



Providing Ground Solutions

CGK/00150/GRA

Otterfield Road
*Generic Quantitative Risk
Assessment*

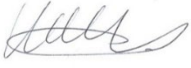


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EXECUTIVE SUMMARY

Card Geotechnics Limited (CGL) has been commissioned by The London Borough of Hillingdon to complete a Phase II Generic Risk Assessment (GRA) for a site named “Otterfield Road” (the site) located at Otterfield Road, West Drayton UB7 8P. The proposed development is to comprise the new construction of a library and residential complex including a playground, parking spaces and various gardens with soft and hard landscaping features.

A Phase I Preliminary Risk Assessment (PRA) of the study site was previously undertaken by CET Infrastructure (CET) in early 2014 and issued to Frankhams Consultancy Ltd, who were acting on behalf of The London Borough of Hillingdon. The proposed development was not completed and in October 2021, The London Borough of Hillingdon instructed CGL to provide works to update the reports previously compiled by CET Infrastructure. A letter report was provided as an addendum to the existing PRA dated 10th November 2021.

An intrusive ground investigation was undertaken by CET in 2014 and comprised eight shallow hand excavated trial pits to depths of up to 1.2m below ground level (bgl) and three cable percussion boreholes to 25m bgl. Made Ground was proved to a maximum depth of 1.7m bgl. Additional ground investigation was undertaken in October 2021 and comprised twelve shallow hand excavated trial pits to depths of up to 1.5mbgl. Twelve samples were selected for chemical analysis at a range of depths, six of these samples were also subject to WAC analysis.

Soil samples collected during the October 2021 site works were sent for chemical analysis and a comparison of the recorded concentrations of metals and various PAHs with the corresponding S4ULs for residential end use was conducted. Elevations in PAHs were seen to exceed the S4UL criteria for “Residential with Plant Uptake”.

The HazWasteOnline model was used to undertake a hazard assessment and all twelve tested samples were classified as non-hazardous waste. Reference to the results of the six Waste Acceptance Criteria tests carried out showed that five of the six samples had not exceeded the inert WAC threshold, however, the sample denoted as “Sample 7” exceeded the inert WAC threshold for fluoride indicating that some material on the site would not be acceptable as inert waste. Asbestos was not detected in any of the samples.

Chemical assessment of soil samples recovered from the site indicates that the underlying soils present a moderate risk to human health with respect to residential with plant uptake end use. The risk to controlled waters, buildings and services via the source, pathway, receptor concept were considered to

be high based on the availability of contamination within the soils and potential pathways for mobilisation and contact with the receptors.

Remedial works should take place before the site would be suitable for residential use based on the comparison of sample analysis against the S4UL values for “Residential with Plant Uptake”.

All construction works should adhere strictly to current best practice. Should the proposed end use of the site change, the risk assessments must be reviewed, and the site conceptual model updated.




1. INTRODUCTION



Card Geotechnics Limited (CGL) has been commissioned by The London Borough of Hillingdon to complete a Phase II Generic Risk Assessment (GRA) for a site named “Otterfield Road” (the site) located at Otterfield Road, West Drayton UB7 8P, which is centred on What3Words location ///buddy.museum.dots and comprises an area of about 0.3 hectares. The proposed development includes construction of a library, residential housing, a playground, parking spaces and various gardens with soft and hard landscaping features.

At the time of the walkover survey, the site comprised a fenced-off triangular shaped plot of disused land surfaced with areas of asphalt to the south alongside concrete and grass areas across the site. The site was bounded by residential gardens to the east, a road and public car park to the south and recreation areas to the west. There was evidence that the general public had been accessing the area with a range of refuse noted across the site.

This GRA report is based upon a defined programme of work and terms and conditions agreed with the Client. In preparing this report, all reasonable skill and care has been taken, accounting for project objectives, agreed scope of work and prevailing site conditions. CGL accepts no liability to any parties whatsoever, following the issue of this report, for any matters arising outside the agreed scope of work. It should be noted that this report is issued in confidence to the Client and that CGL has no responsibility to any third parties to whom this report may be circulated, in part or in full and any such parties cannot rely on the contents of the report. Unless specifically assigned or transferred within the terms of the agreement, CGL asserts and retains all Copyright and other Intellectual Property Rights, in and over the report and its contents.

This report sets out to:

-  Detail the ground conditions encountered across the site, following the ground investigation and provide environmental analysis and interpretation of chemical laboratory testing undertaken on representative soil samples;
-  Present a source-pathway-receptor generic quantitative risk assessment (GQRA) based on the findings of the ground investigation and results of chemical testing and monitoring;
-  An assessment of the environmental condition of the site including assessment of risk to end users, construction workers, water resource receptors and building materials.




-  Provide geoenvironmental recommendations for addressing soil and groundwater contamination (where encountered), ground gas and for material management; and
-  A preliminary assessment of the waste classification for surplus soils.


The objective of this report is to provide preliminary information regarding the ground conditions and recommendations to enable the development of the site for its intended purpose.

2. SUMMARY OF PHASE I PRELIMINARY RISK ASSESSMENT





A Phase I Preliminary Risk Assessment (PRA) of the study site was previously undertaken by CET Infrastructure (CET) in early 2014 and issued to Frankhams Consultancy Ltd, who were acting on behalf of The London Borough of Hillingdon. The proposed development was not completed and in October 2021, The London Borough of Hillingdon instructed CGL to provide works to update the reports previously compiled by CET Infrastructure. A letter report was provided as an addendum to the existing PRA delivering information relevant to land conditions at the site between completion of the CET 2014 report and 10th November 2021 when the letter report was issued (CGK/00150 – Otterfield Road – Preliminary Risk Assessment Addendum Letter).

Information from the CET 2014 report and the CGL 2021 letter report established the following regarding the site and its environmental setting: -




-  The BGS Geology of Great Britain Maps indicates that the site is underlain by the London Clay Formation. The geological memoir describes this stratum as comprising stiff dark or bluish grey clay which weathers at outcrop to brown. Superficial deposits of the Lynch Hill Gravel Member are also mapped at the study site. The geological memoir describes the Lynch Hill Gravel Member as sand and gravel, locally with lenses of silt, clay or peat.
-  The proposed development is for the construction of a library, residential housing, a playground, parking spaces and various gardens with soft and hard landscaping features.
-  A site walkover was undertaken by a CGL Environmental Scientist on 22nd October 2021 where it was observed that the site comprised a fenced-off triangular shaped plot of disused land surfaced with areas of asphalt to the south alongside concrete and grass areas across the site. Uneven ground was noted across the site with short tree stumps present across the entire site. The site was bounded by residential gardens to the east, a road and public car park to the south with recreation areas to the west. There was evidence that the general public had been accessing the area with a range of refuse noted across the site, including gas canisters, bottles, cans, plastic bags, chairs and fly tipped household electronics. A stockpile of fresh woodchips was noted in the southwest corner of the site on an area of asphalt hardstanding. It is understood this material was placed there following the management and cut-back of trees and vegetation on the site in August/September 2021.

 Off-site sources of potential contamination identified in the CET 2014 report were listed as historical gravel pits, brick works and substation. Seven historical landfills were recorded within 1km and a waste treatment/disposal site, garages, a dry cleaners and a carpet/upholstery and curtain cleaners.

The following on-site potential sources of contamination were identified:

-  Made Ground, associated with a historical backfilled swimming pool and redevelopment;
-  Historical commercial activities including rubber/plastic manufacturing;
-  Historical sub-station; and
-  Potential contaminants identified included metals, PAHs, asbestos, phenols, PCBs, VOCs and ground gases.

The following potential receptors were identified:

-  Humans (on-site and off-site);
-  Controlled waters (surface and groundwater close to or beneath the site); and
-  Buildings and materials of construction on or under the site, or in the vicinity

Construction workers, current site users and future site users were thought to be at moderate risk of the effects of contamination and controlled waters were thought to be at moderate risk of the effects of contamination from both the current and historical land uses. Risk to construction workers and off site receptors could be mitigated by good site practice.

3. SUMMARY OF PHASE II GROUND INVESTIGATION

3.1 FIELDWORK

An intrusive ground investigation was undertaken by CET in 2014 comprised of eight shallow hand excavated trial pits to depths of up to 1.2m below ground level (bgl) and three cable percussion boreholes to 25m bgl. Made Ground was proved to a maximum depth of 1.7m bgl, which was underlain by superficial deposits of Lynch Hill Gravel Member then the London Clay Formation.

The exploratory holes show that the site is underlain by superficial deposits of Lynch Hill Gravel Member overlying solid geology of the London Clay Formation. The results of which are further discussed in report denoted as "F13/146109/GRA".

It was judged that there was a negligible ground gas risk on the site due to the low total organic carbon (TOC) of the Made Ground and backfill materials were noted to comprise site-won demolition rubble.

Additional ground investigation was undertaken in October 2021 and comprised of twelve shallow hand excavated trial pits to depths of up to 1.5mbgl. The approximate locations of the exploratory holes are shown in Figure 2.

Details of the ground conditions encountered in the exploratory holes are presented in the trial pit logs in Appendix A. Reference should be made to these logs for detailed descriptions of the strata penetrated.

Made Ground was encountered in all exploratory holes and was proved to a maximum depth of 1.7m bgl in boreholes BH01 and BH02 undertaken during the previous investigation. Many of the trial pits were terminated within the made ground without encountering natural strata.

Groundwater was not observed within any of the trial pits during the October 2021 site works. Water seepages had been noted in the previous investigation in boreholes BH01 and BH03 at depths of 1.8m and 2.0m rising to 1.7m and 1.6m respectively. Notwithstanding the above, groundwater levels may vary both seasonally and in the long term.

The investigation was undertaken in accordance with the requirements of BS 5930:2015¹ and BS 10175:2011² and the exploratory holes were logged by an Environmental Scientist from CGL. Representative soil samples were retrieved and sent for laboratory analysis.

¹ British Standards Institution (2015) *Code of practice for site investigations*. BS 5930:2015

² British Standards Institution (2011) *Investigation of potentially contaminated sites – Code of practice*. BS 10175:2011

4. LIMITATIONS

Attention is drawn to the fact that whilst every effort has been made to ensure the accuracy of the data supplied and any analysis derived from it, there is a potential for variations in ground and groundwater contamination between and beyond the specific locations investigated. No liability can be accepted for any such variations. Any recommendations are specific to the client's requirements as detailed herein and no liability will be accepted should these be used by third parties without prior consultation with CGL.










This interpretive report is based on the information included within the preceding Phase I and the data presented within this report only.

5. LABORATORY TESTING

5.1 CHEMICAL TESTING

To test potential pollutant linkages and assess whether the soils beneath the site could pose a significant risk to sensitive receptors, twelve samples were selected for chemical analysis at a range of depths. The samples were placed in laboratory prepared vessels with a minimum of headspace and labelled accordingly prior to being despatched to an accredited analytical laboratory in a cool box.

The suite of analysis was selected with reference to the findings of the CGL Phase I Preliminary Risk Assessment as well as on-site observations and included:

-  A suite of metals comprising As, B, Cu, Cd, Cr, Cr VI, Hg, Pb, Ni, Se and Zn;
-  Speciated Poly Aromatic Hydrocarbons (PAHs);
-  Speciated petroleum hydrocarbons (TPH CWG);
-  BTEX;
-  Polychlorinated biphenyls (PCBs);
-  Asbestos (screen and quantification where positive);
-  Total monohydric phenols;
-  Free cyanide;
-  pH.

Six samples were also scheduled for the single stage Waste Acceptance Criteria test suite following BS EN 12457/2. The results of all laboratory analyses are attached in full as laboratory report 21- 13160.1 and are included in Appendix B.

6. GENERIC QUANTITATIVE RISK ASSESSMENT

6.1 GENERIC HUMAN HEALTH RISK ASSESSMENT

To provide an indication of whether the soils present beneath the study area could pose a risk to human health, CGL carried out a Phase II Generic Quantitative Risk Assessment (GQRA). The initial screen of the chemical data was made against available Suitable 4 Use Levels (S4ULs) developed by LQM/CIEH (2015) and Category 4 Screening Levels (C4SLs) as developed by DEFRA (2014). Exceedances of assessment criteria may require further detailed/semi-detailed quantitative risk assessment.

