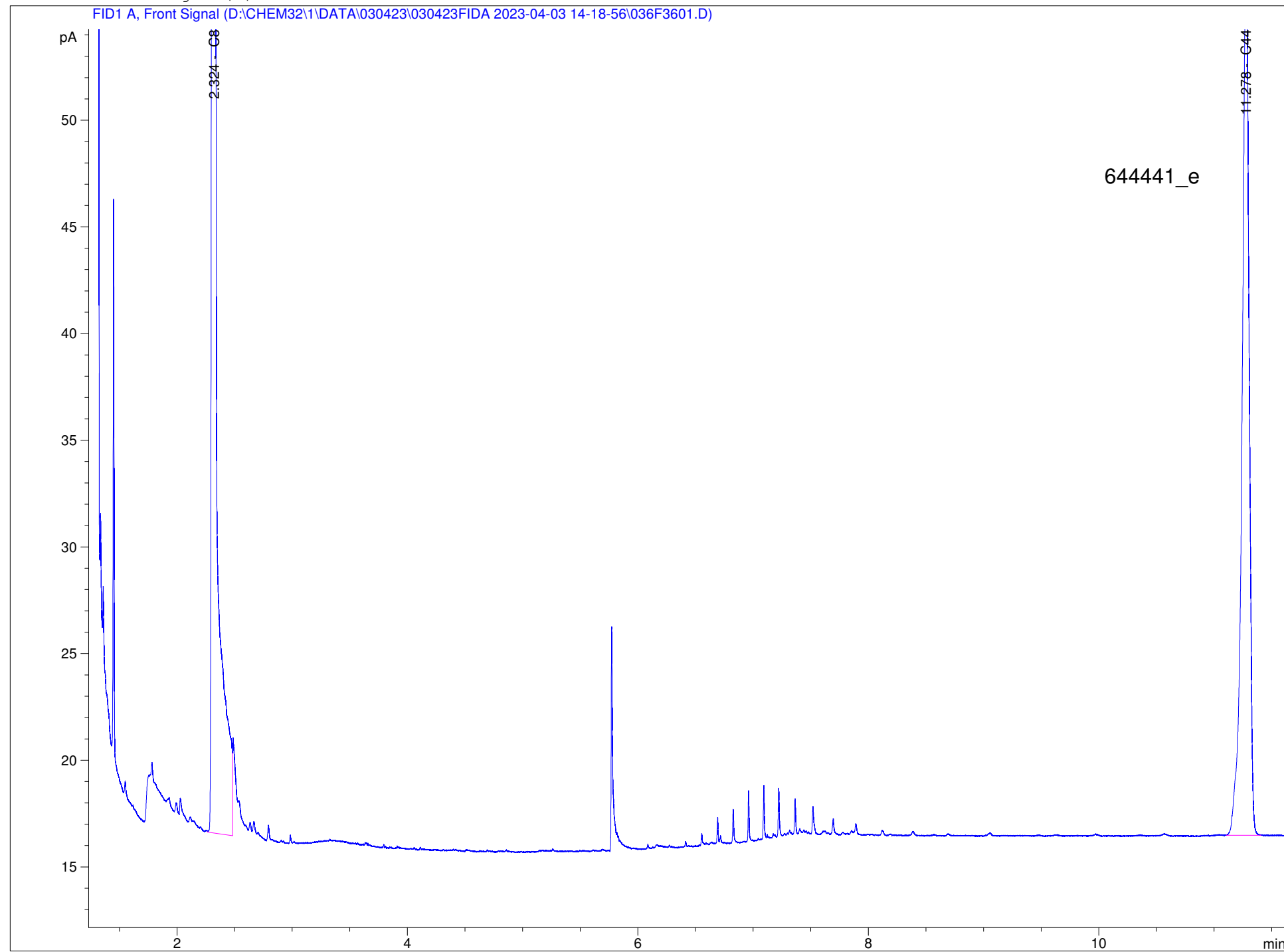
Current Chromatogram(s)

FID1 A, Front Signal (D:\CHEM32\1\DATA\030423\030423\FIDA 2023-04-03 14-18-56\035F3501.D)



Current Chromatogram(s)

FID1 A, Front Signal (D:\CHEM32\1\DATA\030423\030423FIDA 2023-04-03 14-18-56\036F3601.D)



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Appendix C Geotechnical Analysis

Client Reading Borough Council	Location or material to which this assessment applies Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated)	
Project Dwyer Road		
Job number 26888		

Concrete in aggressive ground		After BRE Special Digest 1, 2005
Soil data		
	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)
Number of tests	1	1
No. tests in 20% data set	0	0
No. tests with suspected pyrite		1
Maximum value	41	0.2
Mean of highest two values	41	0
Mean of highest 20%		
Characteristic Value	41	0.2
		Mg not required
	[no pyrite]	[pyrite suspected]
DS Class	DS-1	DS-1
If pyrite suspected, DS Class limited to		DS-1
Is pyrite assumed to be present?	Yes	Adopted DS Class = DS-1
Water data		
	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value	0	0
(Maximum Level)		Mg not required
DS Class		
pH data		
	Soil	Water
Number of tests	9	2
No. tests in 20% data set	2	0
Lowest pH	8.1	12.0
Mean of lowest 20%	8.3	
Characteristic value	8.3	12.0
Design value	8.3	
Number of soil pH results less than 5.5	0	
DS Class design value		ACEC Class design value
Based on higher of soil and water data		Brownfield Mobile groundwater
		DS-1
		AC-1

Client Reading Borough Council	Location or material to which this assessment applies Lambeth Group
Project Dwyer Road	
Job number 26888	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	2	2	0
No. tests in 20% data set	0	0	
No. tests with suspected pyrite		2	
Maximum value	54	0.1	
Mean of highest two values	41	0	
Mean of highest 20%			
Characteristic Value	54	0.1	
			Mg not required
	[no pyrite]	[pyrite suspected]	
DS Class	DS-1	DS-1	
If pyrite suspected, DS Class limited to			
		DS-1	
Is pyrite assumed to be present?	Yes	Adopted DS Class =	DS-1

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value	0	0
(Maximum Level)		Mg not required
DS Class		

pH data

	Soil	Water
Number of tests	2	2
No. tests in 20% data set	0	0
Lowest pH	8.1	12.0
Mean of lowest 20%		
Characteristic value	8.1	12.0
Design value	8.1	

Number of soil pH results less than 5.5 0

DS Class design value

Based on higher of soil and water data

ACEC Class design value

Brownfield
Mobile groundwater **AC-1**

DS-1

Client Reading Borough Council	Location or material to which this assessment applies Lynch Hill Gravel Member
Project Dwyer Road	
Job number 26888	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	5	5	0
No. tests in 20% data set	1	1	
No. tests with suspected pyrite		5	
Maximum value	243	0.1	
Mean of highest two values	222	0	
Mean of highest 20%			
Characteristic Value	222	0	
			Mg not required
	[no pyrite]	[pyrite suspected]	
DS Class	DS-1	DS-1	
If pyrite suspected, DS Class limited to			
		DS-1	
Is pyrite assumed to be present? Yes			
		Adopted DS Class =	DS-1

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0
		Mg not required
DS Class		

pH data

	Soil	Water
Number of tests	5	2
No. tests in 20% data set	1	0
Lowest pH	8.4	12.0
Mean of lowest 20%	8.4	
Characteristic value	8.4	12.0
Design value	8.4	

Number of soil pH results less than 5.5 0

DS Class design value

Based on higher of soil and water data

ACEC Class design value

Brownfield
Mobile groundwater

AC-1

DS-1

Client Reading Borough Council	Location or material to which this assessment applies Made Ground
Project Dwyer Road	
Job number 26888	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	1	1	0
No. tests in 20% data set	0	0	
No. tests with suspected pyrite		1	
Maximum value	59	0.1	
Mean of highest two values	59	0	
Mean of highest 20%			
Characteristic Value	59	0.1	
			Mg not required
	[no pyrite]	[pyrite suspected]	
DS Class	DS-1	DS-1	
If pyrite suspected, DS Class limited to			
		DS-1	
Is pyrite assumed to be present? Yes			
		Adopted DS Class =	DS-1

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value	0	0
(Maximum Level)		Mg not required
DS Class		

pH data

	Soil	Water
Number of tests	1	2
No. tests in 20% data set	0	0
Lowest pH	8.8	12.0
Mean of lowest 20%		
Characteristic value	8.8	12.0
Design value	8.8	

Number of soil pH results less than 5.5 0

DS Class design value

Based on higher of soil and water data

ACEC Class design value

Brownfield
Mobile groundwater

AC-1

DS-1

Appendix D Contamination GQRA

GAC derivation

Background

Initially, the Hydrock GAC were derived following the publishing of soil guideline values (SGV), toxicological (TOX) reports and associated publications by the Environment Agency (EA) in 2009 referenced under Science Report SC050021 (EA, 2009a, b, c, d). The Hydrock GAC have then been periodically updated following publication of new information on toxicological, physico-chemical, land use or receptor parameters, namely:

- » LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathaniel, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.
- » CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.
- » CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment.
- » LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathaniel, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathaniel, J. F.
- » CL:AIRE, 2021. 'C4SL Phase 2 Technical Reports'. Contaminated Land: Applications in Real Environment.

Land use scenarios

Hydrock has derived generic assessment criteria (GAC) for human health based on the six exposure scenarios defined in CL:AIRE (2014) using generic default assumptions from published guidance. GAC for each exposure scenario have been derived for three soil organic matter (SOM) contents, 1%, 2.5% and 6%.

All GAC have been rounded to two significant figures.

Exposure parameters

The exposure parameters used for the Hydrock GAC are the default parameters stated in SR3, unless updated in CL:AIRE (2014) where the CL:AIRE (2014) values have been adopted.

Approach to consumption rates

Hydrock have adopted the 90th percentile consumption rates from Table 3.4 of CL:AIRE (2014) for all produce types. This is noted to be more conservative than the "top two" approach taken in the derivation of C4SLs.

Approach to plant uptake for GAC omitted in CL:AIRE (2010)

Plant uptake factors were not identified in CL:AIRE (2010) for antimony, barium and molybdenum. Hydrock has sourced the required parameter values from ORNL (1984) in order to derive GAC that are inclusive of the homegrown produce exposure pathway.

Chemical and toxicity parameters

The chemical and toxicity parameters have been adopted based on the following documents:

- » IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.
- » LQM/CIEH, 2015.

- » ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.
- » CL:AIRE, 2010.
- » RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.
- » LQM/CIEH, 2009.
- » EA, 2009a.

Approach to Cyanide GAC

The Hydrock GAC for free cyanide have been derived based on ingestion of a bolus of contaminated soil. The GAC are derived for acute exposure of a child (0-6 years old) for all land uses except commercial, where the GAC are derived for acute exposure of an adult (16-65 years old). For the purpose of GQRA, the child value may be adopted for all land use scenarios.

For complex cyanide, the GAC have been derived based on chronic exposure, using the default exposure scenarios but excluding the consumption of homegrown produce, soil attached to homegrown produce, indoor vapour and outdoor vapour pathways. The chronic health criteria value (HCV) for complex cyanide is based on the Environment Agency (2009a) HCV for free cyanide and the ratio of toxicity between free and complex cyanide proposed by RIVM (2001).

Approach to Phenol GAC

In accordance with the Environment Agency Science Report SC050021 / Phenol SGV, a GACing/inh has been derived for ingested and inhaled phenol using the CLEA model, with a GACderm derived for dermal contact using Equation 5.7 within SR3. The lower of the GACing/inh and GACderm has been adopted as the final GAC.

Approach to PCB GAC

GAC for assessing the non-dioxin-like risk from PCBs have been based on the "Dutch 7". As the TDI used by the authors of the Dutch guidance is for the sum of the 7 individual congeners, the TDI has been divided by 7 to create a TDI for each congener. The non-dioxin-like risk from PCBs is therefore assessed using a Hazard Index approach as for total petroleum hydrocarbons (TPH).

Sub-surface soil to indoor air correction factors

Reflecting the approach taken by the Environment Agency in the development of revised SGV in 2009 for BTEX, a sub-surface soil to indoor air correction factor of 10 has been applied for petroleum hydrocarbons in order to account for over-prediction of vapour intrusion into building using the Johnson and Ettinger approach.

The correction factor of 10 has been applied to the following petroleum hydrocarbons (it makes negligible difference to less volatile TPH and PAH compounds):

- » TPHCWG fractions, namely aliphatic EC>5-44 and aromatic EC>6-44;
- » PAHs (acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene), benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, pyrene);
- » BTEX;
- » Isopropylbenzene;
- » Propylbenzene;
- » 1,2,4- and 1,3,5-trimethylbenzene; and
- » Styrene.

Approach to saturation limits

The CLEA model includes a traffic light colour system to highlight when saturated soil conditions have potentially been exceeded for the vapour pathways during calculation of assessment criteria. The colours represent:

- » Green: the assessment criteria do not exceed the saturated soil concentration.
- » Amber: the assessment criteria exceed the saturated soil concentration but the contribution of the indoor and outdoor vapour pathway to total exposure is less than 10% and will not significantly affect the assessment criteria.
- » Red: the assessment criteria exceed the saturated soil concentration and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10% and will significantly affect the assessment criteria.

Hydrock have not applied any further calculations or assessment in relation to saturation limits during GAC derivation, with the CLEA-modelled GAC being presented as the GAC. Consideration of saturation limits is undertaken during the data assessment stage.

References

CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.

CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment

CL:AIRE, 2021. C4SL Phase 2 Technical Reports for tetrachloroethene, trichloroethene and vinyl chloride. Contaminated Land: Applications in Real Environment.

EA, 2009a. 'Science Reports SC050021 – SGV and TOX reports for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'; 'Supplementary information for the derivation of SGV for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs', and 'Contaminants in soil: updated collation of toxicological data and intake values for humans: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'. Environment Agency.

EA, 2009b. 'Science Report – SC050021/SR2. Human health toxicological assessment of contaminants in soil'. Environment Agency.

EA, 2009c. 'Science Report – SC050021/SR3. Updated technical background to the CLEA model'. Environment Agency.

EA, 2009d. 'Science Report – SC050021/SR4. CLEA Software (version 1.05) Handbook'. Environment Agency.

IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.

LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathaniel, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.

LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathaniel, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathaniel, J. F.

ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.

RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.

