

LEVENSHULME ROAD GORTON

UPDATED PHASE 2 GEO-ENVIRONMENTAL INVESTIGATION, RISK ASSESSMENT AND REMEDIATION STRATEGY

Job Number: LKC 22 1031
Date: July 2023
Client: Watson Construction Ltd



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LK Consult Document Verification			
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Report Title	Updated Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy		
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Prepared By	Joe Walker Rachel Peart Colin Wardle	Reviewed By	Peter Dunn

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Revision No.	Date	Nature of Revision	Approved By
1	July 2023	Changes made to report to reflect MCC comments with regards to cover system option selection, cover system depth, foundation design and delineation. Update report to include additional SI around TP106 Delineation around WS102 and TP106	RP/PD

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EXECUTIVE SUMMARY

Site Details

Site Location:	East of Levenshulme Road, north of Lowfell Walk and southwest of the railway line, Gorton. Centred at approximate National Grid Reference 388710E, 395440N.
Site Area:	4,900m ² .
Current Land Use:	Vacant grassland adjacent to railway line.
Proposed Development:	Erection of 6no. 2-storey dwellinghouses and a 3-storey building to form 31 apartments (Class C3) together with parking, access road, landscaping and boundary treatment.
Purpose of Report:	Contamination and Geotechnical Assessment.

Preliminary Risk Assessment

PRA Details:	Undertaken by LKC in September 2022. Ref: LKC 22 1031-01.
History:	Possible track in E on 1848 mapping only, Pond in SW from 1893-1938 mapping, field boundary in centre from 1893-2006 mapping, unreferenced buildings in SW from 1908-1933 mapping, possible allotment gardens in SW from 2000-2005 mapping, unreferenced buildings in W from 2005-2016 mapping.
Geology / Hydrogeology:	Glacial Till (Secondary Undifferentiated Aquifer) over Chester Formation (Principal Aquifer).
Mining:	Not within a Development High Risk Area.
Relevant Environmental Setting:	Un-named stream adjacent SE. No pollution incidents recorded on site. No surface water or groundwater abstractions within 100m. Not within Source Protection Zone.
Preliminary Conceptual Model:	PL1 Direct Contact (Human Health): Moderate Risk (asbestos, metals, PAHs and other inorganic and organic contaminants), Low Risk (Petroleum Hydrocarbons).
PL=Pollutant Linkage	PL2 Inhalation of Vapours: Low Risk (volatile contaminants). PL3 Gas: Moderate Risk (hazardous and ground gas). PL4 Controlled waters: Moderate Risk (mobile contaminants). PL5 Water Pipelines: Moderate Risk (organic contaminants).
Recommendations:	Site Investigation was recommended to further assess the above pollutant linkages.

Ground Investigation Work Undertaken

Date of Investigation:	Initial Phase of SI undertaken on 12 th to 17 th October 2022. Additional SI undertaken on 3 rd July 2023 (TP201, hotspot delineation and dig out).
Intrusive Investigation Work Undertaken:	2no. cable percussive boreholes (CP101-CP102). 3no. window sample boreholes (WS101-WS103). 7no. mechanically excavated trial pits (TP101-TP106, TP201). 2no. hand excavated trial holes (HD101-HD102). 2no. Delineation areas (TP201, Trench 1)
Monitoring Wells:	Installed in all boreholes.
Soil Sampling:	13no. samples tested for metals, speciated PAHs, pH, sulphate, asbestos and SOM. 4no. samples tested for metals, speciated PAHs, cyanide, pH, sulphate, asbestos, phenol, TPHCWG, BTEX, MTBE and SOM. 12no. samples tested for TPHCWG, BTEX, MTBE and SOM (hotspot validation). 2no. samples tested for metals, speciated PAHs, cyanide, pH, sulphate, asbestos, phenol, TPHCWG, BTEX, MTBE, SOM and WAC (hotspot stockpile for disposal).
Groundwater Sampling:	3no samples tested for metals, speciated PAHs, cyanide, pH, sulphate, hardness, phenol, TPHCWG, BTEX.
Monitoring:	6no. visits over 3 months.
Insitu & Laboratory Geotech Testing:	SPTs, shear vanes, pocket penetrometers, Plasticity, triaxial and consolidation tests. 1no. samples tested for pH and sulphate, 2no. samples tested for BRE SD1 Short Suite.

Ground Conditions and Geotechnical Assessment

Location	General Ground Conditions	Undrained Shear Strength (s_u)	Anticipated Foundation Type	Other Considerations
Whole Site	Made Ground generally to approx. 0.5m to 0.90mbgl. At the location of the historical pond (TP104 & WS102) Made Ground containing organic material was recorded to depths of up to 2.50mbgl. Firm becoming stiff and very stiff Glacial Till CLAY to completion depths of the exploratory holes (>15.15mbgl). 2.5mbgl. Groundwater encountered as perched pockets within Made Ground and Glacial Till.	Average 92kPa within upper 4m before constantly achieving 90kPa to completion depth.	Shallow strip foundations for the 2 storey residential units (Plots 1 – 6) and for 3 storey apartment block (Plots 7 – 37) subject to suitable structural engineer design.	Consideration of effects of trees also needs to be considered. Temporary supports of excavations may be required. Detailed design should be carried out by structural engineer. Concrete Requirements DS-2 - AC-1s.

Hazardous Waste Assessment

The soil from the former pond area (WS102, Trench 1, Side 1 and 3) and around the site entrance (TP106 and TP201 0.4-0.9m) onsite should be classified as HAZARDOUS WASTE.

The results show that the remaining samples tested are classified as NON-HAZARDOUS WASTE.

Contamination Risk Assessment

The table below shows a summary of the risk assessments undertaken for each pollutant linkage, the revised conceptual model and recommendation for either remediation and / or further investigation.

Pollutant Linkage		Risk	Recommendations
1	Contaminants posing a risk to site users via dermal contact, ingestion and inhalation (of soil, dust, fibres (and vegetables for houses only)).	Moderate	- Elevated metals (lead), PAHs and hydrocarbons identified. Recommendation: Remediation required.
		Low	- Previously elevated hydrocarbons identified in 2no. locations (WS102 and TP106 only) have been delineated, excavated and stockpiled for offsite removal. Validation samples show no elevated levels remain. - No ACM was detected in any of the samples analysed. Recommendation: No additional remediation required other than the above.
2	Volatile contaminants posing a risk to site users via the inhalation of vapours.	Low	Previously elevated volatile contaminants have been delineated, excavated and stockpiled for offsite disposal. Therefore, no elevated volatile contaminants remain. Recommendation: No remediation required.
3	Gas posing a risk to buildings and site users via the migration of gas into building causing explosion and asphyxiation.	Moderate	- Slightly elevated carbon dioxide identified in WS102 only (max. 6.7%v/v). Other boreholes did not identify elevated carbon dioxide levels. - High flow rates recorded during some visits (max peak of 13l/hr). Fluctuations in flow rates are likely caused by a number of variables such as barometric pumping and stack effect due to difference in air temperature as well as deep borehole installed for GW sampling causing artificial flow. - Based on the elevated carbon dioxide and high flow rates, the low likelihood and moderate risk considered appropriate. Recommendation: CS2 Gas protection measures required.
		Moderate / Low	- No methane concentrations above detection limits identified. - Low risk assumed as GSV for methane classified as CS1. Recommendation: No remediation required.
4	Mobile contamination posing a risk to controlled waters via the migration through permeable strata.	Low	- Although slightly elevated metals identified, given the environmental settings and ground conditions encountered not considered to pose a significant risk to groundwater or surface water. Recommendation: No remediation required.
5	Organic contaminants posing a risk to water pipes.	Moderate	- Likely probability as elevated naphthalene and hydrocarbons encountered which could permeate water pipes and contaminate water supply. Recommendation: UU risk assessment to be undertaken. Barrier piping may be required, to be confirmed upon completion of further investigation works.

Recommendations and Remedial Strategy

The table below shows the remediation and validation requirements for the site. This information should be documented in a Site Completion Report for submission to the local authority.

Phase	PL	Remediation Requirements	Validation Requirements
Pre-Construction	ALL	<u>Earthworks Inspections / Unexpected Contamination</u> The relevant contractors should be briefed that during development works at the site should any unusual ground conditions and / or visual or olfactory evidence of contamination (including asbestos containing material) be encountered at the site, LKC and the Local Authority should be informed, and further assessment of the material may be required. Should asbestos be identified during groundworks, precautions should be taken to ensure the safety of the construction workers and nearby land users. It would be advisable to introduce an asbestos management strategy in line with CIRIA C733¹.	Log of work undertaken including photographs. Details of any sampling undertaken and validation of any potential additional remedial work.
Build-Phase Construction	1	If all or some of the made ground remains in place in gardens and soft landscaping areas, an environmental cover system will be required. The environmental cover system should be as follows: Private Front and Back Gardens: 600mm thick environmental cover system comprising: <u>Either</u> 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 500mm comprising clean inert fill and sufficient topsoil for a growing medium. <u>Or</u> geotextile membrane and at least 600mm comprising clean inert fill and sufficient topsoil for a growing medium. Shared Landscaping: 450mm thick environmental cover system comprising: <u>Either</u> 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 350mm comprising clean inert fill and sufficient topsoil for a growing medium. <u>Or</u> geotextile membrane and at least 450mm comprising clean inert fill and sufficient topsoil for a growing medium. The subsoil layer can be replaced by additional topsoil. A diagram of a typical environmental cover system is shown in Appendix J.	Measuring depth of environmental cover system using a staff and providing photographic evidence. Photographic evidence of the granular physical break or geotextile layer will also be collected. Chemical validation of imported soils: See Table 9-2.

¹ CIRIA (2014). "Asbestos in Soil and Made Ground: A Guide to Understanding and Managing Risks". C733.

Phase	PL	Remediation Requirements	Validation Requirements
Build-Phase Construction	3	<u>Gas Protection Measures</u> In line with CS2 as per UK guidance ^{2,3} . This is likely to / should include: • Passive subfloor or active subfloor ventilation system. • Methane and carbon dioxide resistant membrane installed as per manufacturer's instructions. • Ventilation of confined spaces within the building. • Minimum penetration of ground slab by services. • All joints and penetrations to be sealed. The gas protection measures details are provided on the typical foundation design details provided in Appendix K. A Solshield Ultra Gas Barrier or equivalent is proposed.	Supply and review of foundation designs. Photographic evidence of sub-floor void, ventilation and suitably sealed gas membrane. Validation of gas protection measures should be in line with CIRIA 735 ⁴
	5	<u>Potable Water Pipes</u> It is recommended that a Water Pipeline Assessment is undertaken once the location and depth of potable water pipes are known. It is likely that barrier pipe will be required.	Delivery Notes of Pipe Material. Photographs of the Installed Pipe.

The remediation recommended in the table above should be validated to ensure it has been carried out appropriately. This should be documented in a Completion/Validation Report and submitted to the local authority for completion.

² CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665

³ BSI (2015). "Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for new buildings." BS8485:2015.

⁴ CIRIA (2014). "Good Practice on the Testing and Verification of Protection Systems for Building Against Hazardous Ground Gas". CIRIA C735.

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- Appendix A: Risk Matrix
- Appendix B: Delineation Excavation Photos and Profile Logs
- Appendix C: Certificate of Analysis – Soil
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- Appendix G: Generic Assessment Criteria Values
- Appendix H: Hazard Index Spreadsheet
- Appendix I: HazWaste Online Classification Report
- Appendix J: Typical Environmental Cover System
- Appendix K: Typical Foundation Cross Section Details

1 Introduction

1.1 Background

LK Consult Ltd (LKC) has been commissioned by Watson Construction Ltd to carry out a Phase 2 Geo-Environmental Investigation, Risk Assessment and Remediation Strategy for Levenshulme Road, Gorton. The investigation was undertaken in support of a future planning application to develop the site for residential end use.

The following work has previously been undertaken:

- Preliminary Risk Assessment (PRA) report, undertaken by LKC (Ref: LKC 22 1031, dated 16th September 2022).
- Phase 2 Geo-Environmental Investigation, Risk Assessment and Remedial Strategy report, undertaken by LKC (ref. LKC 22 1031-B1R1, dated 7th February 2023)

This investigation has been undertaken to confirm the ground conditions below the site and to allow a contamination and geotechnical assessment to be undertaken.

The investigation will aim to confirm the risks of the potential pollutant linkages identified in the PRA and recommend further assessment / remediation, as required.

The aims of this report are also to establish the feasibility of developing this site, to demonstrate to the Local Planning Authority that in accordance with the National Planning Policy Framework (NPPF)⁵ the site may be developed for a residential end use and that appropriate site investigation and risk assessment works are in place to allow conditional approval of any future planning application.

This report includes is updated from the February 2023 report following comments provided by Manchester City Council. It also includes an additional phase of delineation investigation targeted around TP106 and WS102. Delineation, remediation and validation has been undertaken around TP106 and WS102 and discussion of works has been included in this report.

1.2 Site Details

A summary of the site details is presented in Table 1-1. Figure 1 shows the site location and boundary. Figure 2 shows the proposed development plan.

Site Location	East of Levenshulme Road, north of Lowfell Walk and southwest of the railway line, Gorton. Centred at approximate National Grid Reference 388710E, 395440N.
Approximate Area	4,900m ² .
Topography	Approximately 68 metres Above Ordnance Datum (AOD). Site slopes down to the south from the south and south east.
Current Site Use	Vacant grassland adjacent to railway line.
Purpose of Report	Planning.
Planning Ref.	135270/FO/2022.
Proposed Development	Erection of 6no. 2-storey dwellinghouses and a 3-storey building to form 31 apartments (Class C3) together with parking, access road, landscaping and boundary treatment.

Table 1-1: Summary of site details.

⁵ "National Planning Policy Framework." Ministry of Housing, Communities and Local Government. July 2021.

2 Review of Previous Work

2.1 Phase 1 Preliminary Risk Assessment (PRA)

A PRA report (Ref: LKC 22 1031, dated 16th September 2022) has previously been undertaken by LKC.

Table 2-1 summarises the site details, historical review, environmental settings and site reconnaissance.

Main Historical Features	Onsite: Track, pond, field boundaries, unreferenced buildings, possible allotment gardens. Surrounding Area: Watercourse, railway line, allotment gardens, electricity substation, saw mill, garage, 13no. ponds.
Geology / Hydrogeology	Artificial: No BGS recorded artificial. Superficial: Till. Secondary Undifferentiated Aquifer. Bedrock: Chester Formation (sandstone). Principal Aquifer.
Landfills / Infilled Ground	No recorded landfills. Potentially infilled ground identified.
Site Walkover	Grassland with dense vegetation. Shipping container and shed in north, caravans and cars in northwest, pallets of building bricks.

Table 2-1: Summary of site details, historical review, environmental settings and site reconnaissance.

The preliminary contamination conceptual model (PCCM) produced in the PRA is provided in Table 2-2.

Each pollutant linkage is described along with an assessment of the risk based upon guidance on probabilities and consequences outlined in CIRIA C552⁶. The risk matrix is provided in Appendix A.

It should be noted that there may be risk from short term exposure from contaminated soil to site workers during development work. The Preliminary Contamination Conceptual Model deals with long term exposure to key receptors associated with the future use of the site. Acute risks can be easily mitigated by good environmental management of the site during site works. Standard health and safety precautions (as per HSE guidance⁷) should be adopted by all workers involved with site enabling and construction works. Therefore, this receptor is not considered in the contamination conceptual model.

2.2 Phase 2 Site Investigation Report

The February 2023 site investigation, updated herein, identified potential risk to human health. Recommendations for further works included *inter alia* further investigation/delineation around hydrocarbon 'hotspots' and build phase remediation.

This report represents an updated assessment following the delineation and remediation of previously identified hotspots. Information from both phases of investigation and remediation have been used to provide an updated conceptual site model and remediation recommendations.

⁶ CIRIA (2001). "Contaminated Land Risk Assessment: A Guide to Good Practice". C552.

⁷ HSE (1991). "Protection of Workers and the General Public During Development of Contaminated Land" London HMSO.

PL	Pathway	Receptor	Contaminants of Concern (CoC)	Probability	Consequence	Risk	Recommendations
1	- Dermal contact. - Inhalation of soil, fibres and dust. - Ingestion of soils, dust. - Ingestion of home-grown produce, soil attached to home-grown produce (houses only). - Windblown dust.	- Future site users. - Offsite receptors.	- ACMs. - Heavy metals. - PAHs. - Other inorganic and organic contaminants.	Likely (given site history, site conditions and proposed end use)	Medium	Moderate	Intrusive investigation required. Soil analysis of CoC.
			- Petroleum hydrocarbons.	Low Likelihood (given site history, site conditions and proposed end use)	Medium	Moderate / Low (low assumed as significant source not anticipated)	Watching brief during groundworks. Soil analysis of CoC, subject to ground conditions encountered and PID testing.
2	- Inhalation of vapours. - Migration via permeable strata and preferential pathways.	- Future site users. - Offsite receptors.	- Volatile contaminants (TPHCWG).	Low Likelihood (given site history, site conditions and proposed end use)	Medium	Moderate / Low (low assumed as significant source not anticipated)	Watching brief during groundworks. Soil analysis of CoC, subject to ground conditions encountered and PID testing.
3	- Inhalation of gas. - Migration via permeable strata and preferential pathways. - Explosion in confined spaces.	- Future site users. - Buildings. - Offsite land users.	- Ground / hazardous gas (carbon dioxide, methane).	Low Likelihood (given viable gas source (pond onsite) and limited pathway)	Severe	Moderate	Intrusive investigation to confirm ground conditions. If significant gas source and pathway identified, gas monitoring required.
4	- Surface run-off. - Migration via permeable strata and preferential pathways. - Perched waters migration.	- Groundwater (Principal Aquifer). - Surface water (adjacent watercourse).	- Mobile contaminants such as metals, PAHs, hydrocarbons.	Low Likelihood (only minimal mobile contamination anticipated with limited pathway)	Medium	Moderate / Low (moderate assumed until ground conditions confirmed)	Intrusive investigation required. Groundwater sampling, subject to ground conditions encountered. Analysis of CoC.
5	- Ingestion of tainted water supply.	- Future site users. - Water pipes.	- Organic contaminants such as petroleum hydrocarbons, naphthalene.	Low Likelihood (although some contamination may be present, significant contamination not expected at pipeline depth)	Medium	Moderate / Low (moderate risk assumed until ground conditions confirmed)	Intrusive investigation required. Soil analysis of CoC, subject to ground conditions encountered.

Table 2-2: Preliminary Contamination Conceptual Model.

3 Ground Investigation

3.1 Site Investigation Design and Methodology

In order to assess the ground conditions at the site and to investigate the potential pollutant linkages identified in the preliminary contamination conceptual model an intrusive investigation was undertaken.

The investigation was carried out on 12th to 17th October 2022 and comprised the following:

- 3no. window sample boreholes drilled to 3.45-5.45 metres below ground level (mbgl) (ref. WS101 to WS103).
- 2no. cable percussion boreholes drilled to 15.05-15.15mbgl (ref. CP101 to CP102).
- 6no. trial pits (using JCB) excavated to 0.5-2.8mbgl (ref. TP101 to TP106).
- 2no. hand pits (using hand auger / spade) excavated to 1.0mbgl (ref. HD101 to HD102).

TP105 was repositioned southeast due to access restrictions to the north of the site. HD102 was undertaken in replacement of the proposed location of TP105.

TP106 terminated at 0.50mbgl upon discovery of an unknown large metal surface (possible tank) and water inflow.

LKC returned to site to investigate the two areas of elevated hydrocarbon / naphthalene contamination around WS102 and TP106 identified during the October 2022 investigation

The investigation was carried out on 3rd July 2023 and comprised the following:

- 1no. trial pit (using JCB) excavated to 1.8mbgl (ref. TP201) in the location of previous terminated TP106 location.
- 2no. delineation trial trenches (using JCB) excavated to 1.0mbgl (ref. TP201 and Trench 1).

All site investigation locations and extent of the delineation trenches are shown in Figure 3.

The locations across the two phases of investigation were chosen to allow good coverage across the site as well as target areas of concern. Table 3-1 details the targeted and general coverage (non-targeted) site investigation locations.

Site Investigation Locations	Rationale
HD101, HD102, TP101, TP105	Adjacent to railway and general site coverage.
WS102, TP104	Former pond and general site coverage.
CP101, HD101, TP101, TP102 and WS103.	Former possible allotments and general site coverage.
CP101, CP102, TP102, TP105, TP106, WS101, WS103	Proposed buildings and general site coverage.
TP103	Former building and general site coverage.
TP201	In location of TP106 which was previously terminated due to contamination and possible tank. Extended into a delineation trench.
Trench 1	In the location of previous location WS102 to delineate the extent of the contaminations identified.

Table 3-1: Summary of sampling locations.

The number of site investigation points corresponds to approximately one location per 19m square centres. This is considered to be a conservative sampling density and is in line with BS10175⁸ for a 'detailed investigation'.

In the area of TP106/TP201, evidence of hydrocarbon contamination was delineated until it was no longer detected using visual, olfactory and PID observations or obstructions were reached.

In the area of WS102, the impacted made ground associated with the former pond was delineated with any areas of proposed landscaping, until the extent of the pond was reached.

Excavated material from TP106 and WS102 were stockpiled separately on banded Visqueen membrane until ready to be removed offsite. Samples were collected from these stockpiles (ref. SP201 and SP301 respectively) to aid in offsite disposal. Photographic evidence is included in Appendix B.

Confirmatory validation samples of the base and sides of the excavation were collected and tested.

The extent of the delineation dig out around TP106 and WS102 is shown on Figure 3 and Photographs are provided in Appendix B.

All profile logs are provided in Appendix B and are in line with BS14688-1⁹ and BS5930¹⁰.

3.2 Well Installations

All of the boreholes were installed with monitoring wells for gas and groundwater monitoring and groundwater sampling. Monitoring wells were installed in accordance with BS10175 and CIRIA C665¹¹ and generally comprised approximately 0.5m or 1m plain pipe over a length of slotted pipe surrounded by pea gravel and sealed at the top with bentonite and concrete.

Well installation details are provided in Profile Logs in Appendix B.

⁸ British Standard (2017). "Investigation of Potentially Contaminated Sites – Code of Practice." BS10175:2017.

⁹ British Standards (2002) Geotechnical investigation and testing – Identification and Classification of Soil. Part 1: Identification and description. BS EN ISO 14688-1:2002.

¹⁰ British Standard (2015). "Code of Practice for Ground Investigations". BS5930:2015.

¹¹ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

3.3 Sampling Protocol

3.3.1 Soil Sampling (Contamination)

Standard sampling protocol and preservation of samples was undertaken as described in the EA guidance on site investigation¹².

Soil was collected for onsite testing. A plastic zip bag was half filled with soil allowing a suitably sized headspace. The bag was sealed and stored for at least 20 minutes before being tested for total volatile organic compounds (TVOCs) using a PhoCheck Tiger photoionisation detector (PID). Results of the PID readings are presented on the profile logs (Appendix B). The on-site monitoring was carried out in line CIRIA C665¹³ to aid in screening samples for volatile analysis.

Soil samples of approximately 500g were recovered in amber jars, amber vials for volatile analysis and plastic tubs. All the samples were labelled and stored in cool boxes prior to being collected by courier at the end of the day for delivery to the Chemtest laboratory in Newmarket for chemical testing. If collection was not possible the same day then samples were stored in the sample storage fridge at the LK Group offices below 4°C. Samples were tracked using appropriate Chain of Custody forms provided by Chemtest.

Many of the contamination tests are UKAS or MCERTS accredited and further details are given in the Certificate of Analysis presented in Appendix C. Table 3-2 shows the soil testing undertaken.

¹² EA (2000). "Technical Aspects of Site Investigation. Volumes 1 & 2 Text Supplements Research and Development Technical Report." P5-065/Tr.

¹³ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

Suites and Contaminants	No. Samples	Location & Depth	Justification
Metals / metalloids, pH, water soluble sulphate, cyanide suite, phenol, TPHCWG, BTEX, MTBE, speciated PAHs, SOM and asbestos screen	4	WS102 0.00-1.00m CP102 1.60-2.00m TP106 0.30-0.50m TP201 0.40-0.90m	Due to the location of former pond, detailed suite undertaken on WS102 0-1m. Evidence of hydrocarbon contamination (olfactory) identified in TP106 0.3-0.5m therefore detailed suite undertaken to confirm contamination risk and extent. Detailed suite undertaken on CP102 1.60-2.00m to confirm the absence of contamination. Detailed suite undertaken on TP201 due to previously identified contamination in TP106.
Metals / metalloids, pH, water soluble sulphate, speciated PAHs, SOM and asbestos screen	13	WS101 0.00-0.50m WS102 1.60-1.80m WS102 1.80-2.50m WS103 0.00-0.50m HD101 0.00-0.60m HD102 0.00-0.40m CP101 0.00-0.40m CP102 1.60-2.00m TP101 0.00-0.30m TP102 0.30-0.50m TP103 0.00-0.90m TP105 0.40-1.40m TP106 0.00-0.30m	A basic suite with a broad selection of contaminants tested on samples across the site where no significant evidence of contamination was identified (with the exception of occasional ash and coal) and no TVOCs identified from the PID tests.
TPHCWG, BTEX, MTBE, organic matter	12	TP201 0.90-1.20m TP201 1.20-1.80m TP201 Side 1 TP201 Side 2 TP201 Side 3 TP201 Side 4 TP201 Base Trench 1 Side 1 Trench 1 Side 2 Trench 1 Side 3 Trench 1 Side 4 Trench 1 Base	TP201 0.90-1.20 and TP201 1.20-1.80m tested to confirm the extent of the hydrocarbon contamination observed in the strata above. TP201 Side 1-4 and Base, Trench 1 Side 1-4 and Base tested to confirm the extent of the previously identified hydrocarbon contamination has been identified.
Metals / metalloids, pH, water soluble sulphate, cyanide suite, phenol, TPHCWG, BTEX, MTBE, speciated PAHs, SOM and asbestos screen and Waste Acceptance Criteria (WAC)	2	SP201 SP301	Samples tested for comprehensive suite and WAC to aid in offsite disposal.

Table 3-2: Summary of soil sample testing undertaken.

Notes:

If asbestos present during screen identification and quantification will be undertaken.

Metal/metalloids=arsenic, cadmium, chromium, (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc and boron; TPHCWG=carbon banded and aromatic/aliphatic split petroleum hydrocarbons; PAH=polycyclic aromatic hydrocarbons, BTEX=benzene, toluene, ethylbenzene and xylenes; MTBE=Methyl tert-butyl ether, SOM=Soil Organic Matter.

3.3.2 Water Sampling

To establish the condition of groundwater LKC undertook 3no. groundwater samples (ref. WS101-WS103).

The groundwater samples were collected a minimum of 1 week after drilling had finished and following well development. Sample collection was undertaken using a low flow sampling pump using thin-walled tubing to encourage laminar flow and minimise the potential loss of volatiles during sampling. The borehole was purged of all standing water and the sample collected from the recharged water. The sample was collected in glass and plastic bottles and a glass vial. A water meter was used to test the pH, temperature and conductivity before sampling until equilibrium conditions were met, as per BS10175¹⁴ guidelines.

All water samples were placed in glass bottles, plastic bottles and septum topped vials and stored in ice packed cool boxes. The samples were sent to Chemtest on the same day for analysis. The sampling suite is presented in Table 3-3.

Sampling was carried out in accordance with BS5930¹⁵ and BS5667-11¹⁶.

Many of the tests are UKAS or MCERTS accredited and further details are given in the Certificate of Analysis presented in Appendix D. Table 3-3 shows the groundwater testing undertaken.

Suites and Contaminants	No. Samples	Location	Justification
Metals / metalloids, pH, sulphate, cyanide suite, TPHCWG, BTEX, MTBE, speciated PAHs, phenol and hardness.	3	WS101 WS102 WS103	Detailed suite undertaken across the site to confirm the absence of contamination.

Table 3-3: Summary of groundwater sampling tests undertaken.

Notes:

Metal/metalloids=arsenic, cadmium, chromium, (total and hexavalent), copper, lead, mercury, nickel, selenium, vanadium, zinc and boron; TPHCWG=carbon banded and aromatic/aliphatic split petroleum hydrocarbons; PAH=polycyclic aromatic hydrocarbons, BTEX=benzene, toluene, ethylbenzene and xylenes; MTBE=Methyl tert-butyl ether.

3.4 Gas Monitoring

Six gas monitoring visits have been undertaken over a 3-month period (28th October 2022 to 26th January 2023) in all installed boreholes.

Monitoring has been undertaken using a Geotechnical Instruments GA5000 in accordance with the monitoring protocol outlined in CIRIA C665¹⁷ (flow rate measured first). The monitoring was undertaken over a range of weather conditions (including low and falling barometric pressure and heavy rain) to demonstrate worst-case conditions.

The gas monitoring results are reproduced in full in Appendix E.

¹⁴ British Standard (2017). "Investigation of Potentially Contaminated Sites – Code of Practice." BS10175:2017.

¹⁵ British Standard (2015). "Code of Practice for Ground Investigations". BS5930:2015.

¹⁶ British Standard (2009). "Water Quality – Sampling. Part 11: Guidance on Sampling of Groundwaters". BS ISO 5667-11:2009.

¹⁷ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

3.5 Geotechnical Testing

3.5.1 In-situ Onsite Geotechnical Testing

In-situ geotechnical tests were performed in the boreholes to further characterise the sub-soil conditions. The following tests were undertaken:

- Standard Penetration Tests (SPTs) were performed in the window sample boreholes and cable percussion boreholes at approximately 1m intervals, generally within the natural strata.
- Shear Vane tests (giving undrained shear strength) were performed trial pits at approximately 1m intervals, within the natural clay strata.
- Pocket Penetrometer tests (giving undrained shear strength) were performed in the window sample boreholes.

The SPT and shear vane readings are provided within the profile logs (Appendix B).

3.5.2 Laboratory Geotechnical Testing

Soil samples taken during the investigation were collected in tubs, bulk bags and sealed U100 tubes and sent to Chemtest and Professional Soil Laboratories for geotechnical testing.

Many of the tests are UKAS accredited and further details are given in the laboratory report presented in Appendix F. Table 3-4 shows the geotechnical testing undertaken.

Suites and Contaminants	No. Samples	Location	Justification
pH and water-soluble sulphate	1	TP104 1.35-2.30m	Taken to assess the pH and sulphate for geotechnical purposes. pH and water-soluble sulphate are also included in the Suites shown in Table 3-2.
Atterberg Limits (plasticity testing)	9	CP101 0.70m CP101 1.70-2.00m CP102 1.00m CP102 1.70-2.00m WS101 0.50-1.00m WS102 1.20-1.60m WS103 0.50-1.00m WS103 2.50-3.00m WS103 4.50-5.00m	A selection of clay samples across the site were tested for Atterberg Limits to assess their shrinkability potential associated with current and proposed trees.
Single Stage Triaxial	4	CP101 3.30-3.75m CP101 10.00-10.45m CP102 4.30-4.75m CP102 8.50-8.95m	Undertaken to confirm the strength of the clay strata.
One-Dimensional Consolidation	2	CP101 10.00-10.45m CP102 4.30-4.75m	To predict how a soil in the field will deform in response to change in effective stress.
BRE SD1	2	WS101 0.50-1.00m WS103 0.50-1.00m	Assess soils aggressiveness to concrete to allow correct class of concrete to be specified.

Table 3-4: Summary of geotechnical testing undertaken.

4 Ground Conditions

4.1 Geology – Generalised Sequence

The ground conditions beneath the site comprised made ground underlain by natural sandy gravelly clay. A summary section of the logs is provided in Plate 4-1, with additional comments below.

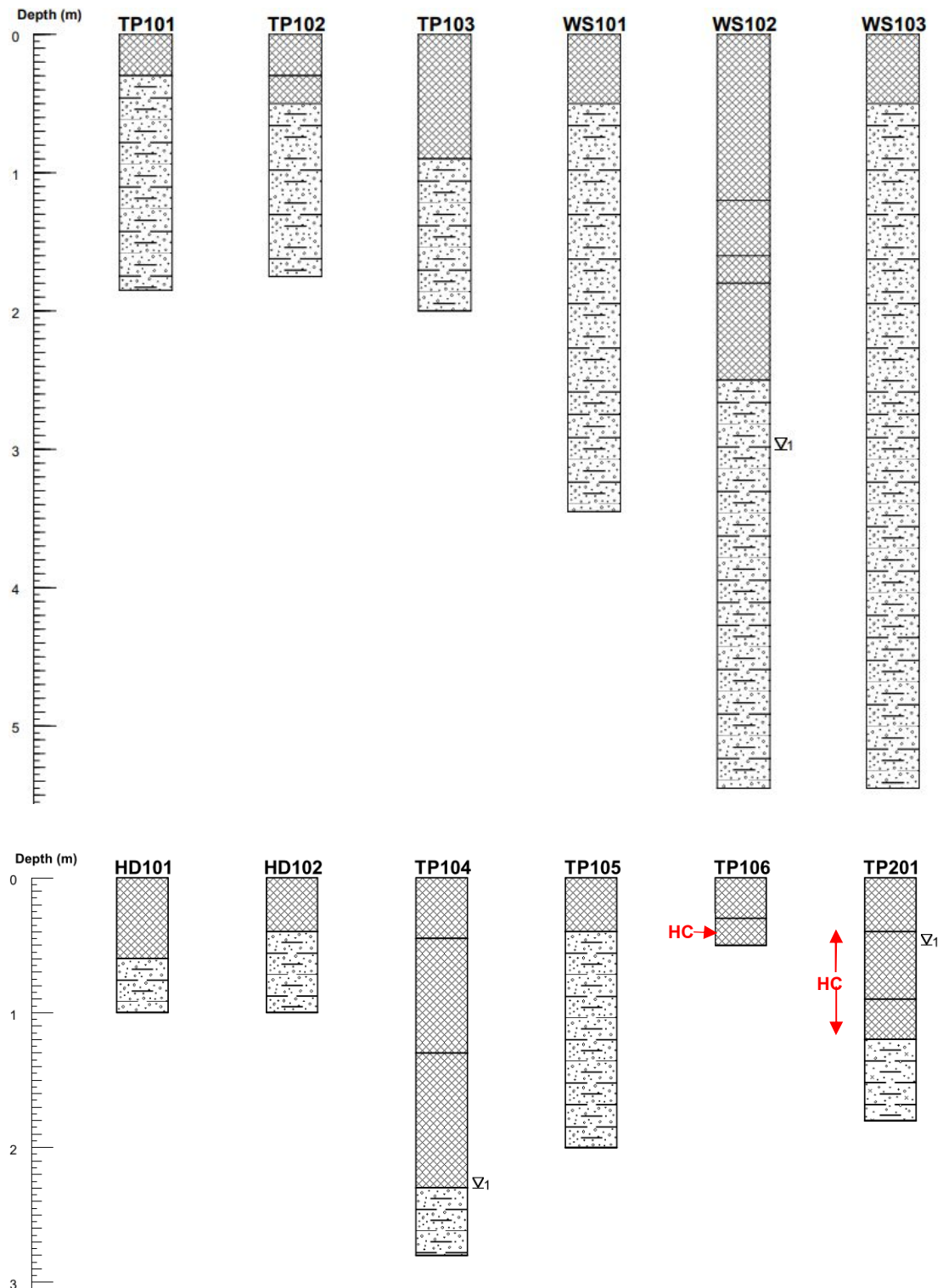


Plate 4-1: Summary of ground conditions.

Additional information on ground conditions:

Made Ground

Made Ground was recorded in the majority of boreholes to depths of 0.05-0.90mbgl. The Made Ground comprised horizons of gravel, sand, silt, clay with anthropogenic material including ash, brick, plastic, ash, metal, tarmacadam, concrete, ceramic and glass.

The made ground recorded in TP104 and WS102 in the former pond area extended down to a maximum depth of 2.5mbgl and comprised horizons of silts, gravels and clays with anthropogenic material including brick, coal, ash, glass and plastic in the upper layer of made ground.

Natural Strata

Natural strata comprised horizons of firm to very stiff gravelly sandy clay in all locations.

Contamination

Olfactory evidence of hydrocarbon contamination was identified in TP106 during the initial phase of investigation. Mild hydrocarbon odour was encountered at 0.30-0.50mbgl where the trial pit was terminated.

The PID recorded a maximum of 13.1ppm TVOC in TP101, 0.00-0.30mbgl. The remaining samples generally recovered TVOC readings of <5ppm.

During the additional phase of investigation and delineation, no obvious hydrocarbon contamination was identified in the made ground around WS102 where elevated heavy end hydrocarbons were identified in the shallow soils.

In the area of TP106, the additional Trial Pit TP201 encountered mild hydrocarbon odours between 0.40-0.90mbgl and faint hydrocarbon odours in the strata below.

4.2 Groundwater

4.2.1 Groundwater Levels

Groundwater strikes were recorded during the investigation in trial pits and boreholes. In addition, groundwater monitoring within the borehole wells has been undertaken on six occasions. An oil-water interface probe (approximately 1cm detection limit) was used to detect the presence of free phase hydrocarbons within each borehole.

Results are summarised in Table 4-1.

BH/TP	Water Strike Depths (mbgl)	Well Response Zone (mbgl)	No. of Monitoring Visits	Monitoring Depths (mbgl)			Sample Taken?	Evidence of Contam?
				Min	Max	Base		
CP101	Dry	1.0-10.0 (C)	6	6.38	9.46	9.63-9.90	No	No
CP102	Dry	1.0-10.0 (C)	6	1.80	9.53	9.62-9.70	No	No
WS101	Dry	1.0-3.0 (C)	6	0.00	0.15	2.95-3.01	Yes	No
WS102	Dry	0.5-4.5 (MG/C)	6	0.73	1.11	4.11-4.18	Yes	No
WS103	Dry	0.5-4.5 (C)	6	0.19	3.48	3.96-4.03	Yes	No
TP101	Dry	Not installed						
TP102	Dry	Not installed						
TP103	Dry	Not installed						
TP104	2.30	Not installed						
TP105	Dry	Not installed						
TP106	0.50	Not installed						
TP201	0.50	Not installed						

Table 4-1: Summary of water strike depths within boreholes and trial pits.

Response Zones:

MG=Made Ground; C=Clay.

The groundwater in the WS boreholes fluctuated over the monitoring period, especially during times of heavy rainfall where some areas of the site were boggy. WS101 was waterlogged or within 0.15m of the surface for all 6no. visits. Groundwater levels rose in the CP boreholes over the monitoring period indicative of surface water infiltration rather than true groundwater levels.

4.3 In-Situ Geotechnical Testing

4.3.1 Standard Penetration Tests

In-situ standard penetration tests (SPTs) were undertaken, predominantly in the natural ground. The results are summarised in Table 4-2 and provided within the profile logs in Appendix B.

Approximate Depth (mbgl)	SPT 'N' Values				
	WS101	WS102	WS103	CP101	CP102
1-2	0 (MG)	5 (C)	11 (C)	17 (C)	6 (C)
2-3	13 (MG)	6 (C)	18 (C)	18 (C)	15 (C)
3-4	22 (C)	22 (C)	5 (C)	-	26 (C)
4-5	-	27 (C)	16 (C)	23 (C)	-
5-6	-	21 (C)	14 (C)	20 (C)	23 (C)
7-8	-	-	-	22 (C)	22 (C)
8-9	-	-	-	22 (C)	-
10-11	-	-	-	-	22 (C)
11-12	-	-	-	23 (C)	24 (C)
13-14	-	-	-	23 (C)	23 (C)
14-15	-	-	-	26 (C)	25 (C)
GW Level	-	-	-	-	-

Table 4-2: Summary of SPT (N) values.

Notes:

MG = Made Ground; C=Clay.

Groundwater level based on strikes during investigation.

4.3.2 Shear Vane and Pocket Penetrometer tests

Hand shear vane and pocket penetrometer readings, recording undrained shear strength (s_u), were taken within the clay strata of the trial pits and window sample boreholes respectively. The results are summarised in Table 4-3 and provided within the profile logs in Appendix B.

Approximate Depth (mbgl)	Average Undrained Shear Strength (kN/m ²)							
	TP101	TP102	TP103	TP104	TP105	WS101	WS102	WS103
0-1	48.67	95.67	96.67	87.33	73.33	-	-	-
1-2	114.00	105.33	100.67	-	92.67	-	-	-
2-3	-	-	-	126.00	-	49.10	34.34	147.20
3-4	-	-	-	-	-	142.23	196.00	188.80
4-5	-	-	-	-	-	-	198.6	201.00
GW Level	-	-	-	2.30	-	-	3.00	-

Table 4-3: Summary of average hand shear vane and pocket penetrometer readings.

Notes:

Groundwater level based on strikes during investigation.

Shear vane readings can be influenced by coarse material including silt.

4.4 Geotechnical Laboratory Testing

4.4.1 Single Stage Triaxial Test

Single stage triaxial testing has been undertaken on four samples of the natural clay strata. The results are presented in Appendix F and summarised in Table 4-4.

Location	Depth (mbgl)	Material Description	Undrained Shear strength (kPa)
CP101	3.30-3.75	Very stiff brown slightly gravelly sandy CLAY.	242
CP101	10.00-10.45	Stiff brown slightly gravelly sandy CLAY.	79
CP102	4.30-4.75	Very stiff brown slightly gravelly sandy CLAY.	183
CP102	8.50-8.95	Stiff brown slightly gravelly sandy CLAY.	125

Table 4-4: Summary of single stage triaxial results.