For the purposes of this assessment the S4ULs that consider an end use of “Residential with plant uptake” were considered to be the most applicable for all samples. Although the samples had a range of total organic carbon values (TOC), the threshold for 1% TOC was chosen as it is the most conservative (Reference *Nathanail, C.P.; McCaffrey, C.; Gillett, A.G.; Ogden, R.C. & Nathanail, J.F. “The LQM/CIEH S4ULs for Human Health Risk Assessment”, 2015, Land Quality Press* for more details).

The CET 2014 GRA report concluded that elevated concentrations of arsenic and three PAH compounds were present when the laboratory results of Made Ground samples were compared against the ‘residential with plant uptake’ generic assessment criteria. The GRA recommended that remedial works should take place before the site would be suitable for residential use.

Twelve of the soil samples collected during the October 2021 site works were sent for chemical analysis and a comparison of the recorded concentrations of metals and various PAHs with the corresponding S4ULs for residential end use are presented in the following tables:

Table 1: Heavy metals in tested samples

Contaminant	Key statistics			S4UL* (Residential with plant uptake)	
	Number of detects	Min. Value (mg/kg)	Max. Value (mg/kg)	S4UL (mg/kg)	No. Samples exceeding assessment criteria
Arsenic	12	10.0	20.0	37	0
Boron (water sol.)	0	<LOD	0.0	290	0
Cadmium	6	0.2	0.5	11	0
Chromium III	12	13.0	22.0	910	0
Chromium VI	0	<LOD	0.0	6	0
Copper	12	22.0	48.0	2400	0
Lead	12	52.0	168.0	200	0
Mercury	1	1.3	1.3	40	0
Nickel	12	11.0	18.0	180	0
Selenium	0	<LOD	0.0	250	0
Zinc	12	49.0	129.0	3700	0
Phenols (Mono)	0	<LOD	0.0	280	0
<i>Notes to Table</i>					
*	<i>Most appropriate screening values are Suitable 4 Use Level (S4UL) for a "Residential with plant uptake" end use, a sandy loam soil type, pH of 7 and a soil organic matter (SOM) of 1%.</i>				

Analysis of the soil samples taken shows that none of the twelve samples exceeded the residential with plant uptake S4UL values for heavy metals, indicating that the elevated arsenic identified in the 2014 report may be confined to discreet areas.

The concentrations of PAHs recorded by the analysis exceed the respective S4ULs for Benzo(b)fluoranthene, Benzo(a)Pyrene and Dibenzo(ah)Anthracene and are therefore considered to pose a risk to human end users where these are elevated within private gardens or have the potential to migrate into private garden areas from other parts of the site. The concentrations of BTEX, PCBs, and phenols recorded by the analysis did not exceed the respective S4ULs and these are considered not to pose a risk to human end users.

Table 2: PAHs, TPH, BTEX and PCBs in tested samples

Contaminant	Key statistics			S4UL* (Residential with plant uptake)	
	Number of detects	Min. Value (mg/kg)	Max. Value (mg/kg)	S4UL (mg/kg)	No. Samples exceeding assessment criteria
Naphthalene	1	<LOD	0.24	2	0.00
Acenaphthylene	2	<LOD	0.13	170	0.00
Acenaphthene	3	<LOD	0.13	210	0.00
Fluorene	3	<LOD	0.26	170	0.00
Phenanthrene	9	<LOD	3.91	95	0.00
Anthracene	5	<LOD	1.11	2400	0.00
Fluoranthene	10	<LOD	6.93	280	0.00
Pyrene	10	<LOD	6.09	620	0.00
Benzo(a)Anthracene	9	<LOD	3.35	7	0.00
Chrysene	10	<LOD	2.71	15	0.00
Benzo(b)fluoranthene	10	<LOD	4.24	2.6	2
Benzo(k)fluoranthene	6	<LOD	1.19	77	0.00
Benzo(a)Pyrene	9	<LOD	3.40	2.2	1
Indeno(123-cd) Pyrene	7	<LOD	2.44	27	0.00
Dibenzo(ah)Anthracene	5	<LOD	0.47	0.2	2
Benzo(ghi)Perylene	7	<LOD	2.31	320	0.00
PCBs	0	<LOD	<LOD	0.39	0.00
Aliphatic C5-C6	0	<LOD	<LOD	42	0.00
Aliphatic C6-C8	0	<LOD	<LOD	100	0.00
Aliphatic C8-C10	0	<LOD	<LOD	27	0.00
Aliphatic C10-C12	0	<LOD	<LOD	130	0.00
Aliphatic C12-C16	2	<LOD	<LOD	1100	0.00
Aliphatic C16-C35	4	<LOD	59	65000	0.00
Aromatic C5-C7 (ben)	0	<LOD	<LOD	70	0.00
Aromatic C7-C8 (tol)	0	<LOD	<LOD	130	0.00
Aromatic C8-C10	0	<LOD	<LOD	34	0.00
Aromatic C10-C12	0	<LOD	<LOD	74	0.00
Aromatic C12-C16	0	<LOD	<LOD	140	0.00
Aromatic C16-C21	5	<LOD	36	260	0.00
Aromatic C21-C35	5	<LOD	100	1100	0.00
MTBE	0	<LOD	<LOD	49	0.00
Benzene	0	<LOD	<LOD	0.09	0.00
Toluene	0	<LOD	<LOD	130	0.00
Ethyl Benzene	0	<LOD	<LOD	47	0.00
Xylene-o	0	<LOD	<LOD	59	0.00
Xylene- p & m	0	<LOD	<LOD	60	0.00
<i>Notes to Table</i>					
*	<i>Most appropriate screening values are Suitable 4 Use Level (S4UL) for a "Residential with plant uptake" end use, a sandy loam soil type, pH of 7 and a soil organic matter (SOM) of 1%.</i>				

6.2 GENERIC RISK ASSESSMENT FOR CONTROLLED WATERS, BUILDINGS & SERVICES

The risk to services from soil contaminants should be considered and the application of the source, pathway, receptor concept utilised to ensure risks are carefully considered. Direct contact with the soil or backfill, an excessive vapour phase or a contaminated groundwater regime all have the potential to provide the pathway between the source to the receptor. Arsenic and PAH elevations were identified within the soils and so it is necessary to consider the pipework and services that will be installed and conduct appropriate analysis on any materials within which the pipes are to be laid, whether that be existing ground materials, remediated materials or imported capping materials. As the source, pathway, receptor link can currently be established the risk to services is considered to be moderate.

The CET PRA stated that *“the site is underlain by the London Clay Formation, which has been classified as an Unproductive Strata by the Environmental Agency. However, the superficial deposits of Lynch Hill Gravel Member mapped at the study site have been classified as a Principal Aquifer although no groundwater Source Protection Zones or sensitive abstractions have been identified within a 1km radius of the study site. The closest surface water receptor to the study site is the Grand Union Canal, which is located approximately 320m to the south west of the site.”* The site is not listed as being located in an area affected by flooding from rivers and seas. Lynch Hill Gravel Member have been classified as a Principal Aquifer. Near surface hydrological percolation from rainfall events could mobilize contaminants within the soil matrix, allowing movement to ground water, however contamination is limited to hotspots and may be well sorbed to organic material. Therefore the risk to controlled waters is considered to be moderate.

The CET 2014 PRA report identified the onsite backfilled swimming pool as a potential sources of ground gases. Based on observations made during the CET 2014 site works, and the TOC concentrations recorded in the samples of Made Ground recovered from the location of the former swimming pool, it was judged that the backfill materials comprised site won demolition rubble with a negligible potential to generate ground gases.

Made Ground was recorded in all the shallow hand dug trial pits during the recent site works. Exploratory hole logs from the 2014 CET site works also identified Made Ground. However average depth according to 2014 CET bore hole logs was <3m and TOC levels in samples collected in 2014 and 2021 do not exceed 2.7% in any of the samples. Using this information and Table D1 of BS 8485:2015 it is concluded that the initial estimation of the potential to generate ground gas as being negligible would be valid and so the risk considered to be moderate / low.

Where ground gas monitoring has not been carried out and the risk is considered to be moderate to low, ventilated underfloor voids, in accordance with BS 8485:2015, and gas/radon resistant membrane would need to be implemented and independent verification of the membrane and venting installation required.

7. WASTE CLASSIFICATION HAZARD ASSESSMENT

As detailed in the Environment Agency's Technical Guidance WM3 Ver.1.2.GB (2021) entitled 'Guidance on the classification and assessment of waste', wastes are presented in the List of Wastes Directive (LoWD, 2014/955/EU) and grouped according to generic industry, process or waste type. Wastes within the LoWD are either hazardous or non-hazardous. Some of these wastes are hazardous without further assessment (absolute entries) or are 'mirror' entries that require further assessment as to hazardous properties in order to determine whether the waste is hazardous. Waste soil has mirror entries on the LoWD and as such the first phase of the waste classification process is to determine if the waste is hazardous or not, i.e., a hazard assessment.

Certain contaminants (e.g., asbestos, diesel) have prescribed concentration thresholds that if breached will render the material hazardous waste. Thus, in the first instance the concentrations of plausible contaminants within the soil should be identified. Results of this assessment should help to determine the likely fate of the soil (re-use elsewhere or disposal) and whether the soil is hazardous 17 05 03* (asterisk denotes hazardous waste code) or non-hazardous 17 05 04. Dependent on the results of the hazard assessment advice can be given as to the likely options available for a given waste and any further testing or assessment that may be required.

Hazardous waste will likely require landfilling (subject to compliance with further Waste Acceptance Criteria (WAC) testing and after 'pre-treatment') or off-site treatment. Non-hazardous waste may be suitable for re-use rather than landfilling in which case reduced or no further testing is likely to be required.

7.1 HAZARD ASSESSMENT

The HazWasteOnline model was used to undertake the hazard assessment, the purpose of which is to establish whether the tested samples should be considered as either hazardous 17 05 03* or non-hazardous 17 05 04 waste. As the model output sheets in Appendix C demonstrate, all twelve tested samples were classified as non-hazardous waste.

Reference was subsequently made to the results of the six WAC tests carried out for the samples denoted as "Sample 2", "Sample 4", "Sample 6", "Sample 7", "Sample 9" and "Sample 11". As detailed in the table below and in Appendix B, the samples denoted as "Sample 2", "Sample 4", "Sample 6", "Sample 9" and "Sample 11" were compliant with the inert WAC. The sample denoted as "Sample 7" exceeded the inert WAC threshold for fluoride and is therefore classified as non-hazardous.

Asbestos was not detected in any of the samples.

To comply with the requirements of disposal to landfill some sort of physical pre-treatment is required. This can be in the form of sorting the bricks, concrete, etc., from the soil matrix. However, the level to which this practice is implemented will depend upon the percentage volume of material to be segregated and that under certain circumstances, where the percentage is understood to be very low, pre-treatment may not be necessary.

A summary table of the waste hazard assessment is shown below:

Table 3: Summary of Waste Classification Report:

Sample Ref:	European Waste Catalogue (EWC) Code	Compliant with inert WAC?	Waste Acceptance	Asbestos Present?	Comments
Sample 1	17 05 04 Non-hazardous	-	-	Not Detected	-
Sample 2	17 05 04 Non-hazardous	Yes	Inert	Not Detected	-
Sample 3	17 05 04 Non-hazardous	-	-	Not Detected	-
Sample 4	17 05 04 Non-hazardous	Yes	Inert	Not Detected	-
Sample 5	17 05 04 Non-hazardous	-	-	Not Detected	-
Sample 6	17 05 04 Non-hazardous	Yes	Inert	Not Detected	-
Sample 7	17 05 04 Non-hazardous	No	Non-hazardous	Not Detected	Inert WAC threshold exceeded: Fluoride: 10.8mg/kg
Sample 8	17 05 04 Non-hazardous	-	-	Not Detected	-
Sample 9	17 05 04 Non-hazardous	Yes	Inert	Not Detected	-
Sample 10	17 05 04 Non-hazardous	-	-	Not Detected	-
Sample 11	17 05 04 Non-hazardous	Yes	Inert	Not Detected	-
Sample 12	17 05 04 Non-hazardous	-	-	Not Detected	-

8. REVISED RISK ASSESSMENT

Following the intrusive ground investigation, a revised conceptual site model is included below and supersedes that issued within the Phase I Preliminary Risk Table 3. Qualitative risk assessment.