Human health GQRA

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter: Client: Site: Job no.: Lab. report no(s).:		Default - Human Health - residential with home-grown produce (1%SOM)												TP5-1							BH1-1		TP3-1		TP2-1		TP1-1		TP3-2		
		Reading Borough Council Dwyer Road 26888 23-04495 Depth Min (m bgl) Depth Max (m bgl)												Data Filters		All LHG 0.2 1		Hydrock													
														Zone																	
														Strata																	
														Dataset mean SOM%	0.48																
Scenario SOM%												1																			
All values in mg/kg unless otherwise stated																															
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	LHG	LHG	LHG	LHG	LHG	LHG											
-	Asbestos																														
P1020	Asbestos Identified	text	Y/N	11	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	N	N												
0	Hydrock Default Suite - FOC / SOM / pH										-																				
P1085	FOC (dimensionless)	ll	0.001	5	0.002	0.004	0.003	0.002	0.00		-	-	-		0.004	0.002	0.002	0.004	0.002												
-	SOM (calculated)	%	0.1724	5	0.34	0.69	0.48	0.34	0.19		-	-	-		0.6896	0.3448	0.3448	0.6896	0.3448												
P1334	pH (su)	pH Units	0.1	5	7.50	8.60	7.76	7.50	0.48		-	-	-		7.5	8.6	7.5	7.5	7.7												
-	Hydrock Default Suite - Metals & PAH																														
7440-38-2	Arsenic	mg/kg	2	5	5.00	18.00	8.80	7.00	5.26	0	NR	37	C4SL - CL:AIRE 2014		7	5	6	8	18												
7440-41-7	Beryllium	mg/kg	0.5	5	0.50	0.50	0.50	0.50	0.00	0	NR	1.7	Hydrock Derived		<0.5	<0.5	<0.5	<0.5	<0.5												
7440-42-8	Boron	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	300	Hydrock Derived		<1	<1	<1	<1	<1												
7440-43-9	Cadmium	mg/kg	0.2	5	0.20	0.50	0.38	0.50	0.16	0	NR	22	C4SL - CL:AIRE 2014		0.5	<0.2	<0.2	0.5	0.5												
18540-29-9	Chromium (VI)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	NR	21	C4SL - CL:AIRE 2014		<2	<2	<2	<2	<2												
7440-47-3	Chromium (Total)	mg/kg	2	5	3.00	14.00	9.20	9.00	4.87			-			14	6	3	14	9												
7440-50-8	Copper	mg/kg	4	5	4.00	9.00	6.20	7.00	2.17	0	NR	2500	Hydrock Derived		7	<4	<4	7	9												
7439-92-1	Lead	mg/kg	3	5	3.00	13.00	7.00	7.00	4.24	0	NR	200	C4SL - CL:AIRE 2014		13	<3	<3	9	7												
7439-97-6	Mercury, inorganic	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	40	Hydrock Derived		<1	<1	<1	<1	<1												
7440-02-0	Nickel	mg/kg	3	5	3.00	7.00	4.80	5.00	1.79	0	NR	130	Hydrock Derived		6	3	<3	5	7												
7440-62-2	Vanadium	mg/kg	1	5	4.00	27.00	17.40	20.00	10.09	0	NR	410	Hydrock Derived		27	10	4	26	20												
7440-66-6	Zinc	mg/kg	3	5	6.00	28.00	18.00	22.00	10.75	0	NR	3900	Hydrock Derived		27	7	6	28	22												
P1095	Cyanide (free)	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1	<1												
P1186	Total Phenols (Monohydric)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	24237	120	Hydrock Derived		<2	<2	<2	<2	<2												
83-32-9	Acenaphthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	57	230	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
208-96-8	Acenaphthylene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	86	180	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
120-12-7	Anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	1.17	2400	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
56-55-3	Benz(a)anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	1.71	8.9	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
50-32-8	Benzo(a)pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.91	5	C4SL - CL:AIRE 2014		<0.1	<0.1	<0.1	<0.1	<0.1												
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	1.22	2.6	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.02	320	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.69	78	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
218-01-9	Chrysene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.44	15	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.004	0.25	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
206-44-0	Fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	19	290	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
86-73-7	Fluorene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	31	180	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.06	28	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
91-20-3	Naphthalene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	76	13	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
85-01-8	Phenanthrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	36	98	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
129-00-0	Pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	2.2	620	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1												
P1310	PAH 16 Total	mg/kg	1.6	5	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6	<1.6	<1.6	<1.6												
0	TPH fractions																														
P1407	TPH ali >EC05-EC06	mg/kg	0.01	5	0.01	0.01	0.01	0.01	0.000	0	304	42	Hydrock Derived		<0.01	<0.01	<0.01	<0.01	<0.01												
P1408	TPH ali >EC06-EC08	mg/kg	0.05	5	0.05	0.05	0.05	0.05	0.000	0	144	100	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05												
P1409	TPH ali >EC08-EC10	mg/kg	2	5	2.00	2.00	2.00	2.00	0.000	0	78	27	Hydrock Derived		<2	<2	<2	<2	<2												
P1410	TPH ali >EC10-EC12	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	48	130	Hydrock Derived		<2	<2	<2	<2	<2												
P1411	TPH ali >EC12-EC16	mg/kg	3	5	3.00	3.00	3.00	3.00	0.00	0	24	1100	Hydrock Derived		<3	<3	<3	<3	<3												
P1412	TPH ali >EC16-EC21	mg/kg	3	5	3.00	3.00	3.00	3.00	0.00			-			<3	<3	<3	<3	<3												
P1413	TPH ali >EC21-EC35	mg/kg	10	5	10.00	10.00	10.00	10.00	0.00			-			<10	<10	<10	<10	<10												
P1418	TPH ali >EC5-EC35	mg/kg	21	5	21.00	21.00	21.00	21.00	0.00			-			<21	<21	<21	<21	<21												
P1441	TPH aro >EC05-EC07	mg/kg	0.01	5	0.01	0.01	0.01	0.01	0.00	0	1218	73	Hydrock Derived		<0.01	<0.01	<0.01	<0.01	<0.01												
P1355	TPH aro >EC07-EC08	mg/kg	0.05	5	0.05	0.05	0.05	0.05	0.00	0	869	130	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05												
P1356	TPH aro >EC08-EC10	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	613	35	Hydrock Derived		<2	<2	<2	<2	<2												
P1357	TPH aro >EC10-EC12	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	364	75	Hydrock Derived		<2	<2	<2	<2	<2												
P1358	TPH aro >EC12-EC16	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	169	140	Hydrock Derived		<2	<2	<2	<2	<2												

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:														Default - Human Health - residential with home-grown produce (1%SOM)														TP5-01							BH1-01							TP3-01							TP2-01							TP1-01													
Client:														Reading Borough Council														Data Filters							Hydrock																																		
Site:														Dwyer Road														Zone																					All																				
Job no.:														26888														Strata																					LHG																				
Lab. report no(s).:														23-04495														Depth Min (m bgl)																					0.2																				
																												Depth Max (m bgl)																					1																				
														Dataset mean SOM%														0.48																																									
														Scenario SOM%														1																																									
														All values in mg/kg unless otherwise stated																																																							
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	LHG	LHG	LHG	LHG	LHG	LHG																																																	
P1359	TPH aro >EC16-EC21	mg/kg	3	5	3.00	3.00	3.00	3.00	0.00	0	54	260	Hydrock Derived		<3	<3	<3	<3	<3	<3																																																	
P1360	TPH aro >EC21-EC35	mg/kg	10	5	10.00	10.00	10.00	10.00	0.00	0	5	1100	Hydrock Derived		<10	<10	<10	<10	<10	<10																																																	
P1365	TPH aro >EC5-EC35	mg/kg	21	5	21.00	21.00	21.00	21.00	0.00			-			<21	<21	<21	<21	<21	<21																																																	
P1418	TPH ali >EC5-EC35	mg/kg	42	5	42.00	42.00	42.00	42.00	0.00			-			<42	<42	<42	<42	<42	<42																																																	
0	VOCs - BTEX & MTBE																																																																				
71-43-2	Benzene	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	1218	0.2	C4SL - CL:AIRE 2014		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002																																																	
108-88-3	Toluene	mg/kg	5	5	0.01	0.01	0.01	0.01	0.00	0	869	130	Hydrock Derived		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005																																																	
100-41-4	Ethylbenzene	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	518	47	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002																																																	
95-47-6	Xylene, o-	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	478	61	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002																																																	
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	576	57	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	<0.002	<0.002																																																	
1634-04-4	MTBE	mg/kg	5	5	0.01	0.01	0.01	0.01	0.00	0	20358	62	Hydrock Derived		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005																																																	
	TPH Additivity Check			HAZARD QUOTIENTS FOR EACH FRACTION																																																																	
														Aliphatics >EC5-EC6							0.000238095	0.000238095	0.000238095	0.000238095	0.000238095																																												
														Aliphatics >EC6-EC8							0.0005	0.0005	0.0005	0.0005	0.0005																																												
														Aliphatics >EC8-EC10							0.074074074	0.074074074	0.074074074	0.074074074	0.074074074																																												
														Aliphatics >EC10-EC12							0.015384615	0.015384615	0.015384615	0.015384615	0.015384615																																												
														Aliphatics >EC12-EC16							0.002727273	0.002727273	0.002727273	0.002727273	0.002727273																																												
														Aliphatics >EC16-EC35																																																							
														Aliphatics >EC35-EC44																																																							
														Aromatics >EC5-EC7							0.000136986	0.000136986	0.000136986	0.000136986	0.000136986																																												
														Aromatics >EC7-EC8							0.000384615	0.000384615	0.000384615	0.000384615	0.000384615																																												
														Aromatics >EC8-EC10							0.057142857	0.057142857	0.057142857	0.057142857	0.057142857																																												
														Aromatics >EC10-EC12							0.026666667	0.026666667	0.026666667	0.026666667	0.026666667																																												
														Aromatics >EC12-EC16							0.014285714	0.014285714	0.014285714	0.014285714	0.014285714																																												
														Aromatics >EC16-EC21							0.011538462	0.011538462	0.011538462	0.011538462	0.011538462																																												
														Aromatics >EC21-EC35							0.009090909	0.009090909	0.009090909	0.009090909	0.009090909																																												
														Aromatics >EC35-EC44																																																							
														Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.							Hazard Index for ali>C8-C16	0.092185962	0.092185962	0.092185962	0.092185962	0.092185962																																											
																					Hazard Index for aro>C8-C16	0.098095238	0.098095238	0.098095238	0.098095238	0.098095238																																											
																					Hazard Index for aro>C16-C35	0.020629371	0.020629371	0.020629371	0.020629371	0.020629371																																											

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:		Default - Human Health - POSresi (1%SOM)											TP5		BH1		TP3		TP2		TP1		TP3	
Client:		Reading Borough Council								Data Filters		Hydrock												
Site:		Dwyer Road								Zone												All		
Job no.:		26888								Strata												LHG		
Lab. report no(s):		23-04495								Depth Min (m bgl)												0.2		
										Depth Max (m bgl)		1												
Dataset mean SOM%													0.48											
Scenario SOM%													1											
All values in mg/kg unless otherwise stated																								
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	LHG	LHG	LHG	LHG	LHG	LHG	LHG			
-	Asbestos																							
P1020	Asbestos Identified	text	Y/N	11	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	N	N					
0	Hydrock Default Suite - FOC / SOM / pH										-													
P1085	FOC (dimensionless)	ll	0.001	5	0.002	0.004	0.003	0.002	0.00		-	-	-		0.004	0.002	0.002	0.004	0.002					
-	SOM (calculated)	%	0.1724	5	0.34	0.69	0.48	0.34	0.19		-	-	-		0.6896	0.3448	0.3448	0.6896	0.3448					
P1334	pH (su)	pH Units	0.1	5	7.50	8.60	7.76	7.50	0.48		-	-	-		7.5	8.6	7.5	7.5	7.7					
-	Hydrock Default Suite - Metals & PAH																							
7440-38-2	Arsenic	mg/kg	2	5	5.00	18.00	8.80	7.00	5.26	0	NR	79	C4SL - CL-AIRE 2014		7	5	6	8	18					
7440-41-7	Beryllium	mg/kg	0.5	5	0.50	0.50	0.50	0.50	0.00	0	NR	2.2	Hydrock Derived		<0.5	<0.5	<0.5	<0.5	<0.5					
7440-42-8	Boron	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	21000	Hydrock Derived		<1	<1	<1	<1	<1					
7440-43-9	Cadmium	mg/kg	0.2	5	0.20	0.50	0.38	0.50	0.16	0	NR	220	C4SL - CL-AIRE 2014		0.5	<0.2	<0.2	0.5	0.5					
18540-29-9	Chromium (VI)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	NR	23	C4SL - CL-AIRE 2014		<2	<2	<2	<2	<2					
7440-47-3	Chromium (Total)	mg/kg	2	5	3.00	14.00	9.20	9.00	4.87			-			14	6	3	14	9					
7440-50-8	Copper	mg/kg	4	5	4.00	9.00	6.20	7.00	2.17	0	NR	12000	Hydrock Derived		7	<4	<4	7	9					
7439-92-1	Lead	mg/kg	3	5	3.00	13.00	7.00	7.00	4.24	0	NR	630	C4SL - CL-AIRE 2014		13	<3	<3	9	7					
7439-97-6	Mercury, inorganic	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	120	Hydrock Derived		<1	<1	<1	<1	<1					
7440-02-0	Nickel	mg/kg	3	5	3.00	7.00	4.80	5.00	1.79	0	NR	230	Hydrock Derived		6	3	<3	5	7					
7440-62-2	Vanadium	mg/kg	1	5	4.00	27.00	17.40	20.00	10.09	0	NR	2000	Hydrock Derived		27	10	4	26	20					
7440-66-6	Zinc	mg/kg	3	5	6.00	28.00	18.00	22.00	10.75	0	NR	81000	Hydrock Derived		27	7	6	28	22					
P1095	Cyanide (free)	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1	<1					
P1186	Total Phenols (Monohydric)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	24237	440	Hydrock Derived		<2	<2	<2	<2	<2					
83-32-9	Acenaphthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	57	15000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
208-96-8	Acenaphthylene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	86	15000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
120-12-7	Anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	1.17	74000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
56-55-3	Benz(a)anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	1.71	29	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
50-32-8	Benzo(a)pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.91	10	C4SL - CL-AIRE 2014		<0.1	<0.1	<0.1	<0.1	<0.1					
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	1.22	7.2	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.02	640	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.69	190	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
218-01-9	Chrysene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.44	57	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.004	0.57	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
206-44-0	Fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	19	3100	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
86-73-7	Fluorene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	31	9900	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
193-39-5	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.06	82	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
91-20-3	Naphthalene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	76	3900	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
85-01-8	Phenanthrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	36	3100	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
129-00-0	Pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	2.2	7400	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1					
P1310	PAH 16 Total	mg/kg	1.6	5	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6	<1.6	<1.6	<1.6					
0	TPH fractions																							
P1407	TPH ali EC05-EC06	mg/kg	0.01	5	0.01	0.01	0.01	0.01	0.000	0	304	570000	Hydrock Derived		<0.01	<0.01	<0.01	<0.01	<0.01					
P1408	TPH ali >EC06-EC08	mg/kg	0.05	5	0.05	0.05	0.05	0.05	0.000	0	144	600000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05					
P1409	TPH ali >EC08-EC10	mg/kg	2	5	2.00	2.00	2.00	2.00	0.000	0	78	13000	Hydrock Derived		<2	<2	<2	<2	<2					
P1410	TPH ali >EC10-EC12	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	48	13000	Hydrock Derived		<2	<2	<2	<2	<2					
P1411	TPH ali >EC12-EC16	mg/kg	3	5	3.00	3.00	3.00	3.00	0.00	0	24	13000	Hydrock Derived		<3	<3	<3	<3	<3					
P1412	TPH ali >EC16-EC21	mg/kg	3	5	3.00	3.00	3.00	3.00	0.00			-			<3	<3	<3	<3	<3					
P1413	TPH ali >EC21-EC35	mg/kg	10	5	10.00	10.00	10.00	10.00	0.00			-			<10	<10	<10	<10	<10					
P1418	TPH ali >EC5-EC35	mg/kg	21	5	21.00	21.00	21.00	21.00	0.00			-			<21	<21	<21	<21	<21					
P1441	TPH aro EC05-EC07	mg/kg	0.01	5	0.01	0.01	0.01	0.01	0.00	0	1218	56000	Hydrock Derived		<0.01	<0.01	<0.01	<0.01	<0.01					
P1355	TPH aro >EC07-EC08	mg/kg	0.05	5	0.05	0.05	0.05	0.05	0.00	0	869	56000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05	<0.05					
P1356	TPH aro >EC08-EC10	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	613	5000	Hydrock Derived		<2	<2	<2	<2	<2					
P1357	TPH aro >EC10-EC12	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	364	5000	Hydrock Derived		<2	<2	<2	<2	<2					
P1358	TPH aro >EC12-EC16	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	169	5000	Hydrock Derived		<2	<2	<2	<2	<2					