4.4.2 Atterberg Limits

Representative samples of natural clay were subjected to Atterberg Limits (plasticity) and Moisture Content testing. Results are presented in Appendix F and summarised in Table 4-5.

Table 4-5 also includes the modified plasticity index as detailed in Chapter 4.2-D5 of the NHBC standards (modified plasticity index = plasticity index x % less than 425µm sieve / 100%).

Location	Depth (mbgl)	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Class	Passing 425 micron (%)	Modified Plasticity Index (%)
CP101	0.70	19	43	20	23	CI	97	22.31
CP101	1.70-2.00	16	37	18	19	CI	93	17.67
CP102	1.00	26	52	23	29	CH	90	26.1
CP102	1.70-2.00	17	39	18	21	CI	96	20.16
WS101	0.50-1.00	22	41	19	22	CI	97	21.34
WS102	1.20-1.60	108	177	62	115	CE	100	115
WS103	0.50-1.00	18	38	18	20	CI	97	19.4
WS103	2.50-3.00	16	40	19	21	CI	94	19.74
WS103	4.50-5.00	18	35	17	18	CI	95	17.1

Table 4-5: Summary of plasticity index testing.

The modified plasticity index is typically between 17% and 26%, averaging 20.5%. This characterises the clay as having a medium volume change potential.

The extremely high result of 115% obtained from WS102 at 0.20-1.60m is from material obtained from the Made Ground in the location of the historic pond and is due to the presence of organic matter in the strata.

4.4.3 Sulphate and pH

Water soluble sulphate and pH tests were carried out on soil and groundwater samples. Full results are presented in Appendix C (soils) and Appendix D (groundwater) and summarised in Table 4-6.

Strata	pH		Sulphate	
	Soil	Groundwater	Soil (g/l)	Groundwater (mg/l)
Made Ground	7.3-9.3	7.1-7.6	<0.010-0.56	79-530
Natural	8-8.3		<0.010-0.040	

Table 4-6: Summary of pH and sulphate results.

5 Geotechnical Assessment

5.1 Proposed Development

It is understood that the proposed development will comprise low rise two storey residential units (Plots 1-6) and a three-storey residential apartment building (Plots 7-37) with associated landscaping, hard standing car parking and infrastructure. Details of the proposed loadings are not known and therefore a line loading of 75kN/m has been assumed for Plots 1-6 and 120kN/m has been assumed for Plots 7-37, for preliminary assessment purposes only.

The finished ground levels have not been provided and it is therefore anticipated that they will not vary significantly from current levels. However, should the development proposals or finished levels be altered then the comments/recommendations in this section may require revising.

The depths of any underground engineering works (sewers etc.) are unknown and therefore have not been taken into account in the following assessment. It is considered that any such works will be designed so as not to have an effect on, or compromise, proposed or existing foundations or ground stability.

Given the nature of the proposed development it is considered that the structure meets the criteria of Geotechnical Category 1 of Euro Code 7.

5.2 Summary of Ground Conditions

Ground conditions identified at the site are detailed in Section 4.1, and typically comprises Made Ground to between 0.50m and 0.90m depth. At the locations of the historic pond, trial pit TP104 and window sample WS102 recorded Made Ground to depths of 2.30m and 2.50mbgl respectively.

Natural superficial deposits comprise Glacial Till (Diamicton) which consists of firm to very stiff, variably sandy gravelly CLAY to the completion depths of the exploratory holes (15.05m CP101 & 15.15mbgl CP102). The extent of the Glacial Till was not proven in any of the exploratory hole locations.

Bedrock is recorded by British Geological Society to comprise Sandstone of the Chester Formation.

Groundwater was encountered as perched water within the Made Ground at 0.50mbgl (TP106) and 2.30mbgl (TP104) and also as perched water within the Glacial Till at 3.00mbgl (WS102).

5.3 Site Preparation

The site should be cleared and any vegetation below areas of proposed development stripped in accordance with Series 200 of the Specification for Highway Works. This should include:

- Roots present below the footprint of proposed structures and infrastructure should be grubbed out and the resulting void infilled with suitable compacted engineered fill;
- Redundant services should be sealed off and grubbed out and replaced with suitable compacted engineered fill; and,
- Buried structures and old foundations may be present from historical unreferenced buildings (refer to PRA, CL-602-LKC 22 1031-01, dated 16th September 2022). If encountered these should be excavated from below the proposed development footprint with the resulting void backfilled.

The near surface soils may potentially be disturbed by weathering and site traffic. Precautions should be taken to avoid this, as excessive disturbance may result in more onerous floor slab design, road cap thickness and increased amount of site disposal etc. Based on site observations the near surface soils may require at least some treatment or reinforcing to allow safe movement of construction plant and labour. A working platform will be required for piling plant.

5.4 Foundation Conditions and Bearing Capacity

5.4.1 General

It is considered that the Made Ground is not suitable for a founding material due to the inherent variability of the material. Foundation options are therefore:

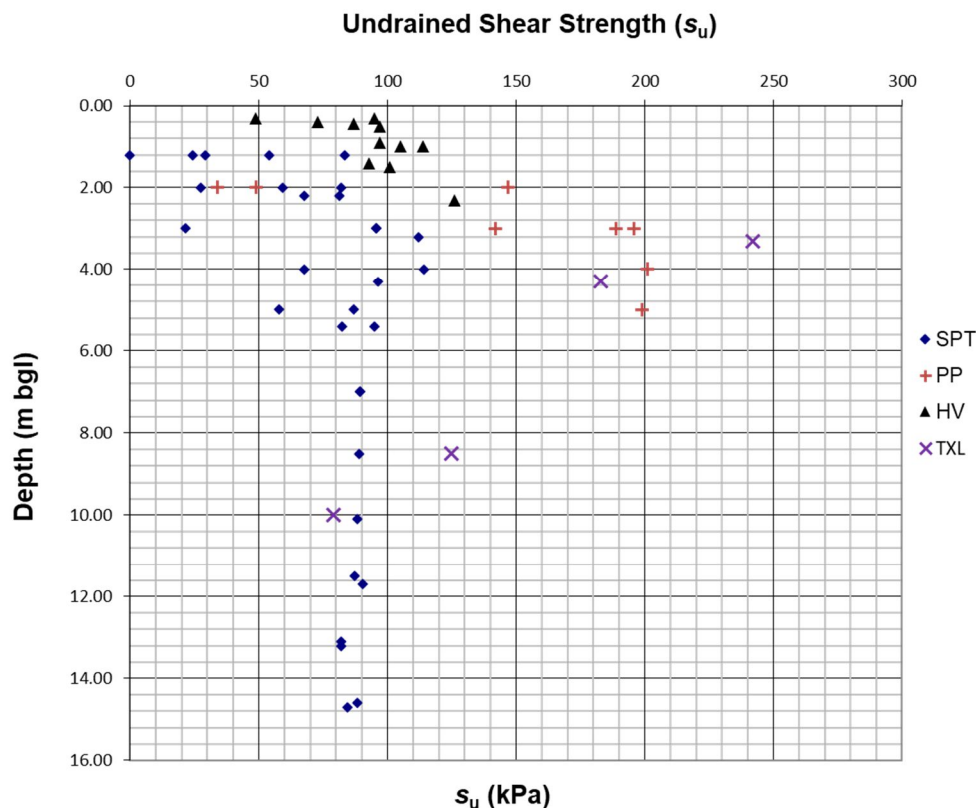
- Strip foundations in to the underlying Glacial Till (CLAY);
- Pad foundations; or,
- Deeper pile foundations.

These options are discussed below:

Strength of the natural cohesive material has been assessed using in-situ testing by SPT, Pocket Penetrometer and Hand Shear Vane (HV) and laboratory Triaxial (TXL). The results of the testing have been plotted against depth as is shown in Graph 5-1 overleaf.

From Graph 5-1 it can be seen that the strength of the cohesive deposits is highly varied at shallow depth ranging between 22 and 242kPa (disregarding the erroneous SPT N0 from WS101 at 1.2mbgl). Averaging the results obtained to a depth of 4.00mbgl returns a s_u of 93kPa.

From a depth of c. 4.00mbgl a more uniform s_u of c.90kPa is returned.



Graph 5-1: Summary of s_u vs depth from in-situ SPT, SHDP and HV testing.

5.4.2 Strip Foundations

Strip foundations should be constructed at least 150mm in to the underlying natural stiff CLAY at c.1.20mbgl. At this depth an allowable bearing capacity of 158kN/m² has been calculated using a Factor of safety of 3 and an undrained shear strength of 92kN/m² taken from Graph 5-1. The average s_u between GL and 4.0mbgl has been used in the assessment of the in-situ undrained shear strength.

Foundation excavations should be inspected by a suitably qualified and experienced geotechnical engineer prior to pouring of concrete, if soft ground is encountered then foundations may need to be deepened/widened or the soft spot excavated out and replaced with compacted granular material.

Atterberg limit determinations, summarised in Table 4-5, show the clay to be of medium plasticity and as such the sides of the foundations may require protection using clay board or similar.

Foundation depths should take account of the presence of existing and proposed trees with foundations deepened locally in accordance with the requirements of NHBC Standards for a clay of medium plasticity. It is recommended that at working drawing stage a foundation schedule is prepared for the development taking account of the soil plasticity and the locations of trees.

5.4.3 Pad Foundations

Based upon the s_u obtained from the in-situ and laboratory testing of the Glacial Till material, an assessment has been made on a pad foundation supporting column loads. For preliminary assessment purposes, two sizes of pad (1m² and 2m²) have been

considered at depths of 1m and 2mbgl. The bearing capacity assessment has been made in line with Skempton's values of N_c for $\phi_u = 0$), results are shown in Table 5-1.

Pad Size	Pad Depth (mbgl)	Allowable Load (kN)
1m ² (1.00m x 1.00m)	1.00	257
	2.00	293
2m ² (1.42m x 1.42m)	1.00	477
	2.00	562

Table 5-1: Summary of pad Allowable Load.

The pads show an ABC of 257kN for a 1m² pad and 477kN for a 2m² pad foundation placed at a depth of 1mbgl in the target stratum of stiff and very stiff clay (Glacial Till). Strip foundations supporting cladding walls should be able to support loadings of 158kN/m².

It can be seen that increasing the size of the foundation results in a greater ABC, however, increasing the depth of the foundation has little benefit to the ABC.

The above is for assessment purposes only, foundation design should be undertaken by a specialist contractor.

5.4.4 Piled Foundations

As an alternative consideration maybe given to the use of piled foundations. For preliminary purposes the following initial pile carrying capacities have been calculated. When undertaking these preliminary calculations the following parameters have been used:

- Undrained shear strength values from Graph 5-1;
- Adhesion Factor of 0.45 based on CFA piles;
- Factors of safety of 1.5 on side resistance and 3 on base resistance;
- Global Factor of safety of 2.5; and,
- Depth to bearing stratum 1.0mbgl.

Depth	Pile Carrying Capacity (kN)		
	300mm dia	450mm dia	600mm dia
5	74	120	173
10	150	235	326
15	226	349	478

Table 5-2: Preliminary Pile Carrying Capacity.

Pile design should be undertaken by a specialist contractor to allow them to reduce the factor of safety based on their extensive pile testing data.

Should Made Ground be encountered at depths of greater than 0.90m then consideration must be given to the potential for negative skin friction to have an effect upon the piles.

Recommendation

Strip foundations should be suitable for supporting the loads of the low-rise residential Plots 1-6. For the three-storey apartment block, which is anticipated to include concrete floors between storeys, whilst a pad or piling solution is viable it is considered

that strip foundations, suitably designed by a structural engineer, will provide a suitable solution.

5.5 Ground Floor Slabs

Due to the presence of varying thickness' up to 0.90m depth of Made Ground across the footprint of the site (and deeper at 2.50mbgl at the location of the historic pond outside of the footprint of the building), it is considered that suitable preparation of the sub-grade, by a combination of excavation and re-compaction, a ground bearing floor slab should prove suitable for the proposed buildings.

Floor slabs should be designed by a suitably experienced structural engineer.

The Atterberg Limit determinations, summarised in Table 4-4, show the clay within the Made Ground to be of medium plasticity and may be liable to heave, this should be considered when designing floor slabs.

5.6 Pavement Construction

It is considered that the topsoil is not suitable for use as a sub-grade. Untreated Made Ground is considered unsuitable as a sub-grade due to its potential variability and potentially low strength/high compressibility. It should be removed to a depth of 0.50m below formation level and sorted to remove any unsuitable or deleterious materials. The sub formation should be rolled and suitable excavated material can then be replaced, up to formation level, in fully compacted thin layers. Any deficit should be made up with suitable imported fill compacted as above. Following this treatment an overall design CBR of 2-5% should be available, although this will require confirmation at a later date through in-situ CBR tests.

Based on the plasticity index the soils are not considered frost susceptible.

Following excavation the sub formation should be proof rolled and any soft material inspected and removed.

5.7 Drainage

The presence of substantial depths of Made Ground across the site (especially at the location of the historical pond) may result in settlement. It is therefore recommended that drain runs are designed using steeper gradients and flexible joints to allow for some differential settlement.

5.8 Concrete Durability

Based upon the results of the chemical analyses summarised in Table 4-6 it is considered that subsurface concrete can be designed in accordance with Design Sulphate Class DS-2, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1s in accordance with the recommendations provided in BRE Special Digest 1 (2005).

5.9 Excavations

Site observations indicated that excavations should be feasible in the near surface with normal plant, however obstructions may be encountered in the near surface including former foundations and former floor slabs. It is anticipated that any obstructions will be grubbed out during the reduced level dig for the sub structure works.

Groundwater seepage was recorded in some of the Trial Holes, evident of isolated perched water in the Made Ground or Glacial Till. Generally trial pits were stable.

Due to the variability of the Made Ground it is considered that all excavations are supported or battered back in accordance with guidance contained in CIRIA R97¹⁸.

5.10 Construction Activity and Inspection

The following activities and inspections should be incorporated in to the site works:

- Due to the variability of the soils at the site it is recommended that sufficient allowance is made for the inspection of formation and sub formations to foundations and pavement construction;
- Excavations where access is required should be subject to a risk assessment from a competent person and where appropriate mitigation measures such as benching back the sides or use of support systems in accordance with CIRIA R97 utilised;
- It is considered that de-watering may be required, especially following periods of heavy rainfall. Removal of surface water and water within trenches should be possible with conventional sump pumping. Discharge of any water should be agreed with the relevant regulatory body and be undertaken under a trade effluent discharge, where required. Measures to remove silt and suspended solids may be required and consideration should be given to provision of space for settling tanks or an attenuation pond;
- Where access to confined spaces is required appropriate mitigation measures should be addressed within the Construction Stage Health and Safety Plan. Particular account should be taken of the gas results;
- The presence of potential contamination and mitigation measures should be addressed as part of the Construction Stage Health and Safety Plan and should include measures to design out the risks, reduce their impact and finally the use of Personnel Protective Equipment (PPE).

¹⁸ CIRIA Report 97 – Trenching Practice – Second Edition (2001 revision)

6 Generic Risk Assessment

6.1 Introduction

Current good practice requires that the findings from a site investigation should be evaluated on a site-specific basis, using a risk-based approach. Risk assessment involves identification and evaluation of the hazards presented by the concentrations of contaminants measured followed by an evaluation of the risks which are associated with these hazards (LCRM¹⁹). Information gathered from the risk assessment has been collated in the revised contamination conceptual model in Section 6.6.

6.2 Soil Risk Assessment

6.2.1 Methodology

With regards to the soil risk assessment LKC will use the following hierarchy:

- Category 4 Screening Levels (C4SLs).
- LQM Suitable 4 Use Levels (S4ULs).
- ATRISK Soil Screening Values (SSVs) and CL:AIRE Generic Assessment Criteria (GACs).

C4SLs were published in 2013^{20,21}. The change to the contaminated land guidance has changed the evaluation of risk from 'minimal' (referred to as Health Criteria values (HCVs))²² used to generate Soil Guideline Values (SGVs) to 'low' (referred to as Lowest Level of Toxicological Concern (LLTCs)). The policy companion document and supporting letter by Defra, dated 3rd September 2014, states that C4SLs '*could be used under the planning regime, as well as within Part 2A*'. Based on these comments LKC considers the justifications and assumptions used to generate 'low' risk are suitable for the planning regime.

Where no C4SLs have been generated LKC will use the LQM S4ULs²³. Similar assumptions and land uses to C4SLs have been used. However, toxicological information has been based on 'minimal risk' as per previous guidelines and assumptions^{24,25,26,27}.

If contaminants are not present as C4SLs and S4ULs then LKC will use ATRISK SSVs or CL:AIRE GACs²⁸. These follow the 'minimal' risk principle and more stringent exposure parameters and will be conservative.

LKC consider the main risk drivers for PAHs are benzo(a)pyrene (B(a)P) and naphthalene. This is due to B(a)P possibly being a carcinogen and most toxic of the

¹⁹ Land Contamination Risk Management (LCRM) <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

²⁰ Defra (2014). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Policy Companion Document."

²¹ CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

²² EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

²³ LQM (2014). "The LQM/CIEH S4ULs for Human Health Risk Assessment."

²⁴ EA (2008). "Updated Technical Background to the CLEA Model." Science Report – SC050021/SR3.

²⁵ EA (2008). "Human Health Toxicological Assessment of Contaminants in Soils." Science Report – SC050021/SR2.

²⁶ EA (2008). "A Review of Body Weight and Height Data used within the Contaminated Land Exposure Assessment Model (CLEA)." Project SC050021/Technical Review 1.

²⁷ EA (2009). "Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values." Science report SC050021/SR7.

²⁸ CL:AIRE (2009). "The Soil Generic Assessment Criteria for Human Health Risk Assessment."

PAHs^{29,30} and naphthalene the most volatile and soluble³¹. The new C4SLs indicate B(a)P as a surrogate marker for carcinogenic PAHs, if it falls within appropriate limits, since the risk from other non-carcinogenic PAHs are considered negligible³². For B(a)P to be used as a surrogate marker it should follow the profile described by the HPA (2008)³³ and CL:AIRE (2013). Naphthalene will be treated separately using the LQM S4ULs.

The proposed development is for a mixed end use of both residential houses with private gardens in the north of the site and residential apartments with limited shared soft landscaping. Therefore, the assessment criteria for residential with plant uptake has been used for the residential houses in the north of the site and residential without plant uptake has been used for the apartments across the remainder of the site.

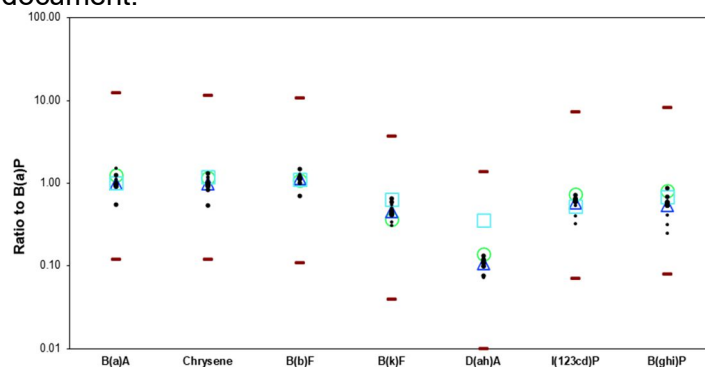
All criteria have been generated using the CLEA V1.06 model³⁴ based either on 1%, 2.5% and 6% Soil Organic matter (SOM). Results will be compared to the nearest appropriate SOM.

A summary of the generic assessment criteria is provided in Appendix G.

B(a)P as Surrogate Marker

Based on the above assumption for PAHs, LKC undertook an assessment of the data for the site with regards to using B(a)P as a surrogate marker for carcinogenic PAHs as per HPA and CL:AIRE guidelines. The primary toxicological study related to Culp *et al.*³⁵, which was based on coal tar mixtures (>80,000mg/kg of total PAHs) fed in food to mice over a two-year carcinogenicity study.

Graph 6-1 summarises the study site data with respect to how the ratios of carcinogenic PAHs relate to B(a)P, within the confidence limits provided in the HPA document.



Graph 6-1: The ratio of PAH to B(a)P in soil for all available data at the site based on 14 out of 18 samples (where values were >LOD to allow the calculation of a ratio).

Notes:

B(a)P=Benzo(a)pyrene; D(ah)A=Dibenzo(ah)anthracene; B(a)A=Benzo(a)anthracene; B(b)F=Benzo(b)fluoranthene; B(k)F=Benzo(k)fluoranthene; I(123cd)P=Indeno(123cd)pyrene; B(ghi)P=Benzo(ghi)perylene

●=Ratio to B(a)P for all data; ○=Mean ratio to B(a)P for Culp data; △=Mean ratio to B(a)P from all data at the site
□=Mean ratio to B(a)P for UK data presented by HPA; ■=Upper and Lower limits (order of magnitude from Culp data)

²⁹ EA (2002). "Contaminants in Soils: Collation of Toxicological Data and Intake Values for Humans. Benzo[a]pyrene." R&D Publication TOX2.

³⁰ USEPA (1984). "Health Effects Assessment of Polycyclic Aromatic Hydrocarbons (PAHs). EPA 540/1-86-013."

³¹ EA (2003). "Review of the Fate and Transport of Selected Contaminants in the Soil Environment." Draft technical report P5- 079/TR1.

³² CL:AIRE (2013). "SP1010: Development of Category 4 Screening Levels and Assessment of Land Affected by Contamination – Final project Report."

³³ HPA (2010). "HPA Contaminated Land Information Sheet: Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs)." Version 3.

³⁴ EA (2008). "CLEA Software (Version 1.05) Handbook." Science Report – SC050021/SR4.

³⁵ Culp, S; Gaylor, D; Sheldon, W; Goldstein, L and Beland, F (1998). "A Comparison of Tumours Induced by Coal Tar and Benzo-a-pyrene in a 2-Year Bioassay." Carcinogenesis. Vol 19, no. 1, pp. 117-124.

All the data points that could be used to calculate ratios fall inside the upper or lower limits.

Based on this distribution of data LKC considers B(a)P can be used as a surrogate marker for carcinogenic PAHs and the C4SL criteria is suitable for this dataset.

6.2.2 Soil Results Comparison against Assessment Criteria

All analysis sheets are presented in Appendix C. Elevated and pertinent results are presented in Table 6-1.

Contaminant	Units	No. of samples	Elevated Results	Sample Location	Criteria (1%/2.5%/6%)	Source of Criteria
Metals						
Lead	mg/kg	18	230	HD102 (0.00-0.40m)	200	C4SL (residential with plant uptake)
			320	TP201 (0.40-0.90m)		
PAHs						
Benzo(a)pyrene	mg/kg	18	45	WS102 (0.00-1.00m)	5.3	C4SL (residential without plant uptake)
			59	WS102 (1.60-1.80m)		
			82	WS103 (0.00-0.50m)		
			12	HD101 (0.00-0.60m)		
			66	TP103 (0.00-0.90m)		
			12	CP101 (0.00-0.40m)		
			11	CP102 (0.00-0.50m)	5	C4SL (residential with plant uptake)
			180	TP106 (0.30-0.50m)		
			15	HD102 (0.00-0.40m)		
			99.7	TP201 (0.40-0.90m)		
Naphthalene	mg/kg	18	210	TP106 (0.30-0.50m)	13 (6%)	S4UL
			1,370	TP201 (0.40-0.90m)		
TPHs						
Aliphatic EC10-12	mg/kg	16	2,348	TP201 (0.40-0.90m)	760 (6%)	S4UL (residential with plant uptake)
Aliphatic EC12-16	mg/kg	16	4,729	TP201 (0.40-0.90m)	4,300 (6%)	S4UL (residential with plant uptake)
Aromatic EC12-16	mg/kg	16	2,586	TP201 (0.40-0.90m)	660 (6%)	S4UL (residential with plant uptake)
Aromatic EC16-21	mg/kg	16	950	TP106 (0.30-0.50m)	930 (6%)	S4UL (residential with plant uptake)
		16	5,596	TP201 (0.40-0.90m)		
Aromatic EC21-35	mg/kg	16	3,400	TP106 (0.30-0.50m)	1,700 (6%)	S4UL (residential with plant uptake)
			3,817	TP201 (0.40-0.90m)		
			6,100	WS102 (0.00-1.00m)	1,900 (6%)	S4UL (residential without plant uptake)

Table 6-1: Summary of elevated and pertinent analytical results.

Notes:

Only results that exceeded assessment criteria have been shown and results from **all depths** are noted. Results have been compared to the nearest appropriate SOM.

GENERAL			
pH	pH	20	Range 7.2 to 9.3
SOM	%	17	Range <0.4 to 18
Asbestos	N/A	17	Not detected

Table 6-1 (continued): Summary of elevated and pertinent analytical results.

6.2.3 Hazard Quotient

To examine the potential additivity of toxicological effects between the petroleum hydrocarbon fractions, a Hazard Index (HI) as described by the Environment Agency³⁶ technical report was calculated for the remaining samples that did not exceed the assessment criteria. This should be undertaken when there are no elevated petroleum hydrocarbons, when compared to assessment criteria of individual fractions. A HI was calculated for CP102 0.00-0.50m (See Appendix H) and are summarised in Table 6-2.

HI results are presented in Table 6-2.

Sample Location	Hazard Index	Further consideration required?
CP102 (0.00-0.50m)	0.2	No

Table 6-2: Hazard Index.

Notes

Bold where HI is >1.

6.2.4 Direct Contact Risk – Pollutant Linkage 1

Elevated lead, PAHs and petroleum hydrocarbons are present on the site. The elevated lead and PAH contaminants are generally spread across the whole site. The petroleum hydrocarbons are localised to WS102 due to an infilled pond and TP106 where olfactory evidence of hydrocarbon contamination was identified.

Metals/PAHs/SVOCs

Elevated lead was identified in the made ground in two locations (HD102 0.00-0.40mbgl and TP201 0.40-0.90mbgl). Elevated PAHs were identified in made ground samples in 10 out of 18 locations, therefore it is assumed that it is site wide.

The source is anticipated to be ash, brick and tarmacadam noted in the soils.

At the concentrations identified, the contaminants are considered to pose a risk to future site users (residents). The principal pathways are the ingestion pathways (soil and dust) and dermal contact.

The probability of metals and PAHs posing a risk to site users is considered to be likely. With a medium consequence, the risk is considered to be moderate and remediation is recommended in areas of soft landscaping.

Petroleum Hydrocarbons

The initial phase of investigation identified elevated aromatic EC16-21 hydrocarbons in TP106 at 0.30-0.50mbgl, aromatic EC21-35 in TP106 at 0.3-0.5mbgl and WS102 0.0-1.0mbgl.

³⁶ EA (2005). "The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils." Science report P5-080/TR3.

The hydrocarbon contamination is isolated to two areas around, WS102 was where a former pond was noted. The second area olfactory evidence of hydrocarbon contamination was identified in TP106 where a metal obstruction was encountered.

The hydrocarbon contamination identified during the first phase of investigation is non-volatile petroleum hydrocarbons (aromatic EC16-21 and EC21-35). The principal pathways associated with these hydrocarbon fractions are ingestion (of soil, dust), dermal contact (indoor and outdoor).

LKC returned to site and completed an additional trial pit (ref. TP201) in the area of TP106 to further assess ground conditions and contamination within this area. It should be noted that no tank was present in this area, the metal obstruction previously identified was a buried sheet of metal.

Elevated levels of aliphatic EC10-16 and aromatic EC12-35 hydrocarbons were identified in TP201 at 0.40-0.90mbgl only. The contamination is likely to be associated with discrete pieces of tarmac identified within the made ground. The contaminated material was stockpiled and validation samples from the base and side of the excavation were collected. No elevated petroleum hydrocarbons were identified in any of the base and side validation samples.

Delineation excavations were also undertaken in the area of WS102. The excavated material was stockpiled and validation samples of the base and sides were collected. No elevated petroleum hydrocarbons were identified in any of the validation samples.

Given the additional investigation, delineation and excavation of the contaminated material around WS102 and TP106, LKC considers the probability of hydrocarbon contamination affecting site users (via ingestion and dermal contact) as unlikely. Given a medium consequence a low risk is considered appropriate no further remediation is recommended.

Asbestos

No asbestos was identified in any of the samples, therefore the probability of asbestos affecting site users is considered to be unlikely. With a medium consequence, the risk is low and remediation for asbestos is not required. However, as a precaution, construction workers should be and vigilant for any suspected ACM during groundworks (discussed further in Section 9.2).

6.2.5 Risk from Inhalation of Vapours – Pollutant Linkage 2

Elevated naphthalene was identified in TP106 (0.30-0.50m). The further phase of investigation also identified elevated naphthalene and aromatic EC10-12 hydrocarbons in TP201 0.40-0.90mbgl. The contamination corresponds to the presence of a mild hydrocarbon odour noted in this samples and discrete pieces of tarmac within the made ground.

These contaminants are likely to pose a risk to site users via the inhalation of vapours, as it is within the building footprint.

As per PL1 above, this material was delineated, excavated and stockpiled on Visqueen for offsite disposal. Confirmatory validation samples from the base and sides of the excavation did not identify any elevated levels of volatile contaminants. Furthermore, naphthalene is classed as being within the aromatic EC10-12 fraction, and therefore is considered to have been removed.

Based on the above, the probability of vapours posing a risk to site users in the localised area is considered to be unlikely. With a medium consequence, the risk is expected to be low and no further remediation is required.

6.3 Gas Risk Assessment

6no. gas monitoring visits have been undertaken on the study site. Gas monitoring results in full are presented in Appendix E. Following guidance set out in CIRIA C665³⁷ and BS8485³⁸ peak methane and carbon dioxide concentrations have been used in the gas risk assessment. In addition, and as per guidance, flow rates were measured first.

All gas concentrations, flow, pressure and groundwater levels are shown on Table 6-3.

Boreholes	Visit	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	H ₂ S (ppm)	CO (ppm)	Flow (l/h)	Groundwater (mbgl)	Pressure (mb)
CP101	1	<0.1	1.4	18.4	0	7	0.1	9.46	1005 (f)
	2	<0.1	2.3	17.0	0	260	1.5 (1.6)	8.80	995 (s)
	3	<0.1	3.2	15.1	0	12	<0.1	8.11	1018 (r)
	4	<0.1	3.9	13.7	0	0	10 (10.3)	7.72	1000 (f)
	5	<0.1	2.7	15.6	0	1	0.1	6.95	1008 (f)
	6	<0.1	3.8	13.4	0	1	6.1 (7.2)	6.38	1029 (s)
CP102	1	<0.1	1.5	18.0	0	4	0.1	9.53	1004 (f)
	2	<0.1	2.0	14.7	0	0	5.7	8.83	995 (s)
	3	<0.1	3.0	10.8	0	0	<0.1	4.91	1018 (r)
	4	<0.1	4.0	9.8	0	0	2.4 (3.1)	3.56	1001 (f)
	5	<0.1	4.9	8.7	0	0	6.5 (10.0)	2.13	1008 (f)
	6	<0.1	4.3	9.9	0	1	1.2 (13.0)	1.80	1028 (s)

Table 6-3: Summary of gas monitoring.

Notes:

If concentrations / flow is zero, then equipment detection limits are assumed.

Table shows peak concentrations of CH₄, CO₂, H₂S, CO and minimum O₂.

Where peak flow differs significantly to the steady, peak is shown in brackets.

Bold where CO₂ exceeds 5%v/v and CH₄ exceeds 1%v/v.

Atmospheric pressure (over past 24hrs): r=rising, f=falling, s=steady

³⁷ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

³⁸ BSI (2019). "Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings." BS8485:2015+A1 2019.

Boreholes	Visit	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	H ₂ S (ppm)	CO (ppm)	Flow (l/h)	Groundwater (mbgl)	Pressure (mb)
WS101	1	Waterlogged						0.02	-
	2	Waterlogged						0.00	-
	3	<0.1	4.0	15.5	0	5	1.4 (7.8)	0.08	1017 (r)
	4	0	1.2	21.1	0	2	-3.2 (-5.8)	0.15	1001 (f)
	5	Waterlogged						0.00	-
	6	<0.1	0.7	20.8	0	3	-1.2 (-5.3)	0.00	1028 (s)
WS102	1	<0.1	4.6	15.7	0	0	<0.1	1.11	1005 (f)
	2	<0.1	5.3	10.2	0	0	<0.1	0.88	994 (s)
	3	<0.1	5.6	11.1	0	0	0.1	0.85	1018 (r)
	4	<0.1	6.7	11.4	0	0	<0.1	1.00	1001 (f)
	5	<0.1	3.8	15.1	0	0	<0.1	0.73	1007 (f)
	6	<0.1	5.1	13.0	0	1	<0.1	0.94	1029 (s)
WS103	1	<0.1	0.5	20.4	0	12	<0.1	3.48	1003 (f)
	2	<0.1	0.5	20.8	0	3	<0.1	2.22	995 (s)
	3	<0.1	1.1	19.6	0	2	<0.1	1.16	1018 (r)
	4	<0.1	1.4	18.1	0	0	<0.1	1.08	1001 (f)
	5	<0.1	0.1	20.2	0	5	<0.1	0.19	1008 (f)
	6	<0.1	1.0	17.4	0	2	<0.1	0.35	1029 (s)

Table 6-3 (continued): Summary of gas monitoring.

Notes:

If concentrations / flow is zero, then equipment detection limits are assumed.

Table shows peak concentrations of CH₄, CO₂, H₂S, CO and minimum O₂.

Where peak flow differs significantly to the steady, peak is shown in brackets.

Bold where CO₂ exceeds 5%v/v and CH₄ exceeds 1%v/v.

Atmospheric pressure (over past 24hrs): r=rising, f=falling, s=steady

Carbon monoxide was >1ppm in all but 1no. boreholes. The maximum concentration was recorded as 260ppm in CP101 during visit 2. This did not appear to correlate with significant oxygen depletion in any of the locations. Only workplace exposure limits defined by the HSE are available for carbon monoxide and are not fully applicable to a residential setting. A Short-Term Exposure Limit of 200ppm (15-minute period) and Long-Term Exposure Limit of 30ppm have been defined (8-hour period).

Based on the above exposure limit, carbon monoxide is not expected to pose a significant risk to the proposed site receptors, as the Short-Term exposure limit was only exceeded once, and the remaining concentrations were all below the Long-Term Exposure Limit.

The slightly elevated carbon dioxide concentrations identified in WS102 only are expected to be associated with the former pond where some organic material was identified. No putrescible or degradable material was identified within the made ground. As expected the highest gas readings were noted during low and falling barometric pressure, as well as during wet conditions.

Flow rates remained generally low. However, fluctuations in flow, were recorded in CP101 and CP102. These are cable percussive boreholes drilled to 15mbgl, but installed between 1.00 to 10.00mbgl. Flow rates in CP101 and CP102 ranged between

<0.1 to 10.3l/hr. CL:AIRE Research Bulletin 17³⁹ notes that high flow rates, not representative of the natural soil gas regime, can result from the artificial construction of the gas wells for a variety of reasons. It also details a number of variables that can affect flow rates, for example, difference in air pressure (barometric pumping) and difference in temperature (stack effect) between well and ambient outside air causes flow from well during cold spells, is a particular problem where deep wells are installed for groundwater sampling and are then used for ground gas monitoring where no credible gas source is present.

LKC considers that freezing temperatures and falling barometric pressure in Visits 4 and 5 respectively are the cause of the high flow rates, given made ground is limited, significant clay is present and no registered landfills are noted within 250m of the site.

In WS101, the elevated flow rate is due to rising groundwater levels above the slotted pipework and is not considered to be a true reflection of gas flow rates. The data from this borehole should therefore be discarded as all the visits, the groundwater was above the slotted section of the pipework.

Considering the above, the artificial flow rates recorded in these boreholes have not been used in the calculation of the Gas Screening Value below.

Gas Screening Value

In accordance with CIRIA C665⁴⁰, a Gas Screening Value (GSV) may be calculated. Assuming worst-case scenario maximum gas concentrations and flow for each borehole have been used to calculate the GSV. The GSV can be used to determine the characteristic situation (CS).

Table 6-4 shows the maximum GSV for each borehole and the appropriate characteristic situation (based on GSV only). An overall site assessment (CP101-CP102, WS101-WS103) has also been included (worst case values across the site, excluding artificial flow rates).

Boreholes	Max GSV (l/hr)	CS
CP101	0.4017	CS2
CP102	0.637	CS2
WS101	-	-
WS102	0.0067	CS1
WS103	0.0014	CS1
All boreholes	0.0001 (CH ₄) 0.871 (CO ₂)	CS1 CS3

Table 6-4: Summary of worst-case Gas Screening Values (GSV).

Notes:

CS – Characteristic Situation; TL= Traffic Light.

In addition, in accordance with CIRIA C665⁴¹, if carbon dioxide and methane are recorded above 5%v/v and 1%v/v respectively, you should consider upgrading the characteristic situation from CS1 to CS2.

The PRA identified a low likelihood and moderate risk with respect to hazardous and ground gas given that no viable sources were identified within 250m of the site, with

³⁹ CL:AIRE Research Bulletin (RB17) "A Pragmatic Approach to Ground Gas Risk Assessment" November 2012.

⁴⁰ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

⁴¹ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665.

the exception of the small historical pond onsite. The anticipated underlying Till was also expected to reduce any gas migration into and within the site.

The only viable source of gas was the small historical pond recorded onsite, and slightly elevated carbon dioxide was recorded in this location only with no detectable flow. However, due to the elevated flow rates recorded in the deeper CP boreholes which are likely to be artificial flow, the site should be treated as CS2 as a precaution.

LKC consider that the probability of gas affecting the site users and building as low likelihood. Assuming a severe consequence, there is a moderate risk associated with Pollutant Linkage 3 and CS2 gas protection measures are required.

6.4 Controlled Water Assessment

LKC considers the Principal Aquifer and adjacent watercourse to the south as the primary receptors.

LKC have compared results above Limits of Detection (LOD). Where relevant the review of priority substances takes precedence considering threshold values for groundwater cannot be used '*as part of site-specific investigations*'. The hierarchy is as follows:

- River Basin District Standards⁴² and updated Water Framework Directive⁴³ for Annual Average / Maximum Allowable Concentration Environmental Quality Standards (AA-MAC-EQS) for priority substances (surface water risk).
- 2016 private water supply standards (UKDWS potable)⁴⁴.
- 2001 Environment Agency Values for Environmental Quality Standards (EQS) and UK Drinking Water Standard (UKDWS)⁴⁵.

With regards to hydrocarbon mixtures (TPHCWG) for UKDWS, LKC will use the CL:AIRE guidance on petroleum hydrocarbons in groundwater⁴⁶ based on WHO guidelines.

No criteria values have been presented for surface waters (EQS) except the odour, visual evidence and taste test for fish⁴⁷. However, criteria for each banding has been presented by WHO within the CL:AIRE report for drinking water and will be used in the assessment.

The risk from List 2 compound (EC Dangerous Substance Directive 76/464/EEC) in a freshwater ecosystem is governed by the hardness of the water. Where applicable the hardness was taken into account for these contaminants.

⁴² Defra (2010). "The River Basin Districts Typology, Standards and Groundwater Threshold Values". Water Framework Directive (England and Wales) Directions 2010.

⁴³ Defra (2015). "Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015".

⁴⁴ Statutory Instruments (2016). "The Private Water Supplies Regulation 2016." No. 614

⁴⁵ EA (2002). "Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the Environment Protection Act 1990."

⁴⁶ CL:AIRE (2017). "Petroleum Hydrocarbons in Groundwater: Guidance on Assessing Petroleum Hydrocarbons Using Existing Hydrological Risk Assessment Methodologies."

⁴⁷ EA (2009). "Petroleum Hydrocarbons in Groundwater: Supplementary Guidance for Hydrological Risk Assessment."

Contaminant	Units	No. of samples	Elevated Result	Location	Assessment Criteria	Source of Criteria
Metals						
Selenium	µg/l	3	37	WS103	10	UKDWS
Zinc	µg/l	3	130	WS101	125 ¹	EQS
General						
pH	pH	3	Range 7.1 to 7.6			
Hardness	mg/l CaCO ₃	3	Range 460 to 990			

Table 6-5: Summary of elevated groundwater results.

Notes:¹ = Based on hardness

EQS (2001) and AA / MAC-EQS (2015) = surface water criteria.

UKDWS (2001, 2016) and WHO (2017) = Groundwater criteria (potable supply).

Results above LOD's presented.

Elevated results have been identified for Selenium (WS103) and Zinc (WS101).

No free product was noted in any water samples. It should also be noted that olfactory hydrocarbon contamination identified in TP106 has been excavated and will be removed from site.

The clay present on the site should significantly reduce any sub-surface migration and processes include dilution, attenuation and biodegradation will reduce the concentration of contamination.

Based on the above, LKC considers the probability of contaminants on site affecting the adjacent watercourse and Principal Aquifer as unlikely. Given the medium consequence, a low risk is anticipated (Pollutant Linkage 4) and no remediation is required.