Table 4. Qualitative risk assessment

Potential Source/Medium	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating	Comments
Asbestos Containing Materials (ACMs)	Direct/indirect ingestion of soil and dust;	Construction workers	Medium	Low Likelihood	Moderate/Low	If asbestos containing material is present it should be removed by a suitable licensed asbestos contractor before any demolition works. However, asbestos was not identified during soil analysis or visually identified during the site works, however, during construction operatives on the site should have suitable asbestos awareness training.
	Inhalation of particle vapours and asbestos fibres; and	Current site users	Medium	Low Likelihood	Moderate/Low	
	Dermal contact.	Future site users	Medium	Low Likelihood	Moderate/Low	
Explosive/ asphyxiating gases/vapours from underlying soils (Made Ground, if present)	Migration of gases and vapours through to the surface	Internal building spaces & future occupiers	Medium	Low Likelihood	Moderate/Low	Made Ground recovered from the site was judged to be backfill materials comprised site won demolition rubble with a negligible potential to generate ground gases.
Historical land use – On-site risks identified in the PRA included Made Ground, associated with a historical backfilled swimming pool and redevelopment as well as historical commercial activities including rubber/plastic manufacturing and a historical sub-station. Potential contaminants identified included metals, PAHs, asbestos, phenols, PCBs, VOCs and ground gases.	Direct/indirect ingestion of soil and dust, inhalation of particle vapours and asbestos fibres and dermal contact, root uptake. Migration of contaminants onto underlying soil including through windblown dust, particulates and through surface run off.	Construction workers	Medium	Low Likelihood	Moderate/Low	PAH contamination was identified by soil analysis to exceed the S4ULs for Residential with Plant uptake.
		Current site users	Medium	Low Likelihood	Moderate/Low	
		Future site users	Medium	Low Likelihood	Moderate/Low	

Potential Source/Medium	Potential Exposure Route	Potential Exposure Route	Potential Receptor	Severity	Probability	Risk Rating		
<p>Current site usage and on-site observations – Potential sources of contamination include PAH recorded by the analysis exceeding the respective S4ULs for Benzo(b)fluoranthene, Benzo(a)Pyrene and Dibenzo(ah)Anthracene.</p> <p>Arsenic was noted to be a contaminant of concern in the 2014 GRA prepared by CET.</p>	<p>Direct/indirect ingestion of soil and dust; Inhalation of particle / vapours; Dermal contact; Root uptake; and Migration of contaminants into underlying soil including through windblown dust, particulates and through surface run off.</p>	Construction workers	Likely	Medium	Moderate	<p>No olfactory signs of contamination were noted during the site works. However, PAH contamination was identified by soil analysis to exceed the S4ULs for Residential with Plant uptake. S – R – P link possible in areas of soft landscaping, park spaces and residential gardens.</p>		
		Current site users	Likely	Medium	Moderate			
		Future site users	Likely	Medium	Moderate			
				Services and buildings	Likely	Medium	Moderate	<p>The source, pathway, receptor link can currently be established between contamination within the soils and the receptor, however contamination is not ubiquitous across the site and there is no certainty that an event is inevitable.</p>
				Controlled waters	Likely	Medium	Moderate	
<p>Off-site sources include; garage services, dry cleaners, car body repairs, car body repairs, manufacturers of rubber and plastic products, petrol filling station</p> <p>Therefore, potential sources of contaminants may include hydrocarbons, TPH, PAHs, PCBs, VOCs and heavy metals.</p>	<p>Migration of contaminants from off-site sources onto underlying site, including through windblown dust, particulates and through surface run off.</p>	Construction workers	Low Likelihood	Medium	Moderate/ Low	<p>PAH contamination was identified by soil analysis to exceed the S4ULs for Residential with Plant uptake.</p>		
		Current site users	Low Likelihood	Medium	Moderate/ Low			
		Future site users	Low Likelihood	Medium	Moderate/ Low			

9. SUMMARY AND CONCLUSIONS

Card Geotechnics Limited (CGL) was commissioned by The London Borough of Hillingdon to carry out a Phase II Generic Risk Assessment (GRA) for a site named “Otterfield Road” located at Otterfield Road, West Drayton UB7 8P, which is centred on What3Words location [///buddy.museum.dots](https://www.what3words.com/otterfield-road). A Phase I Preliminary Risk Assessment (PRA) of the study site was previously undertaken by CET Infrastructure (CET) in early 2014 and issued to Frankhams Consultancy Ltd, who were acting on behalf of The London Borough of Hillingdon. The proposed development was not completed and in October 2021, The London Borough of Hillingdon instructed CGL to provide works to update the reports previously compiled by CET Infrastructure. A letter report was provided as an addendum to the existing PRA delivering information relevant to land conditions at the site between completion of the CET 2014 report and 10th November 2021 when the letter report was issued (CGK/00150 – Otterfield Road – Preliminary Risk Assessment Addendum Letter), data from which has been used herein to inform the Generic Risk Assessment. CGL also undertook some exploratory trial pits on the site as part of the ground investigation carried out in October 2021. Data from the trial pits has also been used herein to conduct a Generic Risk Assessment.

The scope of works comprised twelve shallow hand excavated trial pits to depths of up to 1.5mbgl.

The CET 2014 GRA report concluded that elevated concentrations of arsenic and three PAH compounds were recorded when the laboratory results of Made Ground samples were compared against the ‘residential with plant uptake’ generic assessment criteria. Analysis of the soil samples taken during the October 2021 site works shows that none of the twelve samples exceeded the residential with plant uptake S4UL values for heavy metals. Heavy metals in the soils are therefore not deemed as a risk to human health for residential with plant uptake. The concentrations of BTEX, PCBs, and phenols recorded by the analysis did not exceed the respective S4ULs and these are considered not to pose a risk to human end users. However, the concentrations of PAH recorded by the analysis exceed the respective S4ULs for Benzo(b)fluoranthene, Benzo(a)Pyrene and Dibenzo(ah)Anthracene and are therefore considered to pose a risk to human end users and have the potential to pose a risk to human health and future site users via the direct contact, ingestion and dust inhalation exposure pathways. The risk to controlled waters, buildings and services via the source, pathway, receptor concept were considered to be moderate based on the availability of contamination within the soils and potential pathways for mobilisation and contact with the receptors.

Twelve samples from a range of depths were collected for chemical analysis including a suite of commonly occurring organic and inorganic contaminants based upon the findings of the Phase I Preliminary Risk Assessment (CGK/00150 – Otterfield Road – Preliminary Risk Assessment Addendum Letter). Asbestos was not detected in any of the twelve samples.

The CET 2014 PRA report identified the on-site backfilled swimming pool as a potential source of ground gases. Based on observations made during the CET 2014 site works and the TOC concentrations recorded in the samples of Made Ground recovered from the location of the former swimming pool, it was judged that the backfill materials comprised site won demolition rubble with a negligible potential to generate ground gases. Using the updated TOC analysis and Table D1 of BS 8485:2015 it was concluded that the initial estimation of the potential to generate ground gas as being negligible would be valid and so the risk considered to be moderate / low.

All twelve tested samples were classified as 17 04 05 non-hazardous waste. Reference was made to the results of the six WAC tests carried out. The samples denoted as “Sample 2”, “Sample 4”, “Sample 6”, “Sample 9” and “Sample 11” were compliant with the inert WAC threshold. The sample denoted as “Sample 7” exceeded the inert WAC threshold for fluoride and is therefore classified as non-hazardous. Waste should be disposed of following The Waste (Circular Economy) (Amendment) Regulations 2020.

Construction workers could be exposed to contaminated ground by the aforementioned exposure pathways however, the use of personal protective equipment (PPE) and good health and hygiene practices would ameliorate risks.

The CET site works in 2014 included analysis of potential contaminants including VOCs, SVOCs, phenols and PCBs. The recorded concentrations of these contaminants were generally less than the respective analytical detection limits, however, one sample did contain detectable concentrations of bis(2-ethylhexyl)phthalate and total PCBs. The recorded concentrations of bis(2-ethylhexyl)phthalate and PCBs were both less than the respective Generic Assessment Criteria (GACs), which considered a sensitive residential end use of the site. This consideration, coupled with the absence of significant visual or olfactory evidence of contamination at the time of the works, suggested that the results were not likely to be indicative of a significant pollution event. To discount the risks posed to human health, it may be prudent to carry out a supplementary inspection of the site once it has been stripped to formation level.

9.1 RECOMMENDATIONS

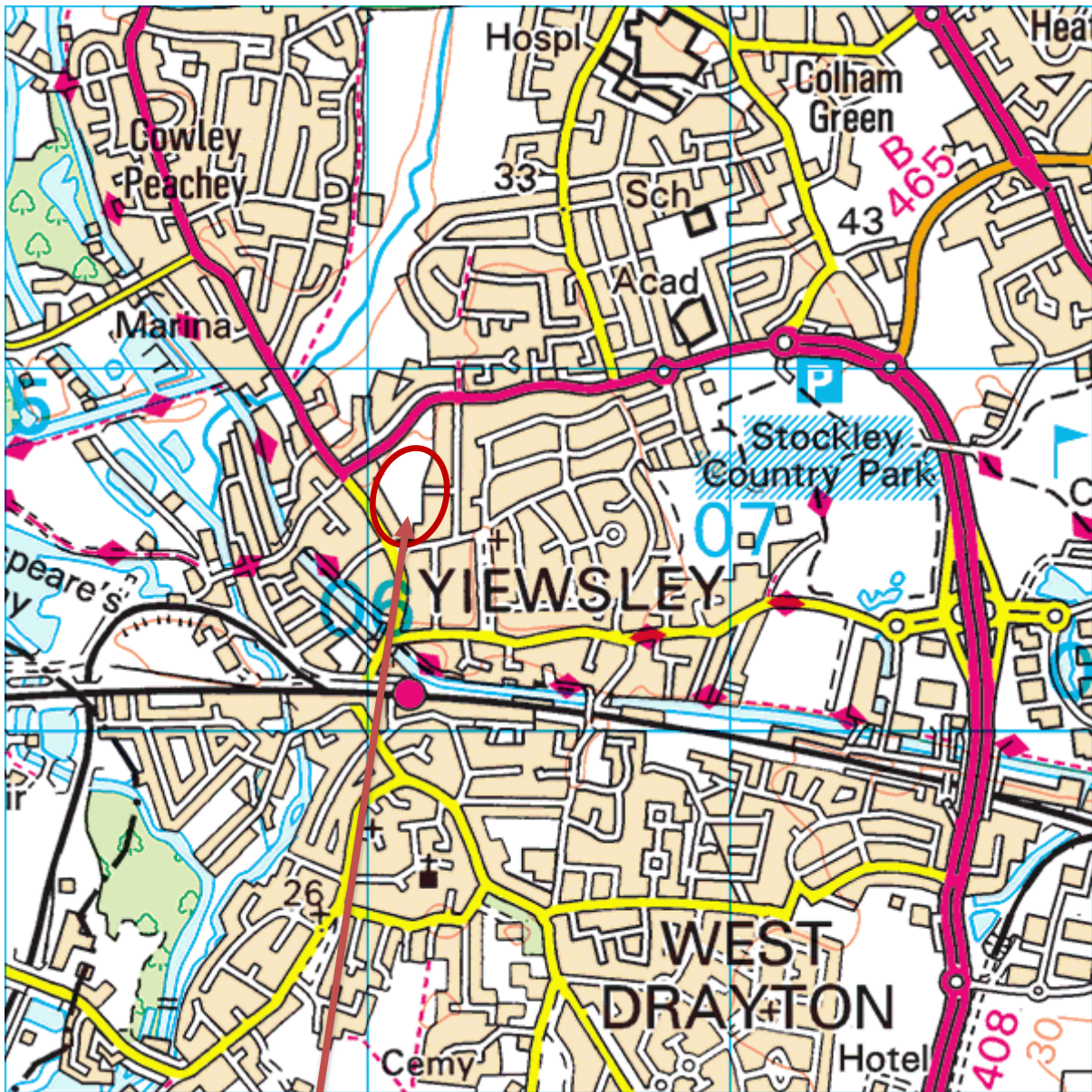
The CET 2014 GRA report recommended that remedial works should take place before the site would be suitable for residential use based on the comparison of sample analysis against the S4UL values for “Residential with Plant Uptake”. The 2021 site works, sample analysis and subsequent findings of this report would uphold these recommendations to ensure that the contamination identified on the site

does not pose a risk to future site users, controlled waters, or buildings and services via the source, pathway, receptor route. A remediation method statement should be prepared and agreed with the local authority prior to commencing works. Remedial works must be verified by an appropriately qualified professional and a verification report submitted to the local authority for acceptance.