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter: Default - Human Health - POSresi (1%SOM)														Data Filters						Hydrock					
Client: Reading Borough Council														Zone		All									
Site: Dwyer Road														Strata		LHG									
Job no.: 26888														Depth Min (m bgl)		0.2									
Lab. report no(s).: 23-04495														Depth Max (m bgl)		1									
Dataset mean SOM%														0.48											
Scenario SOM%														1											
All values in mg/kg unless otherwise stated																									
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	LHG	LHG	LHG	LHG	LHG	LHG					
P1359	TPH aro >EC16-EC21	mg/kg	3	5	3.00	3.00	3.00	3.00	0.00	0	54	3800	Hydrock Derived		<3	<3	<3	<3	<3						
P1360	TPH aro >EC21-EC35	mg/kg	10	5	10.00	10.00	10.00	10.00	0.00	0	5	3800	Hydrock Derived		<10	<10	<10	<10	<10						
P1365	TPH aro >EC5-EC35	mg/kg	21	5	21.00	21.00	21.00	21.00	0.00			-			<21	<21	<21	<21	<21						
P1418	TPH ali >EC5-EC35	mg/kg	42	5	42.00	42.00	42.00	42.00	0.00			-			<42	<42	<42	<42	<42						
0	VOCs - BTEX & MTBE																								
71-43-2	Benzene	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	1218	140	C4SL - CL:AIRE 2014		<0.002	<0.002	<0.002	<0.002	<0.002						
108-88-3	Toluene	mg/kg	5	5	0.01	0.01	0.01	0.01	0.00	0	869	56000	Hydrock Derived		<0.005	<0.005	<0.005	<0.005	<0.005						
100-41-4	Ethylbenzene	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	518	24000	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	<0.002						
95-47-6	Xylene, o-	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	478	41000	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	<0.002						
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	2	5	0.00	0.00	0.00	0.00	0.00	0	576	41000	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	<0.002						
1634-04-4	MTBE	mg/kg	5	5	0.01	0.01	0.01	0.01	0.00	0	20358	75000	Hydrock Derived		<0.005	<0.005	<0.005	<0.005	<0.005						
	TPH Additivity Check			HAZARD QUOTIENTS FOR EACH FRACTION																					
														Aliphatics >EC5-EC6	1.75439E-08	1.75439E-08	1.75439E-08	1.75439E-08	1.75439E-08						
														Aliphatics >EC6-EC8	8.33333E-08	8.33333E-08	8.33333E-08	8.33333E-08	8.33333E-08						
														Aliphatics >EC8-EC10	0.000153846	0.000153846	0.000153846	0.000153846	0.000153846						
														Aliphatics >EC10-EC12	0.000153846	0.000153846	0.000153846	0.000153846	0.000153846						
														Aliphatics >EC12-EC16	0.000230769	0.000230769	0.000230769	0.000230769	0.000230769						
														Aliphatics >EC16-EC35											
														Aliphatics >EC35-EC44											
														Aromatics >EC5-EC7	1.78571E-07	1.78571E-07	1.78571E-07	1.78571E-07	1.78571E-07						
														Aromatics >EC7-EC8	8.92857E-07	8.92857E-07	8.92857E-07	8.92857E-07	8.92857E-07						
														Aromatics >EC8-EC10	0.0004	0.0004	0.0004	0.0004	0.0004						
														Aromatics >EC10-EC12	0.0004	0.0004	0.0004	0.0004	0.0004						
														Aromatics >EC12-EC16	0.0004	0.0004	0.0004	0.0004	0.0004						
														Aromatics >EC16-EC21	0.000789474	0.000789474	0.000789474	0.000789474	0.000789474						
														Aromatics >EC21-EC35	0.002631579	0.002631579	0.002631579	0.002631579	0.002631579						
														Aromatics >EC35-EC44											
														Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	Hazard Index for ali>C8-C16	0.000538462	0.000538462	0.000538462	0.000538462	0.000538462					
															Hazard Index for aro>C8-C16	0.0012	0.0012	0.0012	0.0012	0.0012					
															Hazard Index for aro>C16-C35	0.003421053	0.003421053	0.003421053	0.003421053	0.003421053					
Legend:		MG	Made Ground	<0.02		Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.																			
		TS	Topsoik	0.02		Value greater than, or equal to, the generic assessment criterion (GAC).																			
		LHG	Lynch Hill Gravel	<10		Value excluded from statistical analysis																			
				Y		Text result																			
				-		Represents a determinand that was not tested.																			
				+		represents a data point that is not included in the current filter settings																			
Template Version:																									
105: 11/04/23																									

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:		Default - Human Health - residential with home-grown produce (1%SOM)											TP5		TP5		TP4		BH2				
Client:		Reading Borough Council									Data Filters												
Site:		Dwyer Road									Zone		All										
Job no.:		26888									Strata		MG										
Lab. report no(s):		23-04495									Depth Min (m bgl)		0.2										
											Depth Max (m bgl)		1										
															Date	17/03/23		17/03/23		17/03/23		15/03/23	
															Zone								
															Location	TP5		TP5		TP4		BH2	
															Depth (m bgl)	0.2		0.4		1		0.2	
															Dataset mean SOM%	1.25							
															Scenario SOM%	1							
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	MG	MG	MG	MG					
-	Asbestos																						
P1020	Asbestos Identified	text	Y/N	11	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	N					
0	Hydrock Default Suite - FOC / SOM / pH										-												
P1085	FOC (dimensionless)	l	0.001	4	0.002	0.013	0.007	0.007	0.00		-	-	-		0.002	0.013	0.009	0.005					
-	SOM (calculated)	%	0.1724	4	0.34	2.24	1.25	1.21	0.83		-	-	-		0.3448	2.2412	1.5516	0.862					
P1334	pH (su)	pH Units	0.1	4	7.60	7.90	7.73	7.70	0.13		-	-	-		7.7	7.9	7.6	7.7					
-	Hydrock Default Suite - Metals & PAH																						
7440-38-2	Arsenic	mg/kg	2	4	3.00	22.00	12.00	11.50	8.29	0	NR	37	C4SL - CL-AIRE 2014		3	22	8	15					
7440-41-7	Beryllium	mg/kg	0.5	4	0.50	0.50	0.50	0.50	0.00	0	NR	1.7	Hydrock Derived		<0.5	<0.5	<0.5	<0.5					
7440-42-8	Boron	mg/kg	1	4	1.00	1.00	1.00	1.00	0.00	0	NR	300	Hydrock Derived		<1	<1	<1	<1					
7440-43-9	Cadmium	mg/kg	0.2	4	0.20	0.60	0.43	0.45	0.17	0	NR	22	C4SL - CL-AIRE 2014		<0.2	0.6	0.4	0.5					
18540-29-9	Chromium (VI)	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	NR	21	C4SL - CL-AIRE 2014		<2	<2	<2	<2					
7440-47-3	Chromium (Total)	mg/kg	2	4	8.00	14.00	10.75	10.50	2.75		-				8	14	9	12					
7440-50-8	Copper	mg/kg	4	4	4.00	19.00	11.00	10.50	6.16	0	NR	2500	Hydrock Derived		<4	19	11	10					
7439-92-1	Lead	mg/kg	3	4	4.00	54.00	34.25	39.50	21.95	0	NR	200	C4SL - CL-AIRE 2014		4	54	33	46					
7439-97-6	Mercury, inorganic	mg/kg	1	4	1.00	1.00	1.00	1.00	0.00	0	NR	40	Hydrock Derived		<1	<1	<1	<1					
7440-02-0	Nickel	mg/kg	3	4	3.00	11.00	6.50	6.00	3.32	0	NR	130	Hydrock Derived		<3	11	6	6					
7440-62-2	Natrium	mg/kg	1	4	14.00	26.00	20.50	21.00	5.51	0	NR	410	Hydrock Derived		14	26	18	24					
7440-66-6	Zinc	mg/kg	3	4	6.00	52.00	33.50	38.00	19.64	0	NR	3900	Hydrock Derived		6	35	41	52					
P1095	Cyanide (free)	mg/kg	1	4	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1					
P1186	Total Phenols (Monohydric)	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	24237	120	Hydrock Derived		<2	<2	<2	<2					
83-32-9	Acenaphthene	mg/kg	0.1	4	0.10	0.60	0.27	0.19	0.24	0	57	230	Hydrock Derived		0.28	0.6	<0.1	<0.1					
208-96-8	Acenaphthylene	mg/kg	0.1	4	0.10	0.10	0.10	0.10	0.00	0	86	180	Hydrock Derived		<0.1	<0.1	<0.1	<0.1					
120-12-7	Anthracene	mg/kg	0.1	4	0.10	1.94	0.79	0.57	0.88	0	1.17	2400	Hydrock Derived		1.03	1.94	<0.1	<0.1					
56-55-3	Benzo(a)anthracene	mg/kg	0.1	4	0.10	8.31	3.40	2.60	3.93	0	1.71	8.9	Hydrock Derived		4.83	8.31	0.37	<0.1					
50-32-8	Benzo(a)pyrene	mg/kg	0.1	4	0.10	8.77	3.72	3.01	4.19	2	0.91	5	C4SL - CL-AIRE 2014		5.56	8.77	0.46	<0.1					
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	4	0.10	10.50	4.64	3.99	5.17	2	1.22	2.6	Hydrock Derived		7.48	10.5	0.49	<0.1					
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	4	0.10	4.25	1.85	1.53	1.99	0	0.02	320	Hydrock Derived		2.73	4.25	0.32	<0.1					
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	4	0.10	3.74	1.58	1.23	1.73	0	0.69	78	Hydrock Derived		2.2	3.74	0.26	<0.1					
218-01-9	Chrysene	mg/kg	0.1	4	0.10	8.20	3.45	2.75	3.91	0	0.44	15	Hydrock Derived		5.09	8.2	0.4	<0.1					
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.1	4	0.10	1.37	0.63	0.52	0.63	2	0.004	0.25	Hydrock Derived		0.93	1.37	<0.1	<0.1					
206-44-0	Fluoranthene	mg/kg	0.1	4	0.14	15.20	6.07	4.47	7.11	0	19	290	Hydrock Derived		8.22	15.2	0.72	0.14					
86-73-7	Fluorene	mg/kg	0.1	4	0.10	0.47	0.22	0.15	0.18	0	31	180	Hydrock Derived		0.19	0.47	<0.1	<0.1					
193-39-5	Indeno(1,2,3cd)pyrene	mg/kg	0.1	4	0.10	5.20	2.26	1.87	2.48	0	0.06	28	Hydrock Derived		3.42	5.2	0.32	<0.1					
91-20-3	Naphthalene	mg/kg	0.1	4	0.10	0.10	0.10	0.10	0.00	0	76	13	Hydrock Derived		<0.1	<0.1	<0.1	<0.1					
85-01-8	Phenanthrene	mg/kg	0.1	4	0.10	5.65	2.19	1.51	2.63	0	36	98	Hydrock Derived		2.82	5.65	0.2	<0.1					
129-00-0	Pyrene	mg/kg	0.1	4	0.13	11.30	4.57	3.42	5.25	0	2.2	620	Hydrock Derived		6.15	11.3	0.68	0.13					
P1310	PAH 16 Total	mg/kg	1.6	4	1.60	85.40	35.53	27.55	40.23			-			50.9	85.4	4.2	<1.6					
0	TPH fractions																						
P1407	TPH ali >EC05-EC06	mg/kg	0.01	4	0.01	0.01	0.01	0.01	0.000	0	304	42	Hydrock Derived		<0.01	<0.01	<0.01	<0.01					
P1408	TPH ali >EC06-EC08	mg/kg	0.05	4	0.05	0.05	0.05	0.05	0.000	0	144	100	Hydrock Derived		<0.05	<0.05	<0.05	<0.05					
P1409	TPH ali >EC08-EC10	mg/kg	2	4	2.00	2.00	2.00	2.00	0.000	0	78	27	Hydrock Derived		<2	<2	<2	<2					
P1410	TPH ali >EC10-EC12	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	48	130	Hydrock Derived		<2	<2	<2	<2					
P1411	TPH ali >EC12-EC16	mg/kg	3	4	3.00	3.00	3.00	3.00	0.00	0	24	1100	Hydrock Derived		<3	<3	<3	<3					
P1412	TPH ali >EC16-EC21	mg/kg	3	4	3.00	3.00	3.00	3.00	0.00			-			<3	<3	<3	<3					
P1413	TPH ali >EC21-EC35	mg/kg	10	4	10.00	10.00	10.00	10.00	0.00			-			<10	<10	<10	<10					
P1418	TPH ali >EC5-EC35	mg/kg	21	4	21.00	21.00	21.00	21.00	0.00			-			<21	<21	<21	<21					
P1441	TPH aro >EC05-EC07	mg/kg	0.01	4	0.01	0.01	0.01	0.01	0.00	0	1218	73	Hydrock Derived		<0.01	<0.01	<0.01	<0.01					
P1355	TPH aro >EC07-EC08	mg/kg	0.05	4	0.05	0.05	0.05	0.05	0.00	0	869	130	Hydrock Derived		<0.05	<0.05	<0.05	<0.05					
P1356	TPH aro >EC08-EC10	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	613	35	Hydrock Derived		<2	<2	<2	<2					
P1357	TPH aro >EC10-EC12	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	364	75	Hydrock Derived		<2	<2	<2	<2					
P1358	TPH aro >EC12-EC16	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	169	140	Hydrock Derived		<2	2	<2	<2					

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter: Default - Human Health - residential with home-grown produce (1%SOM)														TP5 0.2TP5 0.4TP4 0.1BH2 0.2					
Client: Reading Borough Council														Hydrock					
Site: Dwyer Road																			
Job no.: 26888																			
Lab. report no(s).: 23-04495																			
Data Filters																			
Zone																			
Strata																			
Depth Min (m bgl)																			
Depth Max (m bgl)																			
Dataset mean SOM%																			
Scenario SOM%																			
All values in mg/kg unless otherwise stated																			
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	MG	MG	MG	MG	
P1359	TPH aro >EC16-EC21	mg/kg	3	4	3.00	33.00	14.75	11.50	14.57	0	54	260	Hydrock Derived		20	33	<3	<3	
P1360	TPH aro >EC21-EC35	mg/kg	10	4	10.00	148.00	60.50	42.00	65.67	0	5	1100	Hydrock Derived		74	148	<10	<10	
P1365	TPH aro >EC5-EC35	mg/kg	21	4	21.00	184.00	80.00	57.50	77.40			-			94	184	<21	<21	
P1418	TPH ali >EC5-EC35	mg/kg	42	4	42.00	184.00	90.50	68.00	66.98			-			94	184	<42	<42	
o	VOCs - BTEX & MTBE																		
71-43-2	Benzene	mg/kg	2	4	0.00	0.00	0.00	0.00	0.00	0	1218	0.2	C4SL - CL:AIRE 2014		<0.002	<0.002	<0.002	<0.002	
108-88-3	Toluene	mg/kg	5	4	0.01	0.01	0.01	0.01	0.00	0	869	130	Hydrock Derived		<0.005	<0.005	<0.005	<0.005	
100-41-4	Ethylbenzene	mg/kg	2	4	0.00	0.00	0.00	0.00	0.00	0	518	47	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	
95-47-6	Xylene, o-	mg/kg	2	4	0.00	0.00	0.00	0.00	0.00	0	478	61	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	2	4	0.00	0.00	0.00	0.00	0.00	0	576	57	Hydrock Derived		<0.002	<0.002	<0.002	<0.002	
1634-04-4	MTBE	mg/kg	5	4	0.01	0.01	0.01	0.01	0.00	0	20358	62	Hydrock Derived		<0.005	<0.005	<0.005	<0.005	
	TPH Additivity Check			HAZARD QUOTIENTS FOR EACH FRACTION															
														Aliphatics >EC5-EC6	0.000238095	0.000238095	0.000238095	0.000238095	
														Aliphatics >EC6-EC8	0.0005	0.0005	0.0005	0.0005	
														Aliphatics >EC8-EC10	0.074074074	0.074074074	0.074074074	0.074074074	
														Aliphatics >EC10-EC12	0.015384615	0.015384615	0.015384615	0.015384615	
														Aliphatics >EC12-EC16	0.002727273	0.002727273	0.002727273	0.002727273	
														Aliphatics >EC16-EC35					
														Aliphatics >EC35-EC44					
														Aromatics EC5-EC7	0.000136986	0.000136986	0.000136986	0.000136986	
														Aromatics >EC7-EC8	0.000384615	0.000384615	0.000384615	0.000384615	
														Aromatics >EC8-EC10	0.057142857	0.057142857	0.057142857	0.057142857	
														Aromatics >EC10-EC12	0.026666667	0.026666667	0.026666667	0.026666667	
														Aromatics >EC12-EC16	0.014285714	0.014285714	0.014285714	0.014285714	
														Aromatics >EC16-EC21	0.076923077	0.126923077	0.011538462	0.011538462	
														Aromatics >EC21-EC35	0.067272727	0.134545455	0.009090909	0.009090909	
														Aromatics >EC35-EC44					
														Hazard Index for ali>C8-C16	0.092185962	0.092185962	0.092185962	0.092185962	
														Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	Hazard Index for aro>C8-C16	0.098095238	0.098095238	0.098095238	0.098095238
															Hazard Index for aro>C16-C35	0.144195804	0.261468531	0.020629371	0.020629371
Legend:														MG	Made Ground	<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.		
														TS	Topsoik	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).		
														LHG	Lynch Hill Gravel	<10	Value excluded from statistical analysis		
															Y		Text result		
															-		Represents a determinand that was not tested.		
															+		represents a data point that is not included in the current filter settings		
Template Version: 105: 11/04/23																			