6.5 Potable Water Supply

Soil results were compared to United Utilities (UU) guidelines for the selection of potable water pipes in land potentially affected by contamination⁴⁸. Only contaminants of concern, based on the preliminary conceptual model and ground conditions encountered, were analysed. The following contaminants were not considered to be a risk and therefore not included in the analysis suites: chlorinated compounds, cresols, ethers, nitrobenzene, ketones, aldehydes and amines.

The following elevated contaminants were identified:

- Elevated petroleum hydrocarbons in TP106 and WS102.
- Elevated TVOCs (inc. naphthalene) in made ground across the majority of the site.

It is likely that barrier pipe will be required across the site subject to the depth and location of the water pipes and in consultation with UU. It should be noted typical pipework depths are 0.75mbgl to 1.35mbgl.

Once details of the pipeline location and depths are known a UU Risk Assessment should be undertaken.

⁴⁸ UU(2011). "United Utilities Water Supplementary Guidance for the Selection of Water Pipes in Land Potentially Affected by Contamination."

At this stage, the probability of organic contaminants affecting potable water pipes is likely. Given the consequence is considered to be medium, the risk (pollutant linkage 6) is anticipated to be moderate risk and remediation (i.e. barrier pipe) may be required (subject to further risk assessment).

6.6 Revised Contamination Conceptual Model

The preliminary contamination conceptual model (Table 2-2) has been revised following the risk assessments undertaken in Sections 6.1-6.5. The revised contamination conceptual model follows the same methodology and guidance used in the preliminary contamination conceptual model. The risk matrix is provided in Appendix A.

The revised contamination conceptual model is presented in Table 6-6.

Where a very low risk is identified, no specific remediation is required.

Where a low risk is identified, some form of remediation may be required depending on the pollutant linkage, the type and concentration of contaminants present and the proposed development.

Where a moderate/low risk is identified, an assessment will be undertaken to establish what category the pollutant linkage will fall into.

Where a moderate or higher risk is identified, remediation or further investigation work is recommended.

Further details of the remedial proposals and a remedial option appraisal are given in Section 9.

Pollutant Linkage	Pathway	Receptor	Contaminant	Probability	Consequence	Risk	Assessment
PL1	- Dermal contact. - Inhalation of soil, fibres and dust. - Ingestion of soils, dust. - Ingestion of home-grown produce, soil attached to home-grown produce (houses only). - Windblown dust.	- Future site users. - Offsite receptors.	Heavy metals: - Lead PAHs: - B(a)P - Naphthalene	Likely	Medium	Moderate	- Likely probability as elevated metals (lead), PAHs and hydrocarbons identified in the made ground across the site which could come into contact with site users in gardens / soft landscaping areas. - Recommendation: Remediation required. Likely to include an environmental cover system in gardens / soft landscaping areas.
			PAHs: - Naphthalene Hydrocarbons: - Aromatic EC16-21 - Aromatic EC21-35 ACMs	Unlikely	Medium	Low	- Previously elevated hydrocarbons identified in 2no. locations (WS102 and TP106 only) have been delineated, excavated and stockpiled for offsite removal. Validation samples show no elevated levels remain. - No ACM was detected in any of the samples analysed. - Recommendation: No additional remediation required other than the above.
PL2	- Inhalation of vapours. - Migration through permeable strata and preferential pathways.	- Future site users. - Offsite receptors.	Volatile Contaminants: - Naphthalene. - Aromatic EC10-12	Unlikely	Medium	Low	- Previously elevated volatile contaminants have been delineation, excavated and stockpiled for offsite disposal. Therefore, no elevated volatile contaminants remain. - Recommendation: No remediation required.
PL3	- Inhalation of gas. - Migration through permeable strata and preferential pathways. - Explosion in confined spaces (methane only).	- Future site users. - Buildings. - Offsite land users.	- Carbon dioxide	Low likelihood	Severe	Moderate	- Slightly elevated carbon dioxide identified in WS102 only (max. 6.7%v/v). Other boreholes did not identify elevated carbon dioxide levels. - High flow rates recorded during some visits (max peak of 13l/hr). Fluctuations in flow rates are likely caused by a number of variables such as barometric pumping and stack effect due to difference in air temperature as well as deep borehole installed for GW sampling causing artificial flow. - Based on the elevated carbon dioxide and high flow rates, the low likelihood and moderate risk considered appropriate. - Recommendation: CS2 Gas protection measures required.
			- Methane	Unlikely	Severe	Moderate / Low	- No methane concentrations above detection limits identified. - Low risk assumed as GSV for methane classified as CS1. - Recommendation: No remediation required.

Table 6-6: Revised Contamination Conceptual Model.

Notes

*1 Although no ACM identified, contractors should be vigilant during earthworks of any potential ACM. This is discussed further in Section 9.1.

Pollutant Linkage	Pathway	Receptor	Contaminant	Probability	Consequence	Risk	Assessment
PL4	– Surface Run-off. – Migration through permeable strata and preferential pathways – Perched waters migration.	– Groundwater (Principal Aquifer). – Surface water (adjacent watercourse).	Mobile contaminants: – Selenium. – Zinc.	Unlikely	Medium	Low	– Although slightly elevated metals identified, given the environmental settings and ground conditions encountered not considered to pose a significant risk to groundwater or surface water. – Recommendation: No remediation required.
PL5	– Ingestion of tainted water supply.	– Future site users (via potable water).	Organic Contaminants: – Hydrocarbons. – Naphthalene.	Likely	Medium	Moderate	– Likely probability as elevated naphthalene and hydrocarbons encountered which could permeate water pipes and contaminate water supply. – Recommendation: UU risk assessment to be undertaken. Barrier piping may be required.

Table 6-6 (continued): Revised Contamination Conceptual Model.

7 Waste Disposal Assessment

7.1 Hazardous Waste Assessment

The soil contamination results as presented in Appendix C have been used to help determine the waste classification of material for off-site disposal.

As an initial screen the soil results were inputted into HazWaste Online™. This is a web-based facility that allows an assessment waste as either hazardous or non-hazardous waste based on relevant guidance and legislation^{49, 50, 51, 52, 53, 54, 55, 56, 57}.

HazWaste Online™ has been designed to cover, amongst other waste types, the European Waste List of Waste (LoW) code number 17 "Construction and Demolition Waste (Including Excavated Soil from Contaminated Sites)".

Where less than limits of detection (LOD) were recorded, the value of the LOD was inputted.

Where applicable, appropriate metal species based on hazard statements/ molecular weight, site history, ground conditions and likely species present in soils were used (e.g. metal oxides relating to an ash-based source).

The output sheet is presented in Appendix I and summarised in Table 7-1.

Sampling Location	Hazardous Waste Y/N	LoW Code	Hazard (Risk Phrase)	Contaminants
WS101 0.0-0.5m	No	17-05-04	N/A	N/A
WS101 0.5-1.0m	No	17-05-04	N/A	N/A
WS102 0.0-1.0m	Yes	17 05 03	HP7 (carcinogenic), HP11 (mutagenic)	TPH C6-40 petroleum group
WS102 1.6-1.8m	No	17-05-04	N/A	N/A
WS103 0.0-0.5m	No	17-05-04	N/A	N/A
WS103 0.5-1.0m	No	17-05-04	N/A	N/A
HD101 0.0-0.6m	No	17-05-04	N/A	N/A
HD102 0.0-0.4m	No	17-05-04	N/A	N/A
CP101 0.0-0.4m	No	17-05-04	N/A	N/A
CP102 0.0-0.5m	No	17-05-04	N/A	N/A
CP102 1.6-2.0m	No	17-05-04	N/A	N/A
TP101 0.0-0.3m	No	17-05-04	N/A	N/A
TP102 0.3-0.5m	No	17-05-04	N/A	N/A
TP103 0.0-0.9m	No	17-05-04	N/A	N/A
TP104 0.45-1.0m	No	17-05-04	N/A	N/A
TP104 1.35-2.3m	No	17-05-04	N/A	N/A
TP105 0.4-1.4m	No	17-05-04	N/A	N/A

Table 7-1: Summary of HazWaste Online™ findings.

⁴⁹ EA (2018). "Guidance on the Classification and Assessment of Waste (1st Edition v1.1)". Technical Guidance WM3.

⁵⁰ CLP Regulation - Regulation 1272/2008/EC of 16 December 2008.

⁵¹ 1st ATP - Regulation 790/2009/EC of 10 August 2009

⁵² Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

⁵³ WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

⁵⁴ Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014

⁵⁵ 13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

⁵⁶ POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004

⁵⁷ 2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

Sampling Location	Hazardous Waste Y/N	LoW Code	Hazard (Risk Phrase)	Contaminants
TP106 0.0-0.3m	No	17-05-04	N/A	N/A
TP106 0.3-0.5m	Yes	17 05 03	HP7 (carcinogenic), HP11 (mutagenic)	TPH C6-40 petroleum group
SP201	No	17-05-04	N/A	N/A
SP301	No	17-05-04	N/A	N/A
TP201 0.4-0.9m	Yes	17 05 03	HP3(i) (flammable), HP7 (carcinogenic), HP11 (mutagenic), HP14 (ecotoxic)	Toluene, ethylbenzene, xylene, TPH C6-40 petroleum group
TP201 0.9-1.2m	No	17-05-04	N/A	N/A
TP201 1.2-1.8m	No	17-05-04	N/A	N/A
TP201 Side 1	No	17-05-04	N/A	N/A
TP201 Side 2	No	17-05-04	N/A	N/A
TP201 Side 3	No	17-05-04	N/A	N/A
TP201 Side 4	No	17-05-04	N/A	N/A
TP201 Base	No	17-05-04	N/A	N/A
Trench 1 Side 1	Yes	17 05 03	HP3(i) (flammable), HP7 (carcinogenic), HP11 (mutagenic)	TPH C6-40 petroleum group
Trench 1 Side 2	No	17-05-04	N/A	N/A
Trench 1 Side 3	Yes	17 05 03	HP3(i) (flammable), HP7 (carcinogenic), HP11 (mutagenic)	TPH C6-40 petroleum group
Trench 1 Side 4	No	17-05-04	N/A	N/A
Trench 1 Base	No	17-05-04	N/A	N/A

Table 7-1 (continued): Summary of HazWaste Online™ findings.

Based on individual locations hazardous waste has been identified. The soil from the former pond area (WS102, Trench 1, Side 1 and 3) and around the site entrance (TP106 and TP201 0.4-0.9m) onsite should be classified as **HAZARDOUS WASTE** based on flammable, carcinogenic and mutagenic and ecotoxic properties and LoW code “17-05-03 - soil and stones containing hazardous substances”.

The results show that the remaining samples tested are classified as **NON-HAZARDOUS WASTE** and LoW code “17-05-04 - soil and stones other than those mentioned in 17 05 03” is suitable. The HazWaste Online™ output sheets are provided in Appendix I.

7.2 Waste Acceptance Criteria (WAC) Testing

Waste Acceptance Criteria (WAC) testing was also undertaken on 2no. samples representative of material likely to be earmarked for off-site disposal. WAC test results are included in Appendix C.

The WAC limits cannot be used to make an assessment of whether a waste is non-hazardous or hazardous. It is recommended that waste assessment and WAC data is forwarded to a licensed waste disposal operator.

8 Conclusions

8.1 Geotechnical

Geotechnical observations and conclusions are contained in Table 8-1 below, more detailed discussions are contained within Section 5.

Proposed Development	- Low rise two storey residential units (Plots 1-6). Three storey residential apartment block (Plots 7-37).
General Ground Conditions / Geotechnical Testing	- Maximum investigation depth 15.15mbgl. - Made Ground typically to 0.5-0.9mbgl. At the location of a historical pond Made Ground is recorded to 2.3-2.5mbgl and contains organic material. - Natural superficial deposits comprise firm to stiff and very stiff variably sandy gravelly CLAY (Glacial Till). - No bedrock encountered. - Perched groundwater pockets encountered within the Made Ground and Glacial Till.
Undrained Shear Strength (s_u)	- Average of 92kPa to 4.00m, then 90kPa to completion depths of cable percussive boreholes (15.15mbgl).
Anticipated Foundation Type	- Initial assessment of natural CLAY from in-situ and laboratory testing indicates the clay to be firm to very stiff. It is recommended to use shallow strip foundations for Plots 1-6 and the apartment block (Plots 7-37). - Strip foundations should be designed by a suitably qualified and experienced structural engineer.
Shallow Groundwater	- Shallow perched groundwater pockets identified in the Made Ground and Glacial Till.
Concrete Requirements	- Based on BRE Digest 2005 ⁵⁸ – DS-2 AC-1s recommended.
Services	- Services – consideration to the presence of services running through the site. Services may need to re-routed.
Temporary Support of Excavation	- May be required; however, trial pits were generally recorded as stable.
Plasticity	- Consideration will need to be given to the shrink / swell of the clay strata if it is to be used as founding strata, particularly where trees/hedges are present. Foundations may need to be deepened. A medium volume change potential has been calculated for the site.

Table 8-1: Geotechnical Observations and Conclusions Table.

⁵⁸ BRE (2005). "Concrete in Aggressive Ground." Special Digest 1.

8.2 Contamination Assessment

A revised contamination conceptual model has been produced by LKC which is summarised in Table 8-2 below (more detailed model provided in Section 6).

Pollutant Linkage		Risk	Recommendations
1	Contaminants posing a risk to site users via dermal contact, ingestion and inhalation (of soil, dust, fibres (and vegetables for houses only)).	Moderate	- Elevated metals (lead), PAHs and hydrocarbons identified. Recommendation: Remediation required.
		Low	- Previously elevated hydrocarbons identified in 2no. locations (WS102 and TP106 only) have been delineated, excavated and stockpiled for offsite removal. Validation samples show no elevated levels remain. - No ACM was detected in any of the samples analysed. Recommendation: No additional remediation required other than the above.
2	Volatile contaminants posing a risk to site users via the inhalation of vapours.	Low	- Previously elevated volatile contaminants have been delineated, excavated and stockpiled for offsite disposal. Therefore, no elevated volatile contaminants remain. Recommendation: No remediation required.
3	Gas posing a risk to buildings and site users via the migration of gas into building causing explosion and asphyxiation.	Moderate	- Slightly elevated carbon dioxide identified in WS102 only (max. 6.7%v/v). Other boreholes did not identify elevated carbon dioxide levels. - High flow rates recorded during some visits (max peak of 13l/hr). Fluctuations in flow rates are likely caused by a number of variables such as barometric pumping and stack effect due to difference in air temperature as well as deep borehole installed for GW sampling causing artificial flow. - Based on the elevated carbon dioxide and high flow rates, the low likelihood and moderate risk considered appropriate. Recommendation: CS2 Gas protection measures required.
		Moderate / Low	- No methane concentrations above detection limits identified. - Low risk assumed as GSV for methane classified as CS1. Recommendation: No remediation required.
4	Mobile contamination posing a risk to controlled waters via the migration through permeable strata.	Low	- Although slightly elevated metals identified, given the environmental settings and ground conditions encountered not considered to pose a significant risk to groundwater or surface water. Recommendation: No remediation required.
5	Organic contaminants posing a risk to water pipes.	Moderate	- Likely probability as elevated naphthalene and hydrocarbons encountered which could permeate water pipes and contaminate water supply. Recommendation: UU risk assessment to be undertaken. Barrier piping may be required, to be confirmed upon completion of further investigation works.

Table 8-2: Summary Risk Table.

Remedial recommendations are presented in Section 9.

9 Recommendations and Remedial Strategy

The recommendations provided below are considered appropriate for the site based on the site investigation work undertaken. LKC should stress that no remediation, enabling works or designing works should take place until Regulatory approval has been obtained.

9.1 Remediation and Validation Recommendations

Table 9-1 details the further works and remedial recommendations / requirements. The table shows work required pre-construction (i.e. during earthworks) and during / post construction.

Phase	PL	Remediation Requirements	Validation Requirements
Pre-Construction	All	<u>Earthworks Inspections / Unexpected Contamination</u> The relevant contractors should be briefed that during development works at the site should any unusual ground conditions and / or visual or olfactory evidence of contamination (including asbestos containing material) be encountered at the site, LKC and the Local Authority should be informed, and further assessment of the material may be required. Should asbestos be identified during groundworks, precautions should be taken to ensure the safety of the construction workers and nearby land users. It would be advisable to introduce an asbestos management strategy in line with CIRIA C733 ⁵⁹ .	Log of work undertaken including photographs. Details of any sampling undertaken and validation of any potential additional remedial work.

Table 9-1: Further work, remediation and validation requirements.

Notes: See Table 6-1 for pollutant linkage (PL) details.

⁵⁹ CIRIA (2014). "Asbestos in Soil and Made Ground: A Guide to Understanding and Managing Risks". C733.

Phase	PL	Remediation Requirements	Validation Requirements
Build-Phase Construction	1	If all or some of the made ground remains in place in gardens and soft landscaping areas, an environmental cover system will be required. The environmental cover system should be as follows: Private Front and Back Gardens: 600mm thick environmental cover system comprising: Either 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 500mm comprising clean inert fill and sufficient topsoil for a growing medium. Or geotextile membrane and at least 600mm comprising clean inert fill and sufficient topsoil for a growing medium. Shared Landscaping: 450mm thick environmental cover system comprising: Either 100mm physical break layer (MOT type 1 material, 20-30mm, minimal fines) and at least 350mm comprising clean inert fill and sufficient topsoil for a growing medium. Or geotextile membrane and at least 450mm comprising clean inert fill and sufficient topsoil for a growing medium. The subsoil layer can be replaced by additional topsoil. A diagram of a typical environmental cover system is shown in Appendix J.	Measuring depth of environmental cover system using a staff and providing photographic evidence. Photographic evidence of the granular physical break or geotextile layer will also be collected. Chemical validation of imported soils: See Table 9-2.

Table 9-1 (continued): Further work, remediation and validation requirements.

Notes: See Table 6-1 for pollutant linkage (PL) details.

Phase	PL	Remediation Requirements	Validation Requirements
Build-Phase Construction	3	<u>Gas Protection Measures</u> In line with CS2 as per UK guidance^{60,61}. This is likely to / should include: • Passive subfloor or active subfloor ventilation system. • Methane and carbon dioxide resistant membrane installed as per manufacturer's instructions. • Ventilation of confined spaces within the building. • Minimum penetration of ground slab by services. • All joints and penetrations to be sealed. The gas protection measures details are provided on the typical foundation design details provided in Appendix K. A Solshield Ultra Gas Barrier or equivalent is proposed.	Supply and review of foundation designs. Photographic evidence of sub-floor void, ventilation and suitably sealed gas membrane. Validation of gas protection measures should be in line with CIRIA 735⁶²
	5	<u>Potable Water Pipes</u> It is recommended that a Water Pipeline Assessment is undertaken once the location and depth of potable water pipes are known. It is likely that barrier pipe will be required.	Delivery Notes of Pipe Material. Photographs of the Installed Pipe.
Other Considerations		<u>Grubbing Out of In-Ground Structures</u> It is recommended that in-ground structures are grubbed out as part of the groundworks. <u>Re-use of site won material</u> To ensure material is compliant with appropriate waste regulations, any site won material re-used onsite should be in recourse to appropriate exemptions. A U1 and T5 exemption should be registered. This will allow the following to be used onsite or brought in for use onsite (refer to guidance for types of waste that can be used ⁶³): 5,000 tonnes (c. 2,500m³) <u>treatment</u> of crushed concrete / stone. 1,000 tonnes (c. 500m³) <u>use of</u> non-hazardous soil. 5,000 tonnes (c. 2,500m³) <u>use of</u> clays, sand, gravel, brick, concrete, stone etc. 50,000 tonnes (c. 25,000m³) <u>use of</u> bituminous material to be used in roadways. A Materials Management Plan (MMP) with recourse to the CL:AIRE Code of Practice may be required if volumes exceed exemption limits. This must be registered before material movement starts onsite. If an MMP is required, this needs to be registered by a Qualified Person (QP) and there must be 'certainty of use' for any material re-used onsite or exported to site to ensure there is no 'sham recovery'. For all the above material will need to be tested at the rate and analytical suites presented in Table 9-2.	

Table 9-1 (continued): Further work, remediation and validation requirements.

Notes: See Table 6-1 for pollutant linkage (PL) details.

⁶⁰ CIRIA (2007). "Assessing Risks Posed by Hazardous Ground Gases to Buildings." CIRIA C665

⁶¹ BSI (2015). "Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for new buildings." BS8485:2015.

⁶² CIRIA (2014). "Good Practice on the Testing and Verification of Protection Systems for Building Against Hazardous Ground Gas". CIRIA C735.

⁶³ <https://www.gov.uk/guidance/waste-exemptions-using-waste>

Other Considerations	Health and Safety Considerations In working with, removing or treating any contaminating material it is important that any potential risks associated with the actual site works are mitigated by good environmental management of the site during the remedial phases. Standard health and safety precautions (as per HSE guidance ⁶⁴) should be adopted by all workers involved with site enabling and construction works.
	Piling in Contaminated Land It is understood that the building will be piled. This may provide a preferential pathway for contaminants to the Principal Aquifer. Once the method of piling has been determined, good practice for the drilling of piles on contaminated sites should be adhered to, such as guidance provided by the Environment Agency ⁶⁵ .

Table 9-1 (continued): Further work, remediation and validation requirements.

9.2 Validation of Subsoil / Topsoil

Chemical validation of all imported soils to be used on site in gardens and soft landscaping areas should be undertaken. Imported soils should be accompanied by a certificate of analysis and source details.

A summary of the required imported material sampling requirements is presented in Table 9-2. Ideally, the material should be sampled at source to prevent double handling if soil fails, with confirmatory sampling undertaken on importation to site. However, where this is not possible then material imported should be segregated based on source and soil type. Validation samples should be taken prior to placement in gardens to ensure suitability for use.

Chemical validation of all imported soils to be used on site in gardens and soft landscaping areas should be undertaken. Imported soils should be accompanied by a certificate of analysis and source details.

A summary of the required imported material sampling requirements is presented in Table 9-2, based on MCC 'Planning & Contaminated Land Technical Guidance' (2021)

⁶⁶.

Ideally, the material should be sampled at source to prevent double handling if soil fails, with confirmatory sampling undertaken on importation to site. However, where this is not possible then material imported should be segregated based on source and soil type. Validation samples should be taken prior to placement in gardens / soft landscaping to ensure suitability for use.

⁶⁴ HSE (1991). "Protection of Workers and the General Public During Development of Contaminated Land" London HMSO.

⁶⁵Environment Agency (2001) Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention.

⁶⁶https://www.manchester.gov.uk/download/downloads/id/11878/planning_guidance_relating_to_ground_contamination.pdf

Material Type	Source	Suite of Analysis	Sampling Rate (min. 3 per source) *		
			Garden	Landscape	Other **
Topsoil / subsoil / Fill material	Proven Greenfield	Suite A	200m ³	200m ³	200m ³
	Remediated	Suite A / B dependent upon original SI	100m ³	150m ³	200m ³
	Brownfield / Unknown	Suite B	50m ³	150m ³	200m ³

Table 9-2: Sampling requirements for imported soils.

Notes:

Suite A - Heavy metals, pH, water soluble sulphate, speciated PAH, soil organic matter and asbestos screen.

Suite B - Heavy metals, pH, water soluble sulphate, speciated PAH, phenol, total and free cyanide, soil organic matter, asbestos screen, banded petroleum hydrocarbons (TPH CWG), BTEX, MTBE.

** Other assumed to be stone / 6F2 / mass fill etc.

Any soil with visual or olfactory evidence of hydrocarbons should be rejected.

In addition, it should be ensured that the matrix of the topsoil is suitable as a growing medium and no undesirable material is present (in line with BS3882⁶⁷). LKC advise this information is provided by the supplier before material is imported onto site.

Imported material to be used in gardens will be compared against residential with plant uptake criteria (as used in the contamination risk assessment (Section 6-1)). Appropriate remedial target criteria are presented in Appendix G.

9.3 Site Completion Report

It is recommended that any remediation carried out on the site is validated by a third party and suitable documentary evidence provided in a Site Completion Report, such as photographs, consignment documents and analytical results. This should include as a minimum:

- » Validation of gas protection measures installed.
- » Provision of waste transfer documents.
- » Validation of environmental cover system.
- » Verification testing of all imported soil for garden and soft landscaping areas.
- » Information on the installation of protective pipes and / or sterile trenches.
- » Details of any unexpected contamination identified onsite, suitably risk assessed and / or validated.

The Site Completion Report will assist the Local Authority in the discharge of any future relevant planning condition and will also be of use to solicitors acting on behalf of any prospective conveyancer who may have concerns over the former use of the site.

⁶⁷ BS (2015). "Specifications for Topsoil and Requirements for use." BS3882:2015.

Figures

Appendix A

Risk Matrix

Risk Evaluation

The method for risk evaluation is a qualitative method of interpreting the output from the risk estimation stage of the assessment, based on CIRIA 552⁶⁸. It involves the classification of the:

- » Magnitude of the potential consequence (severity) of the risk occurring (Table A).
- » Magnitude of the probability (likelihood) of the risk occurring (Table B).

Consequence (Severity)		
Classification	Definition	Example
Severe	- Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. - Short term risk of pollution (note: water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. - Catastrophic damage to buildings/properties. - A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definition of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	- High Concentrations of cyanide on the surface of an informal recreation area. - Major spillage of contaminants from site into controlled waters. - Explosion, causing building collapse (can also equate to short term human health risk if buildings are occupied).
Medium	- Chronic damage to Human Health ('significant harm' as defined in DETR, 2000). - Pollution of sensitive water resources (note Water Resources Act contains no scope for considering significance of pollution). - A significant change in a particular ecosystem, or organism forming part of such ecosystem.	- Concentrations of a contaminant from site exceed generic, or site-specific assessment criteria. - Leaching of contaminants from a site to a major or minor aquifer (Principal and Secondary). - Death of a species within a designated nature reserve.
Mild	- Pollution of non-sensitive water resources. - Significant damage to crops, buildings, structures and services ('significant harm' as defined in DETR, 2000). - Damage to sensitive buildings/structures/services or the environment.	- Pollution of non-classified groundwater. - Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	- Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. - Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). - Easily repairable damage to buildings, structures and services.	- The presence of contaminants at such concentrations that protective equipment is required during site works. - The loss of plants in a landscaping scheme. - Discoloration of concrete.

Table A. Classification of Consequence

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

Table B. Classification of Probability.

⁶⁸ CIRIA C552 (2001) Contaminated Land Risk Assessment - A Guide to Good Practice.

These classifications are then compared to indicate the risk presented by each pollutant linkage (Table C). It is important that this classification is only applied where there is a possibility (which can range from high likelihood to unlikely) of a pollutant linkage existing.

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate / Low Risk
	Likely	High Risk	Moderate Risk	Moderate / Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate / Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate / Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table C. Comparison of Consequence against Probability

Once the risk has been determined the corresponding action can be assessed (Table D).

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

Table D. Description of the Classification and Likely Action Required.

Where a very low risk is identified no specific remediation is required.

Where a low risk is identified, some form of remediation may be required depending on the pollutant linkage, the type and concentration of contaminants present and the proposed development.

Where there is a moderate/low risk identified, an assessment will be undertaken to establish what category the pollutant linkage will fall into.

Where LKC identifies a moderate or higher risk, remediation or further investigation work is recommended.

Appendix B

Delineation Excavation Photos and Profile Logs



Delineation excavation in the location of TP201. Clean clay shown at the base.



Material excavated from TP201 stockpiled on Visqueen. N. B. Visqueen lapped up and stockpile covered once excavations complete.



Photograph of Trench 1 excavation in the location of WS102. Edge of the former pond can be seen in the top left of the photograph.



Stockpile of excavated contaminated material from around WS102. N. B. Visqueen lapped up and stockpile covered once excavations complete.

Boring Method

Cable Percussion

Casing Diameter
Ground Level (mOD)

68.00

Client

Watson Construction Ltd

Job Number

LKC 22 1031

Location (Observed measurements)

388766 E 395425 N

Dates

13/10/2022

Engineer

LKC

Sheet

1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.20	D					(0.50)	MADE GROUND: Dark brown slightly gravelly sandy SILT with occasional ash, rare brick and glass fragments. Sand fine to coarse. Gravel fine to coarse subangular to subrounded of coal and mudstone.			
0.70	D				67.50	0.50 (0.20) 0.70	MADE GROUND: Firm consistency light brown with grey mottling slightly sandy slightly gravelly CLAY with occasional brick fragments. Sand fine to coarse. Gravel fine to coarse and sub-angular to sub-rounded.			
1.20-1.65	SPT N=17			2,2/4,4,4,5						
1.20-1.65	D						Stiff consistency brown slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to coarse and sub-angular to sub-rounded			
1.70-2.00	B									
2.20-2.65	SPT N=18			3,4/4,4,5,5						
2.20-2.65	D									
3.30-3.75	U									
3.80	D									
4.00-4.30	B									
4.30-4.75	SPT N=23			4,5/5,5,6,7						
4.30-4.75	D									
5.40-5.85	SPT N=20			3,4/5,5,5,5						
5.40-5.85	D									
7.00-7.45	SPT N=22			5,5/5,5,6,6						
7.00-7.45	D									
						(14.35)				

Remarks
Scale (approx)

1:40

Logged By

LD

Figure No.

LKC 22 1031.CP101

**LK CONSULT LTD**Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com**Site**

Levenshulme Road, Gorton

**Borehole
Number****CP101****Boring Method**

Cable Percussion

Casing Diameter**Ground Level (mOD)**

68.00

Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388766 E 395425 N

Dates

13/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.50-8.95 8.50-8.95	SPT N=22 D			4,4/5,5,6,6						
10.00-10.45	U									
10.50 10.70-11.00	D B									
11.50-11.95 11.50-11.75	SPT N=23 D			5,5/5,6,6,6						
13.10-13.55 13.10-13.55	SPT N=23 D			5,5/6,5,6,6						
14.60-15.05 14.60-15.05	SPT N=26 D			5,6/6,6,7,7						
					52.95	15.05	Complete at 15.05m			
Remarks								Scale (approx) 1:40	Logged By LD	Figure No. LKC 22 1031.CP101

**LK CONSULT LTD**Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com**Site**

Levenshulme Road, Gorton

Borehole Number**CP102****Boring Method**

Cable Percussion

Casing Diameter**Ground Level (mOD)**

68.00

Client

Watson Construction Ltd

Job Number

LKC 22 1031

Location (Observed measurements)

388699 E 395466 N

Dates

17/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50 0.00-0.50 0.22	D ES D				67.95	0.05	MADE GROUND: Dark brown very gravelly very sandy SILT with frequent rootlets, occasional coal, ash, brick fragments, rare glass and plastic. Sand fine to coarse. Gravel fine to coarse and sub-angular to sub-rounded comprising sandstone.			
1.00	D					(1.55)	Stiff to very stiff consistency light brown with grey mottling gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to coarse and sub-angular to sub-rounded comprising mudstone.			
1.20-1.65 1.20-1.65	SPT N=6 D			1,1/1,1,1,3						
1.60-2.00 1.60 1.60-2.00 1.70-2.00	D PP 152kPa ES B			147, 172, 147, 147, 147/Av. 152.00	66.40	1.60	Stiff consistency slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel Sub-angular to sub-rounded comprising mudstone. Very high strength at 1.6mbgl.			
2.20-2.65 2.20-2.65	SPT N=15 D			3,3/3,3,4,5						
2.70-3.00	D									
3.20-3.65 3.20-3.65	SPT N=26 D			4,5/6,6,7,7						
4.30-4.75	U									
4.80	D									
5.40-5.85 5.40-5.85	SPT N=23 D			5,5/5,5,6,7						
7.00-7.45 7.00-7.45	SPT N=22 D			4,5/5,5,6,6						

Remarks**Scale (approx)**

1:40

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LD

Figure No.

LKC 22 1031.CP102



LK CONSULT LTD

Eton Business Park, Eton Hill Road, Radcliffe, M26 2ZS
Tel: 0161 763 7200 web: www.thelkgroup.com

Site
Levenshulme Road, Gorton

Borehole Number
CP102

Boring Method Cable Percussion	Casing Diameter		Ground Level (mOD) 68.00	Client Watson Construction Ltd	Job Number LKC 22 1031
	Location (Observed measurements) 388699 E 395466 N		Dates 17/10/2022	Engineer LKC	Sheet 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
8.50-8.95	U					(13.55)				
9.00	D									
9.50-9.80	B									
10.10-10.55 10.10-0.55	SPT N=22 D			4,4/5,5,6,6						
11.70-12.15 11.70-12.05 12.00-12.30	SPT N=24 D B			5,5/5,6,6,7						
13.20-13.65 13.20-13.65	SPT N=23 D			5,6/6,6,5,6						
14.70-15.15 14.70-15.15	SPT N=25 D			5,6/6,7,6,6						
					52.85	15.15	Complete at 15.15m			

Remarks	Scale (approx) 1:40	Logged By LD
	Figure No. LKC 22 1031.CP102	

Excavation Method

Hand Excavated Trial Pit

Dimensions

0.2 x 0.2 x 1.0m

Ground Level (mOD)

68.00

Client

Watson Construction Ltd

**Job
Number**
LKC 22 1031

Location (Observed measurements)

388712 E 395460 N

Dates

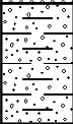
13/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.60 0.00-0.60 0.00-1.00	D ES PID 0.1ppm D				(0.60)	MADE GROUND: Dark brown very gravelly very sandy SILT with frequent rootlets, coal and ash, occasional clinker, brick fragments, rare glass and plastic. Sand fine to coarse. Gravel fine to coarse and angular to sub-angular comprising of mudstone and sandstone.		
0.60-1.00	ES PID 0.1ppm			67.40	0.60 (0.40)	Stiff consistency light brown slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to coarse and angular to sub-rounded comprising mudstone.		
				67.00	1.00	Complete at 1.00m		


Remarks

No hand tests conducted due to insufficient samples.

Scale (approx)

1:25

Logged By

LD

Figure No.

LKC 22 1031.HD101

Excavation Method

Hand Excavated Trial Pit

Dimensions

0.2 x 0.2 x 1.0m

Ground Level (mOD)

67.00

Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388671 E 395485 N

Dates

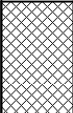
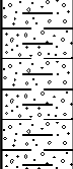
13/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.40 0.00-0.40	D ES PID 0.1ppm				(0.40)	MADE GROUND: Dark brown very gravelly very sandy SILT with frequent rootlets, occasional glass, coal, ash, rare plastic. Sand fine to coarse. Gravel fine to coarse and angular to sub-angular comprising sandstone.		
0.40-1.00 0.40-1.00	D ES PID 0.1ppm			66.60	0.40 (0.60)	Stiff consistency light brown slightly gravelly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to medium and angular to sub-rounded.		
				66.00	1.00	Complete at 1.00m		


Remarks

No hand tests were conducted due to insufficient samples.

Scale (approx)

1:25

Logged By

LD

Figure No.

LKC 22 1031.HD102

Excavation Method

Slow scrape to 1.20mbgl by JCB 3CX.

Dimensions

1.90m x 1.60m x 1.85m

Ground Level (mOD)

68.00

Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388768 E 395424 N

Dates

12/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.30 0.00-0.30	D ES 13.1ppm				(0.30)	MADE GROUND: Dark brown slightly gravelly slightly sandy SILT with frequent rootlets occasional whole brick, brick fragments, coal and ash, rare plastic and metal. Sand fine to coarse. Gravel fine to coarse and angular to sub angular comprising mudstone.		
0.30 0.30-1.00 0.30-1.00	SV 48.67kPa D ES 4.9ppm		40, 50, 56/Av. 48.67	67.70	0.30	Firm to stiff consistency medium to high strength orange to light brown with grey mottling slightly gravelly sandy CLAY with occasional rootlets and coal. Sand fine to coarse. Gravel fine to medium and gravel sub-angular to sub-rounded comprising mudstone and coal.		
1.00	SV 114kPa		112, 120, 110/Av. 114.00		(1.55)	Changes from stiff to very stiff consistency from 1.10mbgl and rootlets no longer present.		
1.50-1.85	D 3.9ppm			66.15	1.85	Complete at 1.85m		


Remarks

Trial Pit stable and dry.

Scale (approx)

1:25

Logged By

LD

Figure No.

LKC 22 1031.TP101

Excavation Method

Slow scrape to 1.20mbgl by JCB 3CX.

Dimensions

1.80m x 0.60m x 1.75m

Ground Level (mOD)

68.00

Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388727 E 395427 N

Dates

12/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.30 0.00-0.30	D ES 7.6ppm				(0.30)	MADE GROUND: Dark brown to black gravelly sandy SILT with frequent rootlets, occasional coal, ash, clinker, brick fragments, whole brick and rare plastic. Sand fine to coarse. Gravel fine to coarse and angular to subangular comprising sandstone and mudstone.		
0.30 0.30-0.50 0.30-0.50 0.50 0.50-1.00 0.50-1.00	SV 94.67kPa D ES 3.7ppm SV 96.67kPa D ES 4.7ppm		92, 96, 96/Av. 94.67 92, 98, 100/Av. 96.67	67.70 67.50	0.30 (0.20) 0.50	MADE GROUND: Stiff consistency high strength light brown gravelly sandy CLAY with frequent rootlets, occasional brick fragments and coal, rare plastic and metal. Sand fine to coarse. Gravel fine to medium and sub-angular to sub-rounded comprising mudstone. Stiff to very stiff consistency high strength light brown with grey mottling slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to medium and sub-angular to sub-rounded comprising mudstone.		
1.00 1.00-1.75	SV 105.33kPa D 3.1ppm		108, 106, 102/Av. 105.33		(1.25)	Clay becomes friable from 1.20mbgl.		
				66.25	1.75	Complete at 1.75m		


Remarks

Trial Pit stable and dry.

Scale (approx)

1:25

Logged By

LD

Figure No.

LKC 22 1031.TP102

Excavation Method

Slow scrape to 1.20mbgl by JCB 3CX.

Dimensions

1.90m x 0.60m x 2.00m

Ground Level (mOD)
Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388696 E 395427 N

Dates

12/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.90 0.00-0.90	D ES 2.3ppm					MADE GROUND: Dark brown very gravelly sandy SILT with frequent rootlets, occasional timber, tarmacadam, ceramic, coal, ash, clinker, rare plastic and metal. Sand fine to coarse. Gravel fine coarse and subangular to subrounded comprising sandstone.		
0.90 0.90-1.50 0.90-1.50	SV 96.67kPa D ES 2.3ppm		100, 96, 94/Av. 96.67		0.90	Stiff consistency high strength light brown with grey mottling slightly gravelly slightly sandy CLAY with occasional coal. Sand fine to coarse. Gravel fine to medium and subangular to subrounded comprising mudstone.		
1.50 1.50-2.00	SV 100.67kPa D 1.3ppm		100, 102, 100/Av. 100.67		(1.10) 2.00	Clay becomes dark brown from 1.50mbgl. Complete at 2.00m		


Remarks

Trial Pit dry and stable.

Scale (approx)

1:25

Logged By

LD

Figure No.

LKC 22 1031.TP103

Excavation Method

Slow scrape to 1.20mbgl by JCB 3CX.

Dimensions

1.80m x 0.60m x 2.80m

Ground Level (mOD)

68.00

Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388685 E 395435 N

Dates

12/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.45 0.00-0.45	D ES 0.8ppm				(0.45)	MADE GROUND: Dark brown very gravelly very sandy SILT with frequent rootlets, occasional glass, brick fragments, whole brick, concrete, coal, ash, clinker, rare plastic and metal. Sand fine to coarse. Gravel fine to coarse and angular to subrounded comprising sandstone and mudstone.		
0.45 0.45-1.30 0.45-1.30	SV 87.33kPa D ES 0.7ppm		88, 82, 92/Av. 87.33	67.55	0.45 (0.85)	MADE GROUND: Stiff consistency high strength dark brown with grey mottling slightly gravelly CLAY with lenses of organic silt with occasional coal. Sand fine to coarse. Gravel fine to coarse and subangular to subrounded comprising mudstone.		
1.30-2.30 1.30-2.30	D ES 1.0ppm			66.70	1.30 (1.00)	MADE GROUND: Black very sandy very silty GRAVEL with occasional brick fragments and rare timber. Sand fine to coarse. Gravel fine to coarse and angular to subangular comprising sandstone and mudstone.		
2.30-2.80 2.30 2.30-2.80	D SV 126kPa ES 0.6ppm		Water strike(1) at 2.30m. 120, 130, 128/Av. 126.00	65.70	2.30 (0.50)	Very stiff consistency high strength light brown slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to medium and subangular to subrounded comprising mudstone.		▽1
				65.20	2.80	Complete at 2.80m		


Remarks

Water strike at 2.3mbgl
Trial Pit stable.

Scale (approx)

1:25

Logged By

LD

Figure No.

LKC 22 1031.TP104

Excavation Method

Slow scrape to 1.20mbgl by JCB 3CX.

Dimensions

1.90m x 0.60m x 2.00m

Ground Level (mOD)
Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388691 E 395470 N

Dates

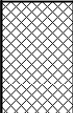
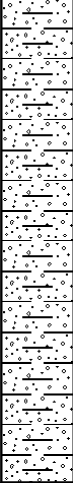
12/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.40 0.00-0.40	D ES 0.6ppm				(0.40)	MADE GROUND: Dark brown gravelly sandy SILT with frequent rootlets, occasional brick fragments, whole brick, coal and ash, rare ceramic and glass. Sand fine to coarse. Gravel fine to coarse and angular to sub-angular comprising sandstone and mudstone.		
0.40 0.40-1.40 0.40-1.40	SV 73.33kPa D ES 0.6ppm		70, 78, 72/Av. 73.33		0.40	Stiff to very stiff consistency medium to high strength light brown with grey mottling slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to medium and sub-angular to sub-rounded comprising mudstone.		
1.40 1.40-2.00	SV 92.67kPa D 0.3ppm		92, 90, 96/Av. 92.67		(1.60)			
					2.00	Complete at 2.00m		


Remarks

Trial Pit stable and dry.