Appropriate dust suppression measures should also be adopted to ensure that construction workers and off-site human receptors are not exposed to or impacted by dust generated during the construction processes.


Where ground gas monitoring has not been carried out and the risk is considered to be moderate to low, ventilated underfloor voids, in accordance with BS 8485:2015, and gas/radon resistant membrane would need to be implemented and independent verification of the membrane and venting installation required.

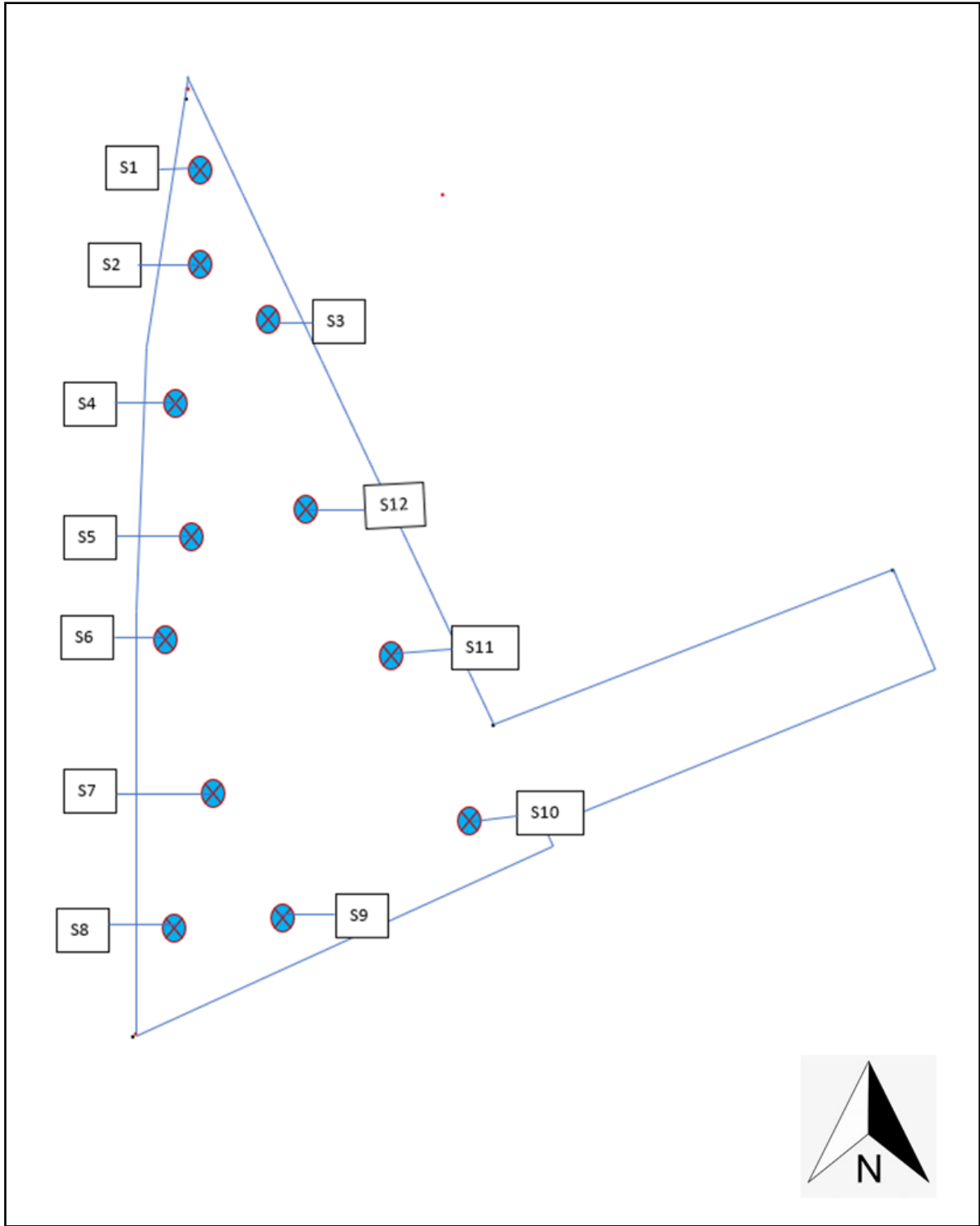
FIGURES



Site Location



<p>Client London Borough of Hillingdon</p>	<p>Project Otterfield Road</p>	<p>Job No CGK/00150</p>
	<p>Title Approximate Site Location Plan</p>	<p>Figure 1 Scale 1:50,000</p>



Client The London Borough of Hillingdon	Project Otterfield Road	Job No CGK/00150
	Title Indicative Trial Pit Locations.	Figure 2

Contamination sources on-site:

- PAH contamination including: Benzo(b)fluoranthene, Benzo(a)Pyrene and Dibenzo(ah)Anthracene
- **Contamination sources off-site:**
- Includes sources of contaminants may include hydrocarbons, TPH, PAHs, PCBs, VOCs and heavy metals.

Current On-site: PAH contamination in soils

Potential pollution pathways:

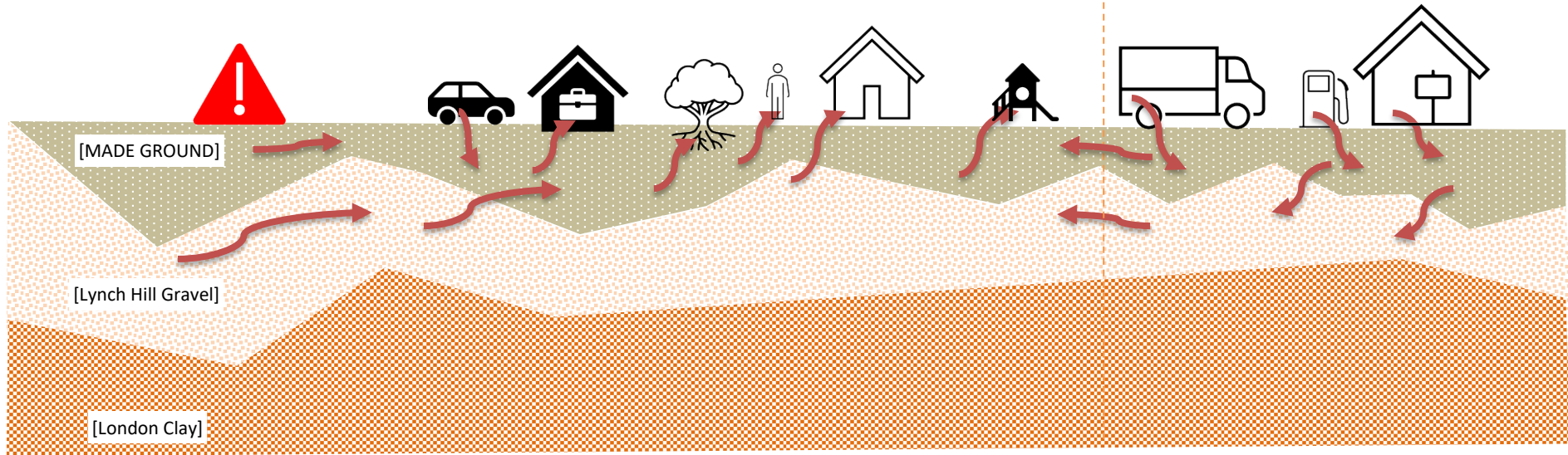
- Ingestion & inhalation
- Direct/dermal contact
- Root uptake
- Lateral and vertical migration
- Ground gas/vapour migration
- Drainage and services

Potential receptors:

- Current site users
- Future site users
- Construction workers
- Off-site users
- On and off-site buildings and infrastructure

Future site-use: library, residential housing, a playground, parking spaces and various gardens with soft and hard landscaping features.

Off-site: Garage services, dry cleaners, car body repairs, car body repairs, manufacturers of rubber and plastic products and petrol filling station.




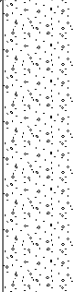
Depths of Made Ground, Lynch Hill Gravel and London Clay formation are approximate only

<p>Client</p> <p>GSE GROUP</p>	<p>Project</p> <p>Otterfield Road</p>	<p>Job No</p> <p>CGK/00150</p>
	<p>Title</p> <p>Conceptual Site Model Schematic</p>	<p>Figure 3</p>




APPENDIX A



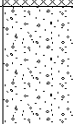
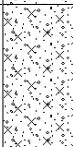
Engineer's Logs

Client: The London Borough of Hillingdon		Depth (m) 1.50	Plant used: Hand Auger	TRIAL PIT NUMBER S01 Sheet 1 of 1
Width (m)	Length (m)	Method of Excavation:	Shoring: NONE	
Co-ordinates	Ground Level (m AOD)	Hand Augering	Date Started: 27/10/2021	

Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & Thickness (m)		
0.00 - 1.50	ES			(0.25)	Black mottled dark brown, gravelly CLAY. Gravel is angular to rounded, fine to coarse mixed lithologies including asphalt.	
				0.25	Some roots noted.	
				(0.25)	Brown, gravelly CLAY. Gravel is angular to rounded, fine to coarse, mixed lithologies including brick.	
				0.50	Yellow mottled light brown, gravelly coarse SAND. Gravel is angular to rounded, fine to coarse, mixed lithologies.	
				(1.00)		
				1.50	End of Trial Pit at 1.50m	




General Remarks:
Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.



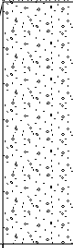
Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S1
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.50	Plant used: Hand Auger	TRIAL PIT NUMBER S02 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 1.50	ES			(0.30)	Black mottled dark brown, gravelly CLAY. Gravel is angular to rounded, fine to coarse, mixed lithologies including asphalt. Roots noted.	
				0.30 (0.30)	Light brown gravelly CLAY. Gravel is angular to rounded, fine to coarse, mixed lithologies including brick and asphalt.	
				0.60 (0.40)	Orange mottled light brown, gravelly coarse SAND. Gravel is angular to rounded, fine to coarse, mixed lithologies.	
				1.00 (0.50)	Orange mottled light brown, silty gravelly SAND. Gravel is sub angular to rounded, fine to coarse, mixed lithologies.	
				1.50	End of Trial Pit at 1.50m	

General Remarks:




Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

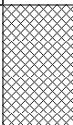
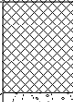
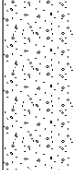
Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S2
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.20	Plant used: Hand Auger	TRIAL PIT NUMBER S04 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 1.20	ES			(0.20) 0.20 (0.20) 0.40 (0.80) 1.20	Black mottled dark brown, silty gravelly SAND. Gravel is angular to rounded, fine, mixed lithologies. Orange mottled brown gravelly SILT. Gravel is angular to rounded, fine to coarse, mixed lithologies including brick and glass. Some rootlets noted. Orange mottled brown, gravelly coarse SAND. Gravel is angular to rounded, fine to coarse mixed lithologies.	  
End of Trial Pit at 1.20m						

General Remarks:




Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 CGL Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S4
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.30	Plant used: Hand Auger	TRIAL PIT NUMBER S05 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 1.30	ES			(0.40)	Dark brown, gravelly SILT, Gravel is angular to rounded, fine to coarse mixed lithologies comprising brick and glass. Some rootlets noted.	
				0.40 (0.30)	Brown gravelly, silty coarse SAND. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and brick. Some rootlets noted.	
				0.70 (0.60)	Orange mottled brown gravelly, coarse SAND. Gravel is angular to rounded, fine to coarse mixed lithologies.	
				1.30	End of Trial Pit at 1.30m	

General Remarks:

Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 CGL Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S5
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.50	Plant used: Hand Auger	TRIAL PIT NUMBER S06 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 1.50	ES			(0.50)	Grey, gravelly, coarse SAND. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint, brick, cement and glass. Rootlets noted.	
				0.50 (0.50)	Dark brown, gravelly SILT. Gravel is angular to rounded, fine to coarse mixed lithologies including flint, brick and glass.	
				1.00 (0.50)	Orange mottled brown gravelly, coarse SAND. Gravel is angular to rounded, fine to coarse mixed lithologies.	
				1.50	End of Trial Pit at 1.50m	




General Remarks:





Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 CGL Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S6
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m) 1.00		Plant used: Hand Auger		TRIAL PIT NUMBER S07 Sheet 1 of 1		
Width (m)		Length (m)		Method of Excavation:		Shoring: NONE			
Co-ordinates		Ground Level (m AOD)		Hand Augering		Date Started: 27/10/2021			
Samples/In Situ Tests			Change of Strata		Description of Strata				Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)					
0.00 - 1.00	ES			(0.50)	Brown, gravelly, fine sandy SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint, brick and cement. Some rootlets noted.				[Cross-hatched pattern]
				0.50 (0.50)	Orange mottled brown, gravelly SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and brick. Some rootlets noted.				
				1.00	End of Trial Pit at 1.00m				




General Remarks:
Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

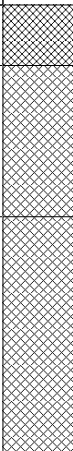
Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S7
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.00	Plant used: Hand Auger	TRIAL PIT NUMBER S08 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 1.00	ES			(0.20) Asphalt.		
				0.20 Dark brown, gravelly, fine SAND. Gravel is angular to rounded, fine to coarse mixed lithologies.		
				(0.20) 0.40 Brown gravelly SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint.		
				0.60 (0.40) Orange mottled brown, gravelly SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint.		
				1.00 End of Trial Pit at 1.00m		

General Remarks:




Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

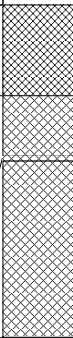
Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 CGL Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S8
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.50	Plant used: Hand Auger	TRIAL PIT NUMBER S09 Sheet 1 of 1
Width (m)		Length (m)		Method of Excavation:	Shoring: NONE	
Co-ordinates		Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021	
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 1.50	ES			(0.20)	Asphalt.	
				0.20	Orange mottled brown, gravelly, coarse sandy SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and asphalt.	
				(0.50)	Dark brown gravelly, SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and brick.	
				0.70		
				(0.80)		
				1.50	End of Trial Pit at 1.50m	

General Remarks:




Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S9
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.10	Plant used: Hand Auger	TRIAL PIT NUMBER S10 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & Thickness (m)		
0.00 - 1.10	ES			(0.30)	Asphalt.	
				0.30 (0.20) 0.50	Brown mottled red, gravelly, coarse SAND. Gravel is angular to rounded, fine to coarse mixed lithologies comprising asphalt, brick and flint.	
				(0.50) 1.00	Brown mottled red, gravelly, SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and brick.	
End of Trial Pit at 1.10m						

General Remarks:




Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.



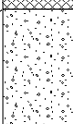
Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S10
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	1.10	Plant used: Hand Auger	TRIAL PIT NUMBER S11 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 1.10	ES			(0.50)	Brown, gravelly, medium sandy SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and brick. Some rootlets noted.	[Cross-hatched pattern]
				0.50 (0.60)	Brown, gravelly SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and brick.	
				1.10	End of Trial Pit at 1.10m	

General Remarks:




Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 CGL Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S11
Appr'd:			

Client: The London Borough of Hillingdon			Depth (m)	0.90	Plant used: Hand Auger	TRIAL PIT NUMBER S12 Sheet 1 of 1
Width (m)	Length (m)		Method of Excavation:	Shoring: NONE		
Co-ordinates	Ground Level (m AOD)		Hand Augering	Date Started: 27/10/2021		
Samples/In Situ Tests			Change of Strata		Description of Strata	Legend
Depth (m)	Type	Test/Field Records	Reduced Level (mAOD)	Depth & (Thickness) (m)		
0.00 - 0.90	ES			(0.20)	Grass cover, soft, brown, silty fine SAND.	
				0.20	Brown, gravelly, medium sandy SILT. Gravel is angular to rounded, fine to coarse mixed lithologies comprising flint and brick.	
				(0.30)		
				0.50	Orange mottled brown gravelly, coarse SAND. Gravel is angular to rounded, fine to coarse mixed lithologies.	
				(0.40)		
				0.90	End of Trial Pit at 0.90m	

General Remarks:

Trial pit logged for environmental purposes only and not necessarily in accordance with BS 5930. Trial pit remained dry whilst open.

Ref:	CGK00150	TRIAL PIT RECORD Scale 1:25 <small>See Key Sheet for explanation of symbols, etc.</small>	 CGL Providing Ground Solutions
Logged:	KK		
Checked:		Otterfield Road	FIG S12
Appr'd:			

APPENDIX B

Laboratory Chemical Analysis



Kathrine Kemsley
CGL Ltd
Northdown House
Ashford Road
Harrietsham
Maidstone
Kent
ME17 1QW

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

DETS Report No: 21-13160

Site Reference: Otterfield Road

Project / Job Ref: CGK/00150

Order No: POP008557

Sample Receipt Date: 29/10/2021

Sample Scheduled Date: 01/11/2021

Report Issue Number: 1

Reporting Date: 08/11/2021

Authorised by:

Nick Watson
General 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.



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Soil Analysis Certificate						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572631	572632	572633	572634	572635

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	7.8	7.9	7.9	7.9	7.8
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	17	< 10	< 10	< 10	54
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.02	< 0.01	< 0.01	< 0.01	0.05
TOC (Total Organic Carbon)	%	< 0.1	NONE	1.9	1.5	1.1	0.9	1.3
Arsenic (As)	mg/kg	< 2	MCERTS	14	13	13	12	12
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	21	19	18	17	18
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	22	40	32	27	31
Lead (Pb)	mg/kg	< 3	MCERTS	52	153	96	77	95
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	17	14	16	18	14
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	65	77	51	49	52
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
TPH - Aliphatic >C35 - C40	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aromatic >C35 - C40	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
TPH - Aliphatic / Aromatic (C6 - C40) - Total	mg/kg	< 42	NONE	< 42	< 42	< 42	< 42	< 42
Tentative Petroleum Type	N/a	N/a	NONE	Typical of PAH range organics	N/a	Typical of PAH range organics	N/a	Typical of PAH range organics

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



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Soil Analysis Certificate						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572636	572637	572638	572639	572640

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
pH	pH Units	N/a	MCERTS	8.1	9.0	7.9	7.8	8.1
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	60	83	88	69	73
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.06	0.08	0.09	0.07	0.07
TOC (Total Organic Carbon)	%	< 0.1	NONE	1.6	1.9	1.7	1.7	2.3
Arsenic (As)	mg/kg	< 2	MCERTS	13	12	13	10	20
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.5	0.3	0.2	< 0.2	0.2
Chromium (Cr)	mg/kg	< 2	MCERTS	17	22	22	13	19
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	33	28	33	40	44
Lead (Pb)	mg/kg	< 3	MCERTS	117	103	91	127	156
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	15	17	18	11	15
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3	< 3	< 3	< 3
Zinc (Zn)	mg/kg	< 3	MCERTS	118	104	129	76	79
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
TPH - Aliphatic >C35 - C40	mg/kg	< 10	NONE	< 10	20	15	12	< 10
TPH - Aromatic >C35 - C40	mg/kg	< 10	NONE	< 10	31	< 10	< 10	< 10
TPH - Aliphatic / Aromatic (C6 - C40) - Total	mg/kg	< 42	NONE	< 42	247	119	85	120
Tentative Petroleum Type	N/a	N/a	NONE	Typical of PAH and lubricating oil range organics	Typical of PAH and lubricating oil range organics	Typical of PAH and lubricating oil range organics	Typical of PAH and lubricating oil range organics	Typical of PAH and lubricating oil range organics

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



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Soil Analysis Certificate					
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21		
CGL Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Otterfield Road	TP / BH No	Sample 11	Sample 12		
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied		
Order No: POP008557	Depth (m)	None Supplied	None Supplied		
Reporting Date: 08/11/2021	DETS Sample No	572641	572642		

Determinand	Unit	RL	Accreditation				
Asbestos Screen ^(S)	N/a	N/a	ISO17025	Not Detected	Not Detected		
pH	pH Units	N/a	MCERTS	7.9	7.9		
Free Cyanide	mg/kg	< 2	NONE	< 2	< 2		
W/S Sulphate as SO ₄ (2:1)	mg/l	< 10	MCERTS	79	64		
W/S Sulphate as SO ₄ (2:1)	g/l	< 0.01	MCERTS	0.08	0.06		
TOC (Total Organic Carbon)	%	< 0.1	NONE	2.7	1.4		
Arsenic (As)	mg/kg	< 2	MCERTS	14	14		
W/S Boron	mg/kg	< 1	NONE	< 1	< 1		
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.2	0.2		
Chromium (Cr)	mg/kg	< 2	MCERTS	18	18		
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		
Copper (Cu)	mg/kg	< 4	MCERTS	48	37		
Lead (Pb)	mg/kg	< 3	MCERTS	168	124		
Mercury (Hg)	mg/kg	< 1	MCERTS	1.3	< 1		
Nickel (Ni)	mg/kg	< 3	MCERTS	15	15		
Selenium (Se)	mg/kg	< 2	MCERTS	< 3	< 3		
Zinc (Zn)	mg/kg	< 3	MCERTS	94	74		
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2		
TPH - Aliphatic >C35 - C40	mg/kg	< 10	NONE	< 10	< 10		
TPH - Aromatic >C35 - C40	mg/kg	< 10	NONE	< 10	< 10		
TPH - Aliphatic / Aromatic (C6 - C40) - Total	mg/kg	< 42	NONE	< 42	< 42		
Tentative Petroleum Type	N/a	N/a	NONE	Typical of PAH range organics	Typical of PAH range organics		

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



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572631	572632	572633	572634	572635

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.24
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.12	< 0.1	0.34
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.27	< 0.1	0.19	< 0.1	0.50
Pyrene	mg/kg	< 0.1	MCERTS	0.27	< 0.1	0.18	< 0.1	0.43
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.12	< 0.1	< 0.1	< 0.1	0.24
Chrysene	mg/kg	< 0.1	MCERTS	0.21	< 0.1	0.15	< 0.1	0.27
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.19	< 0.1	0.11	< 0.1	0.32
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.13	< 0.1	< 0.1	< 0.1	0.22
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.14
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.13
Coronene	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Oily Waste PAHs	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	1.2
Total Dutch 10 PAHs	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	2.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	2.9
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	< 1.7	< 1.7	< 1.7	< 1.7	2.9

(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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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572636	572637	572638	572639	572640

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.12	< 0.1	0.13
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	0.13	< 0.1	0.12	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	0.13	< 0.1	0.26	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.18	3.91	1.76	3.25	0.68
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	1.11	0.30	0.75	0.19
Fluoranthene	mg/kg	< 0.1	MCERTS	0.46	6.93	4.84	6.26	2.45
Pyrene	mg/kg	< 0.1	MCERTS	0.45	6.09	4.13	5.11	2.17
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	0.27	3.35	2.28	2.29	1.31
Chrysene	mg/kg	< 0.1	MCERTS	0.28	2.71	2.05	2.15	1.20
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	0.34	4.24	2.74	2.15	1.66
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.12	1.19	1.12	0.87	0.47
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	0.26	3.40	2.17	1.76	1.23
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.19	2.44	1.49	1.01	0.88
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.47	0.27	0.19	0.18
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.19	2.31	1.36	0.91	0.83
Coronene	mg/kg	< 0.1	NONE	< 0.1	0.64	0.37	0.17	0.21
Total Oily Waste PAHs	mg/kg	< 1	MCERTS	1.5	17.8	12.1	10.4	6.9
Total Dutch 10 PAHs	mg/kg	< 1	MCERTS	1.9	27.4	17.4	19.3	9.2
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	2.7	38.4	24.6	27.1	13.4
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	2.7	39.1	25	27.3	13.6



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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21			
CGL Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Otterfield Road	TP / BH No	Sample 11	Sample 12			
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied			
Order No: POP008557	Depth (m)	None Supplied	None Supplied			
Reporting Date: 08/11/2021	DETS Sample No	572641	572642			

Determinand	Unit	RL	Accreditation			
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	
Phenanthrene	mg/kg	< 0.1	MCERTS	1.18	0.14	
Anthracene	mg/kg	< 0.1	MCERTS	0.25	< 0.1	
Fluoranthene	mg/kg	< 0.1	MCERTS	2.98	0.25	
Pyrene	mg/kg	< 0.1	MCERTS	2.62	0.22	
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	1.42	0.12	
Chrysene	mg/kg	< 0.1	MCERTS	1.36	0.14	
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.76	0.18	
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.63	< 0.1	
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1.34	0.13	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.83	< 0.1	
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.17	< 0.1	
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.79	< 0.1	
Coronene	mg/kg	< 0.1	NONE	0.24	< 0.1	
Total Oily Waste PAHs	mg/kg	< 1	MCERTS	7.5	< 1	
Total Dutch 10 PAHs	mg/kg	< 1	MCERTS	10.8	< 1	
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	15.3	< 1.6	
Total WAC-17 PAHs	mg/kg	< 1.7	NONE	15.6	< 1.7	