Assessment of Chemicals of Potential Concern to Human Health

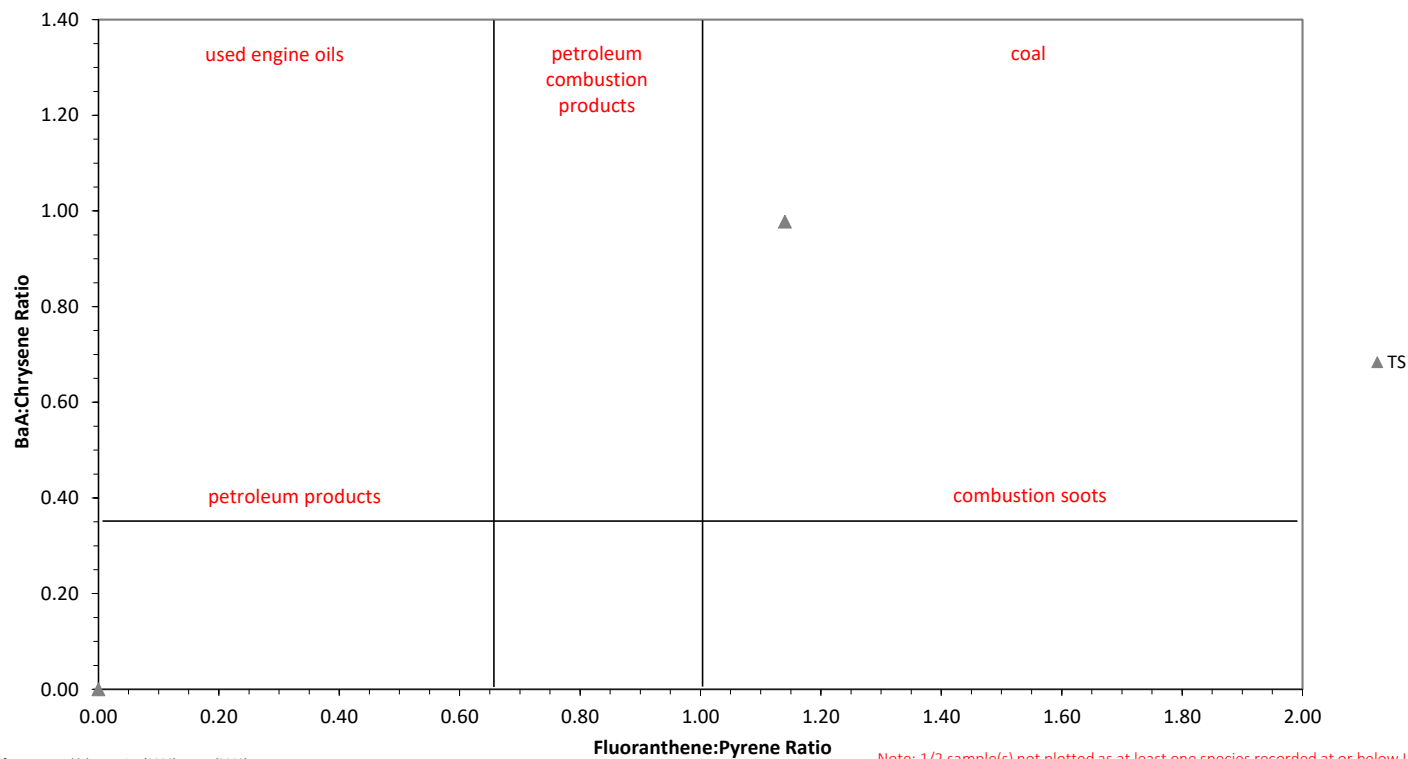
Risk parameter: Client: Site: Job no.: Lab. report no(s):	Default - Human Health - POSresi (1%SOM)										Data Filters		Hydrock		TP5 & TP4				TP4 & TP5		BH2 & BH2			
	Reading Borough Council										Zone				17/03/23				17/03/23		17/03/23		15/03/23	
	Dwyer Road										Strata				TP5				TP5		TP4		BH2	
	26888										Depth Min (m bgl)				0.2				0.4		1		0.2	
	23-04495										Depth Max (m bgl)				1									
Dataset mean SOM%										1.25														
Scenario SOM%										1														
All values in mg/kg unless otherwise stated																								
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	MG	MG	MG	MG						
-	Asbestos																							
P1020	Asbestos Identified	text	Y/N	11	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	N						
o	Hydrock Default Suite - FOC / SOM / pH										-													
P1085	FOC (dimensionless)	ll	0.001	4	0.002	0.013	0.007	0.007	0.00		-	-	-		0.002	0.013	0.009	0.005						
-	SOM (calculated)	%	0.1724	4	0.34	2.24	1.25	1.21	0.83		-	-	-		0.3448	2.2412	1.5516	0.862						
P1334	pH (su)	pH Units	0.1	4	7.60	7.90	7.73	7.70	0.13		-	-	-		7.7	7.9	7.6	7.7						
-	Hydrock Default Suite - Metals & PAH																							
7440-38-2	Arsenic	mg/kg	2	4	3.00	22.00	12.00	11.50	8.29	0	NR	79	C4SL - CL-AIRE 2014		3	22	8	15						
7440-41-7	Beryllium	mg/kg	0.5	4	0.50	0.50	0.50	0.50	0.00	0	NR	2.2	Hydrock Derived		<0.5	<0.5	<0.5	<0.5						
7440-42-8	Boron	mg/kg	1	4	1.00	1.00	1.00	1.00	0.00	0	NR	21000	Hydrock Derived		<1	<1	<1	<1						
7440-43-9	Cadmium	mg/kg	0.2	4	0.20	0.60	0.43	0.45	0.17	0	NR	220	C4SL - CL-AIRE 2014		<0.2	0.6	0.4	0.5						
18540-29-9	Chromium (VI)	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	NR	23	C4SL - CL-AIRE 2014		<2	<2	<2	<2						
7440-47-3	Chromium (Total)	mg/kg	2	4	8.00	14.00	10.75	10.50	2.75			-			8	14	9	12						
7440-50-8	Copper	mg/kg	4	4	4.00	19.00	11.00	10.50	6.16	0	NR	12000	Hydrock Derived		<4	19	11	10						
7439-92-1	Lead	mg/kg	3	4	4.00	54.00	34.25	39.50	21.95	0	NR	630	C4SL - CL-AIRE 2014		4	54	33	46						
7439-97-6	Mercury, inorganic	mg/kg	1	4	1.00	1.00	1.00	1.00	0.00	0	NR	120	Hydrock Derived		<1	<1	<1	<1						
7440-02-0	Nickel	mg/kg	3	4	3.00	11.00	6.50	6.00	3.32	0	NR	230	Hydrock Derived		<3	11	6	6						
7440-62-2	Vanadium	mg/kg	1	4	14.00	26.00	20.50	21.00	5.51	0	NR	2000	Hydrock Derived		14	26	18	24						
7440-66-6	Zinc	mg/kg	3	4	6.00	52.00	33.50	38.00	19.64	0	NR	81000	Hydrock Derived		6	35	41	52						
P1095	Cyanide (free)	mg/kg	1	4	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1						
P1186	Total Phenols (Monohydric)	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	24237	440	Hydrock Derived		<2	<2	<2	<2						
83-32-9	Acenaphthene	mg/kg	0.1	4	0.10	0.60	0.27	0.19	0.24	0	57	15000	Hydrock Derived		0.28	0.6	<0.1	<0.1						
208-96-8	Acenaphthylene	mg/kg	0.1	4	0.10	0.10	0.10	0.10	0.00	0	86	15000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1						
120-12-7	Anthracene	mg/kg	0.1	4	0.10	1.94	0.79	0.57	0.88	0	1.17	74000	Hydrock Derived		1.03	1.94	<0.1	<0.1						
56-55-3	Benzo(a)anthracene	mg/kg	0.1	4	0.10	8.31	3.40	2.60	3.93	0	1.71	29	Hydrock Derived		4.83	8.31	0.37	<0.1						
50-32-8	Benzo(a)pyrene	mg/kg	0.1	4	0.10	8.77	3.72	3.01	4.19	0	0.91	10	C4SL - CL-AIRE 2014		5.56	8.77	0.46	<0.1						
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	4	0.10	10.50	4.64	3.99	5.17	2	1.22	7.2	Hydrock Derived		7.48	10.5	0.49	<0.1						
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	4	0.10	4.25	1.85	1.53	1.99	0	0.02	640	Hydrock Derived		2.73	4.25	0.32	<0.1						
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	4	0.10	3.74	1.58	1.23	1.73	0	0.69	190	Hydrock Derived		2.2	3.74	0.26	<0.1						
218-01-9	Chrysene	mg/kg	0.1	4	0.10	8.20	3.45	2.75	3.91	0	0.44	57	Hydrock Derived		5.09	8.2	0.4	<0.1						
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.1	4	0.10	1.37	0.63	0.52	0.63	2	0.004	0.57	Hydrock Derived		0.93	1.37	<0.1	<0.1						
206-44-0	Fluoranthene	mg/kg	0.1	4	0.14	15.20	6.07	4.47	7.11	0	19	3100	Hydrock Derived		8.22	15.2	0.72	0.14						
86-73-7	Fluorene	mg/kg	0.1	4	0.10	0.47	0.22	0.15	0.18	0	31	9900	Hydrock Derived		0.19	0.47	<0.1	<0.1						
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	4	0.10	5.20	2.26	1.87	2.48	0	0.06	82	Hydrock Derived		3.42	5.2	0.32	<0.1						
91-20-3	Naphthalene	mg/kg	0.1	4	0.10	0.10	0.10	0.10	0.00	0	76	3900	Hydrock Derived		<0.1	<0.1	<0.1	<0.1						
85-01-8	Phenanthrene	mg/kg	0.1	4	0.10	5.65	2.19	1.51	2.63	0	36	3100	Hydrock Derived		2.82	5.65	0.2	<0.1						
129-00-0	Pyrene	mg/kg	0.1	4	0.13	11.30	4.57	3.42	5.25	0	2.2	7400	Hydrock Derived		6.15	11.3	0.68	0.13						
P1310	PAH 16 Total	mg/kg	1.6	4	1.60	85.40	35.53	27.55	40.23			-			50.9	85.4	4.2	<1.6						
o	TPH fractions																							
P1407	TPH ali EC05-EC06	mg/kg	0.01	4	0.01	0.01	0.01	0.01	0.000	0	304	570000	Hydrock Derived		<0.01	<0.01	<0.01	<0.01						
P1408	TPH ali >EC06-EC08	mg/kg	0.05	4	0.05	0.05	0.05	0.05	0.000	0	144	600000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05						
P1409	TPH ali >EC08-EC10	mg/kg	2	4	2.00	2.00	2.00	2.00	0.000	0	78	13000	Hydrock Derived		<2	<2	<2	<2						
P1410	TPH ali >EC10-EC12	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	48	13000	Hydrock Derived		<2	<2	<2	<2						
P1411	TPH ali >EC12-EC16	mg/kg	3	4	3.00	3.00	3.00	3.00	0.00	0	24	13000	Hydrock Derived		<3	<3	<3	<3						
P1412	TPH ali >EC16-EC21	mg/kg	3	4	3.00	3.00	3.00	3.00	0.00			-			<3	<3	<3	<3						
P1413	TPH ali >EC21-EC35	mg/kg	10	4	10.00	10.00	10.00	10.00	0.00			-			<10	<10	<10	<10						
P1418	TPH ali >EC5-EC35	mg/kg	21	4	21.00	21.00	21.00	21.00	0.00			-			<21	<21	<21	<21						
P1441	TPH aro EC05-EC07	mg/kg	0.01	4	0.01	0.01	0.01	0.01	0.00	0	1218	56000	Hydrock Derived		<0.01	<0.01	<0.01	<0.01						
P1355	TPH aro >EC07-EC08	mg/kg	0.05	4	0.05	0.05	0.05	0.05	0.00	0	869	56000	Hydrock Derived		<0.05	<0.05	<0.05	<0.05						
P1356	TPH aro >EC08-EC10	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	613	5000	Hydrock Derived		<2	<2	<2	<2						
P1357	TPH aro >EC10-EC12	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	364	5000	Hydrock Derived		<2	<2	<2	<2						
P1358	TPH aro >EC12-EC16	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	169	5000	Hydrock Derived		<2	2	<2	<2						

Assessment of Chemicals of Potential Concern to Human Health

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Source signature double ratio plot

Dataset: Topsoil



After ALcontrol laboratories (2006), Jones (2008)

Note: 1/2 sample(s) not plotted as at least one species recorded at or below LoD

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:		Default - Human Health - residential with home-grown produce (1%SOM)												TP3-03-23		TP2-03-23					
Client:		Reading Borough Council								Data Filters		Hydrock									
Site:		Dwyer Road								Zone								All			
Job no.:		26888								Strata								TS			
Lab. report no(s).:		23-04495								Depth Min (m bgl)								0.2			
										Depth Max (m bgl)		1									
														Date		17/03/23		17/03/23			
														Zone							
														Location		TP3		TP2			
														Depth (m bgl)		0.2		0.2			
Dataset mean SOM%														1.21							
Scenario SOM%														1							
All values in mg/kg unless otherwise stated																					
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	TS	TS					
-	Asbestos																				
P1020	Asbestos Identified	text	Y/N	11	-	-	-	-	No. of detects:	0	-	-	-		N	N					
o	Hydrock Default Suite - FOC / SOM / pH										-										
P1085	FOC (dimensionless)	ll	0.001	2	0.002	0.012	0.007	0.007	0.01		-	-	-		0.002	0.012					
-	SOM (calculated)	%	0.1724	2	0.34	2.07	1.21	1.21	1.22		-	-	-		0.3448	2.0688					
P1334	pH (su)	pH Units	0.1	2	6.80	7.50	7.15	7.15	0.49		-	-	-		7.5	6.8					
-	Hydrock Default Suite - Metals & PAH																				
7440-38-2	Arsenic	mg/kg	2	2	8.00	10.00	9.00	9.00	1.41	0	NR	37	C4SL - CL-AIRE 2014		8	10					
7440-41-7	Beryllium	mg/kg	0.5	2	0.50	0.50	0.50	0.50	0.00	0	NR	1.7	Hydrock Derived		<0.5	<0.5					
7440-42-8	Boron	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	300	Hydrock Derived		<1	<1					
7440-43-9	Cadmium	mg/kg	0.2	2	0.20	0.40	0.30	0.30	0.14	0	NR	22	C4SL - CL-AIRE 2014		<0.2	0.4					
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	21	C4SL - CL-AIRE 2014		<2	<2					
7440-47-3	Chromium (Total)	mg/kg	2	2	5.00	9.00	7.00	7.00	2.83			-			5	9					
7440-50-8	Copper	mg/kg	4	2	4.00	14.00	9.00	9.00	7.07	0	NR	2500	Hydrock Derived		<4	14					
7439-92-1	Lead	mg/kg	3	2	4.00	39.00	21.50	21.50	24.75	0	NR	200	C4SL - CL-AIRE 2014		4	39					
7439-97-6	Mercury, inorganic	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	40	Hydrock Derived		<1	<1					
7440-02-0	Nickel	mg/kg	3	2	3.00	7.00	5.00	5.00	2.83	0	NR	130	Hydrock Derived		<3	7					
7440-62-2	Vanadium	mg/kg	1	2	10.00	18.00	14.00	14.00	5.66	0	NR	410	Hydrock Derived		10	18					
7440-66-6	Zinc	mg/kg	3	2	14.00	53.00	33.50	33.50	27.58	0	NR	3900	Hydrock Derived		14	53					
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1					
P1186	Total Phenols (Monohydric)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	24237	120	Hydrock Derived		<2	<2					
83-32-9	Acenaphthene	mg/kg	0.1	2	0.10	0.57	0.34	0.34	0.33	0	57	230	Hydrock Derived		<0.1	0.57					
208-96-8	Acenaphthylene	mg/kg	0.1	2	0.10	0.12	0.11	0.11	0.01	0	86	180	Hydrock Derived		<0.1	0.12					
120-12-7	Anthracene	mg/kg	0.1	2	0.10	1.38	0.74	0.74	0.91	0	1.17	2400	Hydrock Derived		<0.1	1.38					
56-55-3	Benzo(a)anthracene	mg/kg	0.1	2	0.10	2.21	1.16	1.16	1.49	0	1.71	8.9	Hydrock Derived		<0.1	2.21					
50-32-8	Benzo(a)pyrene	mg/kg	0.1	2	0.10	2.48	1.29	1.29	1.68	0	0.91	5	C4SL - CL-AIRE 2014		<0.1	2.48					
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	2	0.10	2.76	1.43	1.43	1.88	1	1.22	2.6	Hydrock Derived		<0.1	2.76					
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	2	0.10	1.29	0.70	0.70	0.84	0	0.02	320	Hydrock Derived		<0.1	1.29					
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	2	0.10	0.83	0.47	0.47	0.52	0	0.69	78	Hydrock Derived		<0.1	0.83					
218-01-9	Chrysene	mg/kg	0.1	2	0.10	2.26	1.18	1.18	1.53	0	0.44	15	Hydrock Derived		<0.1	2.26					
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.1	2	0.10	0.27	0.19	0.19	0.12	1	0.004	0.25	Hydrock Derived		<0.1	0.27					
206-44-0	Fluoranthene	mg/kg	0.1	2	0.10	5.53	2.82	2.82	3.84	0	19	290	Hydrock Derived		<0.1	5.53					
86-73-7	Fluorene	mg/kg	0.1	2	0.10	0.41	0.26	0.26	0.22	0	31	180	Hydrock Derived		<0.1	0.41					
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	2	0.10	1.46	0.78	0.78	0.96	0	0.06	28	Hydrock Derived		<0.1	1.46					
91-20-3	Naphthalene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	76	13	Hydrock Derived		<0.1	<0.1					
85-01-8	Phenanthrene	mg/kg	0.1	2	0.10	4.62	2.36	2.36	3.20	0	36	98	Hydrock Derived		<0.1	4.62					
129-00-0	Pyrene	mg/kg	0.1	2	0.10	4.85	2.48	2.48	3.36	0	2.2	620	Hydrock Derived		<0.1	4.85					
P1310	PAH 16 Total	mg/kg	1.6	2	1.60	31.00	16.30	16.30	20.79			-			<1.6	31					
o	TPH fractions																				
P1407	TPH ali EC05-EC06	mg/kg	0.01	2	0.01	0.01	0.01	0.01	0.000	0	304	42	Hydrock Derived		<0.01	<0.01					
P1408	TPH ali >EC06-EC08	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.000	0	144	100	Hydrock Derived		<0.05	<0.05					
P1409	TPH ali >EC08-EC10	mg/kg	2	2	2.00	2.00	2.00	2.00	0.000	0	78	27	Hydrock Derived		<2	<2					
P1410	TPH ali >EC10-EC12	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	48	130	Hydrock Derived		<2	<2					
P1411	TPH ali >EC12-EC16	mg/kg	3	2	3.00	3.00	3.00	3.00	0.00	0	24	1100	Hydrock Derived		<3	<3					
P1412	TPH ali >EC16-EC21	mg/kg	3	2	3.00	3.00	3.00	3.00	0.00			-			<3	<3					
P1413	TPH ali >EC21-EC35	mg/kg	10	2	10.00	10.00	10.00	10.00	0.00			-			<10	<10					
P1418	TPH ali >EC5-EC35	mg/kg	21	2	21.00	21.00	21.00	21.00	0.00			-			<21	<21					
P1441	TPH aro EC05-EC07	mg/kg	0.01	2	0.01	0.01	0.01	0.01	0.00	0	1218	73	Hydrock Derived		<0.01	<0.01					
P1355	TPH aro >EC07-EC08	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	869	130	Hydrock Derived		<0.05	<0.05					
P1356	TPH aro >EC08-EC10	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	613	35	Hydrock Derived		<2	<2					
P1357	TPH aro >EC10-EC12	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	364	75	Hydrock Derived		<2	<2					
P1358	TPH aro >EC12-EC16	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	169	140	Hydrock Derived		<2	2					