Scale (approx)

1:25

Logged By

LD

Figure No.

LKC 22 1031.TP105

Excavation Method

Slow scrape to 0.5mbgl by
JCB 3CX

Dimensions

1.85m x 0.60m x 0.50m

Ground Level (mOD)

68.00

Client

Watson Construction Ltd

**Job
Number**

LKC 22 1031

Location (Observed measurements)

388642 E 395470 N

Dates

12/10/2022

Engineer

LKC

Sheet

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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.30 0.00-0.30	D ES 0.6ppm				(0.30)	MADE GROUND: Dark brown very sandy GRAVEL with frequent rootlets, brick and brick fragments and concrete, occasional plastic, metal, coal, ash and clinker, rare cloth and glass. Sand fine to coarse. Gravel fine to coarse and angular to sub-angular comprising sandstone and mudstone. MADE GROUND: Dark brown to black very gravelly very sandy silty CLAY with occasional sheet metal, coal, rare plastic and ceramic. Sand fine to coarse. Gravel fine to coarse and angular to sub-rounded. Mild hydrocarbon odour noted. Terminated at 0.50m		
0.30-0.50	D			67.70	0.30			
0.30-0.50	ES 1.3ppm			67.50	(0.20) 0.50			


Remarks

Trial Pit stable.
Water strike at 0.50mbgl.
Mild hydrocarbon odour noted at 0.30-0.50mbgl.
Trial Pit terminated due to sheet metal and water preventing excavation.

Scale (approx)

1:40

Logged By

LD

Figure No.

LKC 22 1031.TP106

Excavation Method

Hand excavated to 1.2mbgl

Dimensions
Location (Observed measurements)
388684 E 395456 N

Ground Level (mOD)

68.00

Dates

13/10/2022

Client

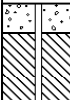
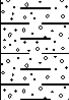
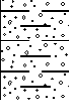
Watson Construction Ltd

Engineer

LKC

Job
Number
LKC 22 1031

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50 0.00-0.50	D ES PID 0.1ppm				(0.50)	MADE GROUND: Light brown gravelly sandy silty CLAY with frequent rootlets, occasional coal, brick fragments, rare glass. Sand fine to coarse. Gravel fine to coarse and Angular to sub-angular comprising mudstone .			
0.50-1.00 0.50-1.00	D ES PID 0.0ppm			67.50	0.50	Firm consistency medium strength light brown with grey mottling slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to coarse and angular to sub-rounded.			
1.20-1.65	SPT N=0		1,0/0,0,0,0						
2.00 2.00-2.45	PP 49.1kPa SPT N=13		49.1, 49.1, 49.1, 49.1, 49.1/Av. 49.10 2,3/2,3,4,4		(2.95)	Clay turns to very stiff consistency from 2.00mbgl.			
3.00 3.00-3.45	PP 142.23kPa SPT N=22		147.15, 123, 159, 147, 135/Av. 142.23 3,4/4,5,7,6	64.55	3.45	Window sample terminated at 3.45mbgl as unable to retrieve sample. Complete at 3.45m			

Remarks
Scale
(approx)
1:40

Logged
By
LD

Figure No.
LKC 22 1031.WS101

Excavation Method

Hand excavated to 1.2mbgl

Dimensions
Location (Observed measurements)
388696 E 395438 N

Ground Level (mOD)

68.00

Dates

13/10/2022

Client

Watson Construction Ltd

Engineer

LK

Job
Number
LKC 22 1031

Sheet
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Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.00 0.00-1.00	D ES PID 0.2ppm				(1.20)	MADE GROUND: Dark brown very gravelly very sandy SILT with frequent brick fragments, occasional coal, ash, rare glass, plastic. Sand fine to coarse. Gravel fine to coarse and angular to sub-angular comprising sandstone and mudstone.			
1.20-1.65 1.20-1.60	SPT N=5 D		1,0/1,2,1,1	66.80	1.20 (0.40)	MADE GROUND: Soft consistency organic black slightly gravelly slightly sandy SILT. Sand fine to coarse. Gravel fine to medium and sub-angular to sub-rounded comprising mudstone.			
1.60-1.80 1.60-1.80 1.80-2.50 1.80-2.50	D ES PID 0.1ppm D ES PID 0.0ppm		24.5, 24.5, 49.1, 24.5, 49.1/Av. 34.34 2,3/1,2,1,2	66.40 66.20	1.60 (0.20) 1.80	MADE GROUND: Black sandy very silty GRAVEL. Sand fine to coarse. Gravel fine to coarse and angular to sub-angular.			
2.00 2.00-2.45	PP 34.34kPa SPT N=6			65.50	(0.70) 2.50	MADE GROUND: Soft consistency low strength dark brown slightly gravelly slightly sandy silty CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to coarse and sub-angular to sub-rounded comprising mudstone.			
3.00 3.00-3.45	PP 196kPa SPT N=22		Fast(1) at 3.00m. 196, 196, 196, 196, 196/Av. 196.00 3,6/6,5,6,5			Very stiff consistency high strength light brown with grey mottling slightly gravelly slightly sandy CLAY with rare coal fragments. Sand fine to coarse. Gravel fine to medium and sub-angular to sub-rounded comprising mudstone. Clay turns very stiff at 2.50mbgl. Clay turns soft at 3.00mbgl.			
4.00-4.45	SPT N=27		6,5/6,6,7,8		(2.95)				
4.50-5.00	D PID 0.0ppm								
5.00 5.00-5.45	PP 198.6kPa SPT N=21		184, 196, 196, 221, 196/Av. 198.60 4,3/6,4,6,5	62.55	5.45	Complete at 5.45m			

Remarks
Scale
(approx)
1:40

Logged
By
LD

Figure No.
LKC 22 1031.WS102

Excavation Method

Hand excavated to 1.2mbgl

Dimensions
Location (Observed measurements)
388725 E 395446 N

Ground Level (mOD)

68.00

Dates

13/10/2022

Client

Watson Construction Ltd

Engineer

LKC

Job
Number

LKC 22 1031

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-0.50 0.00-0.50	D ES PID 0.0ppm				(0.50)	MADE GROUND: Dark brown gravelly sandy SILT with frequent rootlets occasional coal, ash, brick fragments, rare metal and glass. Sand fine to coarse. Gravel fine to coarse and sub-angular to sub-rounded comprising sandstone and mudstone.			
0.50-1.00 0.50-1.00	D ES PID 0.0ppm			67.50	0.50	Stiff consistency high strength light brown slightly gravelly slightly sandy CLAY with occasional coal fragments. Sand fine to coarse. Gravel fine to coarse and sub-angular to sub-rounded comprising mudstone.			
1.20-1.65	SPT N=11		2,2/3,2,3,3						
2.00 2.00-2.45	PP 147.2kPa SPT N=18		147, 147, 147, 172, 123/Av. 147.20 2,3/5,4,4,5						
2.50-3.00	D								
3.00 3.00-3.45	PP 188.8kPa SPT N=5		172, 196, 184, 196, 196/Av. 188.80 2,2/0,1,2,2		(4.95)	Clay turns very stiff at 3.00mbgl.			
4.00 4.00-4.45	PP 201kPa SPT N=16		196, 221, 196, 196, 196/Av. 201.00 3,2/3,4,4,5			Clay turns dark brown at 4.00mbgl.			
4.50-5.00	D								
5.00-5.45	SPT N=14		3,3/3,4,3,4						
				62.55	5.45	Complete at 5.45m			

Remarks
Scale
(approx)
1:40

Logged
By
LD

Figure No.
LKC 22 1031.WS103

Excavation Method

Machine excavated pit to 1.80mbgl.

Dimensions

2.50m x 2.00m x 1.80m

Ground Level (mOD)
Client

Watson Construction Ltd

**Job
Number**
LKC 22 1031

Location
Dates

03/07/2023

Engineer

LKC

Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-0.40	ES PID<0.1ppm				(0.40)	MADE GROUND: Brown very sandy silty GRAVEL with frequent ash, clinker, occasional ceramic fragments, tarmacadam fragments, coal and sandstone cobbles. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone and mudstone.		
0.40-0.90	ES PID=0.2ppm		Slow seepage(1) at 0.50m.		0.40 (0.50)	MADE GROUND: Firm consistency brown with slight hydrocarbon odour sandy silty CLAY with occasional bands of dark grey organic clay, tarmacadam fragments, brick fragments, glass, rootlets, timber and rare sheet metal. Sand is fine to medium. Moderate hydrocarbon odour and hydrocarbon sheen to pockets of the strata between 0.40-0.90mbgl.		Σ1
0.90-1.20	ES PID=0.1ppm				0.90 (0.30)	MADE GROUND: Firm consistency brownish grey with very slight hydrocarbon odour slightly organic gravelly slightly sandy silty CLAY with rare brick fragments. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone and mudstone.		
1.20-1.58	ES PID=0.2ppm				1.20 (0.60)	Stiff consistency light orangish brown and light grey mottled slightly gravelly sandy silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, sub-angular to sub-rounded comprising sandstone and mudstone. Cobbles are sub-rounded comprising sandstone.		
					1.80	Complete at 1.80m		


Remarks

Perched water seeping into pit from between approximately 0.50-0.70mbgl. Pit stable.

Scale (approx)

1:20

Logged By

EM

Figure No.

LKC 22 1031.TP201

Appendix C

Certificates of Analysis – Soil

Final Report

Report No.: 22-39293-1

Initial Date of Issue: 30-Oct-2022

Client LK Consult

Client Address: Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Manchester
Lancashire
M26 2ZS

Contact(s): Contaminated Land
Michelle Thorniley

Project LKC 22 1031 Levenshulme Road,
Gorton

Quotation No.:		Date Received:	14-Oct-2022
Order No.:	740655	Date Instructed:	18-Oct-2022
No. of Samples:	8		
Turnaround (Wkdays):	10	Results Due:	31-Oct-2022
Date Approved:	30-Oct-2022		

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: LKC 22 1031 Levenshulme Road, Gorton

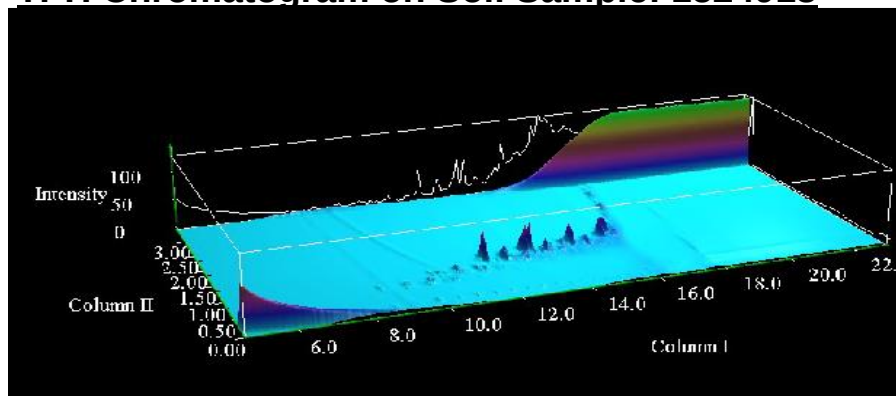
Client: LK Consult	Chemtest Job No.:				22-39293	22-39293	22-39293	22-39293	22-39293	22-39293	22-39293	22-39293
Quotation No.:	Chemtest Sample ID.:				1524899	1524902	1524904	1524907	1524908	1524911	1524912	1524913
	Client Sample ID.:				TP101	TP102	TP103	TP104	TP104	TP105	TP106	TP106
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.00	0.30	0.00	0.45	1.35	0.40	0.00	0.30
	Bottom Depth (m):				0.30	0.50	0.90	1.00	2.30	1.40	0.30	0.50
	Date Sampled:				12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY		COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A	-	-	-	-		-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	18	12	13	12	24	13	6.5	14
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Roots and Stones	Stones	Stones and Roots	Stones	Stones	Stones	Stones and Roots	Stones
Soil Texture	N	2040		N/A	Sand	Clay	Sand	Clay	Clay	Clay	Sand	Sand
Chromatogram (TPH)	N			N/A								See Attached
pH	U	2010		4.0	7.5	7.9	8.3	8.5	7.9	8.3	9.3	8.5
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40								1.5
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	0.56	< 0.010	< 0.010	0.23
Cyanide (Free)	U	2300	mg/kg	0.50								< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50								< 0.50
Arsenic	U	2455	mg/kg	0.5	5.1	2.6	12	4.2		5.4	2.4	16
Cadmium	U	2455	mg/kg	0.10	0.23	< 0.10	1.2	0.22		< 0.10	0.18	0.16
Chromium	U	2455	mg/kg	0.5	8.1	6.9	18	9.8		14	11	19
Copper	U	2455	mg/kg	0.50	18	13	140	15		7.3	10	19
Mercury	U	2455	mg/kg	0.05	0.06	< 0.05	4.9	0.18		< 0.05	0.10	0.07
Nickel	U	2455	mg/kg	0.50	9.7	6.6	21	14		9.3	9.8	14
Lead	U	2455	mg/kg	0.50	240	16	270	17		9.8	26	31
Selenium	U	2455	mg/kg	0.25	0.31	< 0.25	0.44	0.47		0.39	< 0.25	0.46
Vanadium	U	2455	mg/kg	0.5	9.1	7.5	14	9.8		21	17	29
Zinc	U	2455	mg/kg	0.50	140	34	280	37		25	31	64
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	8.6	5.2	9.8	1.6		0.74	18	8.3
Diesel Present	N	2670		N/A								False
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0								< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0								< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0								< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0								< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0								< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0								< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0								< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0								< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0								< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0								< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0								< 1.0

Results - Soil

Project: LKC 22 1031 Levenshulme Road, Gorton

Client: LK Consult	Chemtest Job No.:				22-39293	22-39293	22-39293	22-39293	22-39293	22-39293	22-39293	22-39293
Quotation No.:	Chemtest Sample ID.:				1524899	1524902	1524904	1524907	1524908	1524911	1524912	1524913
	Client Sample ID.:				TP101	TP102	TP103	TP104	TP104	TP105	TP106	TP106
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.00	0.30	0.00	0.45	1.35	0.40	0.00	0.30
	Bottom Depth (m):				0.30	0.50	0.90	1.00	2.30	1.40	0.30	0.50
	Date Sampled:				12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022	12-Oct-2022
	Asbestos Lab:				COVENTRY	COVENTRY	COVENTRY	COVENTRY		COVENTRY	COVENTRY	COVENTRY
Determinand	Accred.	SOP	Units	LOD								
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0								< 1.0
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0								< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0								270
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0								950
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0								3400
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0								< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0								4600
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0								4600
Benzene	U	2760	µg/kg	1.0								< 1.0
Toluene	U	2760	µg/kg	1.0								< 1.0
Ethylbenzene	U	2760	µg/kg	1.0								< 1.0
m & p-Xylene	U	2760	µg/kg	1.0								< 1.0
o-Xylene	U	2760	µg/kg	1.0								< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0								< 1.0
Naphthalene	U	2800	mg/kg	0.10	0.37	0.19	8.1	< 0.10		< 0.10	0.13	210
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	0.46	< 0.10		< 0.10	< 0.10	30
Acenaphthene	U	2800	mg/kg	0.10	0.13	< 0.10	14	0.13		< 0.10	< 0.10	42
Fluorene	U	2800	mg/kg	0.10	0.12	0.11	9.2	< 0.10		< 0.10	< 0.10	76
Phenanthrene	U	2800	mg/kg	0.10	0.71	0.34	120	0.22		< 0.10	0.58	270
Anthracene	U	2800	mg/kg	0.10	0.19	0.34	26	0.21		< 0.10	0.16	98
Fluoranthene	U	2800	mg/kg	0.10	1.4	0.34	160	0.27		< 0.10	1.2	290
Pyrene	U	2800	mg/kg	0.10	1.4	0.25	130	0.25		< 0.10	1.1	270
Benzo[a]anthracene	U	2800	mg/kg	0.10	0.72	< 0.10	65	< 0.10		< 0.10	0.55	170
Chrysene	U	2800	mg/kg	0.10	0.72	< 0.10	67	< 0.10		< 0.10	0.54	150
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	< 0.10	< 0.10	76	< 0.10		< 0.10	0.71	180
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	< 0.10	< 0.10	31	< 0.10		< 0.10	0.65	76
Benzo[a]pyrene	U	2800	mg/kg	0.10	0.76	< 0.10	66	< 0.10		< 0.10	1.0	180
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	0.50	0.13	39	< 0.10		< 0.10	< 0.10	130
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	7.4	< 0.10		< 0.10	0.12	24
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	0.52	< 0.10	37	< 0.10		0.11	0.87	97
Total Of 16 PAH's	N	2800	mg/kg	2.0	7.5	< 2.0	860	< 2.0		< 2.0	7.6	2300
Total Phenols	U	2920	mg/kg	0.10								0.16

TPH Chromatogram on Soil Sample: 1524913



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
22-39293	1524913	S			TP106	0.30	No	PAH

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Final Report

Report No.: 22-39740-1

Initial Date of Issue: 01-Nov-2022

Client LK Consult

Client Address: Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Manchester
Lancashire
M26 2ZS

Contact(s): Contaminated Land
Michelle Thorniley

Project LKC 22 1031 Levenshulme Road,
Gorton

Quotation No.:	Date Received:	18-Oct-2022
Order No.:	Date Instructed:	19-Oct-2022
No. of Samples: 12		
Turnaround (Wkdays): 10	Results Due:	01-Nov-2022
Date Approved: 01-Nov-2022		

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Soil

Project: LKC 22 1031 Levenshulme Road, Gorton

Client: LK Consult	Chemtest Job No.:				22-39740	22-39740	22-39740	22-39740	22-39740	22-39740	22-39740	22-39740	22-39740
Quotation No.:	Chemtest Sample ID.:				1527026	1527027	1527028	1527029	1527030	1527031	1527032	1527033	1527035
	Client Sample ID.:				WS101	WS101	WS102	WS102	WS102	WS103	WS103	HD101	HD102
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0	0.5	0	1.6	1.8	0	0.5	0	0
	Bottom Depth (m):				0.5	1	1	1.8	2.5	0.5	1	0.6	0.4
	Date Sampled:				13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022
	Asbestos Lab:				DURHAM		DURHAM	DURHAM	DURHAM	DURHAM		DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192		N/A	-		-	-	-	-		-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	14	16	13	22	17	17	13	17	19
Soil Colour	N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones and Roots	Stones and Roots	Stones and Roots	Stones	Stones	Stones and Roots	Stones	Stones and Roots	Stones and Roots
Soil Texture	N	2040		N/A	Clay	Clay	Sand	Sand	Clay	Sand	Clay	Sand	Sand
Chromatogram (TPH)	N			N/A			See Attached						
pH	U	2010		4.0	8.0	8.0	7.5	7.6	8.2	7.5	8.0	7.3	7.3
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40			1.0						
Magnesium (Water Soluble)	N	2120	g/l	0.010		< 0.010					0.020		
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.047	0.040	0.056	0.025	< 0.010	0.014	< 0.010	< 0.010	< 0.010
Chloride (Water Soluble)	U	2220	g/l	0.010		< 0.010					< 0.010		
Nitrate (Water Soluble)	N	2220	g/l	0.010		< 0.010					< 0.010		
Cyanide (Free)	U	2300	mg/kg	0.50			< 0.50						
Cyanide (Total)	U	2300	mg/kg	0.50			< 0.50						
Arsenic	U	2455	mg/kg	0.5	5.4		11	14	4.9	18		11	11
Cadmium	U	2455	mg/kg	0.10	< 0.10		0.22	0.34	0.10	0.43		0.35	0.44
Chromium	U	2455	mg/kg	0.5	14		10	14	10	17		14	14
Copper	U	2455	mg/kg	0.50	32		76	100	42	130		85	94
Mercury	U	2455	mg/kg	0.05	0.12		1.4	1.7	0.08	2.2		1.0	0.88
Nickel	U	2455	mg/kg	0.50	16		17	20	12	27		17	19
Lead	U	2455	mg/kg	0.50	30		130	180	18	210		210	230
Selenium	U	2455	mg/kg	0.25	0.59		0.56	0.79	0.33	1.0		0.52	0.56
Vanadium	U	2455	mg/kg	0.5	16		16	22	11	29		16	15
Zinc	U	2455	mg/kg	0.50	39		110	150	30	190		190	200
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	< 0.40		12	15	1.6	13		13	11
Diesel Present	N	2670		N/A			False						
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0			< 1.0						
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0			< 1.0						
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0			< 1.0						
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0			< 1.0						
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0			< 1.0						
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0			< 1.0						
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0			100						
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0			< 1.0						

Results - Soil

Project: LKC 22 1031 Levenshulme Road, Gorton

Client: LK Consult	Chemtest Job No.:				22-39740	22-39740	22-39740	22-39740	22-39740	22-39740	22-39740	22-39740
Quotation No.:	Chemtest Sample ID.:				1527026	1527027	1527028	1527029	1527030	1527031	1527032	1527033
	Client Sample ID.:				WS101	WS101	WS102	WS102	WS102	WS103	WS103	HD101
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0	0.5	0	1.6	1.8	0	0.5	0
	Bottom Depth (m):				0.5	1	1	1.8	2.5	0.5	1	0.6
	Date Sampled:				13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022	13-Oct-2022
	Asbestos Lab:				DURHAM		DURHAM	DURHAM	DURHAM	DURHAM		DURHAM
Determinand	Accred.	SOP	Units	LOD								
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0			100					
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0			< 1.0					
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0			< 1.0					
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0			< 1.0					
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0			< 1.0					
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0			70					
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0			480					
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0			6100					
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0			570					
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0			7200					
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0			7300					
Benzene	U	2760	µg/kg	1.0			< 1.0					
Toluene	U	2760	µg/kg	1.0			2.4					
Ethylbenzene	U	2760	µg/kg	1.0			1.4					
m & p-Xylene	U	2760	µg/kg	1.0			2.6					
o-Xylene	U	2760	µg/kg	1.0			1.4					
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0			< 1.0					
Naphthalene	U	2800	mg/kg	0.10	< 0.10		6.1	6.8	< 0.10	7.7		1.2
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10		0.36	0.48	< 0.10	0.48		0.25
Acenaphthene	U	2800	mg/kg	0.10	< 0.10		7.9	13	< 0.10	16		2.2
Fluorene	U	2800	mg/kg	0.10	< 0.10		6.6	10	< 0.10	15		1.7
Phenanthrene	U	2800	mg/kg	0.10	5.1		72	100	< 0.10	140		17
Anthracene	U	2800	mg/kg	0.10	1.3		17	26	< 0.10	34		4.0
Fluoranthene	U	2800	mg/kg	0.10	7.4		93	130	0.23	180		26
Pyrene	U	2800	mg/kg	0.10	6.1		78	110	0.20	140		22
Benzo[a]anthracene	U	2800	mg/kg	0.10	3.1		43	57	< 0.10	79		11
Chrysene	U	2800	mg/kg	0.10	3.3		43	58	< 0.10	81		11
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	3.7		51	66	< 0.10	95		14
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	1.5		21	26	< 0.10	36		5.0
Benzo[a]pyrene	U	2800	mg/kg	0.10	2.5		45	59	< 0.10	82		12
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	< 0.10		28	36	< 0.10	51		7.1
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10		4.5	6.4	< 0.10	8.8		1.3
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	< 0.10		24	32	< 0.10	44		6.8
Total Of 16 PAH's	N	2800	mg/kg	2.0	34		540	740	< 2.0	1000		140
Total Phenols	U	2920	mg/kg	0.10			< 0.10					

Results - Soil

Project: LKC 22 1031 Levenshulme Road, Gorton

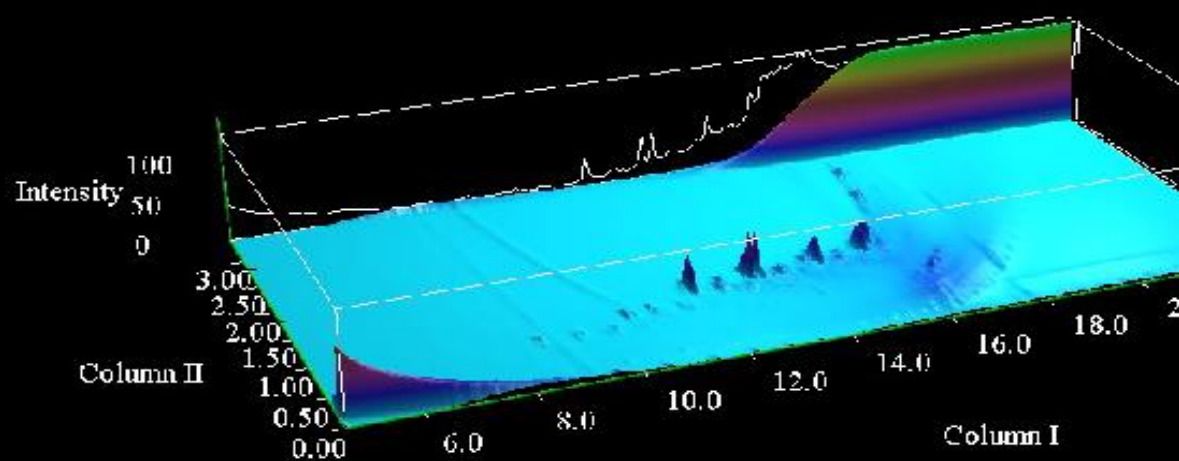
Client: LK Consult	Chemtest Job No.:				22-39740	22-39740	22-39740
Quotation No.:	Chemtest Sample ID.:				1527037	1527038	1527039
	Client Sample ID.:				CP101	CP102	CP102
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0	0	1.6
	Bottom Depth (m):				0.4	0.5	2
	Date Sampled:				13-Oct-2022	13-Oct-2022	13-Oct-2022
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	15	9.5	13
Soil Colour	N	2040		N/A	Brown	Brown	Brown
Other Material	N	2040		N/A	Stones	Stones and Roots	Stones
Soil Texture	N	2040		N/A	Clay	Sand	Clay
Chromatogram (TPH)	N			N/A		See Attached	
pH	U	2010		4.0	7.2	7.9	7.8
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40		< 0.40	
Magnesium (Water Soluble)	N	2120	g/l	0.010			
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010	< 0.010
Chloride (Water Soluble)	U	2220	g/l	0.010			
Nitrate (Water Soluble)	N	2220	g/l	0.010			
Cyanide (Free)	U	2300	mg/kg	0.50		< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50		< 0.50	
Arsenic	U	2455	mg/kg	0.5	9.8	3.8	3.8
Cadmium	U	2455	mg/kg	0.10	0.38	0.25	0.29
Chromium	U	2455	mg/kg	0.5	14	7.5	9.9
Copper	U	2455	mg/kg	0.50	89	25	14
Mercury	U	2455	mg/kg	0.05	0.96	0.54	0.21
Nickel	U	2455	mg/kg	0.50	16	7.7	15
Lead	U	2455	mg/kg	0.50	190	89	33
Selenium	U	2455	mg/kg	0.25	0.43	0.25	0.44
Vanadium	U	2455	mg/kg	0.5	13	8.5	11
Zinc	U	2455	mg/kg	0.50	170	78	44
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	12	9.9	1.1
Diesel Present	N	2670		N/A		False	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0		< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0		< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0	

Results - Soil

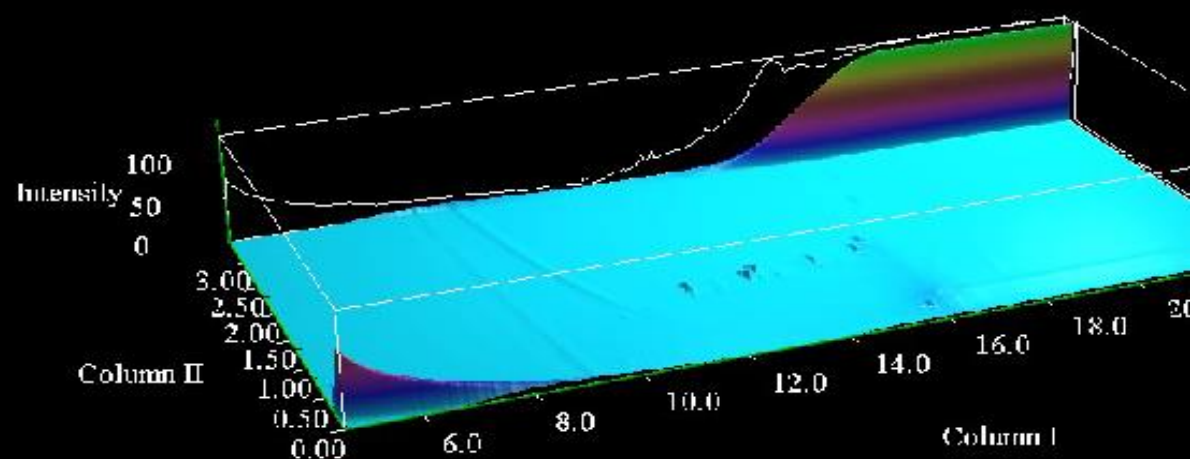
Project: LKC 22 1031 Levenshulme Road, Gorton

Client: LK Consult	Chemtest Job No.:				22-39740	22-39740	22-39740
Quotation No.:	Chemtest Sample ID.:				1527037	1527038	1527039
	Client Sample ID.:				CP101	CP102	CP102
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				0	0	1.6
	Bottom Depth (m):				0.4	0.5	2
	Date Sampled:				13-Oct-2022	13-Oct-2022	13-Oct-2022
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0		< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		< 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0		< 1.0	
Aromatic TPH >C16-C21	N	2680	mg/kg	1.0		64	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0		270	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0		< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0		330	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0		330	
Benzene	U	2760	µg/kg	1.0		< 1.0	
Toluene	U	2760	µg/kg	1.0		< 1.0	
Ethylbenzene	U	2760	µg/kg	1.0		< 1.0	
m & p-Xylene	U	2760	µg/kg	1.0		< 1.0	
o-Xylene	U	2760	µg/kg	1.0		< 1.0	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0		< 1.0	
Naphthalene	U	2800	mg/kg	0.10	1.1	0.68	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	0.24	0.15	< 0.10
Acenaphthene	U	2800	mg/kg	0.10	2.1	1.8	< 0.10
Fluorene	U	2800	mg/kg	0.10	1.6	1.5	< 0.10
Phenanthrene	U	2800	mg/kg	0.10	18	17	1.9
Anthracene	U	2800	mg/kg	0.10	4.1	3.7	0.47
Fluoranthene	U	2800	mg/kg	0.10	26	24	2.9
Pyrene	U	2800	mg/kg	0.10	22	19	2.4
Benzo[a]anthracene	U	2800	mg/kg	0.10	11	10	1.1
Chrysene	U	2800	mg/kg	0.10	12	10	1.2
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	14	13	1.4
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	5.2	4.6	0.55
Benzo[a]pyrene	U	2800	mg/kg	0.10	12	11	1.1
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	7.4	7.2	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	1.4	0.84	< 0.10
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	7.2	6.6	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	150	130	13
Total Phenols	U	2920	mg/kg	0.10		< 0.10	

TPH Chromatogram on Soil Sample: 1527028



TPH Chromatogram on Soil Sample: 1527038



TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
22-39740	1527028	S			WS102	0	No	PAH
22-39740	1527038	S			CP102	0	No	PAH

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2220	Water soluble Chloride in Soils	Chloride	Aqueous extraction and measurement by 'Aquakem 600' Discrete Analyser using ferric nitrate / mercuric thiocyanate.
2300	Cyanides & Thiocyanate in Soils	Free (or easily liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8, >C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35–C44 Aromatics: >C5–C7, >C7–C8, >C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35–C44	Dichloromethane extraction / GCxGC FID detection
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and Trimethylphenols Note: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Rachel Peart
LK Consult Limited
Unit 29 Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

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

DETS Report No: 23-08670

Site Reference: Levenshulme Road , Gorton

Project / Job Ref: LKC 22 1031

Order No: LKC221031 - B2 - RP

Sample Receipt Date: 05/07/2023

Sample Scheduled Date: 05/07/2023

Report Issue Number: 1

Reporting Date: 13/07/2023

Authorised by:

Dave Ashworth
Technical Manager

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: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	SP201	SP301	TP201	TP201	TP201
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	0.40 - 0.90	0.90 - 1.20	1.20 - 1.80
Reporting Date: 13/07/2023	DETS Sample No	661471	661472	661473	661474	661475

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected		
pH	pH Units	N/a	MCERTS	7.6	7.9	7.9		
Total Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1		
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1		
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	36	42	32		
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.04	0.04	0.03		
Organic Matter (SOM)	%	< 0.1	MCERTS	6.8	9.3	11.8	5.1	1.2
Arsenic (As)	mg/kg	< 2	MCERTS	21	20	14		
W/S Boron	mg/kg	< 1	NONE	1.1	< 1	1.3		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	0.6	0.3		
Chromium (Cr)	mg/kg	< 2	MCERTS	17	19	18		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	94	159	84		
Lead (Pb)	mg/kg	< 3	MCERTS	301	1120	320		
Mercury (Hg)	mg/kg	< 1	MCERTS	4.8	8.1	5.5		
Nickel (Ni)	mg/kg	< 3	MCERTS	21	26	18		
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Vanadium (V)	mg/kg	< 1	MCERTS	35	35	32		
Zinc (Zn)	mg/kg	< 3	MCERTS	97	228	133		
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	15.4		

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)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	TP201 Side 1	TP201 Side 2	TP201 Side 3	TP201 Side 4	TP201 Base
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/07/2023	DETS Sample No	661476	661477	661478	661479	661480

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025					
pH	pH Units	N/a	MCERTS					
Total Cyanide	mg/kg	< 1	NONE					
Free Cyanide	mg/kg	< 1	NONE					
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS					
Organic Matter (SOM)	%	< 0.1	MCERTS	11	15.4	8.7	8	1.3
Arsenic (As)	mg/kg	< 2	MCERTS					
W/S Boron	mg/kg	< 1	NONE					
Cadmium (Cd)	mg/kg	< 0.2	MCERTS					
Chromium (Cr)	mg/kg	< 2	MCERTS					
Chromium (hexavalent)	mg/kg	< 2	NONE					
Copper (Cu)	mg/kg	< 4	MCERTS					
Lead (Pb)	mg/kg	< 3	MCERTS					
Mercury (Hg)	mg/kg	< 1	MCERTS					
Nickel (Ni)	mg/kg	< 3	MCERTS					
Selenium (Se)	mg/kg	< 2	MCERTS					
Vanadium (V)	mg/kg	< 1	MCERTS					
Zinc (Zn)	mg/kg	< 3	MCERTS					
Total Phenols (monohydric)	mg/kg	< 2	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)



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: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	Trench 1 Side 1	Trench 1 Side 2	Trench 1 Side 3	Trench 1 Side 4	Trench 1 Base
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/07/2023	DETS Sample No	661481	661482	661483	661484	661485

Determinand	Unit	RL	Accreditation					
Asbestos Screen ^(S)	N/a	N/a	ISO17025					
pH	pH Units	N/a	MCERTS					
Total Cyanide	mg/kg	< 1	NONE					
Free Cyanide	mg/kg	< 1	NONE					
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS					
Organic Matter (SOM)	%	< 0.1	MCERTS	5.6	6.2	11.5	4.9	14.5
Arsenic (As)	mg/kg	< 2	MCERTS					
W/S Boron	mg/kg	< 1	NONE					
Cadmium (Cd)	mg/kg	< 0.2	MCERTS					
Chromium (Cr)	mg/kg	< 2	MCERTS					
Chromium (hexavalent)	mg/kg	< 2	NONE					
Copper (Cu)	mg/kg	< 4	MCERTS					
Lead (Pb)	mg/kg	< 3	MCERTS					
Mercury (Hg)	mg/kg	< 1	MCERTS					
Nickel (Ni)	mg/kg	< 3	MCERTS					
Selenium (Se)	mg/kg	< 2	MCERTS					
Vanadium (V)	mg/kg	< 1	MCERTS					
Zinc (Zn)	mg/kg	< 3	MCERTS					
Total Phenols (monohydric)	mg/kg	< 2	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)



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



Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23		
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied		
Site Reference: Levenshulme Road , Gorton	TP / BH No	SP201	SP301	TP201		
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied		
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	0.40 - 0.90		
Reporting Date: 13/07/2023	DETS Sample No	661471	661472	661473		

Determinand	Unit	RL	Accreditation				
Naphthalene	mg/kg	< 0.1	MCERTS	3.63	4.38	1370	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	6.48	
Acenaphthene	mg/kg	< 0.1	MCERTS	6.56	5.97	481	
Fluorene	mg/kg	< 0.1	MCERTS	4.41	3.81	294	
Phenanthrene	mg/kg	< 0.1	MCERTS	9.40	28.70	973	
Anthracene	mg/kg	< 0.1	MCERTS	2.71	7.41	261	
Fluoranthene	mg/kg	< 0.1	MCERTS	7.15	33.50	428	
Pyrene	mg/kg	< 0.1	MCERTS	5.12	28.50	301	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	2.18	12.80	96.50	
Chrysene	mg/kg	< 0.1	MCERTS	1.67	13.50	101	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.43	13.60	109	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.49	6.34	31	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1.43	11.40	99.70	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.57	6.08	32.50	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	1.36	7.27	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.45	4.67	24.70	
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	47.2	182	4610	



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Maidstone
Kent ME17 2JN
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Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	SP201	SP301	TP201	TP201	TP201
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	0.40 - 0.90	0.90 - 1.20	1.20 - 1.80
Reporting Date: 13/07/2023	DETS Sample No	661471	661472	661473	661474	661475

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	57	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	2438	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	4729	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	1826	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	1237	< 10	< 10
Aliphatic >C34 - C44	mg/kg	< 10	NONE	< 10	< 10	366	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE				< 21	< 21
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	10651	< 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	0.07	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	6	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	6	7	277	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	37	41	2586	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	52	205	5596	< 3	3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	53	300	3817	< 10	< 10
Aromatic >C35 - C44	mg/kg	< 10	NONE	< 10	28	441	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE				< 21	< 21
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	149	581	12723	< 21	< 21
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	149	581	23374	< 42	< 42
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE				< 42	< 42

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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



Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	TP201 Side 1	TP201 Side 2	TP201 Side 3	TP201 Side 4	TP201 Base
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/07/2023	DETS Sample No	661476	661477	661478	661479	661480

Determinand	Unit	RL	Accreditation	(n)				
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 >C34 - C44	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aliphatic (C5 - C44) : 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	6	< 2	2	59	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	12	3	8	83	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	28	12	47	116	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	49	< 10	58	108	< 10
Aromatic >C35 - C44	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	95	< 21	115	367	< 21
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	95	< 21	115	367	< 21
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	95	< 42	115	367	< 42
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	95	< 42	115	367	< 42



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



Soil Analysis Certificate - TPH CWG Banded

DETS Report No: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	Trench 1 Side 1	Trench 1 Side 2	Trench 1 Side 3	Trench 1 Side 4	Trench 1 Base
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/07/2023	DETS Sample No	661481	661482	661483	661484	661485

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	46	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	361	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	591	< 3	12	< 3	< 3
Aliphatic >C21 - C34 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	260	< 10	46	< 10	< 10
Aliphatic >C34 - C44	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	1258	< 21	58	< 21	< 21
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 21	NONE	1258	< 21	58	< 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	14	< 2	12	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	318	13	67	4	7
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	1404	92	345	22	37
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	1047	198	326	41	67
Aromatic >C35 - C44	mg/kg	< 10	NONE	16	< 10	< 10	< 10	< 10
Aromatic (C5 - C35) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	2783	302	750	67	111
Aromatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 21	NONE	2799	302	750	67	111
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	4057	302	808	67	111
Total >C5 - C35 : HS_1D_MS+EH_CU_1D_Tot al	mg/kg	< 42	NONE	4041	302	808	67	111



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



Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	SP201	SP301	TP201	TP201	TP201
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	0.40 - 0.90	0.90 - 1.20	1.20 - 1.80
Reporting Date: 13/07/2023	DETS Sample No	661471	661472	661473	661474	661475

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	74	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	5	5	152	10	4
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	9	5	376	9	4
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	8	< 2	263	5	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation



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Lenham Heath
Maidstone
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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	TP201 Side 1	TP201 Side 2	TP201 Side 3	TP201 Side 4	TP201 Base
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/07/2023	DETS Sample No	661476	661477	661478	661479	661480

Determinand	Unit	RL	Accreditation	(n)			
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	15
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	9	< 2	4	25
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	7	< 2	3	16
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-08670	Date Sampled	03/07/23	03/07/23	03/07/23	03/07/23	03/07/23
LK Consult Limited	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Levenshulme Road , Gorton	TP / BH No	Trench 1 Side 1	Trench 1 Side 2	Trench 1 Side 3	Trench 1 Side 4	Trench 1 Base
Project / Job Ref: LKC 22 1031	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: LKC221031 - B2 - RP	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 13/07/2023	DETS Sample No	661481	661482	661483	661484	661485