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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572631	572632	572633	572634	572635

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	< 21	< 21	< 21	< 21
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42	< 42	< 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



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Soil Analysis Certificate - TPH CWG Banded						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572636	572637	572638	572639	572640

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	9	< 3	< 3	3
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	51	36	24	44
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	59	36	24	48
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	36	18	23	13
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	< 10	100	51	26	52
Aromatic (C5 - C35)	mg/kg	< 21	NONE	< 21	137	69	49	65
Total >C5 - C35	mg/kg	< 42	NONE	< 42	196	105	73	113



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Soil Analysis Certificate - TPH CWG Banded					
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21		
CGL Ltd	Time Sampled	None Supplied	None Supplied		
Site Reference: Otterfield Road	TP / BH No	Sample 11	Sample 12		
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied		
Order No: POP008557	Depth (m)	None Supplied	None Supplied		
Reporting Date: 08/11/2021	DETS Sample No	572641	572642		

Determinand	Unit	RL	Accreditation				
Aliphatic >C5 - C6	mg/kg	< 0.01	NONE	< 0.01	< 0.01		
Aliphatic >C6 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05		
Aliphatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2		
Aliphatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2		
Aliphatic >C12 - C16	mg/kg	< 3	MCERTS	< 3	< 3		
Aliphatic >C16 - C21	mg/kg	< 3	MCERTS	< 3	< 3		
Aliphatic >C21 - C34	mg/kg	< 10	MCERTS	< 10	< 10		
Aliphatic (C5 - C34)	mg/kg	< 21	NONE	< 21	< 21		
Aromatic >C5 - C7	mg/kg	< 0.01	NONE	< 0.01	< 0.01		
Aromatic >C7 - C8	mg/kg	< 0.05	NONE	< 0.05	< 0.05		
Aromatic >C8 - C10	mg/kg	< 2	MCERTS	< 2	< 2		
Aromatic >C10 - C12	mg/kg	< 2	MCERTS	< 2	< 2		
Aromatic >C12 - C16	mg/kg	< 2	MCERTS	< 2	< 2		
Aromatic >C16 - C21	mg/kg	< 3	MCERTS	13	< 3		
Aromatic >C21 - C35	mg/kg	< 10	MCERTS	21	< 10		
Aromatic (C5 - C35)	mg/kg	< 21	NONE	34	< 21		
Total >C5 - C35	mg/kg	< 42	NONE	< 42	< 42		



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572631	572632	572633	572634	572635

Determinand	Unit	RL	Accreditation				(n)		
Benzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
Toluene	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5	< 5
Ethylbenzene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
p & m-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
o-xylene	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2	< 2
MTBE	ug/kg	< 5	MCERTS	< 5	< 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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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572636	572637	572638	572639	572640

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



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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21			
CGL Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Otterfield Road	TP / BH No	Sample 11	Sample 12			
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied			
Order No: POP008557	Depth (m)	None Supplied	None Supplied			
Reporting Date: 08/11/2021	DETS Sample No	572641	572642			

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



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Soil Analysis Certificate - PCB (7 Congeners)						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572631	572632	572633	572634	572635

Determinand	Unit	RL	Accreditation	(n)				
PCB Congener 28	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 52	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 101	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 138	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 153	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 180	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

(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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Soil Analysis Certificate - PCB (7 Congeners)						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21	27/10/21	27/10/21	27/10/21
CGL Ltd	Time Sampled	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Otterfield Road	TP / BH No	Sample 6	Sample 7	Sample 8	Sample 9	Sample 10
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Order No: POP008557	Depth (m)	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Reporting Date: 08/11/2021	DETS Sample No	572636	572637	572638	572639	572640

Determinand	Unit	RL	Accreditation						(n)
PCB Congener 28	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 52	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 101	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 138	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 153	mg/kg	0.008	NONE	< 0.008	0.022	< 0.008	< 0.008	< 0.008	< 0.008
PCB Congener 180	mg/kg	0.008	NONE	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008	< 0.008
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1



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Soil Analysis Certificate - PCB (7 Congeners)						
DETS Report No: 21-13160	Date Sampled	27/10/21	27/10/21			
CGL Ltd	Time Sampled	None Supplied	None Supplied			
Site Reference: Otterfield Road	TP / BH No	Sample 11	Sample 12			
Project / Job Ref: CGK/00150	Additional Refs	None Supplied	None Supplied			
Order No: POP008557	Depth (m)	None Supplied	None Supplied			
Reporting Date: 08/11/2021	DETS Sample No	572641	572642			

Determinand	Unit	RL	Accreditation			
PCB Congener 28	mg/kg	0.008	NONE	< 0.008	< 0.008	
PCB Congener 52	mg/kg	0.008	NONE	< 0.008	< 0.008	
PCB Congener 101	mg/kg	0.008	NONE	< 0.008	< 0.008	
PCB Congener 118	mg/kg	0.008	NONE	< 0.008	< 0.008	
PCB Congener 138	mg/kg	0.008	NONE	< 0.008	0.011	
PCB Congener 153	mg/kg	0.008	NONE	< 0.008	0.011	
PCB Congener 180	mg/kg	0.008	NONE	< 0.008	< 0.008	
Total PCB (7 Congeners)	mg/kg	< 0.1	NONE	< 0.1	< 0.1	



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Waste Acceptance Criteria Analytical Certificate - BS EN 12457/2

DETS Report No: 21-13160		Date Sampled	27/10/21	Landfill Waste Acceptance Criteria Limits		
CGL Ltd		Time Sampled	None Supplied			
Site Reference: Otterfield Road		TP / BH No	Sample 2			
Project / Job Ref: CGK/00150		Additional Refs	None Supplied			
Order No: POP008557		Depth (m)	None Supplied			
Reporting Date: 08/11/2021		DETS Sample No	572632			
Determinand	Unit	MDL		Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
TOC ^{MU}	%	< 0.1	1.5	3%	5%	6%
Loss on Ignition	%	< 0.01	3.20	--	--	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	< 1.7	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		10:1 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			< 0.1	0.5	2	25
Barium ^U		< 0.02			< 0.2	20	100	300
Cadmium ^U		< 0.0005			< 0.005	0.04	1	5
Chromium ^U		< 0.005			< 0.05	0.5	10	70
Copper ^U		< 0.01			< 0.1	2	50	100
Mercury ^U		< 0.0005			< 0.005	0.01	0.2	2
Molybdenum ^U		0.007			0.07	0.5	10	30
Nickel ^U		< 0.007			< 0.07	0.4	10	40
Lead ^U		< 0.005			< 0.05	0.5	10	50
Antimony ^U		< 0.005			< 0.05	0.06	0.7	5
Selenium ^U		< 0.005			< 0.05	0.1	0.5	7
Zinc ^U		< 0.005			< 0.05	4	50	200
Chloride ^U		4.9			49	800	15000	25000
Fluoride ^U		< 0.5			< 5	10	150	500
Sulphate ^U		4.3			43	1000	20000	50000
TDS		45			450	4000	60000	100000
Phenol Index		< 0.01			< 0.1	1	-	-
DOC		14.1			141	500	800	1000

Leach Test Information			
Sample Mass (kg)		0.10	
Dry Matter (%)		90.1	
Moisture (%)		11	
Stage 1			
Volume Eluate L10 (litres)		0.89	

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Samples Descriptions page describes if the test is performed on the dried or as-received portion
 Stated limits are for guidance only and DETS Ltd cannot be held responsible for any discrepancies with current legislation
 M Denotes MCERTS accredited test
 U Denotes ISO17025 accredited test



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Waste Acceptance Criteria Analytical Certificate - BS EN 12457/2

DETS Report No: 21-13160		Date Sampled	27/10/21	Landfill Waste Acceptance Criteria Limits		
CGL Ltd		Time Sampled	None Supplied			
Site Reference: Otterfield Road		TP / BH No	Sample 7			
Project / Job Ref: CGK/00150		Additional Refs	None Supplied			
Order No: POP008557		Depth (m)	None Supplied			
Reporting Date: 08/11/2021		DETS Sample No	572637			
Determinand	Unit	MDL		Inert Waste Landfill	Stable Non-reactive HAZARDOUS waste in non-hazardous Landfill	Hazardous Waste Landfill
TOC ^{MU}	%	< 0.1	1.9	3%	5%	6%
Loss on Ignition	%	< 0.01	1.70	--	--	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	86	500	--	--
Total PAH ^{MU}	mg/kg	< 1.7	39.1	100	--	--
pH ^{MU}	pH Units	N/a	9.0	--	>6	--
Acid Neutralisation Capacity	mol/kg (+/-)	< 1	< 1	--	To be evaluated	To be evaluated

Eluate Analysis		10:1 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			0.1	0.5	2	25
Barium ^U		< 0.02			< 0.2	20	100	300
Cadmium ^U		< 0.0005			< 0.005	0.04	1	5
Chromium ^U		0.011			0.11	0.5	10	70
Copper ^U		< 0.01			< 0.1	2	50	100
Mercury ^U		< 0.0005			< 0.005	0.01	0.2	2
Molybdenum ^U		0.019			0.19	0.5	10	30
Nickel ^U		< 0.007			< 0.07	0.4	10	40
Lead ^U		0.007			0.07	0.5	10	50
Antimony ^U		< 0.005			< 0.05	0.06	0.7	5
Selenium ^U		< 0.005			< 0.05	0.1	0.5	7
Zinc ^U		0.031			0.31	4	50	200
Chloride ^U		9.0			90	800	15000	25000
Fluoride ^U		1.1			10.8	10	150	500
Sulphate ^U		16.1			160	1000	20000	50000
TDS		92			920	4000	60000	100000
Phenol Index		< 0.01			< 0.1	1	-	-
DOC		10.7			107	500	800	1000

Leach Test Information			
Sample Mass (kg)		0.10	
Dry Matter (%)		89.4	
Moisture (%)		12	
Stage 1			
Volume Eluate L10 (litres)		0.89	

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
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Soil Analysis Certificate - Sample Descriptions

DETS Report No: 21-13160	
CGL Ltd	
Site Reference: Otterfield Road	
Project / Job Ref: CGK/00150	
Order No: POP008557	
Reporting Date: 08/11/2021	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
572631	Sample 1	None Supplied	None Supplied	10.8	Brown sandy clay with stones
572632	Sample 2	None Supplied	None Supplied	9.9	Brown sandy clay with stones
572633	Sample 3	None Supplied	None Supplied	9	Brown sandy clay with stones
572634	Sample 4	None Supplied	None Supplied	11.4	Brown clay with stones and brick
572635	Sample 5	None Supplied	None Supplied	9.9	Brown sandy clay with stones
572636	Sample 6	None Supplied	None Supplied	10.6	Brown sandy clay with stones
572637	Sample 7	None Supplied	None Supplied	10.3	Brown sandy clay with stones
572638	Sample 8	None Supplied	None Supplied	8.1	Brown sandy clay with stones
572639	Sample 9	None Supplied	None Supplied	10.8	Brown sandy clay with stones
572640	Sample 10	None Supplied	None Supplied	6.8	Brown clay with stones and brick
572641	Sample 11	None Supplied	None Supplied	11.8	Brown sandy clay with stones
572642	Sample 12	None Supplied	None Supplied	9.3	Brown sandy clay with stones and brick

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

Insufficient Sample ^{i/s}

Unsuitable Sample ^{u/s}

Soil Analysis Certificate - Methodology & Miscellaneous Information

DETS Report No: 21-13160

CGL Ltd

Site Reference: Otterfield Road

Project / Job Ref: CGK/00150

Order No: POP008557

Reporting Date: 08/11/2021

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 diphénylcarbazine 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

Water Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 21-13160
CGL Ltd
Site Reference: Otterfield Road
Project / Job Ref: CGK/00150
Order No: POP008557
Reporting Date: 08/11/2021