Assessment of Chemicals of Potential Concern to Human Health

[illegible]

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:		Default - Human Health - POSresi (1%SOM)												TP3 0.2			TP2 0.2	
Client:		Reading Borough Council								Data Filters		Zone All Strata TS Depth Min (m bgl) 0.2 Depth Max (m bgl) 1						
Site:		Dwyer Road								Hydrock								
Job no.:		26888																
Lab. report no(s).:		23-04495																
															Date	17/03/23	17/03/23	
															Zone			
															Location	TP3	TP2	
All values in mg/kg unless otherwise stated															Depth (m bgl)	0.2	0.2	
															Dataset mean SOM%	1.21		
															Scenario SOM%	1		
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	TS	TS		
-	Asbestos																	
P1020	Asbestos Identified	text	Y/N	11	-	-	-	-	No. of detects:	0	-	-	-		N	N		
o	Hydrock Default Suite - FOC / SOM / pH										-							
P1085	FOC (dimensionless)	l	0.001	2	0.002	0.012	0.007	0.007	0.01		-	-	-		0.002	0.012		
-	SOM (calculated)	%	0.1724	2	0.34	2.07	1.21	1.21	1.22		-	-	-		0.3448	2.0688		
P1334	pH (su)	pH Units	0.1	2	6.80	7.50	7.15	7.15	0.49		-	-	-		7.5	6.8		
-	Hydrock Default Suite - Metals & PAH																	
7440-38-2	Arsenic	mg/kg	2	2	8.00	10.00	9.00	9.00	1.41	0	NR	79	C4SL - CL:AIRE 2014		8	10		
7440-41-7	Beryllium	mg/kg	0.5	2	0.50	0.50	0.50	0.50	0.00	0	NR	2.2	Hydrock Derived		<0.5	<0.5		
7440-42-8	Boron	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	21000	Hydrock Derived		<1	<1		
7440-43-9	Cadmium	mg/kg	0.2	2	0.20	0.40	0.30	0.30	0.14	0	NR	220	C4SL - CL:AIRE 2014		<0.2	0.4		
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	23	C4SL - CL:AIRE 2014		<2	<2		
7440-47-3	Chromium (Total)	mg/kg	2	2	5.00	9.00	7.00	7.00	2.83			-			5	9		
7440-50-8	Copper	mg/kg	4	2	4.00	14.00	9.00	9.00	7.07	0	NR	12000	Hydrock Derived		<4	14		
7439-92-1	Lead	mg/kg	3	2	4.00	39.00	21.50	21.50	24.75	0	NR	630	C4SL - CL:AIRE 2014		4	39		
7439-97-6	Mercury, inorganic	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	120	Hydrock Derived		<1	<1		
7440-02-0	Nickel	mg/kg	3	2	3.00	7.00	5.00	5.00	2.83	0	NR	230	Hydrock Derived		<3	7		
7440-62-2	Vanadium	mg/kg	1	2	10.00	18.00	14.00	14.00	5.66	0	NR	2000	Hydrock Derived		10	18		
7440-66-6	Zinc	mg/kg	3	2	14.00	53.00	33.50	33.50	27.58	0	NR	81000	Hydrock Derived		14	53		
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1		
P1186	Total Phenols (Monohydric)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	24237	440	Hydrock Derived		<2	<2		
83-32-9	Acenaphthene	mg/kg	0.1	2	0.10	0.57	0.34	0.34	0.33	0	57	15000	Hydrock Derived		<0.1	0.57		
208-96-8	Acenaphthylene	mg/kg	0.1	2	0.10	0.12	0.11	0.11	0.01	0	86	15000	Hydrock Derived		<0.1	0.12		
120-12-7	Anthracene	mg/kg	0.1	2	0.10	1.38	0.74	0.74	0.91	0	1.17	74000	Hydrock Derived		<0.1	1.38		
56-55-3	Benz(a)anthracene	mg/kg	0.1	2	0.10	2.21	1.16	1.16	1.49	0	1.71	29	Hydrock Derived		<0.1	2.21		
50-32-8	Benzo(a)pyrene	mg/kg	0.1	2	0.10	2.48	1.29	1.29	1.68	0	0.91	10	C4SL - CL:AIRE 2014		<0.1	2.48		
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	2	0.10	2.76	1.43	1.43	1.88	0	1.22	7.2	Hydrock Derived		<0.1	2.76		
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	2	0.10	1.29	0.70	0.70	0.84	0	0.02	640	Hydrock Derived		<0.1	1.29		
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	2	0.10	0.83	0.47	0.47	0.52	0	0.69	190	Hydrock Derived		<0.1	0.83		
218-01-9	Chrysene	mg/kg	0.1	2	0.10	2.26	1.18	1.18	1.53	0	0.44	57	Hydrock Derived		<0.1	2.26		
53-70-3	Dibenz(a,h)anthracene	mg/kg	0.1	2	0.10	0.27	0.19	0.19	0.12	0	0.004	0.57	Hydrock Derived		<0.1	0.27		
206-44-0	Fluoranthene	mg/kg	0.1	2	0.10	5.53	2.82	2.82	3.84	0	19	3100	Hydrock Derived		<0.1	5.53		
86-73-7	Fluorene	mg/kg	0.1	2	0.10	0.41	0.26	0.26	0.22	0	31	9900	Hydrock Derived		<0.1	0.41		
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	2	0.10	1.46	0.78	0.78	0.96	0	0.06	82	Hydrock Derived		<0.1	1.46		
91-20-3	Naphthalene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	76	3900	Hydrock Derived		<0.1	<0.1		
85-01-8	Phenanthrene	mg/kg	0.1	2	0.10	4.62	2.36	2.36	3.20	0	36	3100	Hydrock Derived		<0.1	4.62		
129-00-0	Pyrene	mg/kg	0.1	2	0.10	4.85	2.48	2.48	3.36	0	2.2	7400	Hydrock Derived		<0.1	4.85		
P1310	PAH 16 Total	mg/kg	1.6	2	1.60	31.00	16.30	16.30	20.79			-			<1.6	31		
o	TPH fractions																	
P1407	TPH ali ECo5-ECo6	mg/kg	0.01	2	0.01	0.01	0.01	0.01	0.000	0	304	570000	Hydrock Derived		<0.01	<0.01		
P1408	TPH ali >ECo6-ECo8	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.000	0	144	600000	Hydrock Derived		<0.05	<0.05		
P1409	TPH ali >ECo8-EC10	mg/kg	2	2	2.00	2.00	2.00	2.00	0.000	0	78	13000	Hydrock Derived		<2	<2		
P1410	TPH ali >EC10-EC12	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	48	13000	Hydrock Derived		<2	<2		
P1411	TPH ali >EC12-EC16	mg/kg	3	2	3.00	3.00	3.00	3.00	0.00	0	24	13000	Hydrock Derived		<3	<3		
P1412	TPH ali >EC16-EC21	mg/kg	3	2	3.00	3.00	3.00	3.00	0.00			-			<3	<3		
P1413	TPH ali >EC21-EC35	mg/kg	10	2	10.00	10.00	10.00	10.00	0.00			-			<10	<10		
P1418	TPH ali >EC5-EC35	mg/kg	21	2	21.00	21.00	21.00	21.00	0.00			-			<21	<21		
P1441	TPH aro ECo5-ECo7	mg/kg	0.01	2	0.01	0.01	0.01	0.01	0.00	0	1218	56000	Hydrock Derived		<0.01	<0.01		
P1355	TPH aro >ECo7-ECo8	mg/kg	0.05	2	0.05	0.05	0.05	0.05	0.00	0	869	56000	Hydrock Derived		<0.05	<0.05		
P1356	TPH aro >ECo8-EC10	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	613	5000	Hydrock Derived		<2	<2		
P1357	TPH aro >EC10-EC12	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	364	5000	Hydrock Derived		<2	<2		
P1358	TPH aro >EC12-EC16	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	169	5000	Hydrock Derived		<2	2		

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:		Default - Human Health - POSresi (1%SOM)										TP3-044		TP2-044				
Client:		Reading Borough Council										Hydrock						
Site:		Dwyer Road																
Job no.:		26888																
Lab. report no(s).:		23-04495																
												Data Filters						
												Zone		All				
												Strata		TS				
												Depth Min (m bgl)		0.2				
												Depth Max (m bgl)		1				
												Dataset mean SOM%		1.21				
All values in mg/kg unless otherwise stated												Scenario SOM%		1				
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @1% SOM	GAC	GAC Source	Strata	TS	TS		
P1359	TPH aro >EC16-EC21	mg/kg	3	2	3.00	17.00	10.00	10.00	9.90	0	54	3800	Hydrock Derived		<3	17		
P1360	TPH aro >EC21-EC35	mg/kg	10	2	10.00	36.00	23.00	23.00	18.38	0	5	3800	Hydrock Derived		<10	36		
P1365	TPH aro >EC5-EC35	mg/kg	21	2	21.00	55.00	38.00	38.00	24.04			-			<21	55		
P1418	TPH ali >EC5-EC35	mg/kg	42	2	42.00	55.00	48.50	48.50	9.19			-			<42	55		
o	VOCs - BTEX & MTBE																	
71-43-2	Benzene	mg/kg	2	2	0.00	0.00	0.00	0.00	0.00	0	1218	140	C4SL - CL-AIRE 2014		<0.002	<0.002		
108-88-3	Toluene	mg/kg	5	2	0.01	0.01	0.01	0.01	0.00	0	869	56000	Hydrock Derived		<0.005	<0.005		
100-41-4	Ethylbenzene	mg/kg	2	2	0.00	0.00	0.00	0.00	0.00	0	518	24000	Hydrock Derived		<0.002	<0.002		
95-47-6	Xylene, o-	mg/kg	2	2	0.00	0.00	0.00	0.00	0.00	0	478	41000	Hydrock Derived		<0.002	<0.002		
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	2	2	0.00	0.00	0.00	0.00	0.00	0	576	41000	Hydrock Derived		<0.002	<0.002		
1634-04-4	MTBE	mg/kg	5	2	0.01	0.01	0.01	0.01	0.00	0	20358	75000	Hydrock Derived		<0.005	<0.005		
	TPH Additivity Check			HAZARD QUOTIENTS FOR EACH FRACTION														
														Aliphatics >EC5-EC6		1.75439E-08	1.75439E-08	
														Aliphatics >EC6-EC8		8.33333E-08	8.33333E-08	
														Considered additive		Aliphatics >EC8-EC10	0.000153846	0.000153846
																Aliphatics >EC10-EC12	0.000153846	0.000153846
																Aliphatics >EC12-EC16	0.000230769	0.000230769
																Aliphatics >EC16-EC35		
																Aliphatics >EC35-EC44		
																Aromatics EC5-EC7	1.78571E-07	1.78571E-07
																Aromatics >EC7-EC8	8.92857E-07	8.92857E-07
																Aromatics >EC8-EC10	0.0004	0.0004
																Aromatics >EC10-EC12	0.0004	0.0004
																Aromatics >EC12-EC16	0.0004	0.0004
																Aromatics >EC16-EC21	0.000789474	0.004473684
																Aromatics >EC21-EC35	0.002631579	0.009473684
																Aromatics >EC35-EC44		
																Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.		
																Hazard Index for ali>C8-C16	0.000538462	0.000538462
																Hazard Index for aro>C8-C16	0.0012	0.0012
																Hazard Index for aro>C16-C35	0.003421053	0.013947368
Legend:		MG	Made Ground	<0.02		Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.												
		TS	Topsoik	0.02		Value greater than, or equal to, the generic assessment criterion (GAC).												
		LHG	Lynch Hill Gravel	<10		Value excluded from statistical analysis												
				Y		Text result												
				-		Represents a determinand that was not tested.												
				*		represents a data point that is not included in the current filter settings												
Template Version:																		
105: 11/04/23																		

Phytotoxic GQRA

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter: Phytotoxic pH 7													TP5-01 TP5-02 TP5-03 TP5-04 TP5-05 TP5-06						
Client: Reading Borough Council													Hydrock						
Site: Dwyer Road																			
Job no.: 26888																			
Lab. report no(s): 23-04495																			
Data Filters																			
Zone																			
Strata																			
Depth Min (m bgl)																			
Depth Max (m bgl)																			
Dataset mean pH																			
Scenario pH																			
All values in mg/kg unless otherwise stated																			
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	Strata	LHG	LHG	LHG	LHG	LHG	LHG
o Hydrock Default Suite - FOC / SOM / pH																			
P1334	pH (su)	pH Units	0.1	5	7.50	8.60	7.76	7.50	0.48		-	-		7.5	8.6	7.5	7.5	7.7	
- Hydrock Default Suite - Metals & PAH																			
7440-38-2	Arsenic	mg/kg	2	5	5.00	18.00	8.80	7.00	5.26	0	250	MAFF 1998		7	5	6	8	18	
7440-42-8	Boron	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	5	Nable, et al. 1997		<1	<1	<1	<1	<1	
18540-29-9	Chromium (VI)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	25	ICRCL 70/90 1990		<2	<2	<2	<2	<2	
7440-50-8	Copper	mg/kg	4	5	4.00	9.00	6.20	7.00	2.17	0	135	BS3882 2015		7	<4	<4	7	9	
7440-02-0	Nickel	mg/kg	3	5	3.00	7.00	4.80	5.00	1.79	0	75	BS3882 2015		6	3	<3	5	7	
7440-66-6	Zinc	mg/kg	3	5	6.00	28.00	18.00	22.00	10.75	0	300	BS3882 2015		27	7	6	28	22	
Legend:		MG	Made Ground		<0.02		Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.												
		TS	Topsoik		0.02		Value greater than, or equal to, the generic assessment criterion (GAC).												
		LHG	Lynch Hill Gravel		<10		Value excluded from statistical analysis												
				Y		Text result													
				-		Represents a determinand that was not tested.													
				•		represents a data point that is not included in the current filter settings													
Template Version: 105: 11/04/23																			