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	14	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	12	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	6	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3																																							
DETS Report No: 23-08670		Date Sampled	03/07/23		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: left; padding: 5px;">Landfill Waste Acceptance Criteria Limits</th> </tr> <tr> <th style="width: 33%; padding: 5px;">Inert Waste Landfill</th> <th style="width: 33%; padding: 5px;">Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill</th> <th style="width: 33%; padding: 5px;">Hazardous Waste Landfill</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;">3%</td> <td style="text-align: center; padding: 5px;">5%</td> <td style="text-align: center; padding: 5px;">6%</td> </tr> <tr> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">10%</td> </tr> <tr> <td style="text-align: center; padding: 5px;">6</td> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">--</td> </tr> <tr> <td style="text-align: center; padding: 5px;">1</td> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">--</td> </tr> <tr> <td style="text-align: center; padding: 5px;">500</td> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">--</td> </tr> <tr> <td style="text-align: center; padding: 5px;">100</td> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">--</td> </tr> <tr> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">>6</td> <td style="text-align: center; padding: 5px;">--</td> </tr> <tr> <td style="text-align: center; padding: 5px;">--</td> <td style="text-align: center; padding: 5px;">To be evaluated</td> <td style="text-align: center; padding: 5px;">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																																					
LK Consult Limited		Time Sampled	None Supplied																																				
Site Reference: Levenshulme Road , Gorton		TP / BH No	SP201																																				
Project / Job Ref: LKC 22 1031		Additional Refs	None Supplied																																				
Order No: LKC221031 - B2 - RP		Depth (m)	None Supplied																																				
Reporting Date: 13/07/2023		DETS Sample No	661471																																				
Determinand	Unit	MDL																																					
TOC ^{MU}	%	< 0.1	4																																				
Loss on Ignition ^{MU}	%	< 0.01	5.60																																				
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	47.4																																				
pH ^{MU}	pH Units	N/a	7.6																																				
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			0.13	0.20		1.9	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			0.050	0.012		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			0.053	0.011		< 0.2	4	50	200																														
Chloride ^U			8	3		34	800	15000	25000																														
Fluoride ^U			< 0.5	< 0.5		< 1	10	150	500																														
Sulphate ^U			17	185		1754	1000	20000	50000																														
TDS			230	336		3298	4000	60000	100000																														
Phenol Index ^U			< 0.01	< 0.01		< 0.5	1	-	-																														
DOC ^U			46.7	14.4		164	500	800	1000																														
Leach Test Information																																							
Sample Mass (kg)			0.22																																				
Dry Matter (%)			78.3																																				
Moisture (%)			27.8																																				
Stage 1																																							
Volume Eluate L2 (litres)			0.30																																				
Filtered Eluate VE1 (litres)			0.10																																				

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

Waste Acceptance Criteria Analytical Certificate - BS EN 12457/3

DETS Report No: 23-08670		Date Sampled	03/07/23			Landfill Waste Acceptance Criteria Limits		
LK Consult Limited		Time Sampled	None Supplied					
Site Reference: Levenshulme Road , Gorton		TP / BH No	SP301					
Project / Job Ref: LKC 22 1031		Additional Refs	None Supplied					
Order No: LKC221031 - B2 - RP		Depth (m)	None Supplied					
Reporting Date: 13/07/2023		DETS Sample No	661472					
Determinand	Unit	MDL				Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
TOC ^{MU}	%	< 0.1	5.4			3%	5%	6%
Loss on Ignition ^{MU}	%	< 0.01	6			--	--	10%
BTEX ^{MU}	mg/kg	< 0.05	< 0.05			6	--	--
Sum of PCBs	mg/kg	< 0.1	< 0.1			1	--	--
Mineral Oil ^{MU}	mg/kg	< 10	< 10			500	--	--
Total PAH ^{MU}	mg/kg	< 1.7	184			100	--	--
pH ^{MU}	pH Units	N/a	7.9			--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1			--	To be evaluated	To be evaluated
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		0.10	0.10		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		0.022	0.013		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		0.006	< 0.005		< 0.05	0.06	0.7	5
Selenium ^U		< 0.005	< 0.005		< 0.05	0.1	0.5	7
Zinc ^U		0.049	0.006		< 0.2	4	50	200
Chloride ^U		2	2		23	800	15000	25000
Fluoride ^U		0.8	0.7		7.4	10	150	500
Sulphate ^U		7	4		44	1000	20000	50000
TDS		139	102		1048	4000	60000	100000
Phenol Index ^U		< 0.01	< 0.01		< 0.5	1	-	-
DOC ^U		14.5	9.7		101	500	800	1000
Leach Test Information								
Sample Mass (kg)				0.21				
Dry Matter (%)				83.1				
Moisture (%)				20.4				
Stage 1								
Volume Eluate L2 (litres)				0.31				
Filtered Eluate VE1 (litres)				0.13				

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



Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-08670	
LK Consult Limited	
Site Reference: Levenshulme Road , Gorton	
Project / Job Ref: LKC 22 1031	
Order No: LKC221031 - B2 - RP	
Reporting Date: 13/07/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
661471	SP201	None Supplied	None Supplied	21.7	Brown sandy clay with stones
661472	SP301	None Supplied	None Supplied	16.9	Brown sandy clay with stones
661473	TP201	None Supplied	0.40 - 0.90	21.6	Black loamy sand with vegetation and oil / petroleum
661474	TP201	None Supplied	0.90 - 1.20	22.7	Brown sandy clay
661475	TP201	None Supplied	1.20 - 1.80	20.8	Brown sandy clay
661476	TP201 Side 1	None Supplied	None Supplied	28.4	Black sandy clay with stones
661477	TP201 Side 2	None Supplied	None Supplied	37.4	Black loamy sand with vegetation
661478	TP201 Side 3	None Supplied	None Supplied	25.7	Black loamy sand with vegetation
661479	TP201 Side 4	None Supplied	None Supplied	23	Grey clay with stones
661480	TP201 Base	None Supplied	None Supplied	20.6	Brown clay
661481	Trench 1 Side 1	None Supplied	None Supplied	15	Brown sandy clay with stones and glass
661482	Trench 1 Side 2	None Supplied	None Supplied	13.8	Brown sandy clay with stones and vegetation
661483	Trench 1 Side 3	None Supplied	None Supplied	14.1	Brown sandy clay with stones and vegetation
661484	Trench 1 Side 4	None Supplied	None Supplied	12.6	Brown sandy clay with stones
661485	Trench 1 Base	None Supplied	None Supplied	28.6	Black loamy sand with stones and plastic

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

Insufficient Sample ^{1/5}

Unsuitable Sample ^{4/5}



DETS Ltd
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Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410



Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-08670

LK Consult Limited

Site Reference: Levenshulme Road , Gorton

Project / Job Ref: LKC 22 1031

Order No: LKC221031 - B2 - RP

Reporting Date: 13/07/2023

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



DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
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Water Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 23-08670

LK Consult Limited

Site Reference: Levenshulme Road, Gorton

Project / Job Ref: LKC 22 1031

Order No: LKC221031 - B2 - RP

Reporting Date: 13/07/2023

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



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



List of HWOL Acronyms and Operators	
DETS Report No: 23-08670	
LK Consult Limited	
Site Reference: Levenshulme Road , Gorton	
Project / Job Ref: LKC 22 1031	
Order No: LKC221031 - B2 - RP	
Reporting Date: 13/07/2023	

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
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 - C44 - HS_1D_MS+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 - C44 - 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 - Total >C5 - C35 - HS_1D_MS+EH_CU_1D_Total
TPH CWG - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
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	%

Appendix D

Certificates of Analysis – Water



2183

Final Report

Report No.: 22-43347-1
Initial Date of Issue: 30-Nov-2022
Client LK Consult
Client Address: Unit 29 Eton Business Park
Eton Hill Road
Radcliffe
Manchester
Lancashire
M26 2ZS
Contact(s): Contaminated Land
Michelle Thorniley
Project LKC 22 1031 Levenshulme Road,
Gorton

Quotation No.:		Date Received:	11-Nov-2022
Order No.:	740713	Date Instructed:	11-Nov-2022
No. of Samples:	3		
Turnaround (Wkdays):	10	Results Due:	24-Nov-2022
Date Approved:	30-Nov-2022		

Approved By:



Details: Stuart Henderson, Technical
Manager

Results - Water

Project: LKC 22 1031 Levenshulme Road, Gorton

Client: LK Consult	Chemtest Job No.:				22-43347	22-43347	22-43347
Quotation No.:	Chemtest Sample ID.:				1543388	1543389	1543390
	Client Sample ID.:				WS101	WS102	WS103
	Sample Location:				WS101	WS102	WS103
	Sample Type:				WATER	WATER	WATER
	Date Sampled:				09-Nov-2022	09-Nov-2022	09-Nov-2022
Determinand	Accred.	SOP	Units	LOD			
pH	U	1010		N/A	7.6	7.1	7.5
Sulphate	U	1220	mg/l	1.0	79	530	160
Cyanide (Total)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050
Cyanide (Free)	U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050
Calcium (Dissolved)	U	1455	mg/l	2.00	110	230	78
Total Hardness as CaCO3	U	1270	mg/l	15	460	990	500
Arsenic (Dissolved)	U	1455	µg/l	0.20	3.3	1.2	0.89
Boron (Dissolved)	U	1455	µg/l	10.0	150	230	130
Cadmium (Dissolved)	U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	µg/l	0.50	< 0.50	< 0.50	0.54
Copper (Dissolved)	U	1455	µg/l	0.50	13	1.1	12
Nickel (Dissolved)	U	1455	µg/l	0.50	6.4	5.8	3.9
Lead (Dissolved)	U	1455	µg/l	0.50	0.51	< 0.50	< 0.50
Selenium (Dissolved)	U	1455	µg/l	0.50	3.3	1.7	37
Vanadium (Dissolved)	U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)	U	1455	µg/l	2.5	130	< 2.5	4.6
Mercury Low Level	U	1460	µg/l	0.010	< 0.010	< 0.010	< 0.010
Chromium (Hexavalent)	U	1490	µg/l	20	< 20	< 20	< 20
Dissolved Organic Carbon	U	1610	mg/l	2.0	15	17	6.9
Aliphatic TPH >C5-C6	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C10-C12	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C12-C16	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C16-C21	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	1675	µg/l	10	< 10	< 10	< 10
Benzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Toluene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0

Results - Water

Project: LKC 22 1031 Levenshulme Road, Gorton

Client: LK Consult	Chemtest Job No.:				22-43347	22-43347	22-43347
Quotation No.:	Chemtest Sample ID.:				1543388	1543389	1543390
	Client Sample ID.:				WS101	WS102	WS103
	Sample Location:				WS101	WS102	WS103
	Sample Type:				WATER	WATER	WATER
	Date Sampled:				09-Nov-2022	09-Nov-2022	09-Nov-2022
Determinand	Accred.	SOP	Units	LOD			
Ethylbenzene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0
Naphthalene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Acenaphthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Fluorene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Phenanthrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Chrysene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	µg/l	0.010	< 0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	1800	µg/l	0.20	< 0.20	< 0.20	< 0.20
Total Phenols	U	1920	mg/l	0.030	0.032	< 0.030	< 0.030

TPH Interpretation

Job	Sample	Matrix	Location	Sample Ref	Sample ID	Sample Depth (m)	Gasoline / Diesel Present	TPH Interpretation
22-43347	1543388	W	WS101		WS101			N/A
22-43347	1543389	W	WS102		WS102			N/A
22-43347	1543390	W	WS103		WS103			N/A

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1270	Total Hardness of Waters	Total hardness	Calculation applied to calcium and magnesium results, expressed as mg l-1 CaCO3 equivalent.
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazine.
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1670	Total Petroleum Hydrocarbons (TPH) in Waters by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO	Pentane extraction / GC FID detection
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenzo[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Appendix E

Gas Monitoring Results



Equipment ¹		
Instrument	Serial Number	Comments
Gas Analyser GA5000	G507783	Serviced, calibrated, gas checked.
HydroTechnik	HT-04	Operating normally.
Pho-Check Tiger	T-106802	Serviced, calibrated.

[illegible]

ABBREVIATIONS	
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
ppm	Parts per million
mb	Millibars
l/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air

NOTES
All monitoring is carried out in line with LK Consult Ltd procedures, with reference to CIRIA C665.
¹ Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records and service certificates.
² CH4 is explosive between the range of 5-15%v/v. 100% lower explosive limit is equal to 5%v/v CH4.
³ Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr).



Equipment ¹		
Instrument	Serial Number	Comments
Gas Analyser GA5000	G502417	Serviced, calibrated, gas checked.
HydroTechnik	HT-04	Operating normally.
-	-	Serviced, calibrated.

[illegible]

ABBREVIATIONS	
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
ppm	Parts per million
mb	Millibars
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² CH4 is explosive between the range of 5-15%v/v. 100% lower explosive limit is equal to 5%v/v CH4.
³ Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr).



Equipment ¹		
Instrument	Serial Number	Comments
Gas Analyser GA5000	G507783	Serviced, calibrated, gas checked.
potech Oil-in-Water Interface Me	81454-14	Operating normally.
-	-	Serviced, calibrated.

Atmospheric / Ground Conditions	
Atmospheric pressure trend onsite	Rising
Atmospheric pressure (prev 24hrs)	Rising
Weather Conditions	Overcast, Dry, Slight breeze
Ground Conditions	Wet, Boggy

[illegible]

ABBREVIATIONS	
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
ppm	Parts per million
mb	Millibars
l/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air

NOTES
All monitoring is carried out in line with LK Consult Ltd procedures, with reference to CIRIA C665.
¹ Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records and service certificates.
² CH4 is explosive between the range of 5-15%v/v. 100% lower explosive limit is equal to 5%v/v CH4.
³ Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr).



Site	Levenshulme Road, Gorton
Job Number	LKC 22 1031
Date	14/12/2022
Engineer	RW
Visit	4 of 6

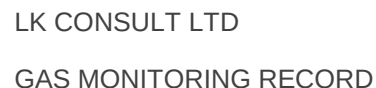
Equipment ¹		
Instrument	Serial Number	Comments
Gas Analyser GA5000	G507783	Serviced, calibrated, gas checked.
HydroTechnik	HT-01	Operating normally.

Atmospheric / Ground Conditions	
Atmospheric pressure trend onsite	Rising
Atmospheric pressure (prev 24hrs)	Falling
Weather Conditions	Sunny, still, cold
Ground Conditions	Frosty

[illegible]

ABBREVIATIONS	
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
ppm	Parts per million
mb	Millibars
l/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air

NOTES	
All monitoring is carried out in line with LK Consult Ltd procedures, with reference to CIRIA C665.	
¹ Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records and service certificates.	
² CH4 is explosive between the range of 5-15%v/v. 100% lower explosive limit is equal to 5%v/v CH4.	
³ Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr).	

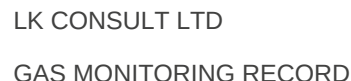


Equipment ¹		
Instrument	Serial Number	Comments
Gas Analyser GA5000	G502417	Serviced, calibrated, gas checked.
HydroTechnik	HT-04	Operating normally.
-	-	Serviced, calibrated.

[illegible]

ABBREVIATIONS	
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
ppm	Parts per million
mb	Millibars
l/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air

NOTES
All monitoring is carried out in line with LK Consult Ltd procedures, with reference to CIRIA C665.
¹ Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records and service certificates.
² CH4 is explosive between the range of 5-15%v/v. 100% lower explosive limit is equal to 5%v/v CH4.
³ Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr).



Equipment ¹		
Instrument	Serial Number	Comments
Gas Analyser GA5000	G502417	Serviced, calibrated, gas checked.
HydroTechnik	HT-03	Operating normally.
-		Serviced, calibrated.

Atmospheric / Ground Conditions	
Atmospheric pressure trend onsite	Steady
Atmospheric pressure (prev 24hrs)	Steady
Weather Conditions	Raining, slight breeze, mild
Ground Conditions	Damp

[illegible]

	ABBREVIATIONS
ND	Not detected
NR	Not recorded
UR	Unable to record
OS	Off recordable scale
N/A	Not applicable
ppm	Parts per million
mb	Millibars
l/hr	Litres per hour
mbgl	Metres below ground level
LEL	Lower explosive limit in air
P	Peak reading
S	Steady reading

NOTES
All monitoring is carried out in line with LK Consult Ltd procedures, with reference to CIRIA C665.
¹ Equipment is serviced and checked as recommended by the manufacturer. Refer to calibration records and service certificates.
² CH4 is explosive between the range of 5-15%v/v. 100% lower explosive limit is equal to 5%v/v CH4.
³ Flow readings are based on a 1 minute average value where flow is detected (equipment range of +/- 12 ltr/hr).

Appendix F

Certificates of Analysis – Geotechnical



LABORATORY REPORT



4043

Contract Number: PSL22/7129

Report Date: 18 November 2022

Client's Reference: LKC 22 1031

Client Name: LK Group
Eton Business Park
Eton Hill Road
Manchester
M26 2ZS

For the attention of: Rachel Peart

Contract Title: Levenshulme Road, Gorton

Date Received: 4/11/2022

Date Commenced: 4/11/2022

Date Completed: 18/11/2022

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

S Eyre
(Senior Technician)

T Watkins
(Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rgunson@prosoils.co.uk
awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
CP101	2	D	0.70		Brown slightly gravelly sandy CLAY.
CP101	4	B	1.70	2.00	Brown slightly gravelly sandy CLAY.
CP101	6	U	3.30	3.75	Very stiff brown slightly gravelly sandy CLAY.
CP101	13	U	10.00	10.45	Stiff brown slightly gravelly sandy CLAY.
CP102	2	D	1.00		Brown slightly gravelly sandy CLAY.
CP102	4	B	1.70	2.00	Brown slightly gravelly sandy CLAY.
CP102	8	U	4.30	4.75	Very stiff brown slightly gravelly sandy CLAY.
CP102	12	U	8.50	8.95	Stiff brown slightly gravelly sandy CLAY.
WS101	-	D	0.50	1.00	Brown slightly gravelly sandy CLAY.
WS102	-	D	1.20	1.60	Dark brown peaty CLAY.
WS103	-	D	0.50	1.00	Brown slightly gravelly sandy CLAY.
WS103	-	D	2.50	3.00	Brown slightly gravelly sandy CLAY.
WS103	-	D	4.50	5.00	Brown slightly gravelly very sandy CLAY.



4043

PSL
Professional Soils Laboratory

Levenshulme Road, Gorton

Contract No:

PSL22/7129

Client Ref:

LKC 22 1031

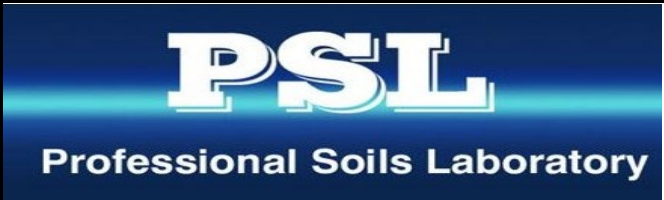
SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

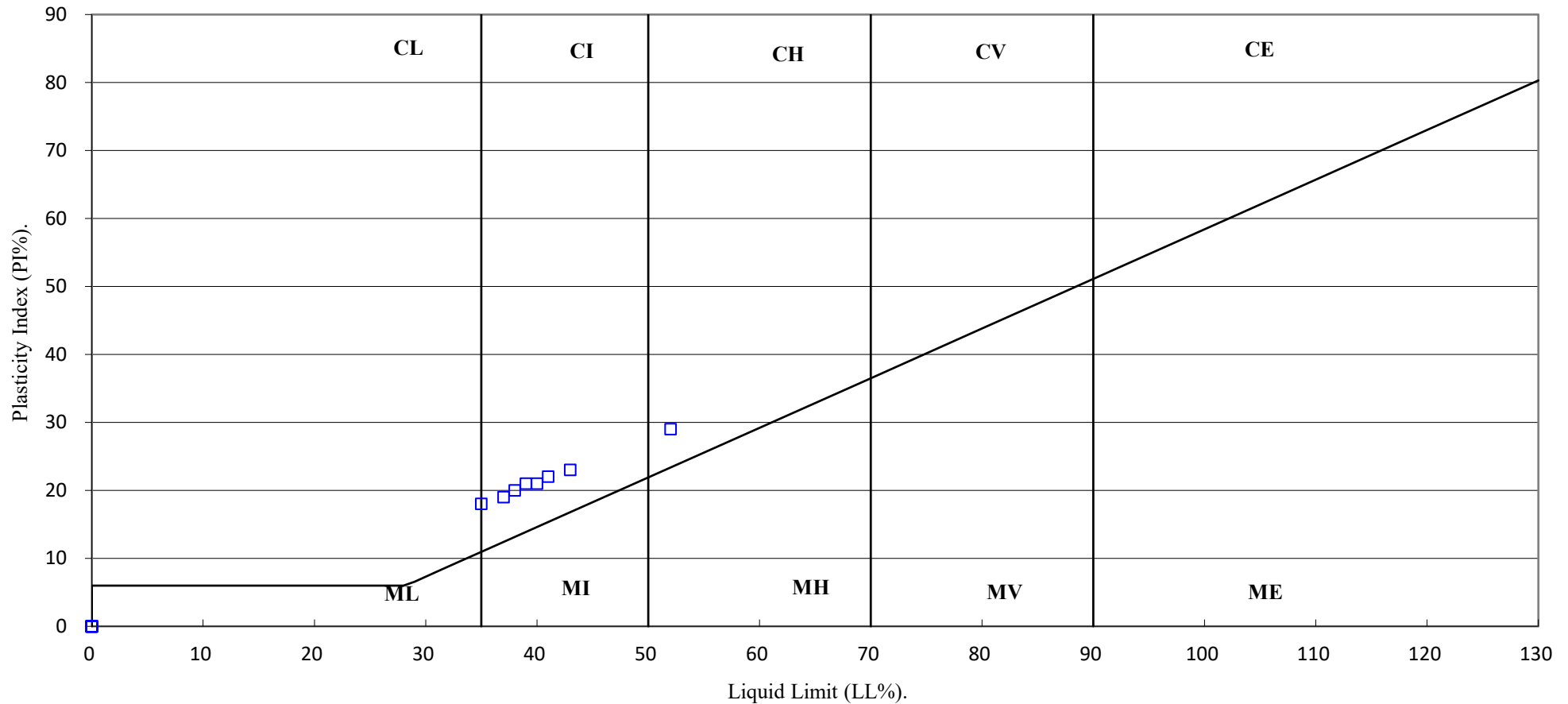
Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
CP101	2	D	0.70		19			43	20	23	97	Intermediate Plasticity CI
CP101	4	B	1.70	2.00	16			37	18	19	93	Intermediate Plasticity CI
CP102	2	D	1.00		26			52	23	29	90	High Plasticity CH
CP102	4	B	1.70	2.00	17			39	18	21	96	Intermediate Plasticity CI
WS101	-	D	0.50	1.00	22			41	19	22	97	Intermediate Plasticity CI
WS102	-	D	1.20	1.60	108			177	62	115	100	Extremely High Plasticity CE
WS103	-	D	0.50	1.00	18			38	18	20	97	Intermediate Plasticity CI
WS103	-	D	2.50	3.00	16			40	19	21	94	Intermediate Plasticity CI
WS103	-	D	4.50	5.00	18			35	17	18	95	Intermediate Plasticity CI

SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.

		Levenshulme Road, Gorton		Contract No:
				PSL22/7129
				Client Ref:
				LKC 22 1031

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL

Professional Soils Laboratory

Levenshulme Road, Gorton

Contract No:

PSL22/7129

Client Ref:

LKC 22 1031

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

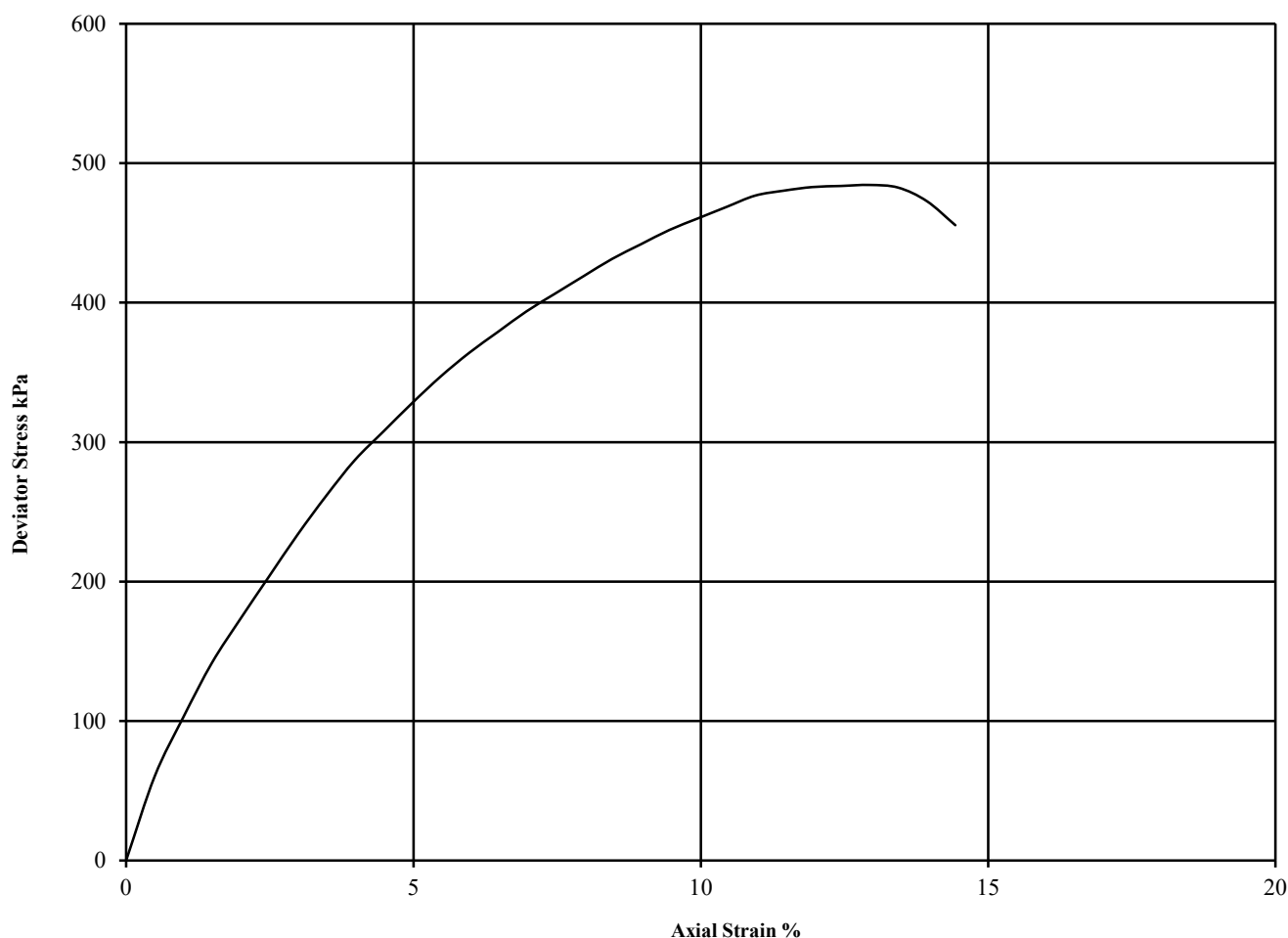
Hole Number: CP101

Top Depth (m): 3.30

Sample Number: 6

Base Depth (m): 3.75

Sample Type U



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.34 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	16	2.08	1.80	70	484	242	12.9	Brittle	



4043

PSL

Professional Soils Laboratory

Levenshulme Road, Gorton

Contract No:

PSL22/7129

Client Ref:

LKC 22 1031

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

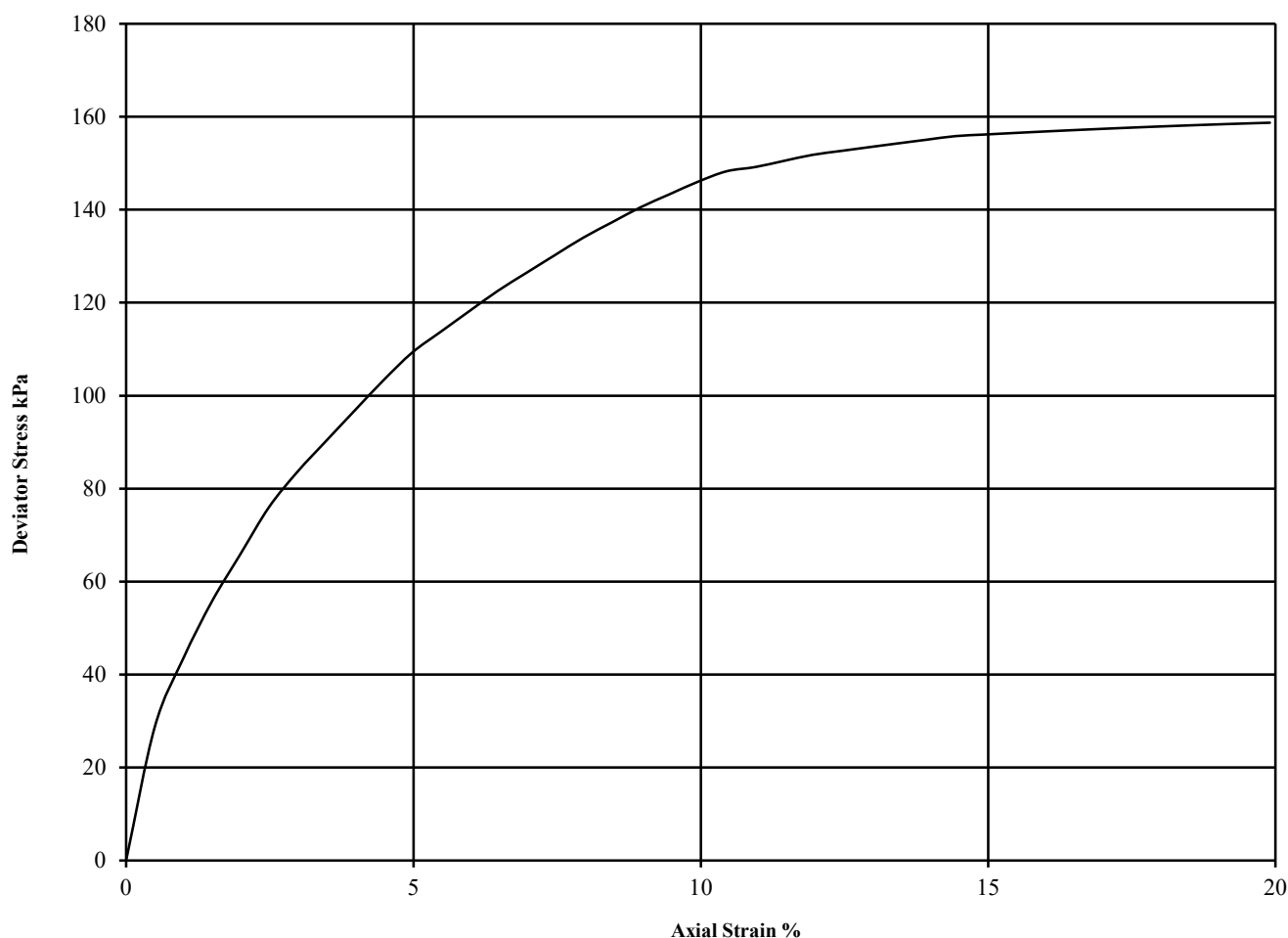
Hole Number: CP101

Top Depth (m): 10.00

Sample Number: 13

Base Depth (m): 10.45

Sample Type U



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	18	2.08	1.77	200	159	79	19.9	Plastic	



4043

PSL

Professional Soils Laboratory

Levenshulme Road, Gorton

Contract No:

PSL22/7129

Client Ref:

LKC 22 1031

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

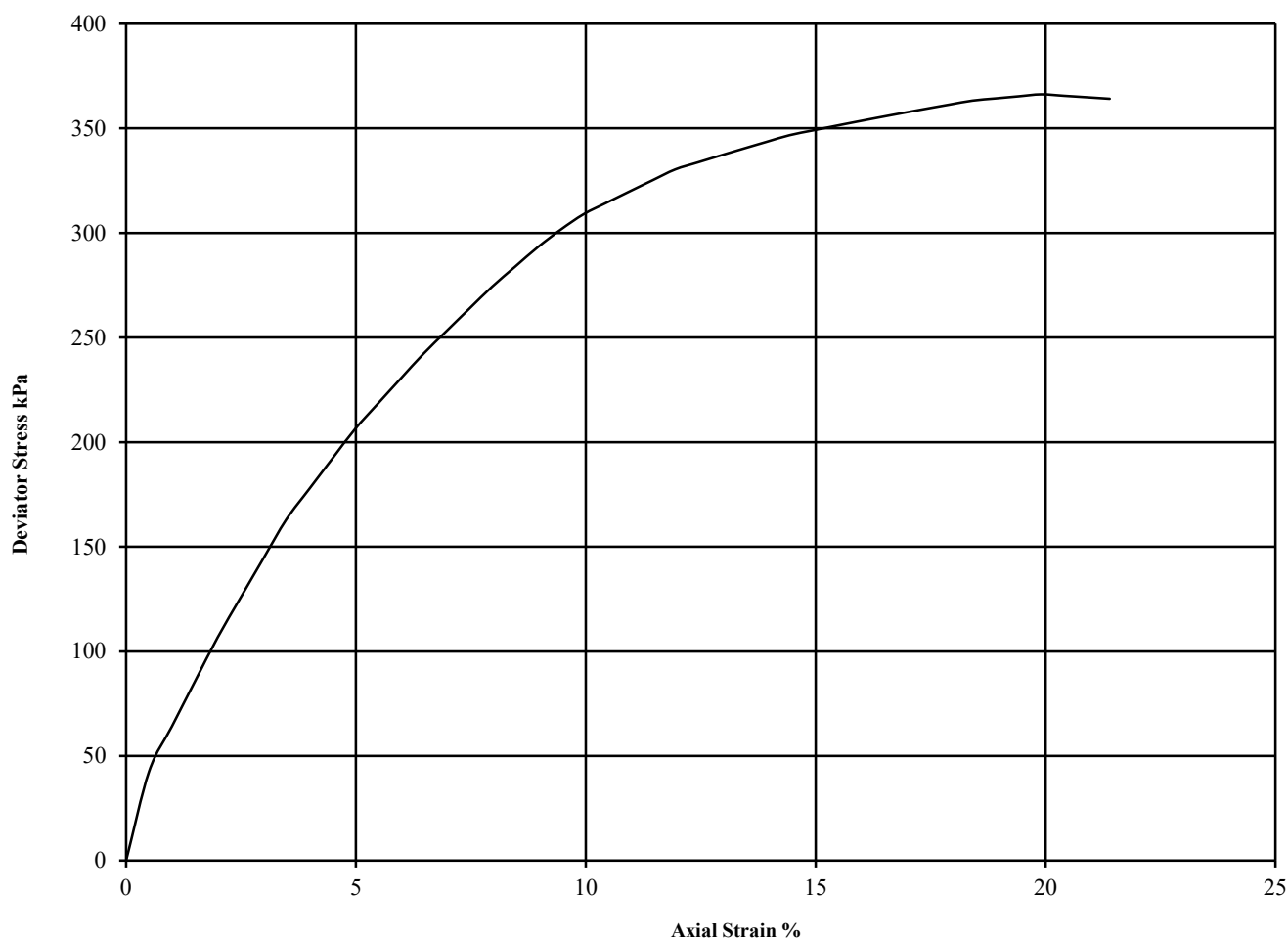
WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number: CP102 Top Depth (m): 4.30

Sample Number: 8 Base Depth (m): 4.75

Sample Type U



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	15	2.15	1.88	90	366	183	19.9	Intermediate	



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UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

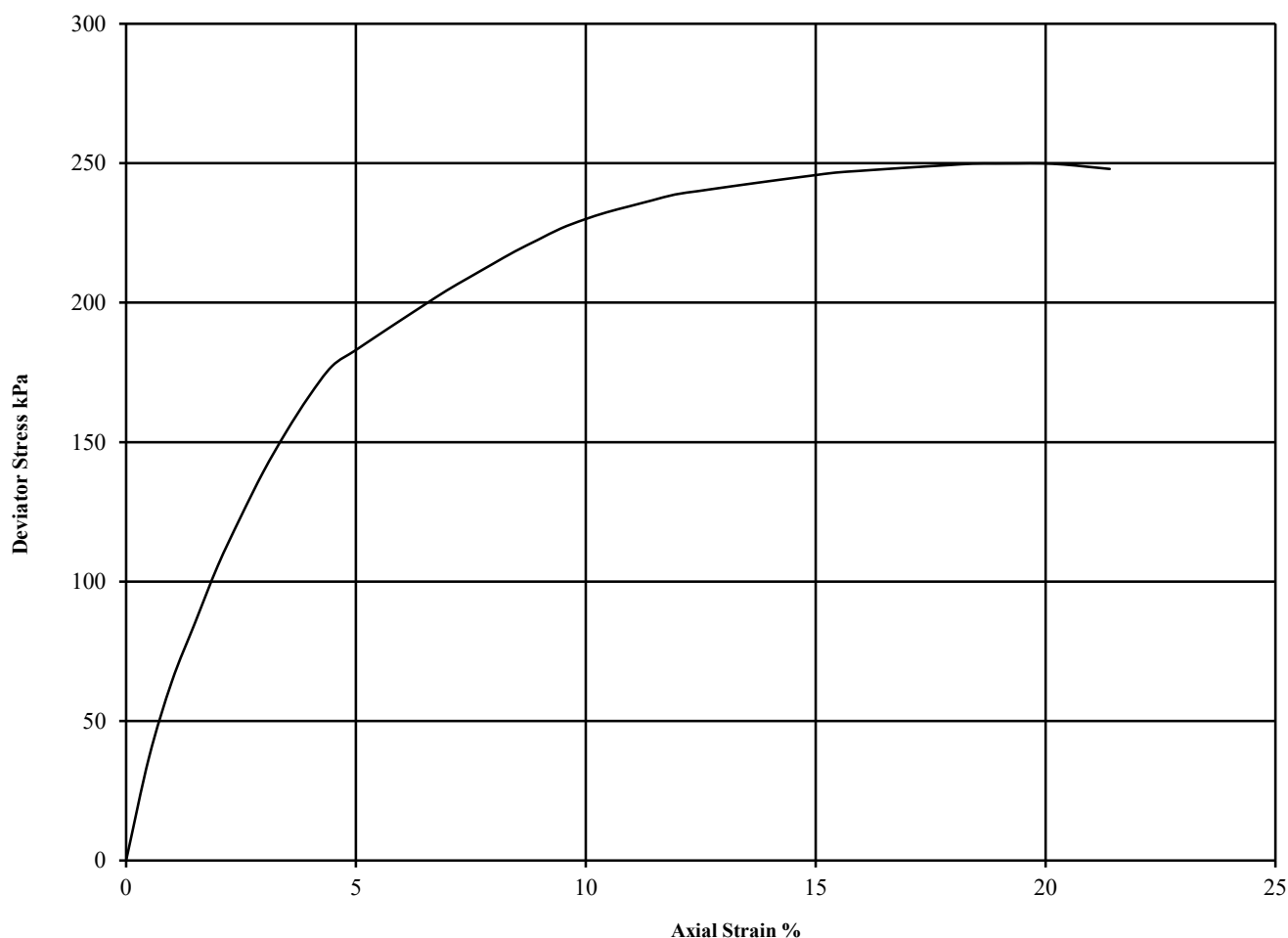
WITHOUT MEASUREMENT OF PORE PRESSURE

BS1377 : Part7 : 1990: Clause 8

Hole Number: CP102 Top Depth (m): 8.50

Sample Number: 12 Base Depth (m): 8.95

Sample Type U



Diameter (mm):		103	Height (mm):		207	Test:	UU Single Stage		Remarks:
Specimen	Moisture Content (%)	Bulk Density (Mg/m3)	Dry Density (Mg/m3)	Cell Pressure (kPa)	Corr. Max. Deviator Stress (kPa)	Shear Strength Cu (kPa)	Failure Strain (%)	Mode of Failure	Undisturbed Sample Sample taken from top of tube Rate of strain = 2 %/min Latex Membrane used 0.2 mm thick, Correction applied 0.33 See summary of soil descriptions
				θ_3	$(\theta_1 - \theta_3)_f$	$\frac{1}{2}(\theta_1 - \theta_3)_f$			
1	20	2.04	1.70	175	250	125	19.9	Plastic	



4043

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Professional Soils Laboratory

Levenshulme Road, Gorton

Contract No:

PSL22/7129

Client Ref:

LKC 22 1031

ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: CP101

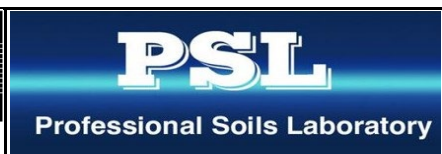
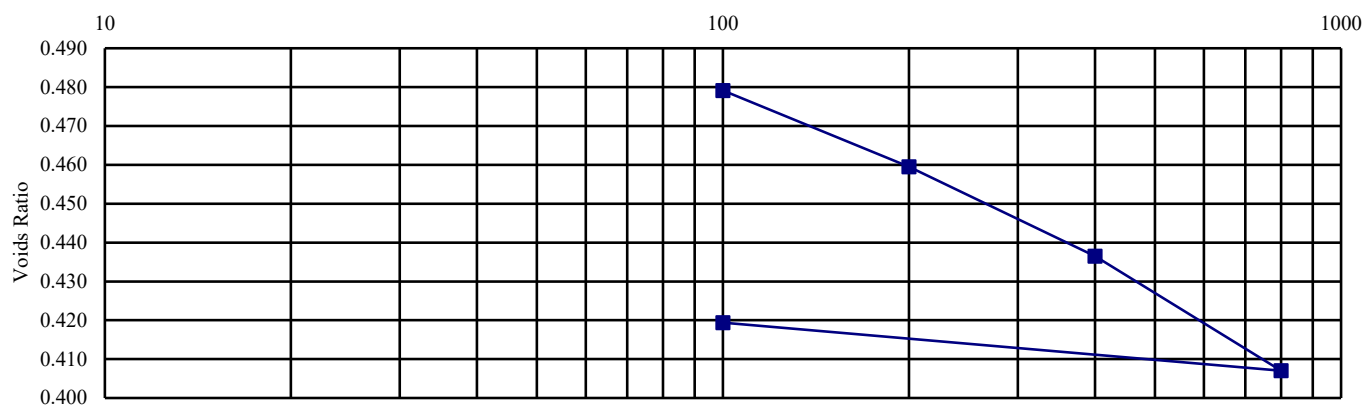
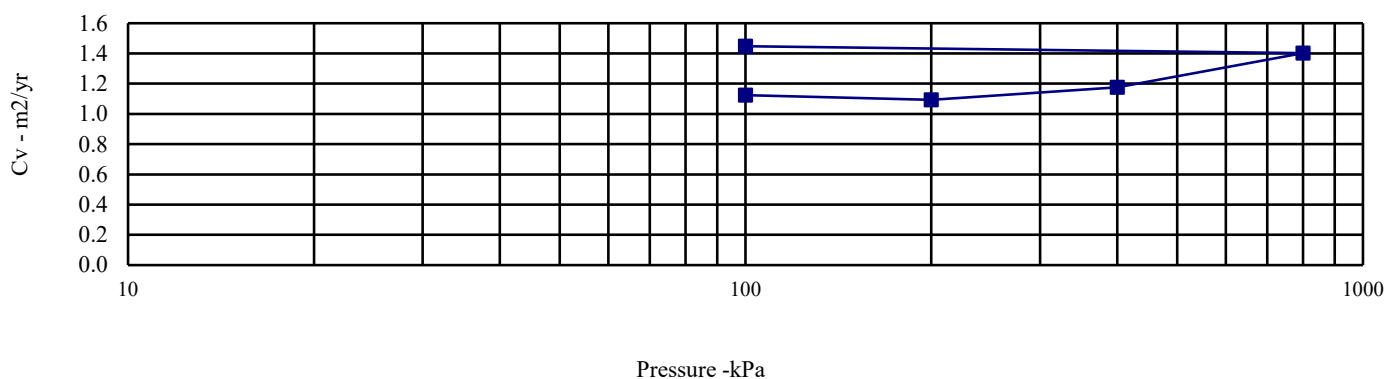
Top Depth (m): 10.00

Sample Number: 13

Base Depth (m) : 10.45

Sample Type: U

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	
Moisture Content (%):	19	kPa		m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.09	0	100	0.217	1.124	Method used to	
Dry Density (Mg/m3):	1.75	100	200	0.133	1.093	determine CV:	T90
Voids Ratio:	0.512	200	400	0.079	1.175	Nominal temperature	
Degree of saturation:	100.7	400	800	0.051	1.403	during test ' C:	20
Height (mm):	20.004	800	100	0.013	1.448	Remarks:	
Diameter (mm)	75.023					See summary of soil descriptions	
Particle Density (Mg/m3):	2.65						
Assumed							



Levenshulme Road, Gorton

Contract No:
PSL22/7129
Client Ref:
LKC 22 1031

ONE DIMENSIONAL CONSOLIDATION TEST

BS 1377: Part 5: 1990: Clause 3

Hole Number: CP102

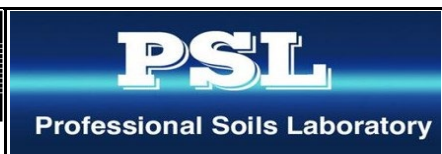
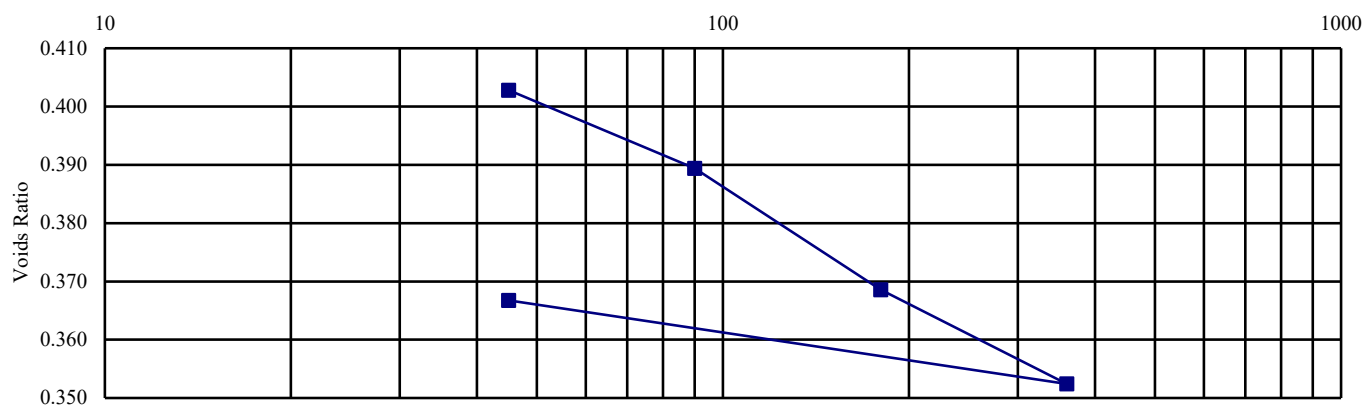
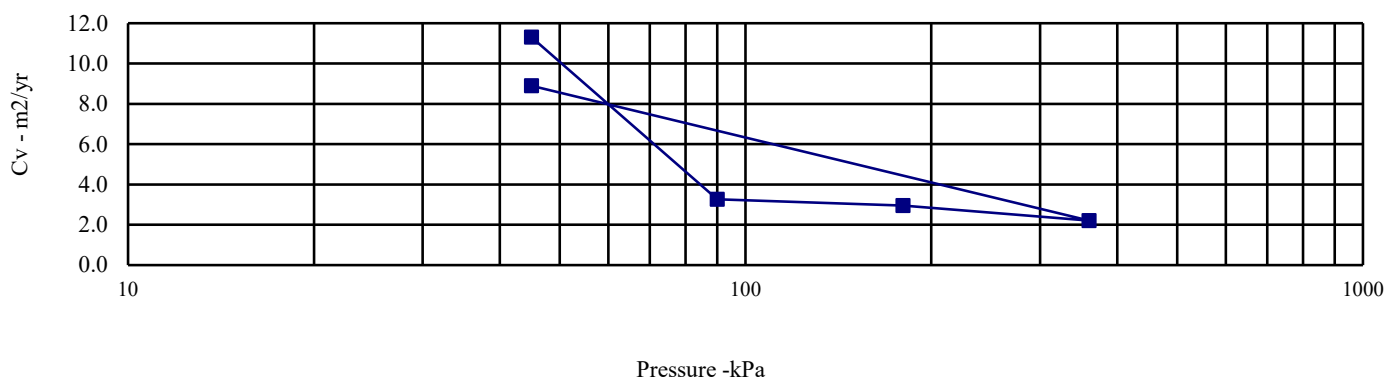
Top Depth (m): 4.30

Sample Number: 8

Base Depth (m) : 4.75

Sample Type: U

Initial Conditions		Pressure Range		Mv	Cv	Specimen location	
Moisture Content (%):	15	kPa		m2/MN	m2/yr	within tube:	Top
Bulk Density (Mg/m3):	2.15	0	45	0.315	11.311	Method used to	
Dry Density (Mg/m3):	1.86	45	90	0.213	3.269	determine CV:	T90
Voids Ratio:	0.423	90	180	0.167	2.949	Nominal temperature	
Degree of saturation:	96.7	180	360	0.066	2.210	during test ' C:	20
Height (mm):	20.016	360	45	0.034	8.893	Remarks:	
Diameter (mm)	75.013					See summary of soil descriptions	
Particle Density (Mg/m3):	2.65						
Assumed							



Levenshulme Road, Gorton

Contract No:
PSL22/7129
Client Ref:
LKC 22 1031

Appendix G

Generic Assessment Criteria Values

Summary of Category 4 Screening Levels: 2015

Substance	Residential (with home- grown produce)	Residential (without home- grown produce)	Allotments	Commercial	Public Open Space 1	Public Open Space 2
Arsenic	37 mg/kg	40 mg/kg	49 mg/kg	640 mg/kg	79 mg/kg	170 mg/kg
Benzene	0.87 mg/kg	3.3 mg/kg	0.18 mg/kg	98 mg/kg	140 mg/kg	230 mg/kg
Benzo(a)pyrene	5.0 mg/kg	5.3 mg/kg	5.7 mg/kg	77 mg/kg	10 mg/kg	21 mg/kg
Cadmium	22 mg/kg	150 mg/kg	3.9 mg/kg	410 mg/kg	220 mg/kg	880 mg/kg
Chromium VI	21 mg/kg	21 mg/kg	170 mg/kg	49 mg/kg	21 mg/kg	250 mg/kg
Lead	200 mg/kg	310 mg/kg	80 mg/kg	2300 mg/kg	630 mg/kg	1300 mg/kg

Summary Table for the Generic Assessment Criteria for Human Health Risk Assessment Land Quality Management (LQM) S4ULs.

All GAC are based on sandy loam soils with a pH 7.

		LQM Generic Assessment Criteria (mg/kg) Dry weight soil						
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Metals	Inorganic Arsenic	6%	37	40	43	640	79	170
	Beryllium	6%	1.7	1.7	35	12	2.2	63
	Boron	6%	290	11,000	45	240,000	21,000	46,000
	Cadmium	6%	11	85	1.9	190	120	532
	Chromium (III)	6%	910	910	18,000	8,600	1,500	33,000
	Chromium (VI)	6%	6.0	6.0	1.8	33	7.7	220
	Copper	6%	2,400	7,100	520	68,000	12,000	44,000
	Elemental Mercury	6%	1.2	1.2	21	58 (25.8) ^{vap}	16	30 (25.8) ^{vap}
	Inorganic Mercury	6%	40	56	19	1,100	120	240
	Methylmercury	6%	11	15	6.0	320	40	68
	Nickel	6%	180	180	230	980	230	3,400
	Selenium	6%	250	430	88	12,000	1,100	1,800
	Vanadium	6%	410	1,200	91	9,000	2,000	5,000
	Zinc	6%	3,700	40,000	620	730,000	81,000	170,000
BTEX Compounds	Benzene	1%	0.087	0.38	0.017	27	72	90
		2.5%	0.17	0.70	0.034	47	72	100
		6%	0.37	1.4	0.075	90	73	110
	Toluene	1%	130	880 (869) ^{vap}	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}
		2.5%	290	1,900	51	110,000 (1,920) ^{vap}	56,000	95,000 (1,920) ^{vap}
		6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360) ^{vap}
	Ethylbenzene	1%	47	83	16	5,700 (518) ^{vap}	24,000	17,000 (518) ^{vap}
		2.5%	110	190	39	13,000 (1,220) ^{vap}	24,000	22,000 (1,220) ^{vap}
		6%	260	440	91	27,000 (2,840) ^{vap}	25,000	27,000 (2,840) ^{vap}
	o-xylene	1%	60	88	28	6,600 (478) ^{sol}	41,000	17,000 (478) ^{sol}
		2.5%	140	210	67	15,000 (1,120) ^{sol}	42,000	24,000 (1,120) ^{sol}
		6%	330	480	160	33,000 (2,620) ^{sol}	43,000	33,000 (2,620) ^{sol}
	m-xylene	1%	59	82	31	6,200 (625) ^{vap}	41,000	17,000 (625) ^{vap}
		2.5%	140	190	74	14,000 (1,470) ^{vap}	42,000	24,000 (1,470) ^{vap}
		6%	320	450	170	31,000 (3,460) ^{vap}	43,000	32,000 (3,460) ^{vap}
	p-xylene	1%	56	79	29	5,900 (576) ^{sol}	41,000	17,000 (576) ^{sol}
		2.5%	130	180	69	14,000 (1,350) ^{sol}	42,000	23,000 (1,350) ^{sol}
		6%	310	430	160	30,000 (3,170) ^{sol}	43,000	31,000 (3,170) ^{sol}

NOTES

^{sol/vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

f = oral, dermal and inhalation exposures compared to oral HCV.

All GAC are based on sandy loam soils with a pH 7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Polycyclic Aromatic Hydrocarbons (PAHs)	Acenaphthene	1%	210	3,000 (57.1) ^{sol}	34	84,000 (57.0) ^{sol}	15,000	29,000
		2.5%	510	4,700 (141) ^{sol}	85	97,000 (141) ^{sol}	15,000	30,000
		6%	1,100	6,000 (336) ^{sol}	200	100,000	15,000	30,000
	Acenaphthylene	1%	170	2,900 (86.1) ^{sol}	28	83,000 (86.1) ^{sol}	15,000	29,000
		2.5%	420	4,600 (212) ^{sol}	69	97,000 (212) ^{sol}	15,000	30,000
		6%	920	6,000 (506) ^{sol}	160	100,000	15,000	30,000
	Anthracene	1%	2,400	31,000 (1.17) ^{vap}	380	520,000	74,000	150,000
		2.5%	5,400	35,000	950	540,000	74,000	150,000
		6%	11,000	37,000	2,200	540,000	74,000	150,000
	Benz(a)anthracene	1%	7.2	11	2.9	170	29	49
		2.5%	11	14	6.5	170	29	56
		6%	13	15	13	180	29	62
	Benzo(a)pyrene (only)	1%	2.2	3.2	0.97	35	5.7	11
		2.5%	2.7	3.2	2.0	35	5.7	12
		6%	3.0	3.2	3.5	36	5.7	13
	Benzo(b)fluoranthene	1%	2.6	3.9	0.99	44	7.1	13
		2.5%	3.3	4.0	2.1	44	7.2	15
		6%	3.7	4.0	3.9	45	7.2	16
	Benzo(ghi)perylene	1%	320	360	290	3,900	640	1,400
		2.5%	340	360	470	4,000	640	1,500
		6%	350	360	640	4,000	640	1,600
	Benzo(k)fluoranthene	1%	77	110	37	1,200	190	370
		2.5%	93	110	75	1,200	190	410
		6%	100	110	130	1,200	190	440
	Chrysene	1%	15	30	4.1	350	57	93
		2.5%	22	31	9.4	350	57	110
		6%	27	32	19	350	57	120
	Dibenzo(ah)anthracene	1%	0.24	0.31	0.14	3.5	0.57	1.1
		2.5%	0.28	0.32	0.27	3.6	0.58	1.3
		6%	0.3	0.32	0.43	3.6	0.58	1.4
	Fluoranthene	1%	280	1,500	52	23,000	3,100	6,300
		2.5%	560	1,600	130	23,000	3,100	6,300
		6%	890	1,600	290	23,000	3,100	6,400
	Fluorene	1%	170	2,800 (36.0) ^{sol}	27	63,000 (30.9) ^{sol}	9,900	20,000
		2.5%	400	3,800 (76.5) ^{sol}	67	68,000	9,900	20,000
		6%	860	4,500 (183) ^{sol}	160	71,000	9,900	20,000
	Indeno(123-cd)pyrene	1%	27	45	9.5	500	82	150
		2.5%	36	46	21	510	82	170
		6%	41	46	39	510	82	180
	Naphthalene	1%	2.3 ^f	2.3 ^f	4.1 ^f	190 ^f (76.4) ^{sol}	4,900 ^f	1,200 ^f (76.4) ^{sol}
		2.5%	5.6 ^f	5.6 ^f	10 ^f	460 ^f (183) ^{sol}	4,900 ^f	1,900 ^f (183) ^{sol}
		6%	13 ^f	13 ^f	24 ^f	1,100 ^f (432) ^{sol}	4,900 ^f	3,000
	Phenanthrene	1%	95	1,300 (36.0) ^{sol}	15	22,000	3,100	6,200
		2.5%	220	1,500	38	22,000	3,100	6,200
		6%	440	1,500	90	22,000	3,100	6,300
	Pyrene	1%	620	3,700	110	54,000	7,400	15,000
		2.5%	1,200	3,800	270	54,000	7,400	15,000
		6%	2,000	3,800	620	54,000	7,400	15,000
Coal Tar (B(a)P as surrogate marker)	1%	0.79	1.2	0.32	15	2.2	4.4	
	2.5%	0.98	1.2	0.67	15	2.2	4.7	
	6%	1.1	1.2	1.2	15	2.2	4.8	

NOTES

^{sol}/^{vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

^f = naphthalene is based on comparison of inhalation exposure with TDI_{inhal} for localised effect.

All GAC are based on sandy loam soils with a pH 7.

LQM Generic Assessment Criteria (mg/kg) Dry weight soil

Contaminant	SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Aliphatic							
EC 5-6	1%	42	42	730	3,200 (304) ^{sol}	570,000(304) ^{sol}	95,000 (304) ^{sol}
EC>6-8	1%	100	100	2,300	7,800 (144) ^{sol}	600,000	150,000 (144) ^{sol}
EC>8-10	1%	27	27	320	2,000 (78) ^{sol}	13,000	14,000 (78) ^{vap}
EC>10-12	1%	130 (48) ^{vap}	130 (48) ^{vap}	2,200	9,700 (48) ^{sol}	13,000	21,000 (48) ^{vap}
EC>12-16	1%	1,100 (24) ^{sol}	1,100 (24) ^{sol}	11,000	59,000 (24) ^{sol}	13,000	25,000 (24) ^{sol}
EC>16-35	1%	65,000 (8.48) ^{f, sol}	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f
EC>35-44	1%	65,000 (8.48) ^{f, sol}	65,000 (8.48) ^{f, sol}	260,000 ^f	160,000 ^f	250,000 ^f	450,000 ^f
Aliphatic							
EC 5-6	2.5%	78	78	1,700	5,900 (558) ^{sol}	590,000	130,000 (558) ^{sol}
EC>6-8	2.5%	230	230	5,600	17,000 (322) ^{sol}	610,000	220,000 (322) ^{sol}
EC>8-10	2.5%	65	65	770	4,800 (190) ^{vap}	13,000	18,000 (190) ^{vap}
EC>10-12	2.5%	330 (118) ^{vap}	330 (118) ^{vap}	4,400	23,000 (118) ^{vap}	13,000	23,000 (118) ^{vap}
EC>12-16	2.5%	2,400 (59) ^{sol}	2,400 (59) ^{sol}	13,000	82,000 (59) ^{sol}	13,000	25,000 (59) ^{sol}
EC>16-35	2.5%	92,000 (21) ^{f, sol}	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f
EC>35-44	2.5%	92,000 (21) ^{f, sol}	92,000 (21) ^{f, sol}	270,000 ^f	1,700,000 ^f	250,000 ^f	480,000 ^f
Aliphatic							
EC 5-6	6%	160	160	3,900	12,000 (1,150) ^{sol}	600,000	180,000 (1,150) ^{sol}
EC>6-8	6%	530	530	13,000	40,000 (736) ^{sol}	620,000	320,000 (736) ^{sol}
EC>8-10	6%	150	150	1,700	11,000 (451) ^{vap}	13,000	21,000 (451) ^{vap}
EC>10-12	6%	760 (283) ^{vap}	760 (283) ^{vap}	7,300	47,000 (283) ^{vap}	13,000	24,000 (283) ^{vap}
EC>12-16	6%	4,300 (142) ^{sol}	4,400 (142) ^{sol}	13,000	90,000 (142) ^{sol}	13,000	26,000 (142) ^{sol}
EC>16-35	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f
EC>35-44	6%	110,000 ^f	110,000 ^f	270,000 ^f	1,800,000 ^f	250,000 ^f	490,000 ^f
Aromatic							
EC5-7(benzene as non-threshold)	1%	70	370	13	26,000 (1,220) ^{sol}	56,000	76,000 (1,220) ^{sol}
EC>7-8(toluene)	1%	130	860	22	56,000 (869) ^{vap}	56,000	87,000 (869) ^{vap}
EC>8-10	1%	34	47	8.6	3,500 (613) ^{vap}	5,000	7,200 (613) ^{vap}
EC>10-12	1%	74	250	13	16,000 (364) ^{sol}	5,000	9,200 (364) ^{sol}
EC>12-16	1%	140	1,800	23	36,000 (169) ^{sol}	5,100	10,000
EC>16-21	1%	260 ^f	1,900 ^f	46 ^f	28,000 ^f	3,800 ^f	7,600 ^f
EC>21-35	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>35-44	1%	1,100 ^f	1,900 ^f	370 ^f	28,000 ^f	3,800 ^f	7,800 ^f
Aromatic							
EC5-7(benzene as non-threshold)	2.5%	140	690	27	46,000 (2,260) ^{sol}	56,000	84,000 (2,260) ^{sol}
EC>7-8(toluene)	2.5%	290	1,800	51	110,000 (1,920) ^{sol}	56,000	95,000 (1,920) ^{sol}
EC>8-10	2.5%	83	110	21	8,100 (1,500) ^{vap}	5,000	8,500 (1,500) ^{vap}
EC>10-12	2.5%	180	590	31	28,000 (899) ^{sol}	5,000	9,700 (899) ^{sol}
EC>12-16	2.5%	330	2,300 (419) ^{sol}	57	37,000	5,100	10,000
EC>16-21	2.5%	540 ^f	1,900 ^f	110 ^f	28,000 ^f	3,800 ^f	7,700 ^f
EC>21-35	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>35-44	2.5%	1,500 ^f	1,900 ^f	820 ^f	28,000 ^f	3,800 ^f	7,800 ^f
Aromatic							
EC5-7(benzene as non-threshold)	6%	300	1,400	57	86,000 (4,710) ^{sol}	56,000	92,000 (4,710) ^{sol}
EC>7-8(toluene)	6%	660	3,900	120	180,000 (4,360) ^{vap}	56,000	100,000 (4,360) ^{vap}
EC>8-10	6%	190	270	51	17,000 (3,580) ^{vap}	5,000	9,300 (3,580) ^{vap}
EC>10-12	6%	380	1,200	74	34,000(2,150) ^{sol}	5,000	10,000
EC>12-16	6%	660	2,500	130	38,000	5,100	10,000
EC>16-21	6%	930 ^f	1,900 ^f	260 ^f	28,000 ^f	3,800 ^f	7,800 ^f
EC>21-35	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f
EC>35-44	6%	1,700 ^f	1,900 ^f	1,600 ^f	28,000 ^f	3,800 ^f	7,900 ^f
Aliphatic	1%	1,600 ^f	1,900 ^f	1,200 ^f	28,000 ^f	3,800 ^f	7,800 ^f
+Aromatic	2.5%	1,800 ^f	1,900 ^f	2,100 ^f	28,000 ^f	3,800 ^f	7,800 ^f
>EC44	6%	1,900 ^f	1,900 ^f	3,000 ^f	28,000 ^f	3,800 ^f	7,900 ^f

NOTES

^{sol}/^{vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

^f = oral, dermal and inhalation exposures compared to oral HCV.

All GAC are based on sandy loam soils with a pH 7.

		LQM Generic Assessment Criteria (mg/kg) Dry weight soil						
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Chloalkanes and Alkenes & Explosives	1,2 Dichloroethane (DCA)	1%	7.1E-03	9.2E-03	4.6E-03	0.67	29	21
		2.5%	1.1E-02	1.3E-02	8.3E-03	0.97	29	24
		6%	1.9E-02	2.3E-02	1.6E-02	1.7	29	28
	1,1,1 Trichloroethane (TCA)	1%	8.8	9.0	48	660	140,000	57,000 (1,425) ^{vap}
		2.5%	18	18	110	1,300	140,000	76,000 (2,915) ^{vap}
		6%	39	40	240	3,000	140,000	100,000 (6,392) ^{vap}
	1,1,2,2-Tetrachloroethanes (PCA)	1%	1.6	3.9	0.41	270	1,400	1,800
		2.5%	3.4	8.0	0.89	550	1,400	2,100
		6%	7.5	17	2.0	1,100	1,400	2,300
	1,1,1,2-Tetrachloroethanes (PCA)	1%	1.2	1.5	0.79	110	1,400	1,500
		2.5%	2.8	3.5	1.9	250	1,400	1,800
		6%	6.4	8.2	4.4	560	1,400	2,100
	Tetrachloroethene (PCE)	1%	0.18	0.18	0.65	19	1,400	810 (424) ^{sol}
		2.5%	0.39	0.40	1.5	42	1,400	1,100 (951) ^{sol}
		6%	0.90	0.92	3.6	95	1,400	1,500
	Tetrachloromethane (carbon tetrachloride)	1%	2.6E-02	2.6E-02	0.45	2.9	890	190
		2.5%	5.6E-02	5.6E-02	1.0	6.3	920	270
		6%	0.13	0.13	2.4	14	950	400
	Trichloroethene (TCE)	1%	1.6E-02	1.7E-02	4.1E-02	1.2	120	70
		2.5%	3.4E-02	3.6E-02	9.1E-02	2.6	120	91
		6%	7.5E-02	8.0E-02	0.21	5.7	120	120
	Trichloromethane (chloroform)	1%	0.91	1.2	0.42	99	2,500	2,600
		2.5%	1.7	2.1	0.83	170	2,500	2,800
		6%	3.4	4.2	1.7	350	2,500	3,100
	Chloroethene (vinyl chloride)	1%	6.4E-04	7.7E-04	5.5E-04	5.9E-02	3.5	4.8
		2.5%	8.7E-04	1.0E-03	1.0E-03	7.7E-02	3.5	5.0
		6%	1.4E-03	1.5E-03	1.8E-03	0.12	3.5	5.4
	2,4,6-Trinitrotoluene (TNT)	1%	1.6	65	0.24	1,000	130	260
		2.5%	3.7	66	0.58	1,000	130	270
		6%	8.1	66	1.4	1,000	130	270
	RDX	1%	120	13,000	17	210,000	26,000	49,000 (18.7) ^{sol}
		2.5%	250	13,000	38	210,000	26,000	51,000
		6%	540	13,000	85	210,000	27,000	53,000
	HMX	1%	5.7	6,700	0.86	110,000	13,000	23,000 (0.35) ^{vap}
		2.5%	13	6,700	1.9	110,000	13,000	23,000 (0.39) ^{vap}
		6%	26	6,700	3.9	110,000	13,000	24,000 (0.48) ^{vap}
Pesticides	Aldrin	1%	5.7	7.3	3.2	170	18	30
		2.5%	6.6	7.4	6.1	170	18	31
		6%	7.1	7.5	9.8	170	18	31
	Dieldrin	1%	0.97	7.0	0.17	170	18	30
		2.5%	2.0	7.3	0.41	170	18	30
		6%	3.5	7.4	0.96	170	18	31
	Atrazine	1%	3.3	610	0.5	9,300	1,200	2,300
		2.5%	7.8	620	1.2	9,400	1,200	2,400
		6%	17.4	620	2.7	9,400	1,200	2,400
	Dichlorvos	1%	3.2E-02	6.4	4.9E-03	140	16	26
		2.5%	6.6E-02	6.5	1.0E-02	140	16	26
		6%	0.14	6.6	2.2E-02	140	16	27
	Endosulfans (2 isomers)	1%	7.4	160 (3.0E-03) ^{vap}	1.2	5,600 (3.0E-03) ^{vap}	1,200	2,300
		2.5%	18	280 (7.0E-03) ^{vap}	2.9	7,400 (7.0E-03) ^{vap}	1,200	2,400
		6%	41	410 (1.6E-02) ^{vap}	6.8	8,400 (1.6E-02) ^{vap}	1,200	2,500
	Hexachlorocyclohexane (3 isomers), inc Lindane	1%	8.5E-02	3.7	1.3E-02	65	8.1	15
		2.5%	0.2	3.8	3.2E-02	65	8.1	15
		6%	0.46	3.8	7.7E-02	65	8.1	16

NOTES

^{sol} / ^{vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

All GAC are based on
sandy loam soils with a pH
7.

All GAC are based on sandy loam soils with a pH 7.			LQM Generic Assessment Criteria (mg/kg) Dry weight soil					
Contaminant		SOM	Res +	Res -	Allot.	Comm.	POS _{resi}	POS _{park}
Chlorobenzenes	Chlorobenzene	1%	0.46	0.46	5.9	56	11,000	1,300 (675) ^{sol}
		2.5%	1.0	1.0	14	130	13,000	2,000 (1,520) ^{sol}
		6%	2.4	2.4	32	290	14,000	2,900
	Dichlorobenzenes (3 isomers)	1%	23	24	94	2,000 (571) ^{sol}	90,000	24,000 (571) ^{sol}
		2.5%	55	57	230	4,800 (1,370) ^{sol}	95,000	36,000 (1,370) ^{sol}
		6%	130	130	540	11,000 (3,240) ^{sol}	98,000	51,000 (3,270) ^{sol}
	Trichlorobenzenes (3 isomers)	1%	2.6	2.6	55	220	15,000	1,700 (318) ^{vap}
		2.5%	6.4	6.4	140	530	17,000	2,600 (786) ^{vap}
		6%	15	15	320	1,300	19,000	4,000 (1,880) ^{vap}
	Tetrachlorobenzenes (3 isomers)	1%	0.66	0.75	0.38	49 (39.4) ^{vap}	78	110 (39) ^{vap}
		2.5%	1.6	1.9	0.90	120 (98.1) ^{vap}	79	120
		6%	3.7	4.3	2.2	240 (235) ^{vap}	79	130
	Pentachlorobenzene	1%	5.8	19	1.2	640 (43.0) ^{sol}	100	190
		2.5%	12	30	3.1	770 (107) ^{sol}	100	190
		6%	22	38	7.0	830	100	190
	Hexachlorobenzene	1%	1.8 (0.20) ^{vap}	4.1 (0.20) ^{vap}	0.47	110 (0.20) ^{vap}	16	30
		2.5%	3.3 (0.50) ^{vap}	5.7 (0.50) ^{vap}	1.1	120	16	30
		6%	4.9	6.7 (1.2) ^{vap}	2.5	120	16	30
Chlorophenol	Chlorophenols (4 congeners)	1%	0.87 ^g	94	0.13 ^g	3,500	620	1,100
		2.5%	2.0	150	0.30	4,000	620	1,100
		6%	4.5	210	0.70	4,300	620	1,100
	Pentachlorophenol	1%	0.22	27 (16.4) ^{vap}	3.0E-02	400	60	110
		2.5%	0.52	29	8.0E-02	400	60	120
		6%	1.2	31	0.19	400	60	120
Others	Carbon Disulphide	1%	0.14	0.14	4.8	11	11,000	1,300
		2.5%	0.29	0.29	10	22	11,000	1,900
		6%	0.62	0.62	23	47	11,000	2,700
	Hexachlorobutadiene	1%	0.29	0.32	0.25	31	25	48
		2.5%	0.7	0.78	0.61	66	25	50
		6%	1.6	1.8	1.4	120	25	51
	Phenol	1%	280	750	66	760 ^{dir} (31,000)	760 ^{dir} (11,000)	760 ^{dir} (8,600)
		2.5%	550	1,300	140	1,500 ^{dir} (35,000)	1,500 ^{dir} (11,000)	1,500 ^{dir} (9,700)
		6%	1,100	2,300	280	3,200 ^{dir} (37,000)	3,200 ^{dir} (11,000)	3,200 ^{dir} (11,000)

NOTES

^{sol / vap} = solubility / vapour limit (potentially use if free product identified, although highly conservative).

^{dir} = S4uls based on threshold protective of direct skin contact with phenol (brackets long term exposure for illustration purposes).

^g = derived based on 2,3,4,6-tetrachlorophenol.

Appendix H

Hazard Index Spreadsheet

$$HI = \sum_{Fi=1}^{16} HQ_{Fi} = \frac{\text{Measured concentration } Fi \text{ (mg/kg)}}{S4UL \text{ } Fi \text{ (mg/kg)}}$$

where: HI = Hazard Index
 HQ = Hazard Quotient
 Fi = Fraction I
 S4UL = LQM Sutable 4 Use Levels (S4ULs)

Job Levenshulme Road, Gorton
Job No. LKC 22 1031
SOM 9.9%
Comment CP102 0.0-0.5mbgl

Residential Without Plant Uptake

	1% S4UL	2.50% S4UL	6% S4UL	Max Soil concn.	HQ (1%SOM)	HQ (2.5%SOM)	HQ (6% SOM)
Aliphatic							
EC5-EC6	42	78	160	1			0.00625
EC6-EC8	100	230	530	1			0.0018868
EC8-EC10	27	65	150	1			0.0066667
EC10-EC12	130	330	760	1			0.0013158
EC12-EC16	1100	2400	4300	1			0.0002326
EC16-EC21	65000	92000	110000	2			1.818E-05
EC21-EC35							
EC35-EC44	65000	92000	110000	1			9.091E-06
Aromatic							
EC5-EC7 (benzene)	370	690	1400	0.001			7.143E-07
EC7-EC8 (tolulene)	860	1800	3900	0.001			2.564E-07
EC8-EC10	47	110	270	1			0.0037037
EC10-EC12	250	590	1200	1			0.0008333
EC12-EC16	1800	2300	2500	1			0.0004
EC16-EC21	1900	1900	1900	64			0.0336842
EC21-EC35	1900	1900	1900	270			0.1421053
EC35-EC44	1900	1900	1900	1			0.0005263

HI			0.20
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Appendix I

HazWaste Online Classification Report

Waste Classification Report

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

- 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)



MLDD8-C966M-7ELWI

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

Job name

LKC 22 1031

Description/Comments

Project

LKC 22 1031

Site

Levenshulme Road, Gorton

Classified by

Name: **Colin Crompton**
Date: **03 Jan 2023 16:35 GMT**
Telephone: **0161 763 7200**

Company: **LK Group**
Unit 29, Eton Business Park
Eton Hill Rd, Radcliffe
Greater Manchester
M26 2ZS

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 Oct 2020

Next 3 year Refresher due by Oct 2023

Purpose of classification

2 - Material Characterisation

Address of the waste

Levenshulme Road, Gorton

Post Code M18 7NL

SIC for the process giving rise to the waste

41202 Construction of domestic buildings

Description of industry/producer giving rise to the waste

Construction

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

Site enabling works and construction

Description of the waste

Made ground with anthropogenic inclusions and natural strata

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS101-13/10/2022-0	0-0.5	Non Hazardous		3
2	WS101-13/10/2022-0.5	0.5-1	Non Hazardous		5
3	WS102-13/10/2022-0	0-1	Hazardous	HP 7, HP 11	6
4	WS102-13/10/2022-1.6	1.6-1.8	Non Hazardous		9
5	WS102-13/10/2022-1.8	1.8-2.5	Non Hazardous		11
6	WS103-13/10/2022-0	0-0.5	Non Hazardous		13
7	WS103-13/10/2022-0.5	0.5-1	Non Hazardous		15
8	HD101-13/10/2022-0	0-0.6	Non Hazardous		16
9	HD102-13/10/2022-0	0-0.4	Non Hazardous		18
10	CP101-13/10/2022-0	0-0.4	Non Hazardous		20
11	CP102-13/10/2022-0	0-0.5	Non Hazardous		22
12	CP102-13/10/2022-1.6	1.6-2	Non Hazardous		25
13	TP101-12/10/2022-0.00	0.00-0.30	Non Hazardous		27
14	TP102-12/10/2022-0.30	0.30-0.50	Non Hazardous		29
15	TP103-12/10/2022-0.00	0.00-0.90	Non Hazardous		31
16	TP104-12/10/2022-0.45	0.45-1.00	Non Hazardous		33
17	TP104-12/10/2022-1.35	1.35-2.30	Non Hazardous		35
18	TP105-12/10/2022-0.40	0.40-1.40	Non Hazardous		36
19	TP106-12/10/2022-0.00	0.00-0.30	Non Hazardous		38
20	TP106-12/10/2022-0.30	0.30-0.50	Hazardous	HP 7, HP 11	40

Related documents

#	Name	Description
1	HWOL_22-39740-20221101 164936.hwol	Eurofins Chemtest .hwol file used to populate the Job
2	HWOL_22-39293-20221030 214537.hwol	Eurofins Chemtest .hwol file used to populate the Job
3	LK SUITE 1 - 5	waste stream template used to create this Job

Report

Created by: Colin Crompton

Created date: 03 Jan 2023 16:35 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	43
Appendix B: Rationale for selection of metal species	45
Appendix C: Version	45

Classification of sample: WS101-13/10/2022-0

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

Sample details

Sample name:	LoW Code:
WS101-13/10/2022-0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0-0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
14%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				5.4 mg/kg	1.32	6.132 mg/kg	0.000613 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	17.597 mg/kg	0.00176 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				32 mg/kg	1.126	30.984 mg/kg	0.0031 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				0.12 mg/kg	1.353	0.14 mg/kg	0.000014 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				16 mg/kg	1.273	17.511 mg/kg	0.00175 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	30 mg/kg		25.8 mg/kg	0.00258 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.59 mg/kg	1.405	0.713 mg/kg	0.0000713 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				16 mg/kg	1.785	24.564 mg/kg	0.00246 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				39 mg/kg	1.245	41.748 mg/kg	0.00417 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH				8 pH		8 pH	8pH		
			PH							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		5.1 mg/kg		4.386 mg/kg	0.000439 %	✓	
18	anthracene	204-371-1	120-12-7		1.3 mg/kg		1.118 mg/kg	0.000112 %	✓	
19	fluoranthene	205-912-4	206-44-0		7.4 mg/kg		6.364 mg/kg	0.000636 %	✓	
20	pyrene	204-927-3	129-00-0		6.1 mg/kg		5.246 mg/kg	0.000525 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	3.1 mg/kg		2.666 mg/kg	0.000267 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	3.3 mg/kg		2.838 mg/kg	0.000284 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.7 mg/kg		3.182 mg/kg	0.000318 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.5 mg/kg		1.29 mg/kg	0.000129 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	2.5 mg/kg		2.15 mg/kg	0.000215 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0196 %		

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
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS101-13/10/2022-0.5

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

Sample details

Sample name:	LoW Code:	
WS101-13/10/2022-0.5	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)
0.5-1 m		
Moisture content:		
16%		
(wet weight correction)		

Hazard properties

None identified

Determinands

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

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

Key

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

Classification of sample: WS102-13/10/2022-0

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

Sample details

Sample name:	LoW Code:
WS102-13/10/2022-0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0-1 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
13%	
(wet weight correction)	

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.635%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.635%)

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	11 mg/kg	1.32	12.636	mg/kg	0.00126 %	✓	
2	 cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	0.22 mg/kg	1.142	0.219	mg/kg	0.0000219 %	✓	
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		10 mg/kg	1.462	12.716	mg/kg	0.00127 %	✓	
4	 copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	76 mg/kg	1.126	74.444	mg/kg	0.00744 %	✓	
5	 mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	1.4 mg/kg	1.353	1.649	mg/kg	0.000165 %	✓	
6	 nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]	17 mg/kg	1.273	18.822	mg/kg	0.00188 %	✓	
7	 lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			130 mg/kg		113.1	mg/kg	0.0113 %	✓	