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

Parameter	Matrix Type	Suite Reference	Expanded Uncertainty Measurement	Unit
TOC	Soil	BS EN 12457	20.0	%
Loss on Ignition	Soil	BS EN 12457	35.0	%
BTEX	Soil	BS EN 12457	14.0	%
Sum of PCBs	Soil	BS EN 12457	23.0	%
Mineral Oil	Soil	BS EN 12457	9.0	%
Total PAH	Soil	BS EN 12457	11.6	%
pH	Soil	BS EN 12457	0.28	Units
Acid Neutralisation Capacity	Soil	BS EN 12457	18.0	%
Arsenic	Leachate	BS EN 12457	18.7	%
Barium	Leachate	BS EN 12457	11.6	%
Cadmium	Leachate	BS EN 12457	20.3	%
Chromium	Leachate	BS EN 12457	18.3	%
Copper	Leachate	BS EN 12457	24.3	%
Mercury	Leachate	BS EN 12457	23.7	%
Molybdenum	Leachate	BS EN 12457	14.7	%
Nickel	Leachate	BS EN 12457	16.1	%
Lead	Leachate	BS EN 12457	15.7	%
Antimony	Leachate	BS EN 12457	17.9	%
Selenium	Leachate	BS EN 12457	22.0	%
Zinc	Leachate	BS EN 12457	17.4	%
Chloride	Leachate	BS EN 12457	15.3	%
Fluoride	Leachate	BS EN 12457	16.4	%
Sulphate	Leachate	BS EN 12457	20.6	%
TDS	Leachate	BS EN 12457	12.0	%
Phenol Index	Leachate	BS EN 12457	14.0	%
DOC	Leachate	BS EN 12457	10.0	%
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	35.0	%
pH	Soil	BS 3882: 2015	0.14	Units
Carbonate	Soil	BS 3882: 2015	16.0	%
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	14.9	%
Copper	Soil	BS 3882: 2015	16.0	%
Nickel	Soil	BS 3882: 2015	17.7	%
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 C

HazWasteOnline Model Output

Waste Classification Report

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

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



IIIWO-FEFEU-K1D00

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

Job name

CGK/00150 - Otterfield Road - 21-13160.1

Description/Comments

DETS Report Number - 21-13160.1

The material in question was sampled on site by CGL personnel under the direction of London Borough of Hillingdon. The samples were stored in a cool box and immediately couriered to DETS South, an accredited laboratory for testing. Please note that this document should be read in conjunction with a sampling plan and soil descriptions prepared by London Borough of Hillingdon with sample identifications and dates matching this summary sheet and the attached "HazWasteOnline" sheets. Should London Borough of Hillingdon not supply a sampling plan to sit alongside this document, the waste classification may be considered invalid.

Project

CGK/00150

Site

Otterfield Road

Classified by

Name: **Katherine Kemsley**
Date: **17 Nov 2021 19:56 GMT**
Telephone:
Company: **CGL UK**
12 Melcombe Place
London NW1 6JJ

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

06 Jun 2019

Next 3 year Refresher due by Jun 2022

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results			Page
					Inert	SNRHW	Hazardous	
1	Sample 1--27/10/2021		Non Hazardous		-	-	-	3
2	Sample 2--27/10/2021		Non Hazardous		Pass	Pass	N/A	6
3	Sample 3--27/10/2021		Non Hazardous		-	-	-	10
4	Sample 4--27/10/2021		Non Hazardous		Pass	Pass	N/A	13
5	Sample 5--27/10/2021		Non Hazardous		-	-	-	17
6	Sample 6--27/10/2021		Non Hazardous		Pass	Pass	N/A	20
7	Sample 7--27/10/2021		Non Hazardous		Fail	Pass	N/A	24
8	Sample 8--27/10/2021		Non Hazardous		-	-	-	28
9	Sample 9--27/10/2021		Non Hazardous		Pass	Pass	N/A	31
10	Sample 10--27/10/2021		Non Hazardous		-	-	-	35
11	Sample 11--27/10/2021		Non Hazardous		Pass	Pass	N/A	38
12	Sample 12--27/10/2021		Non Hazardous		-	-	-	42

Related documents

#	Name	Description
1	21-13160.1.hwol	.hwol file used to create the Job
2	CET Suite 3 or 4	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job do not constitute a single population.

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

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

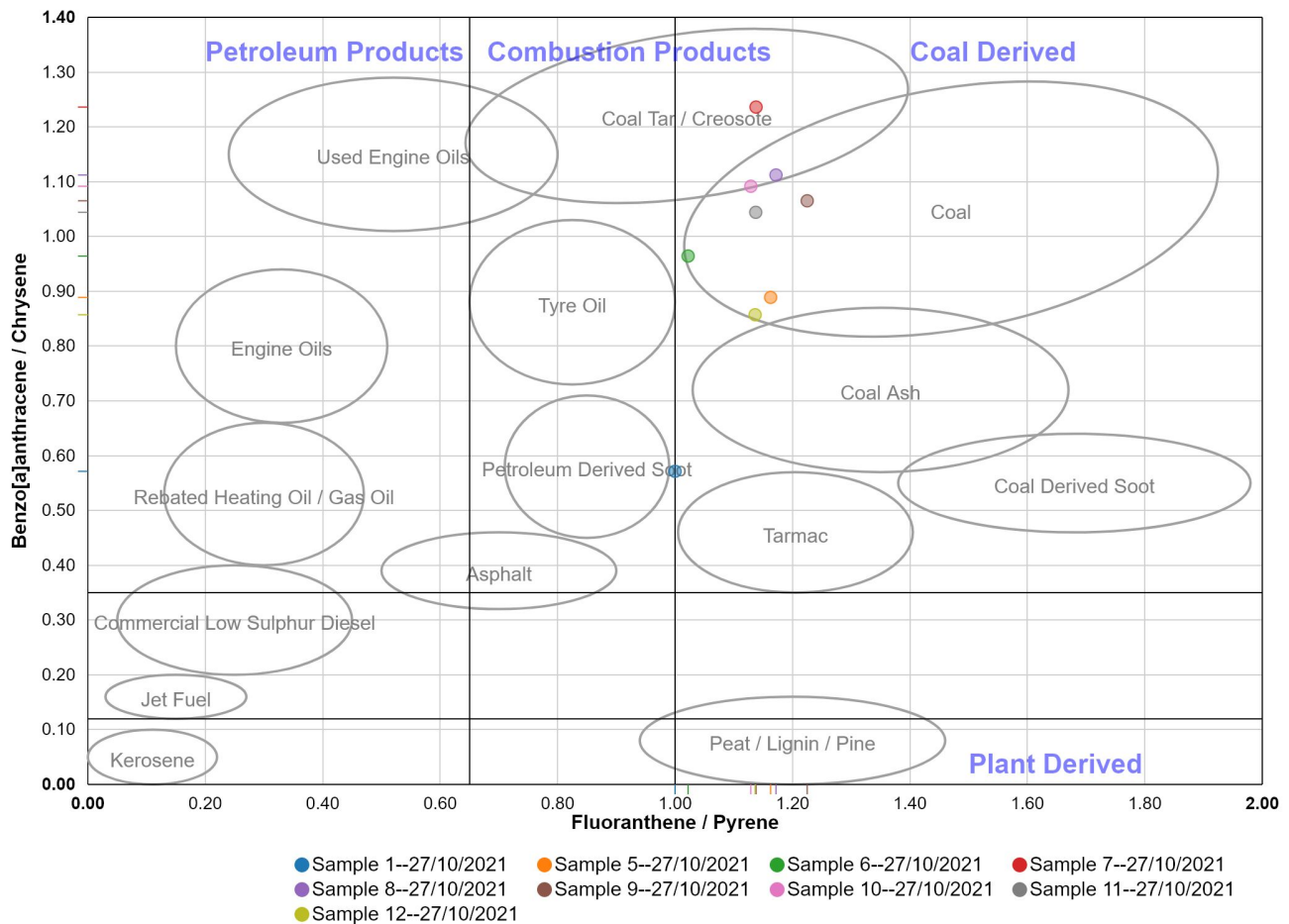
Report

Created by: Katherine Kemsley

Created date: 17 Nov 2021 19:56 GMT

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	45
Appendix B: Rationale for selection of metal species	46
Appendix C: Version	47

Double Ratio PAH Plot




Disclaimer

The domains, oval areas and the plotted points are **indicators only** and must be combined with other lines of evidence to form conclusions. Samples marked with an empty circle are not plotted as they fall outside of the graph's boundaries.

Credits

The domains and the horizontal and vertical lines are derived from Yunker et al. 2002 (Organic Geochemistry 33, 489-515). The oval areas and their labels are with kind permission of Jones Environmental Forensics Limited (now Element Materials Technology).

Classification of sample: Sample 1--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 1--27/10/2021	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
10.8%	Entry:
(dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

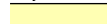



Determinands

Moisture content: 10.8% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		7.8	pH		7.8	pH	7.8 pH		
2	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 }				<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
	006-007-00-5											
3	arsenic { arsenic trioxide }				14	mg/kg	1.32	16.488	mg/kg	0.00165 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
4	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									
5	cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21	mg/kg	1.462	27.378	mg/kg	0.00274 %	✓	
		215-160-9	1308-38-9									
7	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									
8	copper { copper sulphate pentahydrate }				22	mg/kg	3.929	77.104	mg/kg	0.00771 %	✓	
	029-023-00-4	231-847-6	7758-99-8									
9	lead { lead chromate }			1	52	mg/kg	1.56	72.35	mg/kg	0.00464 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
10	mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
11	nickel { nickel chromate }				17	mg/kg	2.976	45.132	mg/kg	0.00451 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	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											
13	zinc { zinc chromate }				65	mg/kg	2.774	160.845	mg/kg	0.0161 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
15	TPH (C6 to C40) petroleum group				<42	mg/kg		<42	mg/kg	<0.0042 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
21	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
22	fluoranthene				0.27 mg/kg		0.241 mg/kg	0.0000241 %	✓	
		205-912-4	206-44-0							
23	pyrene				0.27 mg/kg		0.241 mg/kg	0.0000241 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				0.12 mg/kg		0.107 mg/kg	0.0000107 %	✓	
		601-033-00-9	200-280-6							
25	chrysene				0.21 mg/kg		0.187 mg/kg	0.0000187 %	✓	
		601-048-00-0	205-923-4							
26	benz[e]acephenanthrylene				0.19 mg/kg		0.169 mg/kg	0.0000169 %	✓	
		601-034-00-4	205-911-9							
27	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6							
28	benzo[a]pyrene; benzo[def]chrysene				0.13 mg/kg		0.116 mg/kg	0.0000116 %	✓	
		601-032-00-3	200-028-5							
29	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
30	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8							
31	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
32	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-020-00-8	200-753-7							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
		601-021-00-3	203-625-9							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
		601-023-00-4	202-849-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		602-039-00-4	215-648-1							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0437 %		

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: Sample 2--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 2--27/10/2021	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.9% (dry weight correction)	

Hazard properties

None identified

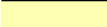



Determinands

Moisture content: 9.9% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	• pH		PH		7.9 pH		7.9 pH	7.9 pH		
2	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 }				<2 mg/kg	1.884	<3.768 mg/kg	<0.000377 %		<LOD
	006-007-00-5									
3	arsenic { arsenic trioxide }				13 mg/kg	1.32	15.465 mg/kg	0.00155 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
4	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							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	25.02 mg/kg	0.0025 %	✓	
		215-160-9	1308-38-9							
7	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							
8	copper { copper sulphate pentahydrate }				40 mg/kg	3.929	141.603 mg/kg	0.0142 %	✓	
	029-023-00-4	231-847-6	7758-99-8							
9	lead { lead chromate }			1	153 mg/kg	1.56	215.025 mg/kg	0.0138 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
10	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
11	nickel { nickel chromate }				14 mg/kg	2.976	37.543 mg/kg	0.00375 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { selenium compounds with the exception of cadmium sulposelenide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
13	zinc { zinc chromate }				77 mg/kg	2.774	192.462 mg/kg	0.0192 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
15	TPH (C6 to C40) petroleum group		TPH		<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
21	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
22	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
23	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
24	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
30	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							
31	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
32	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0613 %		