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:Phytotoxic pH 7 Client:Reading Borough Council Site:Dwyer Road Job no.:26888 Lab. report no(s):23-04495 Data Filters ZoneAll StrataMG Depth Min (m bgl)0.2 Depth Max (m bgl)1 Dataset mean pH7.73 Scenario pH7 TP5-02TP5-04TP4-1BH2-1 Hydrock													Date17/03/2317/03/2317/03/2315/03/23
													Zone
													LocationTP5TP5TP4BH2
													Depth (m bgl)0.20.410.2
All values in mg/kg unless otherwise stated													StrataMGMGMGMG
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	
o Hydrock Default Suite - FOC / SOM / pH													
P1334	pH (su)	pH Units	0.1	4	7.60	7.90	7.73	7.70	0.13		-	-	7.77.97.67.7
- Hydrock Default Suite - Metals & PAH													
7440-38-2	Arsenic	mg/kg	2	4	3.00	22.00	12.00	11.50	8.29	0	250	MAFF 1998	322815
7440-42-8	Boron	mg/kg	1	4	1.00	1.00	1.00	1.00	0.00	0	5	Nable, et al. 1997	<1<1<1<1
18540-29-9	Chromium (VI)	mg/kg	2	4	2.00	2.00	2.00	2.00	0.00	0	25	ICRCL 70/90 1990	<2<2<2<2
7440-50-8	Copper	mg/kg	4	4	4.00	19.00	11.00	10.50	6.16	0	135	BS3882 2015	<4191110
7440-02-0	Nickel	mg/kg	3	4	3.00	11.00	6.50	6.00	3.32	0	75	BS3882 2015	<31166
7440-66-6	Zinc	mg/kg	3	4	6.00	52.00	33.50	38.00	19.64	0	300	BS3882 2015	6354152
Legend: MGMade Ground TSTopsoik LHGLynch Hill Gravel <0.02Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. 0.02Value greater than, or equal to, the generic assessment criterion (GAC). *<10Value excluded from statistical analysis YText result -Represents a determinand that was not tested. •represents a data point that is not included in the current filter settings Template Version: 105: 11/04/23													

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter: Phytotoxic pH 7														TP3 0.2 0.2		
Client: Reading Borough Council														Hydrock		
Site: Dwyer Road																
Job no.: 26888																
Lab. report no(s): 23-04495																
Data Filters																
Zone																
Strata																
Depth Min (m bgl)																
Depth Max (m bgl)																
Dataset mean pH																
Scenario pH																
All values in mg/kg unless otherwise stated																
														Date	17/03/23	17/03/23
														Zone		
														Location	TP3	TP2
														Depth (m bgl)	0.2	0.2
CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	Strata	TS	TS	
o Hydrock Default Suite - FOC / SOM / pH																
P1334	pH (su)	pH Units	0.1	2	6.80	7.50	7.15	7.15	0.49		-	-		7.5	6.8	
-	Hydrock Default Suite - Metals & PAH															
7440-38-2	Arsenic	mg/kg	2	2	8.00	10.00	9.00	9.00	1.41	0	250	MAFF 1998		8	10	
7440-42-8	Boron	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	5	Nable, et al. 1997		<1	<1	
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	25	ICRCL 70/90 1990		<2	<2	
7440-50-8	Copper	mg/kg	4	2	4.00	14.00	9.00	9.00	7.07	0	135	BS3882 2015		<4	14	
7440-02-0	Nickel	mg/kg	3	2	3.00	7.00	5.00	5.00	2.83	0	75	BS3882 2015		<3	7	
7440-66-6	Zinc	mg/kg	3	2	14.00	53.00	33.50	33.50	27.58	0	300	BS3882 2015		14	53	
Legend: MG Made Ground TS Topsoik LHG Lynch Hill Gravel Template Version: 105: 11/04/23 <0.02 Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate. 0.02 Value greater than, or equal to, the generic assessment criterion (GAC). *<10 Value excluded from statistical analysis Y Text result - Represents a determinand that was not tested. • represents a data point that is not included in the current filter settings																

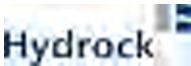
Controlled waters GQRA

Remedial Targets Methodology Data Table



Hydrock Scenario: Scenario A - DWS													
RTM Level: RTM Level 1 - Soil Zone Assessment - leachate samples													
Water body receptor(s): Groundwater and surface water													
Secondary receptor(s): Human health (abstraction)													
Data set: Leachate													
Client: Reading Borough Council													
Site: Dwyer Road													
Job no: 26888													
Test Certificates(s): 23-04495													
Dataset ALL ZONES													
123* Exceeds solubility value <1 Grey text and "<" sign if value <= LoD 999 Red text if value > DWS													
Surface Water Representative Hardness as mg/l CaCO ₃ 10													
Strata / Zone Date sampled: 17/03/2023													
CAS / AGS Number	Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	Solubility Limit (µg/l)	No. of samples	Limit of Detection	DWS	TP4 1.00					
7440-22-4	Silver (Ag) (dissolved)				0								
7429-90-5	Aluminium (Al) (dissolved)				0		200						
7440-38-2	Arsenic (As) (dissolved)	SP	H		1	5	10	<5					
7440-42-8	Boron (B) (dissolved)		NP		1	5	1000	17					
7440-36-3	Barium (Ba) (dissolved)				0		1300						
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP		1	0.4	5	<0.4					
7440-48-4	Cobalt (Co) (dissolved)		NP		0		100						
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H		1	20	100	<20					
16065-83-1	Chromium (III) (Cr) (dissolved)	SP			0		100						
7440-47-3	Chromium (Cr) (total) (dissolved)				1	5	50	<5					
7440-50-8	Copper (Cu) (dissolved)	SP	NP		1	5	2000	<5					
7439-89-6	Iron (Fe) (dissolved)	SP			0		200						
7439-97-6	Mercury (Hg) (dissolved)	PH	H		1	0.05	1	<0.05					
P1286	Manganese (Mn) (dissolved)	SP			0		50						
7440-23-5	Sodium (Na) (dissolved)				0		200000						
7440-02-0	Nickel (Ni) (dissolved)	P	NP		1	5	20	<5					
7439-92-1	Lead (Pb) (dissolved)	P	H		1	5	10	<5					
7440-36-0	Antimony (Sb) (dissolved)		NP		0		5						
7782-49-2	Selenium (Se) (dissolved)		NP		0		10						
7440-31-5	Tin (Sn) (dissolved)				0		100						
7440-62-2	Vanadium (V) (dissolved)				1	5	100	<5					
7440-66-6	Zinc (Zn) (dissolved)	SP	NP		1	2	100	19					
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP		0		100						
57-12-5	Cyanide (total)				1	5	50	9					
P1140	Ammonium (NH ₄ ⁺)		NP		0		500						
P1238	Ammoniacal Nitrogen (as N)		NP		0		100						
P1720	Ammonia (unionised) (NH ₃ as N) (free ammonia)	SP	NP		0		100						
15541-45-4	Bromate (BrO ₃ ⁻)				0		10						
16887-00-6	Chloride (Cl ⁻)				0		250000						
16984-48-8	Fluoride (F ⁻)				0		1500						
P1348	Nitrate (NO ₃ ⁻)				0		50000						
P1349	Nitrite (NO ₂ ⁻)				0		500						
14808-79-8	Sulfate (SO ₄ ²⁻)				0		250000						
P1134	pH (min.) (su)				1	0	6.5	7.6					
P1134	pH (max.) (su)				0		9.5						
P1287	Electrical conductivity (µS/cm)				0		2500						
120-12-7	Anthracene	PH	H	56	1	0.01		0.03					
50-32-8	Benzo(a)pyrene	PH	H	3.8	1	0.01	0.01	<0.01					
206-44-0	Fluoranthene	P	H	230	1	0.01	100	0.02					
91-20-3	Naphthalene	P	NP	19000	1	0.01	100	0.11					
	PAHs = sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene												
GRP01		P	H		1	0.038	0.1	<0.038					
P1877	Phenol	SP	NP	84100000	0								
P1407	Ali EC5-EC6			35900	1	10	15000	<10					
P1408	Ali >EC6-EC8			5370	1	10	15000	<10					
P1409	Ali >EC8-EC10			427	1	10	300	<10					
P1410	Ali >EC10-EC12			33.9	1	10	300	<10					
P1411	Ali >EC12-EC16			0.759	1	10	300	<10					
P1938	Ali >EC16-EC35			0.00254	0		100						
P1415	Ali >EC35-EC44			0.00254	0		100						
P1441	Aro EC5-EC7			1780000	1	10	1	<10					
P1355	Aro >EC7-EC8			590000	1	10	700	<10					
P1356	Aro >EC8-EC10			64600	1	10	300	<10					
P1357	Aro >EC10-EC12			24500	1	10	90	<10					
P1358	Aro > EC12-EC16			5750	1	10	90	<10					
P1359	Aro >EC16-EC21			653	1	10	90	<10					
P1360	Aro >EC21-EC35			6.61	1	10	90	<10					
P1362	Aro >EC35-EC44			6.61	0		100						
71-43-2	Benzene	P	H	1780000	1	1	1	<1					
108-88-3	Toluene	SP	H	590000	1	5	700	<5					
100-41-4	Ethylbenzene		H	180000	1	5	300	<5					

Remedial Targets Methodology Data Table



Water body receptor(s): Groundwater and surface water Secondary receptor(s): Human health (abstraction) Data set: Leachate Client: Reading Borough Council Site: Dwyer Road Job no: 26888 Test Certificates(s): 23-04495 Dataset ALL ZONES										PNEC calculated (inland EQS)		123* Exceeds solubility value <1 Grey text and "<" sign if value <= LoD 999 Red text if value > DWS		Surface Water Representative Hardness as mg/l CaCO₃ 10			
										Strata / Zone							
										Date sampled: 17/03/2023							
CAS / AGS Number	Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	Solubility Limit (µg/l)	No. of samples	Limit of Detection	DWS			TP4 1.00							
95-47-6	o-Xylene		H	173000	1	5	500			<5							
P1374	m,p-Xylene		H	200000	1	10	500			<10							
1634-04-04	Methyl tertiary butyl ether (MTBE)		NP	48000000	1	10	15			<10							

Appendix E Gas Monitoring

[illegible]

Appendix F Waste Assessment

Waste Classification Report

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

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



4JHY1-IENUN-TPOKD

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

Job name

Dwyer Road, Reading

Description/Comments

Project

26888

Site

Dwyer Road, Reading

Classified by

Name:

Matthew Keehn

Date:

11 May 2023 08:16 GMT

Telephone:

Company:

Hydrock Consultants Ltd

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

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification

Date

08 Sep 2020

Next 3 year Refresher due by Sep 2023

Purpose of classification

2 - Material Characterisation

Address of the waste

Dwyer Road, Reading

Post Code RG30 3PN

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Development of vacant land for housing.

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

Waste created during excavation of exploratory hole locations for ground investigation.

Description of the waste

Made Ground and natural soils.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP5	0.2	Non Hazardous		3
2	TP5[2]	0.4	Non Hazardous		6
3	TP5[3]	1	Non Hazardous		9
4	BH1	0.2	Non Hazardous		11
5	TP3	0.2	Non Hazardous		13
6	TP3[2]	1	Non Hazardous		15
7	TP2	0.5	Non Hazardous		17
8	TP1	0.2	Non Hazardous		19
9	TP4	1	Non Hazardous		21
10	BH2	0.2	Non Hazardous		23
11	TP2[2]	0.2	Non Hazardous		25

Related documents

#	Name	Description
1	Hydrock Standard plus Cresol (ammended Lead)	waste stream template used to create this Job

Report

Created by: Matthew Keehn

Created date: 11 May 2023 08:16 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	28
Appendix B: Rationale for selection of metal species	29
Appendix C: Version	30

Classification of sample: TP5

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

Sample details

Sample name: **TP5** LoW Code: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth: **0.2 m** Chapter: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	133-32-9		0.28 mg/kg		0.28 mg/kg	0.000028 %			
2	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
3	anthracene	204-371-1	120-12-7		1.03 mg/kg		1.03 mg/kg	0.000103 %			
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4		3 mg/kg	1.32	3.961 mg/kg	0.000396 %			
5	benzene	601-020-00-8	200-753-7		<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6		4.83 mg/kg		4.83 mg/kg	0.000483 %			
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		5.56 mg/kg		5.56 mg/kg	0.000556 %			
8	benzo[b]fluoranthene	601-034-00-4	205-911-9		7.48 mg/kg		7.48 mg/kg	0.000748 %			
9	benzo[ghi]perylene	205-883-8	191-24-2		2.73 mg/kg		2.73 mg/kg	0.000273 %			
10	benzo[k]fluoranthene	601-036-00-5	205-916-6		2.2 mg/kg		2.2 mg/kg	0.00022 %			
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %			<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %			<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8		<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %			<LOD
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		8 mg/kg	1.462	11.692 mg/kg	0.00117 %			
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				5.09 mg/kg		5.09 mg/kg	0.000509 %		
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				<4 mg/kg	1.126	<4.504 mg/kg	<0.00045 %		<LOD
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				0.93 mg/kg		0.93 mg/kg	0.000093 %		
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				8.22 mg/kg		8.22 mg/kg	0.000822 %		
		205-912-4	206-44-0							
22	fluorene				0.19 mg/kg		0.19 mg/kg	0.000019 %		
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				3.42 mg/kg		3.42 mg/kg	0.000342 %		
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	4 mg/kg		4 mg/kg	0.0004 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				<3 mg/kg	1.579	<4.738 mg/kg	<0.000474 %		<LOD
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH		PH		7.7 pH		7.7 pH	7.7 pH		
29	phenanthrene				2.82 mg/kg		2.82 mg/kg	0.000282 %		
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				6.15 mg/kg		6.15 mg/kg	0.000615 %		
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group		TPH		214.12 mg/kg		214.12 mg/kg	0.0214 %		
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				6 mg/kg	1.245	7.468 mg/kg	0.000747 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0339 %		

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Flammability of soils due to TPH is likely to be in the region of 10,000mg/kg, therefore, anything below 1,000mg/kg is unlikely to be a flammable and, therefore, non-hazardous.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0214%)

Classification of sample: TP5[2]

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

Sample details

Sample name:	LoW Code:
TP5[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.4 m	

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.6 mg/kg		0.6 mg/kg	0.00006 %			
2	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
3	anthracene	204-371-1	120-12-7		1.94 mg/kg		1.94 mg/kg	0.000194 %			
4	arsenic { arsenic trioxide }	215-481-4	1327-53-3		22 mg/kg	1.32	29.047 mg/kg	0.0029 %			
5	benzene	200-753-7	71-43-2		<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
6	benzo[a]anthracene	200-280-6	56-55-3		8.31 mg/kg		8.31 mg/kg	0.000831 %			
7	benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		8.77 mg/kg		8.77 mg/kg	0.000877 %			
8	benzo[b]fluoranthene	205-911-9	205-99-2		10.5 mg/kg		10.5 mg/kg	0.00105 %			
9	benzo[ghi]perylene	205-883-8	191-24-2		4.25 mg/kg		4.25 mg/kg	0.000425 %			
10	benzo[k]fluoranthene	205-916-6	207-08-9		3.74 mg/kg		3.74 mg/kg	0.000374 %			
11	beryllium { beryllium oxide }	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %			<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %			<LOD
13	cadmium { cadmium sulfide }	215-147-8	1306-23-6	1	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %			
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		14 mg/kg	1.462	20.462 mg/kg	0.00205 %			
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	chrysene				8.2 mg/kg		8.2 mg/kg	0.00082 %			
	601-048-00-0	205-923-4	218-01-9								
17	copper { dicopper oxide; copper (I) oxide }				19 mg/kg	1.126	21.392 mg/kg	0.00214 %			
	029-002-00-X	215-270-7	1317-39-1								
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
19	dibenz[a,h]anthracene				1.37 mg/kg		1.37 mg/kg	0.000137 %			
	601-041-00-2	200-181-8	53-70-3								
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
21	fluoranthene				15.2 mg/kg		15.2 mg/kg	0.00152 %			
		205-912-4	206-44-0								
22	fluorene				0.47 mg/kg		0.47 mg/kg	0.000047 %			
		201-695-5	86-73-7								
23	indeno[123-cd]pyrene				5.2 mg/kg		5.2 mg/kg	0.00052 %			
		205-893-2	193-39-5								
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	54 mg/kg		54 mg/kg	0.0054 %			
	082-001-00-6										
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
27	nickel { nickel dihydroxide }				11 mg/kg	1.579	17.374 mg/kg	0.00174 %			
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
28	pH				7.9 pH		7.9 pH	7.9 pH			
			PH								
29	phenanthrene				5.65 mg/kg		5.65 mg/kg	0.000565 %			
		201-581-5	85-01-8								
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
31	pyrene				11.3 mg/kg		11.3 mg/kg	0.00113 %			
		204-927-3	129-00-0								
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
33	TPH (C6 to C40) petroleum group				391.12 mg/kg		391.12 mg/kg	0.0391 %			
			TPH								
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %			<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]								
35	zinc { zinc oxide }				35 mg/kg	1.245	43.565 mg/kg	0.00436 %			
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.07 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Flammability of soils due to TPH is likely to be in the region of 10,000mg/kg, therefore, anything below 1,000mg/kg is unlikely to be a flammable and, therefore, non-hazardous.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0391%)