#	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								
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.56 mg/kg	1.405	0.685	mg/kg	0.0000685 %	✓	
	034-002-00-8										
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				16 mg/kg	1.785	24.85	mg/kg	0.00248 %	✓	
	023-001-00-8	215-239-8	1314-62-1								
10	zinc { zinc oxide }				110 mg/kg	1.245	119.119	mg/kg	0.0119 %	✓	
	030-013-00-7	215-222-5	1314-13-2								
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0								
12	boron { diboron trioxide; boric oxide }				1 mg/kg	3.22	2.801	mg/kg	0.00028 %	✓	
	005-008-00-8	215-125-8	1303-86-2								
13	TPH (C6 to C40) petroleum group				7300 mg/kg		6351	mg/kg	0.635 %	✓	
			TPH								
14	confirm TPH has NOT arisen from diesel or petrol				☒						
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
17	toluene				0.0024 mg/kg		0.002	mg/kg	0.000000209 %	✓	
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				0.0014 mg/kg		0.0012	mg/kg	0.000000122 %	✓	
	601-023-00-4	202-849-4	100-41-4								
19	xylene				0.004 mg/kg		0.0034	mg/kg	0.000000348 %	✓	
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
	006-007-00-5										
21	pH				7.5 pH		7.5	pH	7.5 pH		
			PH								
22	naphthalene				6.1 mg/kg		5.307	mg/kg	0.000531 %	✓	
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				0.36 mg/kg		0.313	mg/kg	0.0000313 %	✓	
		205-917-1	208-96-8								
24	acenaphthene				7.9 mg/kg		6.873	mg/kg	0.000687 %	✓	
		201-469-6	83-32-9								
25	fluorene				6.6 mg/kg		5.742	mg/kg	0.000574 %	✓	
		201-695-5	86-73-7								
26	phenanthrene				72 mg/kg		62.64	mg/kg	0.00626 %	✓	
		201-581-5	85-01-8								
27	anthracene				17 mg/kg		14.79	mg/kg	0.00148 %	✓	
		204-371-1	120-12-7								
28	fluoranthene				93 mg/kg		80.91	mg/kg	0.00809 %	✓	
		205-912-4	206-44-0								
29	pyrene				78 mg/kg		67.86	mg/kg	0.00679 %	✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				43 mg/kg		37.41	mg/kg	0.00374 %	✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				43 mg/kg		37.41	mg/kg	0.00374 %	✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				51 mg/kg		44.37	mg/kg	0.00444 %	✓	
	601-034-00-4	205-911-9	205-99-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
33	benzo[k]fluoranthene 601-036-00-5	205-916-6	207-08-9		21 mg/kg		18.27 mg/kg	0.00183 %	✓	
34	benzo[a]pyrene; benzo[def]chrysene 601-032-00-3	200-028-5	50-32-8		45 mg/kg		39.15 mg/kg	0.00392 %	✓	
35	indeno[123-cd]pyrene 205-893-2	193-39-5			28 mg/kg		24.36 mg/kg	0.00244 %	✓	
36	dibenz[a,h]anthracene 601-041-00-2	200-181-8	53-70-3		4.5 mg/kg		3.915 mg/kg	0.000392 %	✓	
37	benzo[ghi]perylene 205-883-8	191-24-2			24 mg/kg		20.88 mg/kg	0.00209 %	✓	
38	monohydric phenols P1186				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.72 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Laboratory trace interpretation identifies sample as PAH which are unlikely to be flammable. Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinands:

toluene: (conc.: 2.09e-07%)

ethylbenzene: (conc.: 1.22e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.635%)

xylene: (conc.: 3.48e-07%)

Classification of sample: WS102-13/10/2022-1.6

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

Sample details

Sample name:	LoW Code:
WS102-13/10/2022-1.6	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.6-1.8 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
22%	
(wet weight correction)	

Hazard properties

None identified

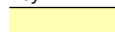
Determinands

Moisture content: 22% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				14 mg/kg	1.32	14.418 mg/kg	0.00144 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.34 mg/kg	1.142	0.303 mg/kg	0.0000303 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	15.96 mg/kg	0.0016 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				100 mg/kg	1.126	87.819 mg/kg	0.00878 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				1.7 mg/kg	1.353	1.795 mg/kg	0.000179 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				20 mg/kg	1.273	19.852 mg/kg	0.00199 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	180 mg/kg		140.4 mg/kg	0.014 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.79 mg/kg	1.405	0.866 mg/kg	0.0000866 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				22 mg/kg	1.785	30.634 mg/kg	0.00306 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				150 mg/kg	1.245	145.632 mg/kg	0.0146 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH				7.6 pH		7.6 pH	7.6 pH		
			PH							
13	naphthalene				6.8 mg/kg		5.304 mg/kg	0.00053 %	✓	
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		0.48 mg/kg		0.374 mg/kg	0.0000374 %	✓	
15	acenaphthene	201-469-6	83-32-9		13 mg/kg		10.14 mg/kg	0.00101 %	✓	
16	fluorene	201-695-5	86-73-7		10 mg/kg		7.8 mg/kg	0.00078 %	✓	
17	phenanthrene	201-581-5	85-01-8		100 mg/kg		78 mg/kg	0.0078 %	✓	
18	anthracene	204-371-1	120-12-7		26 mg/kg		20.28 mg/kg	0.00203 %	✓	
19	fluoranthene	205-912-4	206-44-0		130 mg/kg		101.4 mg/kg	0.0101 %	✓	
20	pyrene	204-927-3	129-00-0		110 mg/kg		85.8 mg/kg	0.00858 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	57 mg/kg		44.46 mg/kg	0.00445 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	58 mg/kg		45.24 mg/kg	0.00452 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	66 mg/kg		51.48 mg/kg	0.00515 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	26 mg/kg		20.28 mg/kg	0.00203 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	59 mg/kg		46.02 mg/kg	0.0046 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		36 mg/kg		28.08 mg/kg	0.00281 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	6.4 mg/kg		4.992 mg/kg	0.000499 %	✓	
28	benzo[ghi]perylene	205-883-8	191-24-2		32 mg/kg		24.96 mg/kg	0.0025 %	✓	
Total:								0.103 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS102-13/10/2022-1.8

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

Sample details

Sample name:	LoW Code:
WS102-13/10/2022-1.8	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.8-2.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
17%	
(wet weight correction)	

Hazard properties

None identified

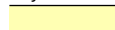
Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				4.9 mg/kg	1.32	5.37 mg/kg	0.000537 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.1 mg/kg	1.142	0.0948 mg/kg	0.00000948 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10 mg/kg	1.462	12.131 mg/kg	0.00121 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				42 mg/kg	1.126	39.248 mg/kg	0.00392 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				0.08 mg/kg	1.353	0.0899 mg/kg	0.00000899 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				12 mg/kg	1.273	12.675 mg/kg	0.00127 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	18 mg/kg		14.94 mg/kg	0.00149 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.33 mg/kg	1.405	0.385 mg/kg	0.0000385 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				11 mg/kg	1.785	16.299 mg/kg	0.00163 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				30 mg/kg	1.245	30.993 mg/kg	0.0031 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH				8.2 pH		8.2 pH	8.2 pH		
			PH							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	● acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	● acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	● fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	● phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	● anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	● fluoranthene	205-912-4	206-44-0		0.23 mg/kg		0.191 mg/kg	0.0000191 %	✓	
20	● pyrene	204-927-3	129-00-0		0.2 mg/kg		0.166 mg/kg	0.0000166 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	● indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	● benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS103-13/10/2022-0

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

Sample details

Sample name:	LoW Code:
WS103-13/10/2022-0	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0-0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
17%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				18 mg/kg	1.32	19.726 mg/kg	0.00197 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				0.43 mg/kg	1.142	0.408 mg/kg	0.0000408 %	✓		
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }				17 mg/kg	1.462	20.623 mg/kg	0.00206 %	✓		
			215-160-9	1308-38-9								
4		copper { dicopper oxide ; copper (I) oxide }				130 mg/kg	1.126	121.483 mg/kg	0.0121 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
5		mercury { mercury dichloride }				2.2 mg/kg	1.353	2.471 mg/kg	0.000247 %	✓		
		080-010-00-X	231-299-8	7487-94-7								
6		nickel { nickel(II) oxide (nickel monoxide) }				27 mg/kg	1.273	28.519 mg/kg	0.00285 %	✓		
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7		lead {  lead compounds with the exception of those specified elsewhere in this Annex }			1	210 mg/kg		174.3 mg/kg	0.0174 %	✓		
		082-001-00-6										
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	1.405	1.166 mg/kg	0.000117 %	✓		
		034-002-00-8										
9		vanadium {  divanadium pentaoxide ; vanadium pentoxide }				29 mg/kg	1.785	42.969 mg/kg	0.0043 %	✓		
		023-001-00-8	215-239-8	1314-62-1								
10		zinc { zinc oxide }				190 mg/kg	1.245	196.291 mg/kg	0.0196 %	✓		
		030-013-00-7	215-222-5	1314-13-2								
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD	
		024-001-00-0	215-607-8	1333-82-0								
12		pH		PH		7.5 pH		7.5 pH	7.5 pH			
13		naphthalene				7.7 mg/kg		6.391 mg/kg	0.000639 %	✓		
		601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		0.48 mg/kg		0.398 mg/kg	0.0000398 %	✓	
15	acenaphthene	201-469-6	83-32-9		16 mg/kg		13.28 mg/kg	0.00133 %	✓	
16	fluorene	201-695-5	86-73-7		15 mg/kg		12.45 mg/kg	0.00125 %	✓	
17	phenanthrene	201-581-5	85-01-8		140 mg/kg		116.2 mg/kg	0.0116 %	✓	
18	anthracene	204-371-1	120-12-7		34 mg/kg		28.22 mg/kg	0.00282 %	✓	
19	fluoranthene	205-912-4	206-44-0		180 mg/kg		149.4 mg/kg	0.0149 %	✓	
20	pyrene	204-927-3	129-00-0		140 mg/kg		116.2 mg/kg	0.0116 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	79 mg/kg		65.57 mg/kg	0.00656 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	81 mg/kg		67.23 mg/kg	0.00672 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	95 mg/kg		78.85 mg/kg	0.00789 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	36 mg/kg		29.88 mg/kg	0.00299 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	82 mg/kg		68.06 mg/kg	0.00681 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		51 mg/kg		42.33 mg/kg	0.00423 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	8.8 mg/kg		7.304 mg/kg	0.00073 %	✓	
28	benzo[ghi]perylene	205-883-8	191-24-2		44 mg/kg		36.52 mg/kg	0.00365 %	✓	
Total:								0.145 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS103-13/10/2022-0.5

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

Sample details

Sample name:	LoW Code:	
WS103-13/10/2022-0.5	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)
0.5-1 m		
Moisture content:		
13%		
(wet weight correction)		

Hazard properties

None identified

Determinands

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

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

Key

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

Classification of sample: HD101-13/10/2022-0

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

Sample details

Sample name:	LoW Code:
HD101-13/10/2022-0	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0-0.6 m	
Moisture content:	
17%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		arsenic { arsenic trioxide }				11 mg/kg	1.32	12.055 mg/kg	0.00121 %	✓	
		033-003-00-0	215-481-4	1327-53-3							
2		cadmium { cadmium oxide }				0.35 mg/kg	1.142	0.332 mg/kg	0.0000332 %	✓	
		048-002-00-0	215-146-2	1306-19-0							
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	16.983 mg/kg	0.0017 %	✓	
			215-160-9	1308-38-9							
4		copper { dicopper oxide; copper (I) oxide }				85 mg/kg	1.126	79.431 mg/kg	0.00794 %	✓	
		029-002-00-X	215-270-7	1317-39-1							
5		mercury { mercury dichloride }				1 mg/kg	1.353	1.123 mg/kg	0.000112 %	✓	
		080-010-00-X	231-299-8	7487-94-7							
6		nickel { nickel(II) oxide (nickel monoxide) }				17 mg/kg	1.273	17.956 mg/kg	0.0018 %	✓	
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	210 mg/kg		174.3 mg/kg	0.0174 %	✓	
		082-001-00-6									
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.52 mg/kg	1.405	0.606 mg/kg	0.0000606 %	✓	
		034-002-00-8									
9		vanadium { divanadium pentaoxide; vanadium pentoxide }				16 mg/kg	1.785	23.707 mg/kg	0.00237 %	✓	
		023-001-00-8	215-239-8	1314-62-1							
10		zinc { zinc oxide }				190 mg/kg	1.245	196.291 mg/kg	0.0196 %	✓	
		030-013-00-7	215-222-5	1314-13-2							
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0							
12		pH		PH		7.3 pH		7.3 pH	7.3 pH		
13		naphthalene				1.2 mg/kg		0.996 mg/kg	0.0000996 %	✓	
		601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		0.25 mg/kg		0.208 mg/kg	0.0000208 %	✓	
15	acenaphthene	201-469-6	83-32-9		2.2 mg/kg		1.826 mg/kg	0.000183 %	✓	
16	fluorene	201-695-5	86-73-7		1.7 mg/kg		1.411 mg/kg	0.000141 %	✓	
17	phenanthrene	201-581-5	85-01-8		17 mg/kg		14.11 mg/kg	0.00141 %	✓	
18	anthracene	204-371-1	120-12-7		4 mg/kg		3.32 mg/kg	0.000332 %	✓	
19	fluoranthene	205-912-4	206-44-0		26 mg/kg		21.58 mg/kg	0.00216 %	✓	
20	pyrene	204-927-3	129-00-0		22 mg/kg		18.26 mg/kg	0.00183 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		11 mg/kg		9.13 mg/kg	0.000913 %	✓	
22	chrysene	601-048-00-0	205-923-4		11 mg/kg		9.13 mg/kg	0.000913 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		14 mg/kg		11.62 mg/kg	0.00116 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		5 mg/kg		4.15 mg/kg	0.000415 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		12 mg/kg		9.96 mg/kg	0.000996 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		7.1 mg/kg		5.893 mg/kg	0.000589 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		1.3 mg/kg		1.079 mg/kg	0.000108 %	✓	
28	benzo[ghi]perylene	205-883-8	191-24-2		6.8 mg/kg		5.644 mg/kg	0.000564 %	✓	
Total:								0.0642 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: HD102-13/10/2022-0

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

Sample details

Sample name:	LoW Code:
HD102-13/10/2022-0	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0-0.4 m	
Moisture content:	
19%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				11 mg/kg	1.32	11.764 mg/kg	0.00118 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				0.44 mg/kg	1.142	0.407 mg/kg	0.0000407 %		✓	
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	16.574 mg/kg	0.00166 %		✓	
		215-160-9	1308-38-9								
4	copper { dicopper oxide; copper (I) oxide }				94 mg/kg	1.126	85.725 mg/kg	0.00857 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
5	mercury { mercury dichloride }				0.88 mg/kg	1.353	0.965 mg/kg	0.0000965 %		✓	
	080-010-00-X	231-299-8	7487-94-7								
6	nickel { nickel(II) oxide (nickel monoxide) }				19 mg/kg	1.273	19.585 mg/kg	0.00196 %		✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	230 mg/kg		186.3 mg/kg	0.0186 %		✓	
	082-001-00-6										
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				0.56 mg/kg	1.405	0.637 mg/kg	0.0000637 %		✓	
	034-002-00-8										
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				15 mg/kg	1.785	21.69 mg/kg	0.00217 %		✓	
	023-001-00-8	215-239-8	1314-62-1								
10	zinc { zinc oxide }				200 mg/kg	1.245	201.644 mg/kg	0.0202 %		✓	
	030-013-00-7	215-222-5	1314-13-2								
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %			<LOD
	024-001-00-0	215-607-8	1333-82-0								
12	pH		PH		7.3 pH		7.3 pH	7.3 pH			
13	naphthalene				1.3 mg/kg		1.053 mg/kg	0.000105 %		✓	
	601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		0.21 mg/kg		0.17 mg/kg	0.000017 %	✓	
15	acenaphthene	201-469-6	83-32-9		3 mg/kg		2.43 mg/kg	0.000243 %	✓	
16	fluorene	201-695-5	86-73-7		2.3 mg/kg		1.863 mg/kg	0.000186 %	✓	
17	phenanthrene	201-581-5	85-01-8		23 mg/kg		18.63 mg/kg	0.00186 %	✓	
18	anthracene	204-371-1	120-12-7		5.5 mg/kg		4.455 mg/kg	0.000445 %	✓	
19	fluoranthene	205-912-4	206-44-0		33 mg/kg		26.73 mg/kg	0.00267 %	✓	
20	pyrene	204-927-3	129-00-0		27 mg/kg		21.87 mg/kg	0.00219 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		15 mg/kg		12.15 mg/kg	0.00122 %	✓	
22	chrysene	601-048-00-0	205-923-4		15 mg/kg		12.15 mg/kg	0.00122 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		17 mg/kg		13.77 mg/kg	0.00138 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		6.2 mg/kg		5.022 mg/kg	0.000502 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		15 mg/kg		12.15 mg/kg	0.00122 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		9.1 mg/kg		7.371 mg/kg	0.000737 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		1.5 mg/kg		1.215 mg/kg	0.000122 %	✓	
28	benzo[ghi]perylene	205-883-8	191-24-2		8.3 mg/kg		6.723 mg/kg	0.000672 %	✓	
Total:								0.0694 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: CP101-13/10/2022-0

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

Sample details

Sample name:	LoW Code:
CP101-13/10/2022-0	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0-0.4 m	
Moisture content:	
15%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		arsenic { arsenic trioxide }				9.8 mg/kg	1.32	10.998 mg/kg	0.0011 %	✓	
		033-003-00-0	215-481-4	1327-53-3							
2		cadmium { cadmium oxide }				0.38 mg/kg	1.142	0.369 mg/kg	0.0000369 %	✓	
		048-002-00-0	215-146-2	1306-19-0							
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	17.393 mg/kg	0.00174 %	✓	
			215-160-9	1308-38-9							
4		copper { dicopper oxide; copper (I) oxide }				89 mg/kg	1.126	85.173 mg/kg	0.00852 %	✓	
		029-002-00-X	215-270-7	1317-39-1							
5		mercury { mercury dichloride }				0.96 mg/kg	1.353	1.104 mg/kg	0.00011 %	✓	
		080-010-00-X	231-299-8	7487-94-7							
6		nickel { nickel(II) oxide (nickel monoxide) }				16 mg/kg	1.273	17.307 mg/kg	0.00173 %	✓	
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	190 mg/kg		161.5 mg/kg	0.0162 %	✓	
		082-001-00-6									
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.43 mg/kg	1.405	0.514 mg/kg	0.0000514 %	✓	
		034-002-00-8									
9		vanadium { divanadium pentaoxide; vanadium pentoxide }				13 mg/kg	1.785	19.726 mg/kg	0.00197 %	✓	
		023-001-00-8	215-239-8	1314-62-1							
10		zinc { zinc oxide }				170 mg/kg	1.245	179.861 mg/kg	0.018 %	✓	
		030-013-00-7	215-222-5	1314-13-2							
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0							
12		pH		PH		7.2 pH		7.2 pH	7.2 pH		
13		naphthalene				1.1 mg/kg		0.935 mg/kg	0.0000935 %	✓	
		601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene	205-917-1	208-96-8		0.24 mg/kg		0.204 mg/kg	0.0000204 %	✓	
15	• acenaphthene	201-469-6	83-32-9		2.1 mg/kg		1.785 mg/kg	0.000179 %	✓	
16	• fluorene	201-695-5	86-73-7		1.6 mg/kg		1.36 mg/kg	0.000136 %	✓	
17	• phenanthrene	201-581-5	85-01-8		18 mg/kg		15.3 mg/kg	0.00153 %	✓	
18	• anthracene	204-371-1	120-12-7		4.1 mg/kg		3.485 mg/kg	0.000349 %	✓	
19	• fluoranthene	205-912-4	206-44-0		26 mg/kg		22.1 mg/kg	0.00221 %	✓	
20	• pyrene	204-927-3	129-00-0		22 mg/kg		18.7 mg/kg	0.00187 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	11 mg/kg		9.35 mg/kg	0.000935 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	12 mg/kg		10.2 mg/kg	0.00102 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	14 mg/kg		11.9 mg/kg	0.00119 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	5.2 mg/kg		4.42 mg/kg	0.000442 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	12 mg/kg		10.2 mg/kg	0.00102 %	✓	
26	• indeno[123-cd]pyrene	205-893-2	193-39-5		7.4 mg/kg		6.29 mg/kg	0.000629 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	1.4 mg/kg		1.19 mg/kg	0.000119 %	✓	
28	• benzo[ghi]perylene	205-883-8	191-24-2		7.2 mg/kg		6.12 mg/kg	0.000612 %	✓	
Total:								0.0618 %		

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
- ND Not detected
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: CP102-13/10/2022-0

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

Sample details

Sample name:	LoW Code:
CP102-13/10/2022-0	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0-0.5 m	
Moisture content:	
9.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	3.8 mg/kg	1.32	4.541 mg/kg	0.000454 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	0.25 mg/kg	1.142	0.258 mg/kg	0.0000258 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		7.5 mg/kg	1.462	9.92 mg/kg	0.000992 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	25 mg/kg	1.126	25.473 mg/kg	0.00255 %	✓	
5	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	0.54 mg/kg	1.353	0.661 mg/kg	0.0000661 %	✓	
6	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]	7.7 mg/kg	1.273	8.868 mg/kg	0.000887 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			89 mg/kg		80.545 mg/kg	0.00805 %	✓	
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }	034-002-00-8			0.25 mg/kg	1.405	0.318 mg/kg	0.0000318 %	✓	
9	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1	8.5 mg/kg	1.785	13.733 mg/kg	0.00137 %	✓	
10	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2	78 mg/kg	1.245	87.864 mg/kg	0.00879 %	✓	
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
12	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2	<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
13	TPH (C6 to C40) petroleum group		TPH		330 mg/kg		298.65 mg/kg	0.0299 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	confirm TPH has NOT arisen from diesel or petrol				☒					
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
21	pH				7.9 pH		7.9 pH	7.9 pH		
			PH							
22	naphthalene				0.68 mg/kg		0.615 mg/kg	0.0000615 %	✓	
	601-052-00-2	202-049-5	91-20-3							
23	acenaphthylene				0.15 mg/kg		0.136 mg/kg	0.0000136 %	✓	
		205-917-1	208-96-8							
24	acenaphthene				1.8 mg/kg		1.629 mg/kg	0.000163 %	✓	
		201-469-6	83-32-9							
25	fluorene				1.5 mg/kg		1.358 mg/kg	0.000136 %	✓	
		201-695-5	86-73-7							
26	phenanthrene				17 mg/kg		15.385 mg/kg	0.00154 %	✓	
		201-581-5	85-01-8							
27	anthracene				3.7 mg/kg		3.349 mg/kg	0.000335 %	✓	
		204-371-1	120-12-7							
28	fluoranthene				24 mg/kg		21.72 mg/kg	0.00217 %	✓	
		205-912-4	206-44-0							
29	pyrene				19 mg/kg		17.195 mg/kg	0.00172 %	✓	
		204-927-3	129-00-0							
30	benzo[a]anthracene				10 mg/kg		9.05 mg/kg	0.000905 %	✓	
	601-033-00-9	200-280-6	56-55-3							
31	chrysene				10 mg/kg		9.05 mg/kg	0.000905 %	✓	
	601-048-00-0	205-923-4	218-01-9							
32	benzo[b]fluoranthene				13 mg/kg		11.765 mg/kg	0.00118 %	✓	
	601-034-00-4	205-911-9	205-99-2							
33	benzo[k]fluoranthene				4.6 mg/kg		4.163 mg/kg	0.000416 %	✓	
	601-036-00-5	205-916-6	207-08-9							
34	benzo[a]pyrene; benzo[def]chrysene				11 mg/kg		9.955 mg/kg	0.000996 %	✓	
	601-032-00-3	200-028-5	50-32-8							
35	indeno[123-cd]pyrene				7.2 mg/kg		6.516 mg/kg	0.000652 %	✓	
		205-893-2	193-39-5							
36	dibenz[a,h]anthracene				0.84 mg/kg		0.76 mg/kg	0.000076 %	✓	
	601-041-00-2	200-181-8	53-70-3							
37	benzo[ghi]perylene				6.6 mg/kg		5.973 mg/kg	0.000597 %	✓	
		205-883-8	191-24-2							
38	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
			P1186							
Total:								0.0653 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Laboratory trace interpretation identifies sample as PAH which are unlikely to be flammable. Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0299%)

Classification of sample: CP102-13/10/2022-1.6

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

Sample details

Sample name:	LoW Code:
CP102-13/10/2022-1.6	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.6-2 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				3.8 mg/kg	1.32	4.365 mg/kg	0.000436 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.29 mg/kg	1.142	0.288 mg/kg	0.0000288 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.9 mg/kg	1.462	12.588 mg/kg	0.00126 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				14 mg/kg	1.126	13.713 mg/kg	0.00137 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				0.21 mg/kg	1.353	0.247 mg/kg	0.0000247 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				15 mg/kg	1.273	16.607 mg/kg	0.00166 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	33 mg/kg		28.71 mg/kg	0.00287 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.44 mg/kg	1.405	0.538 mg/kg	0.0000538 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				11 mg/kg	1.785	17.084 mg/kg	0.00171 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				44 mg/kg	1.245	47.648 mg/kg	0.00476 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH				7.8 pH		7.8 pH	7.8 pH		
			PH							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		1.9 mg/kg		1.653 mg/kg	0.000165 %	✓	
18	anthracene	204-371-1	120-12-7		0.47 mg/kg		0.409 mg/kg	0.0000409 %	✓	
19	fluoranthene	205-912-4	206-44-0		2.9 mg/kg		2.523 mg/kg	0.000252 %	✓	
20	pyrene	204-927-3	129-00-0		2.4 mg/kg		2.088 mg/kg	0.000209 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	1.1 mg/kg		0.957 mg/kg	0.0000957 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9	1.2 mg/kg		1.044 mg/kg	0.000104 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1.4 mg/kg		1.218 mg/kg	0.000122 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.55 mg/kg		0.479 mg/kg	0.0000479 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1.1 mg/kg		0.957 mg/kg	0.0000957 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0155 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101-12/10/2022-0.00

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

Sample details

Sample name:	LoW Code:
TP101-12/10/2022-0.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00-0.30 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
18%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 18% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				5.1 mg/kg	1.32	5.522 mg/kg	0.000552 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.23 mg/kg	1.142	0.215 mg/kg	0.0000215 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				8.1 mg/kg	1.462	9.708 mg/kg	0.000971 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	16.618 mg/kg	0.00166 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				0.06 mg/kg	1.353	0.0666 mg/kg	0.00000666 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				9.7 mg/kg	1.273	10.122 mg/kg	0.00101 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	240 mg/kg		196.8 mg/kg	0.0197 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.31 mg/kg	1.405	0.357 mg/kg	0.0000357 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				9.1 mg/kg	1.785	13.321 mg/kg	0.00133 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				140 mg/kg	1.245	142.893 mg/kg	0.0143 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH				7.5 pH		7.5 pH	7.5 pH		
			PH							
13	naphthalene				0.37 mg/kg		0.303 mg/kg	0.0000303 %	✓	
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		0.13 mg/kg		0.107 mg/kg	0.0000107 %	✓	
16	fluorene	201-695-5	86-73-7		0.12 mg/kg		0.0984 mg/kg	0.00000984 %	✓	
17	phenanthrene	201-581-5	85-01-8		0.71 mg/kg		0.582 mg/kg	0.0000582 %	✓	
18	anthracene	204-371-1	120-12-7		0.19 mg/kg		0.156 mg/kg	0.0000156 %	✓	
19	fluoranthene	205-912-4	206-44-0		1.4 mg/kg		1.148 mg/kg	0.000115 %	✓	
20	pyrene	204-927-3	129-00-0		1.4 mg/kg		1.148 mg/kg	0.000115 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.72 mg/kg		0.59 mg/kg	0.000059 %	✓	
22	chrysene	601-048-00-0	205-923-4		0.72 mg/kg		0.59 mg/kg	0.000059 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		0.76 mg/kg		0.623 mg/kg	0.0000623 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.5 mg/kg		0.41 mg/kg	0.000041 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		0.52 mg/kg		0.426 mg/kg	0.0000426 %	✓	
Total:								0.0403 %		

Key

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

Classification of sample: TP102-12/10/2022-0.30

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

Sample details

Sample name:	LoW Code:
TP102-12/10/2022-0.30	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30-0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				2.6 mg/kg	1.32	3.021 mg/kg	0.000302 %	✓		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD	
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				6.9 mg/kg	1.462	8.875 mg/kg	0.000887 %	✓		
			215-160-9	1308-38-9								
4		copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	12.88 mg/kg	0.00129 %	✓		
		029-002-00-X	215-270-7	1317-39-1								
5		mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
6		nickel { nickel(II) oxide (nickel monoxide) }				6.6 mg/kg	1.273	7.391 mg/kg	0.000739 %	✓		
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	16 mg/kg		14.08 mg/kg	0.00141 %	✓		
		082-001-00-6										
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.25 mg/kg	1.405	<0.351 mg/kg	<0.0000351 %		<LOD	
		034-002-00-8										
9		vanadium { divanadium pentaoxide; vanadium pentoxide }				7.5 mg/kg	1.785	11.782 mg/kg	0.00118 %	✓		
		023-001-00-8	215-239-8	1314-62-1								
10		zinc { zinc oxide }				34 mg/kg	1.245	37.242 mg/kg	0.00372 %	✓		
		030-013-00-7	215-222-5	1314-13-2								
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD	
		024-001-00-0	215-607-8	1333-82-0								
12		pH		PH		7.9 pH		7.9 pH	7.9 pH			
13		naphthalene				0.19 mg/kg		0.167 mg/kg	0.0000167 %	✓		
		601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		0.11 mg/kg		0.0968 mg/kg	0.00000968 %	✓	
17	phenanthrene	201-581-5	85-01-8		0.34 mg/kg		0.299 mg/kg	0.0000299 %	✓	
18	anthracene	204-371-1	120-12-7		0.34 mg/kg		0.299 mg/kg	0.0000299 %	✓	
19	fluoranthene	205-912-4	206-44-0		0.34 mg/kg		0.299 mg/kg	0.0000299 %	✓	
20	pyrene	204-927-3	129-00-0		0.25 mg/kg		0.22 mg/kg	0.000022 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		0.13 mg/kg		0.114 mg/kg	0.0000114 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.00992 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP103-12/10/2022-0.00

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

Sample details

Sample name:	LoW Code:
TP103-12/10/2022-0.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.00-0.90 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used	
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }			12	mg/kg	1.32	13.784	mg/kg	0.00138 %	✓	
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }			1.2	mg/kg	1.142	1.193	mg/kg	0.000119 %	✓	
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }			18	mg/kg	1.462	22.888	mg/kg	0.00229 %	✓	
			215-160-9	1308-38-9								
4		copper { dicopper oxide; copper (I) oxide }			140	mg/kg	1.126	137.133	mg/kg	0.0137 %	✓	
		029-002-00-X	215-270-7	1317-39-1								
5		mercury { mercury dichloride }			4.9	mg/kg	1.353	5.77	mg/kg	0.000577 %	✓	
		080-010-00-X	231-299-8	7487-94-7								
6		nickel { nickel(II) oxide (nickel monoxide) }			21	mg/kg	1.273	23.25	mg/kg	0.00233 %	✓	
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	270	mg/kg	234.9	mg/kg	0.0235 %	✓	
		082-001-00-6										
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }			0.44	mg/kg	1.405	0.538	mg/kg	0.0000538 %	✓	
		034-002-00-8										
9		vanadium { divanadium pentaoxide; vanadium pentoxide }			14	mg/kg	1.785	21.744	mg/kg	0.00217 %	✓	
		023-001-00-8	215-239-8	1314-62-1								
10		zinc { zinc oxide }			280	mg/kg	1.245	303.212	mg/kg	0.0303 %	✓	
		030-013-00-7	215-222-5	1314-13-2								
11		chromium in chromium(VI) compounds { chromium(VI) oxide }			<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0								
12		pH		PH	8.3	pH		8.3	pH	8.3 pH		
13		naphthalene			8.1	mg/kg		7.047	mg/kg	0.000705 %	✓	
		601-052-00-2	202-049-5	91-20-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene	205-917-1	208-96-8		0.46 mg/kg		0.4 mg/kg	0.00004 %	✓	
15	• acenaphthene	201-469-6	83-32-9		14 mg/kg		12.18 mg/kg	0.00122 %	✓	
16	• fluorene	201-695-5	86-73-7		9.2 mg/kg		8.004 mg/kg	0.0008 %	✓	
17	• phenanthrene	201-581-5	85-01-8		120 mg/kg		104.4 mg/kg	0.0104 %	✓	
18	• anthracene	204-371-1	120-12-7		26 mg/kg		22.62 mg/kg	0.00226 %	✓	
19	• fluoranthene	205-912-4	206-44-0		160 mg/kg		139.2 mg/kg	0.0139 %	✓	
20	• pyrene	204-927-3	129-00-0		130 mg/kg		113.1 mg/kg	0.0113 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		65 mg/kg		56.55 mg/kg	0.00565 %	✓	
22	chrysene	601-048-00-0	205-923-4		67 mg/kg		58.29 mg/kg	0.00583 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		76 mg/kg		66.12 mg/kg	0.00661 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		31 mg/kg		26.97 mg/kg	0.0027 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		66 mg/kg		57.42 mg/kg	0.00574 %	✓	
26	• indeno[123-cd]pyrene	205-893-2	193-39-5		39 mg/kg		33.93 mg/kg	0.00339 %	✓	
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		7.4 mg/kg		6.438 mg/kg	0.000644 %	✓	
28	• benzo[ghi]perylene	205-883-8	191-24-2		37 mg/kg		32.19 mg/kg	0.00322 %	✓	
Total:								0.151 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104-12/10/2022-0.45

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

Sample details

Sample name:	LoW Code:
TP104-12/10/2022-0.45	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.45-1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				4.2 mg/kg	1.32	4.88 mg/kg	0.000488 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.22 mg/kg	1.142	0.221 mg/kg	0.0000221 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				9.8 mg/kg	1.462	12.604 mg/kg	0.00126 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				15 mg/kg	1.126	14.862 mg/kg	0.00149 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				0.18 mg/kg	1.353	0.214 mg/kg	0.0000214 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				14 mg/kg	1.273	15.678 mg/kg	0.00157 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	17 mg/kg		14.96 mg/kg	0.0015 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.47 mg/kg	1.405	0.581 mg/kg	0.0000581 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				9.8 mg/kg	1.785	15.395 mg/kg	0.00154 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				37 mg/kg	1.245	40.528 mg/kg	0.00405 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH				8.5 pH		8.5 pH	8.5 pH		
			PH							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		0.13 mg/kg		0.114 mg/kg	0.0000114 %	✓	
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		0.22 mg/kg		0.194 mg/kg	0.0000194 %	✓	
18	anthracene	204-371-1	120-12-7		0.21 mg/kg		0.185 mg/kg	0.0000185 %	✓	
19	fluoranthene	205-912-4	206-44-0		0.27 mg/kg		0.238 mg/kg	0.0000238 %	✓	
20	pyrene	204-927-3	129-00-0		0.25 mg/kg		0.22 mg/kg	0.000022 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
Total:								0.0123 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP104-12/10/2022-1.35

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

Sample details

Sample name:	LoW Code:	
TP104-12/10/2022-1.35	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)
1.35-2.30 m		
Moisture content:		
24%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 24% Wet Weight Moisture Correction applied (MC)

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

Key

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

Classification of sample: TP105-12/10/2022-0.40

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

Sample details

Sample name:	LoW Code:
TP105-12/10/2022-0.40	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.40-1.40 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				5.4 mg/kg	1.32	6.203 mg/kg	0.00062 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14 mg/kg	1.462	17.802 mg/kg	0.00178 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				7.3 mg/kg	1.126	7.151 mg/kg	0.000715 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				9.3 mg/kg	1.273	10.297 mg/kg	0.00103 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	9.8 mg/kg		8.526 mg/kg	0.000853 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				0.39 mg/kg	1.405	0.477 mg/kg	0.0000477 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				21 mg/kg	1.785	32.615 mg/kg	0.00326 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				25 mg/kg	1.245	27.073 mg/kg	0.00271 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	pH		PH		8.3 pH		8.3 pH	8.3 pH		
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	■ acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	■ acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	■ fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	■ phenanthrene	201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
18	■ anthracene	204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
19	■ fluoranthene	205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
20	■ pyrene	204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	■ indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	■ benzo[ghi]perylene	205-883-8	191-24-2		0.11 mg/kg		0.0957 mg/kg	0.00000957 %	✓	
Total:								0.0113 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106-12/10/2022-0.00

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

Sample details

Sample name:	LoW Code:
TP106-12/10/2022-0.00	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)
0.00-0.30 m	
Moisture content:	
6.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	2.4 mg/kg	1.32	2.963 mg/kg	0.000296 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	0.18 mg/kg	1.142	0.192 mg/kg	0.0000192 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }	215-160-9	1308-38-9		11 mg/kg	1.462	15.032 mg/kg	0.0015 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	10 mg/kg	1.126	10.527 mg/kg	0.00105 %	✓	
5	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	0.1 mg/kg	1.353	0.127 mg/kg	0.0000127 %	✓	
6	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]	9.8 mg/kg	1.273	11.661 mg/kg	0.00117 %	✓	
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			26 mg/kg		24.31 mg/kg	0.00243 %	✓	
8	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }	034-002-00-8			<0.25 mg/kg	1.405	<0.351 mg/kg	<0.0000351 %		<LOD
9	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1	17 mg/kg	1.785	28.376 mg/kg	0.00284 %	✓	
10	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2	31 mg/kg	1.245	36.078 mg/kg	0.00361 %	✓	
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
12	pH		PH		9.3 pH		9.3 pH	9.3 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3	0.13 mg/kg		0.122 mg/kg	0.0000122 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	acenaphthylene	205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	acenaphthene	201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
16	fluorene	201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
17	phenanthrene	201-581-5	85-01-8		0.58 mg/kg		0.542 mg/kg	0.0000542 %	✓	
18	anthracene	204-371-1	120-12-7		0.16 mg/kg		0.15 mg/kg	0.000015 %	✓	
19	fluoranthene	205-912-4	206-44-0		1.2 mg/kg		1.122 mg/kg	0.000112 %	✓	
20	pyrene	204-927-3	129-00-0		1.1 mg/kg		1.029 mg/kg	0.000103 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.55 mg/kg		0.514 mg/kg	0.0000514 %	✓	
22	chrysene	601-048-00-0	205-923-4		0.54 mg/kg		0.505 mg/kg	0.0000505 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		0.71 mg/kg		0.664 mg/kg	0.0000664 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		0.65 mg/kg		0.608 mg/kg	0.0000608 %	✓	
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		1 mg/kg		0.935 mg/kg	0.0000935 %	✓	
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		0.12 mg/kg		0.112 mg/kg	0.0000112 %	✓	
28	benzo[ghi]perylene	205-883-8	191-24-2		0.87 mg/kg		0.813 mg/kg	0.0000813 %	✓	
Total:								0.0138 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP106-12/10/2022-0.30

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

Sample details

Sample name:	LoW Code:
TP106-12/10/2022-0.30	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30-0.50 m	Entry:
Moisture content:	17 05 03 * (Soil and stones containing hazardous substances)
14%	
(wet weight correction)	

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.396%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.396%)

Determinands

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

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				16	mg/kg	1.32	18.168	mg/kg	0.00182 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		cadmium { cadmium oxide }				0.16	mg/kg	1.142	0.157	mg/kg	0.0000157 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19	mg/kg	1.462	23.882	mg/kg	0.00239 %	✓	
			215-160-9	1308-38-9									
4		copper { dicopper oxide; copper (I) oxide }				19	mg/kg	1.126	18.397	mg/kg	0.00184 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
5		mercury { mercury dichloride }				0.07	mg/kg	1.353	0.0815	mg/kg	0.00000815 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
6		nickel { nickel(II) oxide (nickel monoxide) }				14	mg/kg	1.273	15.322	mg/kg	0.00153 %	✓	
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]									
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	31	mg/kg		26.66	mg/kg	0.00267 %	✓	
		082-001-00-6											

#	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							
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.46 mg/kg	1.405	0.556 mg/kg	0.0000556 %	✓	
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				29 mg/kg	1.785	44.523 mg/kg	0.00445 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				64 mg/kg	1.245	68.509 mg/kg	0.00685 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	boron { diboron trioxide; boric oxide }				1.5 mg/kg	3.22	4.154 mg/kg	0.000415 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
13	TPH (C6 to C40) petroleum group				4600 mg/kg		3956 mg/kg	0.396 %	✓	
			TPH							
14	confirm TPH has NOT arisen from diesel or petrol				☒					
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
	006-007-00-5									
21	pH				8.5 pH		8.5 pH	8.5 pH		
			PH							
22	naphthalene				210 mg/kg		180.6 mg/kg	0.0181 %	✓	
	601-052-00-2	202-049-5	91-20-3							
23	acenaphthylene				30 mg/kg		25.8 mg/kg	0.00258 %	✓	
		205-917-1	208-96-8							
24	acenaphthene				42 mg/kg		36.12 mg/kg	0.00361 %	✓	
		201-469-6	83-32-9							
25	fluorene				76 mg/kg		65.36 mg/kg	0.00654 %	✓	
		201-695-5	86-73-7							
26	phenanthrene				270 mg/kg		232.2 mg/kg	0.0232 %	✓	
		201-581-5	85-01-8							
27	anthracene				98 mg/kg		84.28 mg/kg	0.00843 %	✓	
		204-371-1	120-12-7							
28	fluoranthene				290 mg/kg		249.4 mg/kg	0.0249 %	✓	
		205-912-4	206-44-0							
29	pyrene				270 mg/kg		232.2 mg/kg	0.0232 %	✓	
		204-927-3	129-00-0							
30	benzo[a]anthracene				170 mg/kg		146.2 mg/kg	0.0146 %	✓	
	601-033-00-9	200-280-6	56-55-3							
31	chrysene				150 mg/kg		129 mg/kg	0.0129 %	✓	
	601-048-00-0	205-923-4	218-01-9							
32	benzo[b]fluoranthene				180 mg/kg		154.8 mg/kg	0.0155 %	✓	
	601-034-00-4	205-911-9	205-99-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
33	benzo[k]fluoranthene				76 mg/kg		65.36 mg/kg	0.00654 %	✓	
	601-036-00-5	205-916-6	207-08-9							
34	benzo[a]pyrene; benzo[def]chrysene				180 mg/kg		154.8 mg/kg	0.0155 %	✓	
	601-032-00-3	200-028-5	50-32-8							
35	indeno[123-cd]pyrene				130 mg/kg		111.8 mg/kg	0.0112 %	✓	
		205-893-2	193-39-5							
36	dibenz[a,h]anthracene				24 mg/kg		20.64 mg/kg	0.00206 %	✓	
	601-041-00-2	200-181-8	53-70-3							
37	benzo[ghi]perylene				97 mg/kg		83.42 mg/kg	0.00834 %	✓	
		205-883-8	191-24-2							
38	monohydric phenols				0.16 mg/kg		0.138 mg/kg	0.0000138 %	✓	
			P1186							
Total:								0.615 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because Laboratory trace interpretation identifies sample as PAH which are unlikely to be flammable. Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.396%)

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

GB MCL index number: 082-001-00-6

Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2

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

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium

www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

divanadium pentaoxide; vanadium pentoxide (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8

Description/Comments:

Additional Hazard Statement(s): Carc. 1B; H350 , Acute Tox. 3; H301 , Acute Tox. 2; H330

Reason for additional Hazards Statement(s):

20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 06 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 06 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 21 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

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

Data source date: 21 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351

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

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

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

Data source date: 23 Jul 2015

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

■ **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

■ **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

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

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

Description/Comments:

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

Reason for additional Hazards Statement(s):

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

■ **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

■ **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: CLP combined data

Data source date: 26 Mar 2019

Hazard Statements: Muta. 2; H341, Acute Tox. 3; H331, Acute Tox. 3; H311, Acute Tox. 3; H301, STOT RE 2; H373, Skin Corr. 1B; H314, Skin Corr. 1B; H314 >= 3 %, Skin Irrit. 2; H315 1 % conc. < 3 %, Eye Irrit. 2; H319 1 % conc. < 3 %, Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides.

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

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

copper {dicopper oxide; copper (I) oxide}

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

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(II) oxide (nickel monoxide)}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

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

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

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

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

vanadium {divanadium pentoxide; vanadium pentoxide}

Most conservative species.

zinc {zinc oxide}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

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

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

boron {diboron trioxide; boric oxide}

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

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

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

Appendix C: Version

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

HazWasteOnline Classification Engine Version: 2022.364.5467.10136 (30 Dec 2022)

HazWasteOnline Database: 2022.364.5467.10136 (30 Dec 2022)

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

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)



AOCPW-ZE6D2-B91ES

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

Job name

LKC 22 1031[2]

Description/Comments

Project

LKC 22 1031

Site

Levenshulme Road, Gorton

Classified by

Name: **Peter Dunn**
Date: **14 Jul 2023 10:57 GMT**
Telephone: **0161 763 7200**
Company: **LK Group**

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

HazWasteOnline™ Certification:

CERTIFIED

Course

Hazardous Waste Classification
Most recent 3 year Refresher

Date

18 Sep 2019
02 Aug 2022

Next 3 year Refresher due by Aug 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Levenshulme Road, Gorton

Post Code **M18 7NL**

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

development of brownfield land

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

Construction

Description of the waste

Made Ground and soil

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	SP201--03/07/2023		Non Hazardous		3
2	SP301--03/07/2023		Non Hazardous		6
3	TP201-0.40 - 0.90-03/07/2023	0.40 - 0.90	Hazardous	HP 3(i), HP 7, HP 11, HP 14	9
4	TP201-0.90 - 1.20-03/07/2023	0.90 - 1.20	Non Hazardous		12
5	TP201-1.20 - 1.80-03/07/2023	1.20 - 1.80	Non Hazardous		14
6	TP201 Side 1--03/07/2023		Non Hazardous		16
7	TP201 Side 2--03/07/2023		Non Hazardous		17
8	TP201 Side 3--03/07/2023		Non Hazardous		18
9	TP201 Side 4--03/07/2023		Non Hazardous		19
10	TP201 Base--03/07/2023		Non Hazardous		21
11	Trench 1 Side 1--03/07/2023		Hazardous	HP 3(i), HP 7, HP 11	22
12	Trench 1 Side 2--03/07/2023		Non Hazardous		24
13	Trench 1 Side 3--03/07/2023		Hazardous	HP 3(i), HP 7, HP 11	25
14	Trench 1 Side 4--03/07/2023		Non Hazardous		27
15	Trench 1 Base--03/07/2023		Non Hazardous		28

Related documents

#	Name	Description
1	23-08670.1.hwol	DETS South .hwol file used to populate the Job
2	LK SUITE 1 - 5	waste stream template used to create this Job

Report

Created by: Peter Dunn

Created date: 14 Jul 2023 10:57 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	29
Appendix B: Rationale for selection of metal species	31
Appendix C: Version	31

Classification of sample: SP201--03/07/2023

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

Sample details

Sample name:	LoW Code:
SP201--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
21.7% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 21.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				21 mg/kg	1.32	21.71 mg/kg	0.00217 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	19.455 mg/kg	0.00195 %	✓	
		215-160-9	1308-38-9							
4	copper { dicopper oxide; copper (I) oxide }				94 mg/kg	1.126	82.868 mg/kg	0.00829 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
5	mercury { mercury dichloride }				4.8 mg/kg	1.353	5.087 mg/kg	0.000509 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
6	nickel { nickel(II) oxide (nickel monoxide) }				21 mg/kg	1.273	20.925 mg/kg	0.00209 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]							
7	lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	301 mg/kg		235.683 mg/kg	0.0236 %	✓	
	082-001-00-6									
8	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
9	vanadium { divanadium pentaoxide; vanadium pentoxide }				35 mg/kg	1.785	48.923 mg/kg	0.00489 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
10	zinc { zinc oxide }				97 mg/kg	1.245	94.537 mg/kg	0.00945 %	✓	
	030-013-00-7	215-222-5	1314-13-2							
11	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
12	boron { diboron trioxide; boric oxide }				1.1 mg/kg	3.22	2.773 mg/kg	0.000277 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
13	TPH (C6 to C40) petroleum group				148 mg/kg		115.884 mg/kg	0.0116 %	✓	
			TPH							
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	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							
15	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				0.005 mg/kg		0.0039 mg/kg	0.000000392 %	✓	
	601-023-00-4	202-849-4	100-41-4							
18	xylene				0.017 mg/kg		0.0133 mg/kg	0.00000133 %	✓	
	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]							
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
20	pH		PH		7.6 pH		7.6 pH	7.6 pH		
21	naphthalene				3.63 mg/kg		2.842 mg/kg	0.000284 %	✓	
	601-052-00-2	202-049-5	91-20-3							
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
23	acenaphthene				6.56 mg/kg		5.136 mg/kg	0.000514 %	✓	
		201-469-6	83-32-9							
24	fluorene				4.41 mg/kg		3.453 mg/kg	0.000345 %	✓	
		201-695-5	86-73-7							
25	phenanthrene				9.4 mg/kg		7.36 mg/kg	0.000736 %	✓	
		201-581-5	85-01-8							
26	anthracene				2.71 mg/kg		2.122 mg/kg	0.000212 %	✓	
		204-371-1	120-12-7							
27	fluoranthene				7.15 mg/kg		5.598 mg/kg	0.00056 %	✓	
		205-912-4	206-44-0							
28	pyrene				5.12 mg/kg		4.009 mg/kg	0.000401 %	✓	
		204-927-3	129-00-0							
29	benzo[a]anthracene				2.18 mg/kg		1.707 mg/kg	0.000171 %	✓	
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				1.67 mg/kg		1.308 mg/kg	0.000131 %	✓	
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				1.43 mg/kg		1.12 mg/kg	0.000112 %	✓	
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				0.49 mg/kg		0.384 mg/kg	0.0000384 %	✓	
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				1.43 mg/kg		1.12 mg/kg	0.000112 %	✓	
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				0.57 mg/kg		0.446 mg/kg	0.0000446 %	✓	
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				0.45 mg/kg		0.352 mg/kg	0.0000352 %	✓	
		205-883-8	191-24-2							
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
38	monohydric phenols		P1186		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
Total:								0.0696 %		

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

ethylbenzene: (conc.: 3.92e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0116%)

xylene: (conc.: 1.33e-06%)

Classification of sample: SP301--03/07/2023

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

Sample details

Sample name:	LoW Code:
SP301--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
16.9% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 16.9% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }			20	mg/kg	1.32	21.944	mg/kg	0.00219 %	✓	
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }			0.6	mg/kg	1.142	0.57	mg/kg	0.000057 %	✓	
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }			19	mg/kg	1.462	23.077	mg/kg	0.00231 %	✓	
			215-160-9	1308-38-9								
4		copper { dicopper oxide; copper (I) oxide }			159	mg/kg	1.126	148.762	mg/kg	0.0149 %	✓	
		029-002-00-X	215-270-7	1317-39-1								
5		mercury { mercury dichloride }			8.1	mg/kg	1.353	9.11	mg/kg	0.000911 %	✓	
		080-010-00-X	231-299-8	7487-94-7								
6		nickel { nickel(II) oxide (nickel monoxide) }			26	mg/kg	1.273	27.496	mg/kg	0.00275 %	✓	
		028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]								
7		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	1120	mg/kg	930.72	mg/kg	0.0931 %	✓	
		082-001-00-6										
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }			<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
		034-002-00-8										
9		vanadium { divanadium pentaoxide; vanadium pentoxide }			35	mg/kg	1.785	51.922	mg/kg	0.00519 %	✓	
		023-001-00-8	215-239-8	1314-62-1								
10		zinc { zinc oxide }			228	mg/kg	1.245	235.833	mg/kg	0.0236 %	✓	
		030-013-00-7	215-222-5	1314-13-2								
11		chromium in chromium(VI) compounds { chromium(VI) oxide }			<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD
		024-001-00-0	215-607-8	1333-82-0								
12		boron { diboron trioxide; boric oxide }			<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
		005-008-00-8	215-125-8	1303-86-2								
13		TPH (C6 to C40) petroleum group			553	mg/kg		459.543	mg/kg	0.046 %	✓	
				TPH								
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane			<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4								

#	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							
15	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				0.005 mg/kg		0.0041 mg/kg	0.000000416 %	✓	
	601-023-00-4	202-849-4	100-41-4							
18	xylene				0.005 mg/kg		0.0041 mg/kg	0.000000416 %	✓	
	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]							
19	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
20	pH				7.9 pH		7.9 pH	7.9 pH		
			PH							
21	naphthalene				4.38 mg/kg		3.64 mg/kg	0.000364 %	✓	
	601-052-00-2	202-049-5	91-20-3							
22	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
23	acenaphthene				5.97 mg/kg		4.961 mg/kg	0.000496 %	✓	
		201-469-6	83-32-9							
24	fluorene				3.81 mg/kg		3.166 mg/kg	0.000317 %	✓	
		201-695-5	86-73-7							
25	phenanthrene				28.7 mg/kg		23.85 mg/kg	0.00238 %	✓	
		201-581-5	85-01-8							
26	anthracene				7.41 mg/kg		6.158 mg/kg	0.000616 %	✓	
		204-371-1	120-12-7							
27	fluoranthene				33.5 mg/kg		27.839 mg/kg	0.00278 %	✓	
		205-912-4	206-44-0							
28	pyrene				28.5 mg/kg		23.684 mg/kg	0.00237 %	✓	
		204-927-3	129-00-0							
29	benzo[a]anthracene				12.8 mg/kg		10.637 mg/kg	0.00106 %	✓	
	601-033-00-9	200-280-6	56-55-3							
30	chrysene				13.5 mg/kg		11.218 mg/kg	0.00112 %	✓	
	601-048-00-0	205-923-4	218-01-9							
31	benzo[b]fluoranthene				13.6 mg/kg		11.302 mg/kg	0.00113 %	✓	
	601-034-00-4	205-911-9	205-99-2							
32	benzo[k]fluoranthene				6.34 mg/kg		5.269 mg/kg	0.000527 %	✓	
	601-036-00-5	205-916-6	207-08-9							
33	benzo[a]pyrene; benzo[def]chrysene				11.4 mg/kg		9.473 mg/kg	0.000947 %	✓	
	601-032-00-3	200-028-5	50-32-8							
34	indeno[123-cd]pyrene				6.08 mg/kg		5.052 mg/kg	0.000505 %	✓	
		205-893-2	193-39-5							
35	dibenz[a,h]anthracene				1.36 mg/kg		1.13 mg/kg	0.000113 %	✓	
	601-041-00-2	200-181-8	53-70-3							
36	benzo[ghi]perylene				4.67 mg/kg		3.881 mg/kg	0.000388 %	✓	
		205-883-8	191-24-2							
37	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
38	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.207 %		

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

ethylbenzene: (conc.: 4.16e-07%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.046%)

xylene: (conc.: 4.16e-07%)

Classification of sample: TP201-0.40 - 0.90-03/07/2023

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

Sample details

Sample name:	LoW Code:	
TP201-0.40 - 0.90-03/07/2023	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
0.40 - 0.90 m		
Moisture content:		
21.6%		
(wet weight correction)		

Hazard properties

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 hazardous because Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinands:

toluene: (conc.: 5.8e-06%)

ethylbenzene: (conc.: 0.00001%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 1.769%)

xylene: (conc.: 0.00005%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.769%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.769%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

naphthalene: (conc.: 0.107%)

Aquatic Chronic 2; H411 "Toxic to aquatic life with long lasting effects."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 1.769%)

Determinands

Moisture content: 21.6% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				14	mg/kg	1.32	14.492	mg/kg	0.00145 %	✓	
	033-003-00-0	215-481-4	1327-53-3										
2		cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.269	mg/kg	0.0000269 %	✓	
	048-002-00-0	215-146-2	1306-19-0										
3		chromium in chromium(III) compounds {  chromium(III) oxide (worst case) }				18	mg/kg	1.462	20.625	mg/kg	0.00206 %	✓	
		215-160-9	1308-38-9										
4		copper { dicopper oxide ; copper (I) oxide }				84	mg/kg	1.126	74.147	mg/kg	0.00741 %	✓	
	029-002-00-X	215-270-7	1317-39-1										
5		mercury { mercury dichloride }				5.5	mg/kg	1.353	5.836	mg/kg	0.000584 %	✓	
	080-010-00-X	231-299-8	7487-94-7										
6		nickel { nickel(II) oxide (nickel monoxide) }				18	mg/kg	1.273	17.959	mg/kg	0.0018 %	✓	
	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]										
7		lead {  lead compounds with the exception of those specified elsewhere in this Annex }			1	320	mg/kg		250.88	mg/kg	0.0251 %	✓	
	082-001-00-6												
8		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
	034-002-00-8												
9		vanadium {  divanadium pentaoxide; vanadium pentoxide }				32	mg/kg	1.785	44.787	mg/kg	0.00448 %	✓	
	023-001-00-8	215-239-8	1314-62-1										
10		zinc { zinc oxide }				133	mg/kg	1.245	129.789	mg/kg	0.013 %	✓	
	030-013-00-7	215-222-5	1314-13-2										
11		chromium in chromium(VI) compounds { chromium(VI) oxide }				<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD
	024-001-00-0	215-607-8	1333-82-0										
12		boron { diboron trioxide ; boric oxide }				1.3	mg/kg	3.22	3.282	mg/kg	0.000328 %	✓	
	005-008-00-8	215-125-8	1303-86-2										
13		TPH (C6 to C40) petroleum group				22569.07	mg/kg		17694.151	mg/kg	1.769 %	✓	
			TPH										
14		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005	mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4										
15		benzene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2										
16		toluene				0.074	mg/kg		0.058	mg/kg	0.0000058 %	✓	
	601-021-00-3	203-625-9	108-88-3										
17		ethylbenzene				0.152	mg/kg		0.119	mg/kg	0.0000119 %	✓	
	601-023-00-4	202-849-4	100-41-4										
18		xylene				0.639	mg/kg		0.501	mg/kg	0.0000501 %	✓	
	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]										
19		cyanides {  salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5												
20		pH				7.9	pH		7.9	pH	7.9 pH		
			PH										

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
21		naphthalene				1370	mg/kg		1074.08	mg/kg	0.107 %	✓	
		601-052-00-2	202-049-5	91-20-3									
22	•	acenaphthylene				6.48	mg/kg		5.08	mg/kg	0.000508 %	✓	
			205-917-1	208-96-8									
23	•	acenaphthene				481	mg/kg		377.104	mg/kg	0.0377 %	✓	
			201-469-6	83-32-9									
24	•	fluorene				294	mg/kg		230.496	mg/kg	0.023 %	✓	
			201-695-5	86-73-7									
25	•	phenanthrene				973	mg/kg		762.832	mg/kg	0.0763 %	✓	
			201-581-5	85-01-8									
26	•	anthracene				261	mg/kg		204.624	mg/kg	0.0205 %	✓	
			204-371-1	120-12-7									
27	•	fluoranthene				428	mg/kg		335.552	mg/kg	0.0336 %	✓	
			205-912-4	206-44-0									
28	•	pyrene				301	mg/kg		235.984	mg/kg	0.0236 %	✓	
			204-927-3	129-00-0									
29		benzo[a]anthracene				96.5	mg/kg		75.656	mg/kg	0.00757 %	✓	
		601-033-00-9	200-280-6	56-55-3									
30		chrysene				101	mg/kg		79.184	mg/kg	0.00792 %	✓	
		601-048-00-0	205-923-4	218-01-9									
31		benzo[b]fluoranthene				109	mg/kg		85.456	mg/kg	0.00855 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				31	mg/kg		24.304	mg/kg	0.00243 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[a]pyrene; benzo[def]chrysene				99.7	mg/kg		78.165	mg/kg	0.00782 %	✓	
		601-032-00-3	200-028-5	50-32-8									
34	•	indeno[123-cd]pyrene				32.5	mg/kg		25.48	mg/kg	0.00255 %	✓	
			205-893-2	193-39-5									
35		dibenz[a,h]anthracene				7.27	mg/kg		5.7	mg/kg	0.00057 %	✓	
		601-041-00-2	200-181-8	53-70-3									
36	•	benzo[ghi]perylene				24.7	mg/kg		19.365	mg/kg	0.00194 %	✓	
			205-883-8	191-24-2									
37	•	monohydric phenols				15.4	mg/kg		12.074	mg/kg	0.00121 %	✓	
				P1186									
Total:											2.19 %		

Key

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

Classification of sample: TP201-0.90 - 1.20-03/07/2023

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

Sample details

Sample name:	LoW Code:
TP201-0.90 - 1.20-03/07/2023	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)
0.90 - 1.20 m	
Moisture content:	
22.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 22.7% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	●	TPH (C6 to C40) petroleum group				<84 mg/kg		<84 mg/kg	<0.0084 %		<LOD
				TPH							
2		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
3		benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
4		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3							
5	●	ethylbenzene				0.01 mg/kg		0.0077 mg/kg	0.000000773 %	✓	
		601-023-00-4	202-849-4	100-41-4							
6		xylene				0.014 mg/kg		0.0108 mg/kg	0.00000108 %	✓	
		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]							
Total:									0.0084 %		

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)
<LOD	Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

ethylbenzene: (conc.: 7.73e-07%)

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

Because of determinand:

xylene: (conc.: 1.08e-06%)

Classification of sample: TP201-1.20 - 1.80-03/07/2023

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

Sample details

Sample name:	LoW Code:	
TP201-1.20 - 1.80-03/07/2023	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)
1.20 - 1.80 m		
Moisture content:		
20.8%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 20.8% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	●	TPH (C6 to C40) petroleum group				<84 mg/kg		<84 mg/kg	<0.0084 %		<LOD
				TPH							
2		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
3		benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
4		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3							
5	●	ethylbenzene				0.004 mg/kg		0.0031 mg/kg	0.000000317 %	✓	
		601-023-00-4	202-849-4	100-41-4							
6		xylene				0.004 mg/kg		0.0031 mg/kg	0.000000317 %	✓	
		601-022-00-9	202-422-2 [1]	95-47-6 [1]							
			203-396-5 [2]	106-42-3 [2]							
			203-576-3 [3]	108-38-3 [3]							
			215-535-7 [4]	1330-20-7 [4]							
Total:									0.0084 %		

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)
<LOD Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

ethylbenzene: (conc.: 3.17e-07%)

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

Because of determinand:

xylene: (conc.: 3.17e-07%)

Classification of sample: TP201 Side 1--03/07/2023

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

Sample details

Sample name: **TP201 Side 1--03/07/2023** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: **28.4%** Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)

Hazard properties

None identified

Determinands

Moisture content: 28.4% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	TPH (C6 to C40) petroleum group				190 mg/kg		136.04	mg/kg	0.0136 %	✓	
			TPH								
2	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
3	benzene				<0.002 mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
4	toluene				<0.005 mg/kg		<0.005	mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								
5	ethylbenzene				<0.002 mg/kg		<0.002	mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4								
6	xylene				0.016 mg/kg		0.0115	mg/kg	0.00000115 %	✓	
	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]								
Total:									0.0136 %		

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)
<LOD Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0136%)

xylene: (conc.: 1.15e-06%)

Classification of sample: TP201 Side 2--03/07/2023

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

Sample details

Sample name:	LoW Code:
TP201 Side 2--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
37.4% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 37.4% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	●	TPH (C6 to C40) petroleum group				<84 mg/kg		<84 mg/kg	<0.0084 %		<LOD
				TPH							
2		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
3		benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
4		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3							
5	●	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-023-00-4	202-849-4	100-41-4							
6		xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
		601-022-00-9	202-422-2 [1]	95-47-6 [1]							
			203-396-5 [2]	106-42-3 [2]							
			203-576-3 [3]	108-38-3 [3]							
			215-535-7 [4]	1330-20-7 [4]							
Total:									0.0084 %		

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)
<LOD	Below limit of detection

Classification of sample: TP201 Side 3--03/07/2023

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

Sample details

Sample name:	LoW Code:
TP201 Side 3--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
25.7% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 25.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	TPH (C6 to C40) petroleum group				230 mg/kg		170.89 mg/kg	0.0171 %	✓	
			TPH							
2	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
3	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
4	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
5	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
6	xylene				0.007 mg/kg		0.0052 mg/kg	0.00000052 %	✓	
	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]							
Total:								0.0171 %		

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)
<LOD	Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0171%)

xylene: (conc.: 5.2e-07%)

Classification of sample: TP201 Side 4--03/07/2023

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

Sample details

Sample name:	LoW Code:
TP201 Side 4--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
23% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 23% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	TPH (C6 to C40) petroleum group				734 mg/kg		565.18 mg/kg	0.0565 %	✓	
			TPH							
2	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
3	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
4	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
5	ethylbenzene				0.015 mg/kg		0.0115 mg/kg	0.00000115 %	✓	
	601-023-00-4	202-849-4	100-41-4							
6	xylene				0.041 mg/kg		0.0316 mg/kg	0.00000316 %	✓	
	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]							
Total:								0.0565 %		

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)
<LOD	Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

ethylbenzene: (conc.: 1.16e-06%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.0565%)

xylene: (conc.: 3.16e-06%)

Classification of sample: TP201 Base--03/07/2023

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

Sample details

Sample name:	LoW Code:
TP201 Base--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
20.6% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 20.6% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	●	TPH (C6 to C40) petroleum group				<84 mg/kg		<84 mg/kg	<0.0084 %		<LOD
				TPH							
2		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
3		benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
4		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3							
5	●	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-023-00-4	202-849-4	100-41-4							
6		xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
		601-022-00-9	202-422-2 [1]	95-47-6 [1]							
			203-396-5 [2]	106-42-3 [2]							
			203-576-3 [3]	108-38-3 [3]							
			215-535-7 [4]	1330-20-7 [4]							
Total:									0.0084 %		

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)
<LOD	Below limit of detection

Classification of sample: Trench 1 Side 1--03/07/2023

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

Sample details

Sample name:	LoW Code:
Trench 1 Side 1--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
15% (wet weight correction)	

Hazard properties

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 hazardous because Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.687%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.687%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.687%)

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	TPH (C6 to C40) petroleum group				8082 mg/kg		6869.7 mg/kg		0.687 %	✓	
			TPH								
2	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
3	benzene				<0.002 mg/kg		<0.002 mg/kg		<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2								
4	toluene				<0.005 mg/kg		<0.005 mg/kg		<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
5	ethylbenzene									
	601-023-00-4	202-849-4	100-41-4		<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
6	xylene									
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
Total:								0.687 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
<LOD	Below limit of detection

Classification of sample: Trench 1 Side 2--03/07/2023

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

Sample details

Sample name: **Trench 1 Side 2--03/07/2023** LoW Code: Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: **13.8%** Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)

Hazard properties

None identified

Determinands

Moisture content: 13.8% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	TPH (C6 to C40) petroleum group				604 mg/kg		520.648 mg/kg	0.0521 %	✔	
			TPH							
2	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
3	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
4	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
5	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
6	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
Total:								0.0521 %		

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)
<LOD	Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0521%)

Classification of sample: Trench 1 Side 3--03/07/2023

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

Sample details

Sample name:	LoW Code:	
Trench 1 Side 3--03/07/2023	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
14.1% (wet weight correction)		

Hazard properties

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 hazardous because Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

ethylbenzene: (conc.: 1.2e-06%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.139%)

xylene: (conc.: 1.55e-06%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.139%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.139%)

Determinands

Moisture content: 14.1% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	TPH (C6 to C40) petroleum group				1616 mg/kg		1388.144	mg/kg	0.139 %	✓	
			TPH								

#		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							
2		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		603-181-00-X	216-653-1	1634-04-4							
3		benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7	71-43-2							
4		toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9	108-88-3							
5	●	ethylbenzene				0.014 mg/kg		0.012 mg/kg	0.0000012 %	✓	
		601-023-00-4	202-849-4	100-41-4							
6		xylene				0.018 mg/kg		0.0155 mg/kg	0.00000155 %	✓	
		601-022-00-9	202-422-2 [1]	95-47-6 [1]							
			203-396-5 [2]	106-42-3 [2]							
			203-576-3 [3]	108-38-3 [3]							
			215-535-7 [4]	1330-20-7 [4]							
Total:									0.139 %		

Key

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

Classification of sample: Trench 1 Side 4--03/07/2023

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

Sample details

Sample name:	LoW Code:
Trench 1 Side 4--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12.6% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12.6% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	TPH (C6 to C40) petroleum group				134 mg/kg		117.116 mg/kg	0.0117 %	✓	
			TPH							
2	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
3	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
4	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
5	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
6	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
Total:								0.0117 %		

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)
<LOD	Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0117%)

Classification of sample: Trench 1 Base--03/07/2023

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

Sample details

Sample name:	LoW Code:
Trench 1 Base--03/07/2023	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
28.6% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 28.6% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	TPH (C6 to C40) petroleum group				222 mg/kg		158.508 mg/kg	0.0159 %	✔	
			TPH							
2	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
3	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
4	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
5	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
6	xylene				<0.004 mg/kg		<0.004 mg/kg	<0.0000004 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
Total:								0.0159 %		

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)
<LOD	Below limit of detection

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 Concentrations at less than 1.0% are "unlikely to be flammable". Flammability of soils is unlikely to result in a hazardous classification in soils (AGS Waste Classification – A Practitioner's Guide).

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0159%)

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

GB MCL index number: 082-001-00-6

Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2

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

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

divanadium pentaoxide; vanadium pentoxide (EC Number: 215-239-8, CAS Number: 1314-62-1)

GB MCL index number: 023-001-00-8

Description/Comments: Hazard statements H301, H330, H350 added by HazWasteOnline due to ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.

Additional Hazard Statement(s): Carc. 1B; H350, Acute Tox. 3; H301, Acute Tox. 2; H330

Reason for additional Hazards Statement(s):

20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].

Substance has therefore been self-classified.

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

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

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

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

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

Description/Comments:

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

Reason for additional Hazards Statement(s):

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

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

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

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

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

Reason for additional Hazards Statement(s):

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

pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GB MCL index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

■ **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Muta. 2; H341, Acute Tox. 3; H331, Acute Tox. 3; H311, Acute Tox. 3; H301, STOT RE 2; H373, Skin Corr. 1B; H314, Skin Corr. 1B; H314 >= 3 %, Skin Irrit. 2; H315 1 £ conc. < 3 %, Eye Irrit. 2; H319 1 £ conc. < 3 %, Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides.

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

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

copper {dicopper oxide; copper (I) oxide}

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

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(II) oxide (nickel monoxide)}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

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

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

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

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

vanadium {divanadium pentaoxide; vanadium pentoxide}

Most conservative species.

zinc {zinc oxide}

Worst case compound based on absence of CrVI and assumed metal oxides from a combustion, ash based source.

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

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

boron {diboron trioxide; boric oxide}

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

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

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

Appendix C: Version

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

HazWasteOnline Classification Engine Version: 2023.194.5683.10460 (13 Jul 2023)

HazWasteOnline Database: 2023.194.5683.10460 (13 Jul 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

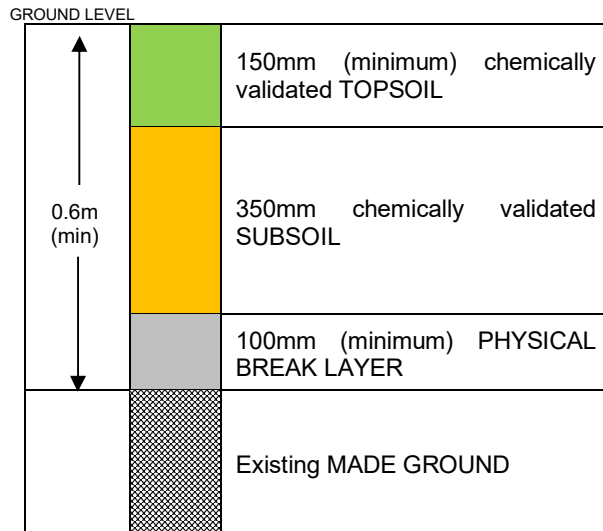
GB MCL List - version 1.1 of 09 June 2021

Appendix J

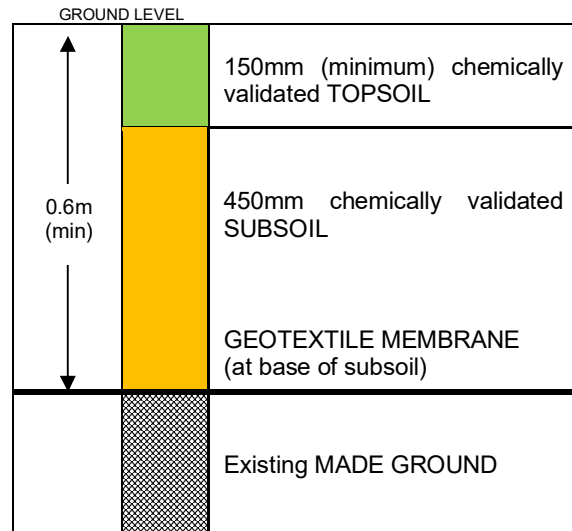
Typical Environmental Cover System Construction

PRIVATE FRONT AND REAR GARDENS:

Either (physical break layer)

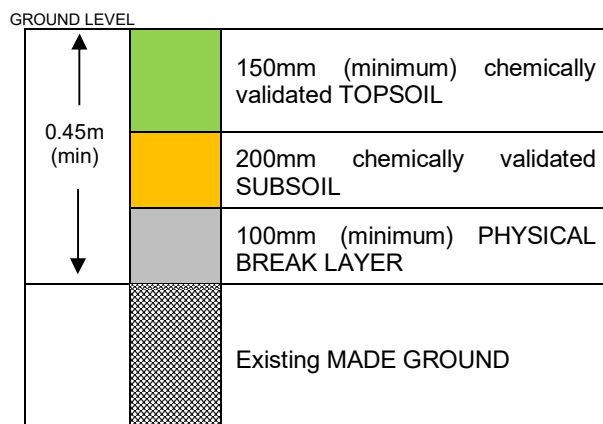


Or (geotextile membrane)

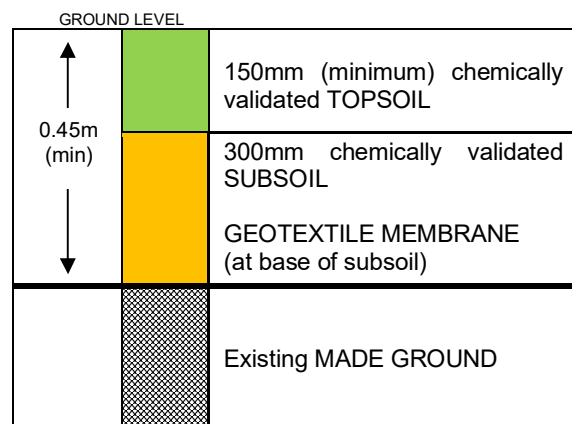


SHARED LANDSCAPING:

Either (physical break layer)



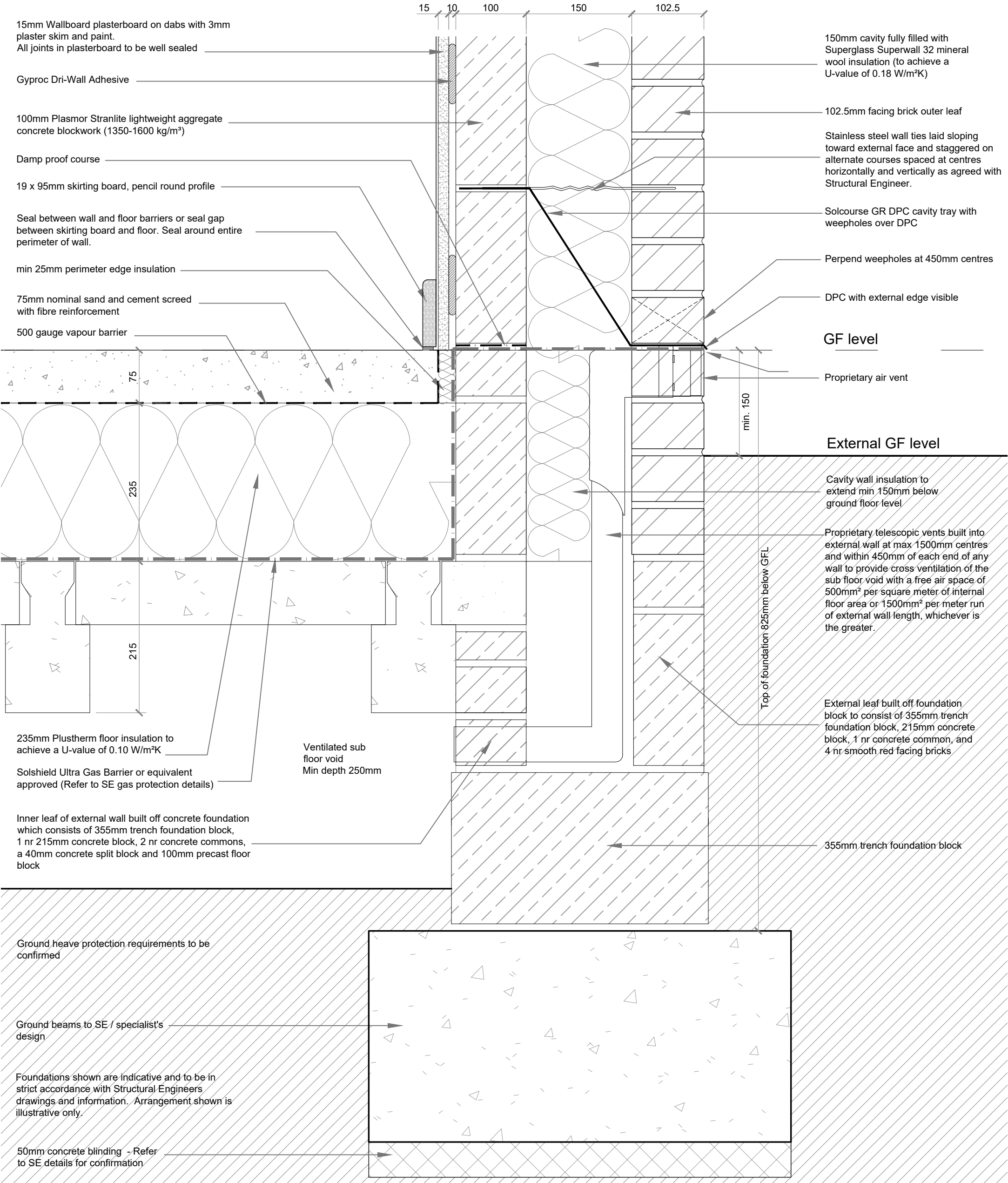
Or (geotextile membrane)



Hardstood Areas – No Remediation Required

Appendix K

Typical Foundation Cross Section Details



SEPARATING WALL DETAIL
(E-WM-27)

DETAILS TO BE READ IN CONJUNCTION WITH
ROBUST DETAILS E-WM-27

To communal corridor side, one layer of 12.5mm Gyproc Wallboard (total nominal mass per unit area 8 kg/m²), mounted on dabs and 3mm plaster skim and paint finish.

100mm Plasmor Stranlite lightweight aggregate concrete blockwork (1350-1600 kg/m³)

75mm cavity fully filled with 75mm Superglass Party Wall Roll insulation, ensuring no gaps remain

Damp proof course

Seal between wall and floor barriers or seal gap between skirting board and floor. Seal around entire perimeter of wall using flexible acoustic sealant.

Cavity wall tie - refer to Robust Details for suitable types

Gyproc Dri-Wall Adhesive

To apartment side, one layer of 12.5mm Gyproc Wallboard (total nominal mass per unit area 8 kg/m²), mounted on dabs and 3mm plaster skim and paint finish.

Damp proof course

Visqueen 1200g damp proof membrane

19 x 95mm skirting board, pencil round profile

min 25mm perimeter edge insulation

75mm nominal sand and cement screed with fibre reinforcement

500 gauge vapour barrier

235mm Plustherm floor insulation to achieve a U-value of 0.10 W/m²K

Solshield Ultra Gas Barrier or equivalent approved (Refer to SE gas protection details)

215mm deep pre-cast concrete beam and block flooring to Specialist design (Refer to SE drawings for direction of floor spans)

Party wall leaf built off concrete foundation which consists of 1 nr 215mm concrete block, 2 nr concrete commons, a 40mm concrete split block and 100mm precast floor block

Damp-proof course below precast concrete floor beams where they are built into masonry wall

Minimum ventilated sub floor void depth of 250mm determined based on medium shrinkage potential of ground as identified in Geoenvironmental Report. Refer to LABC requirements.

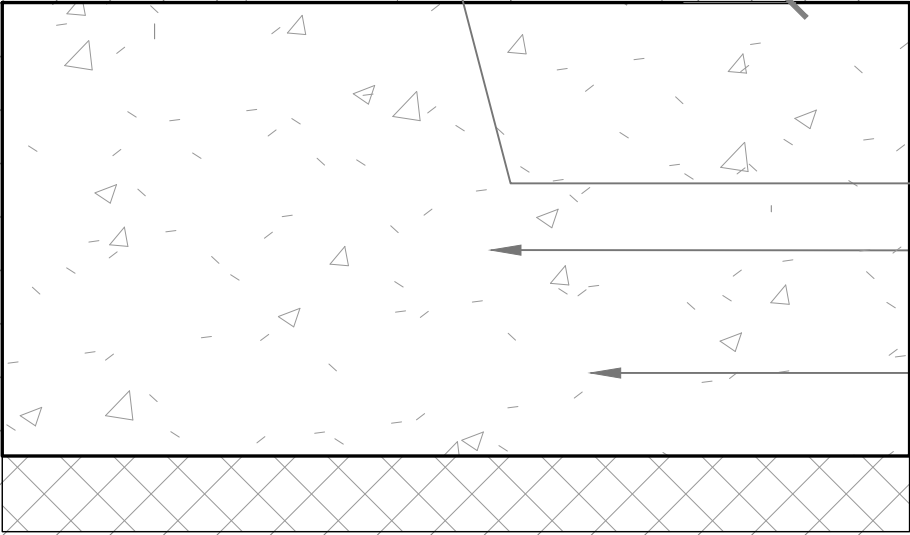
Air vents built into party walls and all substructure walls (positioned between insulated precast concrete floor units) at max 1500mm centres and within 450mm of each end of any wall to provide cross ventilation of the sub floor void with a free air space of 500mm² per square meter of internal floor area or 1500mm² per meter run of external wall length, whichever is the greater.

Lean mix concrete fill to be a minimum 225mm below DPC

Ground beams to SE / Specialist's design

Foundations shown are indicative and to be in strict accordance with Structural Engineers drawings and information. Arrangement shown is illustrative only.

50mm concrete blinding - Refer to SE details for confirmation



Based across the UK with offices in
Manchester, London,
Liverpool, Swindon and Glasgow.

Manchester (Head Office)

Unit 29
Eton Business Park
Eton Hill Rd, Radcliffe
M26 2ZS

t: 0161 763 7200
e: info@thelkgroup.com

Swindon

39 Bowman House Business Centre
Bowman Court
Whitehill Lane
Royal Wootton Bassett
Swindon
SN4 7DB

t : 01793 987 390
e : info@thelkgroup.com

London

Brooklands Business Park
Wellington Way
Weybridge
KT13 0TT

t: 01932 871872
e: info@thelkgroup.com

Glasgow

Wright Business Centre
1 Lonmay Road
Glasgow
G33 4EL

t: 0141 773 6269
e: info@thelkgroup.com

Liverpool

The Corn Exchange
Fenwick Street
Liverpool
L2 7QL

t: 0151 235 8716
e: info@thelkgroup.com



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