Classification of sample: TP5[3]

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

Sample details

Sample name:	LoW Code:
TP5[3]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	acenaphthene	201-469-6	33-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
3	anthracene	204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	7	mg/kg	1.32	9.242	mg/kg	0.000924 %		
5	benzene	601-020-00-8	200-753-7	71-43-2	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				7 mg/kg	1.126	7.881 mg/kg	0.000788 %		
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	13 mg/kg		13 mg/kg	0.0013 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				6 mg/kg	1.579	9.477 mg/kg	0.000948 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH				7.5 pH		7.5 pH	7.5 pH		
			PH							
29	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group				<60.12 mg/kg		<60.12 mg/kg	<0.00601 %		<LOD
			TPH							
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				27 mg/kg	1.245	33.607 mg/kg	0.00336 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0193 %		

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

Classification of sample: BH1

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

Sample details

Sample name:	LoW Code:
BH1	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	acenaphthene	201-469-6	133-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
3	anthracene	204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	5	mg/kg	1.32	6.602	mg/kg	0.00066 %		
5	benzene	601-020-00-8	200-753-7	71-43-2	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		6	mg/kg	1.462	8.769	mg/kg	0.000877 %		
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				<4 mg/kg	1.126	<4.504 mg/kg	<0.00045 %		<LOD
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	<3 mg/kg		<3 mg/kg	<0.0003 %		<LOD
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				3 mg/kg	1.579	4.738 mg/kg	0.000474 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH				8.6 pH		8.6 pH	8.6 pH		
			PH							
29	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group				<60.12 mg/kg		<60.12 mg/kg	<0.00601 %		<LOD
			TPH							
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				7 mg/kg	1.245	8.713 mg/kg	0.000871 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0135 %		

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

Classification of sample: TP3

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

Sample details

Sample name:	LoW Code:
TP3	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	133-32-9		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
3	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4		8 mg/kg	1.32	10.563	mg/kg	0.00106 %		
5	benzene	601-020-00-8	200-753-7		<2 mg/kg		<2	mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
8	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1		<0.5 mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8		<0.2 mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		5 mg/kg	1.462	7.308	mg/kg	0.000731 %		
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8		<2 mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				<4 mg/kg	1.126	<4.504 mg/kg	<0.00045 %		<LOD
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	4 mg/kg		4 mg/kg	0.0004 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				<3 mg/kg	1.579	<4.738 mg/kg	<0.000474 %		<LOD
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH		PH		7.5 pH		7.5 pH	7.5 pH		
29	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group		TPH		<60.12 mg/kg		<60.12 mg/kg	<0.00601 %		<LOD
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				14 mg/kg	1.245	17.426 mg/kg	0.00174 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0147 %		

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

Classification of sample: TP3[2]

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

Sample details

Sample name:	LoW Code:
TP3[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	acenaphthene	201-469-6	133-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
3	anthracene	204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	6	mg/kg	1.32	7.922	mg/kg	0.000792 %		
5	benzene	601-020-00-8	200-753-7	71-43-2	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		3	mg/kg	1.462	4.385	mg/kg	0.000438 %		
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
16	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
17	copper { dicopper oxide; copper (I) oxide }				<4 mg/kg	1.126	<4.504 mg/kg	<0.00045 %			<LOD
	029-002-00-X	215-270-7	1317-39-1								
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
21	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
23	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	<3 mg/kg		<3 mg/kg	<0.0003 %			<LOD
	082-001-00-6										
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
27	nickel { nickel dihydroxide }				<3 mg/kg	1.579	<4.738 mg/kg	<0.000474 %			<LOD
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]								
28	pH		PH		7.5 pH		7.5 pH	7.5 pH			
29	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
	604-001-00-2	203-632-7	108-95-2								
31	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
33	TPH (C6 to C40) petroleum group		TPH		<60.12 mg/kg		<60.12 mg/kg	<0.00601 %			<LOD
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %			<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]								
35	zinc { zinc oxide }				6 mg/kg	1.245	7.468 mg/kg	0.000747 %			
	030-013-00-7	215-222-5	1314-13-2								
Total:									0.0131 %		

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

Classification of sample: TP2

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

Sample details

Sample name:	LoW Code:
TP2	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: **0% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	acenaphthene	201-469-6	133-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
3	anthracene	204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	8	mg/kg	1.32	10.563	mg/kg	0.00106 %		
5	benzene	601-020-00-8	200-753-7	71-43-2	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	<0.5	mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1	mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.5	mg/kg	1.285	0.643	mg/kg	0.00005 %	
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		14	mg/kg	1.462	20.462	mg/kg	0.00205 %		
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				7 mg/kg	1.126	7.881 mg/kg	0.000788 %		
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	9 mg/kg		9 mg/kg	0.0009 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				5 mg/kg	1.579	7.897 mg/kg	0.00079 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH				7.5 pH		7.5 pH	7.5 pH		
			PH							
29	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group				<60.12 mg/kg		<60.12 mg/kg	<0.00601 %		<LOD
			TPH							
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				28 mg/kg	1.245	34.852 mg/kg	0.00349 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.019 %		

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

Classification of sample: TP1

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

Sample details

Sample name:	LoW Code:
TP1	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	133-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
3	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	18 mg/kg	1.32	23.766 mg/kg	0.00238 %			
5	benzene	601-020-00-8	200-753-7	71-43-2	<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %			<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %			<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %			
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		9 mg/kg	1.462	13.154 mg/kg	0.00132 %			
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				9 mg/kg	1.126	10.133 mg/kg	0.00101 %		
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	7 mg/kg		7 mg/kg	0.0007 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				7 mg/kg	1.579	11.056 mg/kg	0.00111 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH		PH		7.7 pH		7.7 pH	7.7 pH		
29	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group		TPH		<60.12 mg/kg		<60.12 mg/kg	<0.00601 %		<LOD
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				22 mg/kg	1.245	27.384 mg/kg	0.00274 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0192 %		

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

Classification of sample: TP4

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

Sample details

Sample name:	LoW Code:
TP4	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1 m	

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	133-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
3	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	8 mg/kg	1.32	10.563 mg/kg	0.00106 %			
5	benzene	601-020-00-8	200-753-7	71-43-2	<2 mg/kg		<2 mg/kg	<0.0002 %			<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.37 mg/kg		0.37 mg/kg	0.000037 %			
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.46 mg/kg		0.46 mg/kg	0.000046 %			
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.49 mg/kg		0.49 mg/kg	0.000049 %			
9	benzo[ghi]perylene	205-883-8	191-24-2		0.32 mg/kg		0.32 mg/kg	0.000032 %			
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.26 mg/kg		0.26 mg/kg	0.000026 %			
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %			<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %			<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %			
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		9 mg/kg	1.462	13.154 mg/kg	0.00132 %			
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %			<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				0.4 mg/kg		0.4 mg/kg	0.00004 %		
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				11 mg/kg	1.126	12.385 mg/kg	0.00124 %		
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				0.72 mg/kg		0.72 mg/kg	0.000072 %		
		205-912-4	206-44-0							
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				0.32 mg/kg		0.32 mg/kg	0.000032 %		
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	33 mg/kg		33 mg/kg	0.0033 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				6 mg/kg	1.579	9.477 mg/kg	0.000948 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH		PH		7.6 pH		7.6 pH	7.6 pH		
29	phenanthrene				0.2 mg/kg		0.2 mg/kg	0.00002 %		
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				0.68 mg/kg		0.68 mg/kg	0.000068 %		
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group		TPH		<60.12 mg/kg		<60.12 mg/kg	<0.00601 %		<LOD
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				41 mg/kg	1.245	51.033 mg/kg	0.0051 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0232 %		

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

Classification of sample: BH2

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

Sample details

Sample name:	LoW Code:
BH2	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.2 m	Entry:

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	133-32-9		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
2	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
3	anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4		15 mg/kg	1.32	19.805	mg/kg	0.00198 %		
5	benzene	601-020-00-8	200-753-7		<2 mg/kg		<2	mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
8	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1		<0.5 mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8		0.5 mg/kg	1.285	0.643	mg/kg	0.00005 %		
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		12 mg/kg	1.462	17.539	mg/kg	0.00175 %		
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8		<2 mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				10 mg/kg	1.126	11.259 mg/kg	0.00113 %		
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
		205-912-4	206-44-0							
22	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	46 mg/kg		46 mg/kg	0.0046 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				6 mg/kg	1.579	9.477 mg/kg	0.000948 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	pH		PH		7.7 pH		7.7 pH	7.7 pH		
29	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
30	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
31	pyrene				0.13 mg/kg		0.13 mg/kg	0.000013 %		
		204-927-3	129-00-0							
32	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
33	TPH (C6 to C40) petroleum group		TPH		<60.12 mg/kg		<60.12 mg/kg	<0.00601 %		<LOD
34	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
35	zinc { zinc oxide }				52 mg/kg	1.245	64.725 mg/kg	0.00647 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0268 %		

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

Classification of sample: TP2[2]

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

Sample details

Sample name: **TP2[2]** LoW Code: **17: Construction and Demolition Wastes (including excavated soil from contaminated sites)**
Sample Depth: **0.2 m** Chapter: **17 05 04 (Soil and stones other than those mentioned in 17 05 03)**
Entry:

Hazard properties

None identified

Determinands

Moisture content: **0% No Moisture Correction applied (MC)**

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	acenaphthene	201-469-6	83-32-9		0.57 mg/kg		0.57	mg/kg	0.000057 %		
2	acenaphthylene	205-917-1	208-96-8		0.12 mg/kg		0.12	mg/kg	0.000012 %		
3	anthracene	204-371-1	120-12-7		1.38 mg/kg		1.38	mg/kg	0.000138 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4		10 mg/kg	1.32	13.203	mg/kg	0.00132 %		
5	benzene	601-020-00-8	200-753-7		<2 mg/kg		<2	mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6		2.21 mg/kg		2.21	mg/kg	0.000221 %		
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		2.48 mg/kg		2.48	mg/kg	0.000248 %		
8	benzo[b]fluoranthene	601-034-00-4	205-911-9		2.76 mg/kg		2.76	mg/kg	0.000276 %		
9	benzo[ghi]perylene	205-883-8	191-24-2		1.29 mg/kg		1.29	mg/kg	0.000129 %		
10	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.83 mg/kg		0.83	mg/kg	0.000083 %		
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1		<0.5 mg/kg	2.775	<1.388	mg/kg	<0.000139 %		<LOD
12	boron { boron tribromide/trichloride/trifluoride (combined) }		10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43	mg/kg	<0.00134 %		<LOD
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8		0.4 mg/kg	1.285	0.514	mg/kg	0.00004 %		
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		9 mg/kg	1.462	13.154	mg/kg	0.00132 %		
15	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8		<2 mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
16	chrysene				2.26 mg/kg		2.26 mg/kg	0.000226 %		
	601-048-00-0	205-923-4	218-01-9							
17	copper { dicopper oxide; copper (I) oxide }				14 mg/kg	1.126	15.762 mg/kg	0.00158 %		
	029-002-00-X	215-270-7	1317-39-1							
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 }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
19	dibenz[a,h]anthracene				0.27 mg/kg		0.27 mg/kg	0.000027 %		
	601-041-00-2	200-181-8	53-70-3							
20	ethylbenzene				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
21	fluoranthene				5.53 mg/kg		5.53 mg/kg	0.000553 %		
		205-912-4	206-44-0							
22	fluorene				0.41 mg/kg		0.41 mg/kg	0.000041 %		
		201-695-5	86-73-7							
23	indeno[123-cd]pyrene				1.46 mg/kg		1.46 mg/kg	0.000146 %		
		205-893-2	193-39-5							
24	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	39 mg/kg		39 mg/kg	0.0039 %		
	082-001-00-6									
25	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
26	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
27	nickel { nickel dihydroxide }				7 mg/kg	1.579	11.056 mg/kg	0.00111 %		
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
28	phenanthrene				4.62 mg/kg		4.62 mg/kg	0.000462 %		
		201-581-5	85-01-8							
29	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
30	pyrene				4.85 mg/kg		4.85 mg/kg	0.000485 %		
		204-927-3	129-00-0							
31	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
32	TPH (C6 to C40) petroleum group				134.12 mg/kg		134.12 mg/kg	0.0134 %		
			TPH							
33	xylene				<4 mg/kg		<4 mg/kg	<0.0004 %		<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]							
34	zinc { zinc oxide }				53 mg/kg	1.245	65.97 mg/kg	0.0066 %		
	030-013-00-7	215-222-5	1314-13-2							
Total:								0.0361 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Flammability of soils due to TPH is likely to be in the region of 10,000mg/kg, therefore, anything below 1,000mg/kg is unlikely to be a flammable and, therefore, non-hazardous.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0134%)

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

■ **boron tribromide/trichloride/trifluoride (combined)** (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride

Data source: N/A

Data source date: 06 Aug 2015

Hazard Statements: EUH014, Acute Tox. 2; H330, Acute Tox. 2; H300, Skin Corr. 1A; H314, Skin Corr. 1B; H314

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

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

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

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

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

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

GB MCL index number: 601-023-00-4

Description/Comments:

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

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

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

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

▪ **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

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

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

▪ **pH** (CAS Number: PH)

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

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

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

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

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

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

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

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on hazard statements

beryllium {beryllium oxide}

Worst case species based on hazard statements

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on hazard statements

cadmium {cadmium sulfide}

Worst case species based on hazard statements

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

Worst case species based on hazard statements

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

Worst case species based on hazard statements

copper {dicopper oxide; copper (I) oxide}

Most likely common species

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}

Worst case species

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

Worst case species based on hazard statements

mercury {mercury dichloride}

Worst case species based on hazard statements

nickel {nickel dihydroxide}

Worst case species based on hazard statements

zinc {zinc oxide}

Worst case species based on hazard statements

Appendix C: Version

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

HazWasteOnline Classification Engine Version: 2023.111.5569.10274 (22 Apr 2023)

HazWasteOnline Database: 2023.111.5569.10274 (22 Apr 2023)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

Appendix G Preliminary geotechnical risk register

Geotechnical hazard identification – desk study stage

Potential geotechnical hazards have been assessed in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HD 41/15 and CD 622. The following pages set out the identified geotechnical risks and hazards which are associated with the proposed development and establish the approach which is to be taken to manage the risks including the geotechnical input and analysis.

Table G.1 is a preliminary assessment of possible geotechnical hazards at the site at Desk Study stage. This information is used to assist with ground investigation design.

Table G.1: Possible geotechnical hazards

Hazard	Comment	Hazard status based on desk study	
		Could be present and / or affect site (i.e., Plausible)	Unlikely to be present and/or affect site
Uncontrolled Made Ground (variable strength and compressibility).	Made Ground of unknown composition is likely to be present on site.	✓	-
Soft / loose compressible ground (low strength and high settlement potential).	The shallowest soils (particularly any Made Ground) may be soft and compressible. A weathering profile may be also present within the natural soils of the Solid Geology.	✓	-
Shrink swell of the clay fraction of soils under the influence of vegetation.	Cohesive material is expected to be present across the majority of the site within the Lambeth Group.	✓	-
Variable lateral and vertical changes in ground conditions.	Made Ground will likely be present across the site and the Solid Geology changes from predominantly clays with some sands and gravels in the north (Lambeth Group) to chalk in the south (Seaford Chalk Formation and Newhaven Chalk Formation [undifferentiated])	✓	-
Potential for high sulphates present in the soils.	Potential for sulphates within both Made Ground and natural soils.	✓	-

Adverse chemical ground conditions, (e.g., expansive slag).	No evidence based on historical uses of the land on and around the site.	-	✓
Obstructions.	Underground services are likely to be present (based on site walkover) as well as potential obstructions related to the now-demolished care home (e.g., relic foundations).	✓	-
Existing below ground structures to remain.	Existing below ground services and service chambers are present on site. Hydrock is not currently aware of the structures that are to be removed or remain.	✓	-
Shallow groundwater.	The Lambeth Group is a Secondary A Aquifer and the Seaford Chalk Formation and Newhaven Chalk Formation (undifferentiated) is a Principal Aquifer. A shallower groundwater body may be present within the Lambeth Group, notably within a granular sand and gravel material	✓	-
Changing groundwater conditions.	The potential presence of relatively permeable bands of sand, gravel or chalk may enable changing groundwater conditions.	✓	-
Risk from erosion.	Topography not considered to be a significant risk of erosion on site.	-	✓
Risk from flooding.	The site is in Flood Zone 1 (low risk) for coastal and river flooding, but the environmental report indicates a moderate risk of groundwater flooding. Pluvial surface water flooding models show a 0.1-0.3m return every 1 in 30 years.	✓	-
Loose Made Ground, leading to difficulty with excavation and collapse of side walls.	Unknown composition of the Made Ground has potential to be loose, causing difficulties with excavation.	✓	-
Slope stability issues – general slopes.	The site is considered to be relatively flat.	-	✓

Slope stability issues – retaining walls.	No retaining walls currently exist or are understood to be planned for the development.	-	✓
Earthworks – settlement (due to placement of fill on soft / loose ground).	Significant earthworks are not anticipated / proposed.	-	✓
Earthworks – poor bearing capacity of new fill.	Significant earthworks are not anticipated / proposed.	-	✓
Earthworks – unsuitability of site won material to be reused as fill.	Significant earthworks are not anticipated / proposed.	-	✓
Solution features in chalk.	Chalk underlies the site at shallow depth and solution features present a moderate risk. Natural cavities have been recorded 329 and 600m north-west of the site.	✓	-
Cavities in the Superficial Deposits due to solution features.	No Superficial Deposits recorded on site.	-	✓
Dissolution (associated with “wet rock head”).	Chalk is present beneath the site.	✓	-
Brine extraction.	Inadequate geology.	-	✓
Mining.	Localised small scale underground mining may have occurred. Potential for difficult ground conditions associated within mining are unlikely or localised and are at a level where they need not be considered.	-	✓
Cambered ground with gulls possibly present.	Inadequate geology.	-	✓
Relict Slip Surfaces.	Inadequate geology.	-	✓
Solifluction.	Inadequate geology.	-	✓
Problematic soils (silts and rewetting etc.).	Inadequate geology.	-	✓

Geotechnical Hazard Identification – Following Ground Investigation

The preliminary Geotechnical Risk Register following Ground Investigation is set out in Table G.3.

The probability and impact of a hazard have been judged on a qualitative scale as set out in Table G.2. The degree of risk (R) is determined by combining an assessment of the probability (P) of the hazard occurring with an assessment of the impact (I) of the hazard and associated mitigation it will require if it occurs ($R = P \times I$).

Table G.2: Qualitative assessment of hazards and risks

P = Probability		I = Impact		R = Risk Rating (P x I)	
1	Very unlikely (VU)	1	Very Low	1 – 4	None / negligible
2	Unlikely (U)	2	Low	5 – 9	Minor
3	Plausible (P)	3	Medium	10 – 14	Moderate
4	Likely (Lk)	4	High	15 – 19	Substantial
5	Very Likely (VLk)	5	Very High	20 – 25	Severe

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
Uncontrolled Made Ground (variable strength and compressibility).	There is Made Ground due to historical construction activity at the site.	Residential Dwellings.	Bearing capacity failure, settlement (total and differential).	4	4	16	Design foundations to found below Made Ground or on Made Ground which has been improved.
			Floor slab failure.	4	4	16	Design floor slabs as suspended.
	The Made Ground is up to 1.70m thick.	Roads and Pavements.	Settlement (total and differential) of roads and pavements.	4	2	8	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate.
		Services.	Settlement (differential), causing damage to services.	4	2	8	Anticipated settlements are significant with regard to services. There is a requirement to improve the Made Ground prior to installation of services. It is also advisable to steepen falls in drainage to prevent back fall and use rocker boxes and flexible couplings.
		Gardens.	Settlement (differential), in gardens.	4	2	8	It is unlikely that settlements will be significant with regard to gardens.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	4	3	12	Where soft spots encountered, over-excavation and replacement with suitable fill. Outline design of working platform to include geo-grid. Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Soft / loose ground (low strength and high	The shallow natural soils comprise Lynch Hill Gravel Member, which	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	4	4	16	Design foundations to found below any loose relative density sand and gravel or soft clay.

settlement potential).	consist of sand and gravel locally with a loose relative density.		Floor slab failure.	4	4	16	Design floor slab as suspended.
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	4	3	12	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate. If anticipated settlements are significant, and cannot be mitigated by design, over-excavate and replace soft soils.
		Services.	Settlement (differential), causing damage to services.	3	3	9	Ground levels are remaining at approximately current levels. Settlements are not anticipated to be significant. No additional design requirements envisaged.
		Gardens.	Settlement (differential), in gardens.	3	3	9	
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	4	3	12	Where soft spots encountered, over-excavate and replace with suitable fill. Design working platform to suit the ground conditions. Outline design of working platform to include geo-grid if necessary. Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Shrinkage / swelling of the clay fraction of soils under the influence of vegetation.	The clays of the Lynch Hill Gravel Member are medium heave potential.	Foundations.	Shrinkage or heave of soils and associated damage to foundations.	4	3	12	Design foundations in accordance with NHBC standards. Deepen foundations due to trees as appropriate.
		Floor slabs.	Floor slab failure.	4	4	16	Design floor slabs in accordance with NHBC standards. Design floor slab as suspended with a void, unless the warranty provider is satisfied the soil is not desiccated, or slabs are constructed when soils are not seasonally desiccated (i.e. during winter and spring).

Variable lateral and vertical changes in ground conditions.	The presence of Made Ground soils varies laterally and vertically.	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below Made Ground or on Made Ground which has been improved. Design foundations to found below any loose relative density sand and gravel or soft clay, or improve the River Terrace Deposits prior to founding.
			Floor slab failure.	3	4	12	Design floor slab as suspended.
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	3	3	9	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate. If anticipated settlements are significant, and cannot be mitigated by design, over-excavate and replace unsuitable soils.
		Services.	Settlement (differential), causing damage to services.	3	3	9	Settlements are not anticipated to be significant with regard to services. No additional design requirements envisaged.
		Gardens.	Settlement (differential), in gardens.	3	3	9	It is unlikely that settlements will be significant with respect to gardens.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	3	3	9	Where soft spots encountered, over-excavate and replace with suitable fill. Design working platform to suit the ground conditions. Outline design of working platform to include geo-grid if necessary. Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Sulfates present in the soils.	The ground investigation has proven that there is	Attack of buried concrete.	Damage to concrete and reduction in strength.	2	4	8	Classify concrete in accordance with BRE SD1 and design concrete accordingly. No additional design requirements envisaged.

	not the potential for expansive sulfate bearing soils to be present. DS-1, AC-1 conditions apply.						
Obstructions.	There is a potential for additional obstructions to be present due to historical construction activity, or unknown fill in Made Ground.	Construction staff, vehicles and plant operators.	Risk of collapse of excavation as obstructions are pulled out.	2	3	6	Allow for a breaker to be present during construction and remove obstructions where encountered during construction.
		Roads and Pavements.	Hard spots in externals and roads / pavements.	2	2	4	
		Residential Dwellings.	Impact on piling, resulting in additional piles and re-design of foundations.	2	3	6	
Existing below ground structures to remain	Existing below ground services and service chambers are present on site. Hydrock is not currently aware of the structures that are to be removed or remain.	Below ground services	Structural damage, settlement (differential).	2	4	8	Undertake geotechnical design to ensure the proposed structures do not place additional load on the existing structures. Design to be undertaken in accordance with EC7.
Shallow groundwater.	Monitoring during the ground	Construction staff,	Difficulty with excavation.	2	2	4	No additional design requirements envisaged.

	investigations has proven a deep groundwater table between 12.50m – 13.30m bgl. Monitoring notes groundwater levels between 9.10m – 9.17m bgl.	vehicles and plant operators.	Limit state failure, excessive deformation, trafficking of site plant, inability to place and compact fill.				
Changing groundwater conditions.	Monitoring during the ground investigations has proven a deep groundwater table between 12.50m – 13.30m bgl. Monitoring notes groundwater levels between 9.10m – 9.17m bgl.	Construction staff, vehicles and plant operators.	Difficulty with excavation. Limit state failure, excessive deformation, trafficking of site plant, inability to place and compact fill.	2	2	4	Contractor to appoint competent Temporary Works Designer to design temporary works as required, in accordance with BS 5975:2008+A1:2011. Temporary Works Designer to consider in their analysis the impact of a variable water table.
Subject to risk from flooding.	The site is within an area of flood risk.	The entire development.	Damage to houses, gardens roads and services.	3	4	12	The site is partially located within a Flood Zone 1, and as such is at a low risk of flooding. However, the environmental report indicates a moderate risk of groundwater flooding. Pluvial surface water flooding models show a 0.1-0.3m return every 1 in 30 years. The planning of the site needs to take into account the risk of flooding.
Running sands and / or loose Made Ground,	The ground investigation has indicated that there	Construction staff, vehicles	Ground failure, instability of plant and machinery.	3	4	12	No instability has been noted in pits from surface, however in the soft spot it could become unstable. If required foundation

leading to difficulty with excavation and collapse of side walls.	is a potential for loose soils and Made Ground to be present at the site.	and plant operators.	Risk of collapse of excavation.	3	3	9	options should be reviewed to ensure minimal excavation (e.g. piles). Contractor to appoint competent Temporary Works Designer to design temporary works, in accordance with BS 5975:2008+A1:2011. Temporary Works Design to include recommendations for inspection of excavations. No person entry to unsupported excavations.	
Solution features in the Chalk. & Dissolution (associated with "wet rock head").	The site is in an area where nearby solution features have been identified and there is a risk of sinkholes from collapse of natural dissolution voids in the Chalk. There is evidence of a potential dissolution feature at and around the dynamic probing location DP5 where between 1.90m – 4m depth bgl extremely loose ground was met upon with a possible void below 4m to around 6m.	Residential Dwellings	Reduction of lateral support potentially affecting stability of the structure.	4	4	16	Further investigation (CPT testing and geophysical survey) will be required before or during construction to delineate and confirm if further solution features are present at the site.	Structures to be supported from piled foundations where solution features are present.
			Floor slab failure.	4	4	16		Design floor slab as suspended.
		Roads and Pavements	Serviceability affected.	4	3	12		-
		Services.	Damage to services. Leaking drainage causing inundation and further collapse.	3	3	9	Founding stratum should be inspected by a suitably qualified person prior to construction where shallow strips are proposed.	No soakaway drainage within influencing distance of structures and roads. Infiltration if used is to be installed in POS. Use rocker boxes and flexible couplings.
		Gardens.	Depression or void forming at the surface.	3	3	9		-
		Construction staff, vehicles	Trafficking of the site in temporary conditions.	3	3	9		Where soft spots encountered, over-excavate and replacement with suitable fill.

		and plant operators.	Overturning of plant during construction.					Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Cavities in the Superficial Deposits, due to solution features.	The Ground Investigation has proven the presence of Superficial Deposits. Where these overlie sinkholes, the presence of dense materials or cohesive layers are preventing or restricting the void reaching the surface. The collapse of materials into voids can cause either voids, or loosened material which can extend in a zone surrounding the central core of the collapsed material.	Residential Dwellings.	Reduction of lateral support potentially affecting stability of the structure.	4	5	20	Further investigation (CPT testing) will be required before or during construction to delineate and confirm if further solution features are present at the site.	Structures to be supported from piled foundations where solution features are present.
			Floor slab failure.	4	5	20		Design floor slab as suspended.
		Roads and Pavements.	Serviceability affected.	4	3	12		-
		Services.	Damage to services. Leaking drainage causing inundation and further collapse.	3	3	9		No soakaway drainage within influencing distance of structures and roads. Infiltration if used is to be installed in POS.
								Use rocker boxes and flexible couplings.
		Gardens.	Depression or void forming at the surface.	3	3	9		-
Unforeseen ground conditions - risk	Ground investigation has been undertaken. However, additional	Constructio n staff, vehicles and plant operators.	Trafficking of the site in temporary conditions.	3	3	9	Designers to be contacted if conditions encountered are different to those identified during investigation.	Where soft spots encountered, over-excavation and replace with suitable fill.
		All aspects of the development	Overturning of plant during construction.	3	4	12		Site inspection and watching brief by Contractor to review working platform frequently and regularly.

associated with limited data.	information will be obtained during construction. Ground conditions are only defined at exploratory hole locations.					Regular inspections of excavations and earthworks for evidence of stability. Adequate investigation required to characterise the site and understand the potential risks.
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Whilst the probability and impact of the hazard occurring can be reduced to a minimum by geotechnical design, the impact cannot be reduced below very low. The risk register will need to be up-dated, as necessary, to reflect design, additional information, data and experience as it is gained through the construction process.

Impacts of the design with regard to health and Safety considerations will need to be included by the designer at design stage.

Appendix H Plausible source-pathway-receptor contaminant linkages

Summary of potential contaminant linkages

Table H.2 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in LCRM (2019) and additional risk assessment is required.

Source – Pathway – Receptor Linkages have been assessed in general accordance with guidance in CIRIA Report C552 (Rudland *et al* 2001) but modified to add a 'no linkage' category and to remove low/moderate risk (See Table H.1).

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

Table H.1: Consequence versus probability assessment.

		Consequence			
Probability		Severe	Medium	Mild	Minor
	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

Table H.2: Exposure model – final source-pathway-receptor contaminant linkages

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments	
Made Ground and stockpiles associated with historical construction and demolition activities, possibly including elevated concentrations of metals, metalloids, asbestos fibres, asbestos containing materials, polycyclic aromatic hydrocarbons and petroleum hydrocarbons (So1).	Ingestion, inhalation or direct contact (PO1)	People (neighbours, site end users) (RO1)	Likely	Medium	Moderate	Made Ground has been recorded across the site to a maximum depth of 1,70m bgl. Pervasive levels of PAHs have been detected above the GAC.	Pervasive levels of PAHs have been detected above the GAC. Contact with these materials is likely in areas of POS and private gardens. Mitigation required in the form of an engineered cover system.
	Root uptake (PO2)	Development end use (buildings, utilities and landscaping) (RO2)	Low likelihood	Medium	Low		No exceedances of the GAC. Therefore, the risk is low.
	Inhalation of fugitive dust (PO1).	People (neighbours, site end users) (RO1)	Low likelihood	Medium	Low		The risk of significant generation of dust is likely only during site development process and can therefore be controlled.
	Leachate migration and base flow (PO3 & PO4)	Groundwater (RO3)	Low likelihood	Medium	Low		No exceedances of the EQS. Therefore, the risk is low.

Fly-tipped waste, potentially including asbestos containing materials (S02).	Inhalation (P01)	Site users and neighbours (R01)	Low likelihood	Severe	Moderate	Fly-tipped waste has been observed on site. No visible asbestos containing materials were identified within any of the fly tipped waste.	This material should be removed prior to construction and appropriately disposed of.
Ground gases (carbon dioxide and methane) from organic materials in the Made Ground (S03).	Methane ingress via permeable soils and/or construction gaps (P05).	Site users and neighbours (R01). Buildings on site and on adjacent sites (R02).	Low likelihood	Severe	Low	Ground gas monitoring proves CS1 conditions apply, i.e., no protection measures required.	
Elevated concentrations of PAHs within Topsoil.	Ingestion, inhalation or direct contact (P01)	People (neighbours, site end users) (R01)	Likely	Medium	Moderate	Elevated concentrations of PAHs have been detected within topsoil. Due to the limited number of testing and poor understanding of the extent and nature of the topsoil further investigation is recommended to clarify the risk to human health.	