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

WAC results for sample: Sample 2--27/10/2021

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.5	3	5	6
2	LOI (loss on ignition)	%	3.2	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.05	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1.7	100	-	-
7	pH	pH	7.9	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.1	0.5	2	25
10	barium	mg/kg	<0.2	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	<0.05	0.5	10	70
13	copper	mg/kg	<0.1	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	0.07	0.5	10	30
16	nickel	mg/kg	<0.07	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.05	0.1	0.5	7
20	zinc	mg/kg	<0.05	4	50	200
21	chloride	mg/kg	49	800	15,000	25,000
22	fluoride	mg/kg	<5	10	150	500
23	sulphate	mg/kg	43	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	141	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	450	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: Sample 3--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 3--27/10/2021	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9% (dry weight correction)	

Hazard properties

None identified

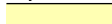



Determinands

Moisture content: 9% Dry Weight Moisture Correction applied (MC)


#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	• pH		PH		7.9 pH		7.9 pH	7.9 pH		
2	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 }				<2 mg/kg	1.884	<3.768 mg/kg	<0.000377 %		<LOD
	006-007-00-5									
3	arsenic { arsenic trioxide }				13 mg/kg	1.32	15.619 mg/kg	0.00156 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
4	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							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18 mg/kg	1.462	23.94 mg/kg	0.00239 %	✓	
		215-160-9	1308-38-9							
7	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							
8	copper { copper sulphate pentahydrate }				32 mg/kg	3.929	114.414 mg/kg	0.0114 %	✓	
	029-023-00-4	231-847-6	7758-99-8							
9	lead { lead chromate }			1	96 mg/kg	1.56	136.265 mg/kg	0.00874 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
10	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
11	nickel { nickel chromate }				16 mg/kg	2.976	43.334 mg/kg	0.00433 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2 mg/kg	1.405	<2.81 mg/kg	<0.000281 %		<LOD
	034-002-00-8									
13	zinc { zinc chromate }				51 mg/kg	2.774	128.748 mg/kg	0.0129 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
15	TPH (C6 to C40) petroleum group		TPH		<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				0.12 mg/kg		0.109 mg/kg	0.0000109 %	✓	
		201-581-5	85-01-8							
21	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
22	fluoranthene				0.19 mg/kg		0.173 mg/kg	0.0000173 %	✓	
		205-912-4	206-44-0							
23	pyrene				0.18 mg/kg		0.164 mg/kg	0.0000164 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				0.15 mg/kg		0.137 mg/kg	0.0000137 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				0.11 mg/kg		0.1 mg/kg	0.00001 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
30	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							
31	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
32	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0477 %		

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: Sample 4--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 4--27/10/2021	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
11.4%	Entry:
(dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

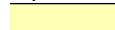



Determinands

Moisture content: 11.4% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	pH		PH		7.9 pH		7.9 pH	7.9 pH		
2	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 }				<2 mg/kg	1.884	<3.768 mg/kg	<0.000377 %		<LOD
	006-007-00-5									
3	arsenic { arsenic trioxide }				12 mg/kg	1.32	14.038 mg/kg	0.0014 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
4	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							
5	cadmium { cadmium sulfide }			1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6							
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	22.014 mg/kg	0.0022 %	✓	
		215-160-9	1308-38-9							
7	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							
8	copper { copper sulphate pentahydrate }				27 mg/kg	3.929	93.991 mg/kg	0.0094 %	✓	
	029-023-00-4	231-847-6	7758-99-8							
9	lead { lead chromate }			1	77 mg/kg	1.56	106.414 mg/kg	0.00682 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
10	mercury { mercury dichloride }				<1 mg/kg	1.353	<1.353 mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
11	nickel { nickel chromate }				18 mg/kg	2.976	47.465 mg/kg	0.00475 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	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									
13	zinc { zinc chromate }				49 mg/kg	2.774	120.437 mg/kg	0.012 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	phenol				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
15	TPH (C6 to C40) petroleum group				<42 mg/kg		<42 mg/kg	<0.0042 %		<LOD
			TPH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
21	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
22	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
23	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
24	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
30	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							
31	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
32	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0429 %		

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

WAC results for sample: Sample 4--27/10/2021

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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


WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.9	3	5	6
2	LOI (loss on ignition)	%	2.4	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.05	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<1.7	100	-	-
7	pH	pH	7.9	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.1	0.5	2	25
10	barium	mg/kg	<0.2	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	<0.05	0.5	10	70
13	copper	mg/kg	<0.1	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	0.13	0.5	10	30
16	nickel	mg/kg	<0.07	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.05	0.1	0.5	7
20	zinc	mg/kg	0.26	4	50	200
21	chloride	mg/kg	31	800	15,000	25,000
22	fluoride	mg/kg	<5	10	150	500
23	sulphate	mg/kg	24	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	71.7	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	610	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: Sample 5--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 5--27/10/2021	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
9.9%	Entry:
(dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

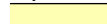



Determinands

Moisture content: 9.9% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		7.8	pH		7.8	pH	7.8 pH		
2	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 }				<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
	006-007-00-5											
3	arsenic { arsenic trioxide }				12	mg/kg	1.32	14.275	mg/kg	0.00143 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
4	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									
5	cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	23.704	mg/kg	0.00237 %	✓	
		215-160-9	1308-38-9									
7	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									
8	copper { copper sulphate pentahydrate }				31	mg/kg	3.929	109.742	mg/kg	0.011 %	✓	
	029-023-00-4	231-847-6	7758-99-8									
9	lead { lead chromate }			1	95	mg/kg	1.56	133.512	mg/kg	0.00856 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
10	mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
11	nickel { nickel chromate }				14	mg/kg	2.976	37.543	mg/kg	0.00375 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	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											
13	zinc { zinc chromate }				52	mg/kg	2.774	129.974	mg/kg	0.013 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
15	TPH (C6 to C40) petroleum group				<42	mg/kg		<42	mg/kg	<0.0042 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				0.24 mg/kg		0.216 mg/kg	0.0000216 %	✓	
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				0.34 mg/kg		0.306 mg/kg	0.0000306 %	✓	
		201-581-5	85-01-8							
21	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
22	fluoranthene				0.5 mg/kg		0.45 mg/kg	0.000045 %	✓	
		205-912-4	206-44-0							
23	pyrene				0.43 mg/kg		0.387 mg/kg	0.0000387 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				0.24 mg/kg		0.216 mg/kg	0.0000216 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				0.27 mg/kg		0.243 mg/kg	0.0000243 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				0.32 mg/kg		0.288 mg/kg	0.0000288 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				0.22 mg/kg		0.198 mg/kg	0.0000198 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				0.14 mg/kg		0.126 mg/kg	0.0000126 %	✓	
		205-893-2	193-39-5							
30	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							
31	benzo[ghi]perylene				0.13 mg/kg		0.117 mg/kg	0.0000117 %	✓	
		205-883-8	191-24-2							
32	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0465 %		

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: Sample 6--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 6--27/10/2021	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
10.6% (dry weight correction)	

Hazard properties

None identified

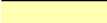



Determinands

Moisture content: 10.6% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	• pH		PH		8.1	pH		8.1	pH	8.1 pH		
2	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 }				<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
	006-007-00-5											
3	arsenic { arsenic trioxide }				13	mg/kg	1.32	15.345	mg/kg	0.00153 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
4	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									
5	cadmium { cadmium sulfide }			1	0.5	mg/kg	1.285	0.575	mg/kg	0.0000447 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17	mg/kg	1.462	22.213	mg/kg	0.00222 %	✓	
		215-160-9	1308-38-9									
7	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									
8	copper { copper sulphate pentahydrate }				33	mg/kg	3.929	115.915	mg/kg	0.0116 %	✓	
	029-023-00-4	231-847-6	7758-99-8									
9	lead { lead chromate }			1	117	mg/kg	1.56	163.154	mg/kg	0.0105 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
10	mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
11	nickel { nickel chromate }				15	mg/kg	2.976	39.912	mg/kg	0.00399 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
	034-002-00-8											
13	zinc { zinc chromate }				118	mg/kg	2.774	292.65	mg/kg	0.0293 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
15	TPH (C6 to C40) petroleum group		TPH		<42	mg/kg		<42	mg/kg	<0.0042 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				0.18 mg/kg		0.161 mg/kg	0.0000161 %	✓	
		201-581-5	85-01-8							
21	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
22	fluoranthene				0.46 mg/kg		0.411 mg/kg	0.0000411 %	✓	
		205-912-4	206-44-0							
23	pyrene				0.45 mg/kg		0.402 mg/kg	0.0000402 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				0.27 mg/kg		0.241 mg/kg	0.0000241 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				0.28 mg/kg		0.25 mg/kg	0.000025 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				0.34 mg/kg		0.304 mg/kg	0.0000304 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				0.12 mg/kg		0.107 mg/kg	0.0000107 %	✓	
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				0.26 mg/kg		0.232 mg/kg	0.0000232 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				0.19 mg/kg		0.17 mg/kg	0.000017 %	✓	
		205-893-2	193-39-5							
30	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							
31	benzo[ghi]perylene				0.19 mg/kg		0.17 mg/kg	0.000017 %	✓	
		205-883-8	191-24-2							
32	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0655 %		

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

WAC results for sample: Sample 6--27/10/2021

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.6	3	5	6
2	LOI (loss on ignition)	%	3.9	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.05	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	2.7	100	-	-
7	pH	pH	8.1	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.1	0.5	2	25
10	barium	mg/kg	<0.2	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	<0.05	0.5	10	70
13	copper	mg/kg	<0.1	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	0.03	0.5	10	30
16	nickel	mg/kg	<0.07	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.05	0.1	0.5	7
20	zinc	mg/kg	1.29	4	50	200
21	chloride	mg/kg	55	800	15,000	25,000
22	fluoride	mg/kg	<5	10	150	500
23	sulphate	mg/kg	100	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	166	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	680	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: Sample 7--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 7--27/10/2021	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:
10.3% (dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

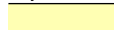
Determinands

Moisture content: 10.3% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	9		PH		9	pH		9	pH	9pH		
2			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 }		<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
	006-007-00-5											
3			arsenic { arsenic trioxide }		12	mg/kg	1.32	14.212	mg/kg	0.00142 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
4			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									
5			cadmium { cadmium sulfide }	1	0.3	mg/kg	1.285	0.346	mg/kg	0.0000269 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6			chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		22	mg/kg	1.462	28.842	mg/kg	0.00288 %	✓	
		215-160-9	1308-38-9									
7			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									
8			copper { copper sulphate pentahydrate }		28	mg/kg	3.929	98.682	mg/kg	0.00987 %	✓	
	029-023-00-4	231-847-6	7758-99-8									
9			lead { lead chromate }	1	103	mg/kg	1.56	144.113	mg/kg	0.00924 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
10			mercury { mercury dichloride }		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
11			nickel { nickel chromate }		17	mg/kg	2.976	45.385	mg/kg	0.00454 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12			selenium { selenium compounds with the exception of cadmium sulposelenide and those specified elsewhere in this Annex }		<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
	034-002-00-8											
13			zinc { zinc chromate }		104	mg/kg	2.774	258.795	mg/kg	0.0259 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14			phenol		<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
15			TPH (C6 to C40) petroleum group		247	mg/kg		221.559	mg/kg	0.0222 %	✓	
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				0.13 mg/kg		0.117 mg/kg	0.0000117 %	✓	
		201-469-6	83-32-9							
19	fluorene				0.13 mg/kg		0.117 mg/kg	0.0000117 %	✓	
		201-695-5	86-73-7							
20	phenanthrene				3.91 mg/kg		3.507 mg/kg	0.000351 %	✓	
		201-581-5	85-01-8							
21	anthracene				1.11 mg/kg		0.996 mg/kg	0.0000996 %	✓	
		204-371-1	120-12-7							
22	fluoranthene				6.93 mg/kg		6.216 mg/kg	0.000622 %	✓	
		205-912-4	206-44-0							
23	pyrene				6.09 mg/kg		5.463 mg/kg	0.000546 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				3.35 mg/kg		3.005 mg/kg	0.0003 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				2.71 mg/kg		2.431 mg/kg	0.000243 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				4.24 mg/kg		3.803 mg/kg	0.00038 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				1.19 mg/kg		1.067 mg/kg	0.000107 %	✓	
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				3.4 mg/kg		3.05 mg/kg	0.000305 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				2.44 mg/kg		2.189 mg/kg	0.000219 %	✓	
		205-893-2	193-39-5							
30	dibenz[a,h]anthracene				0.47 mg/kg		0.422 mg/kg	0.0000422 %	✓	
	601-041-00-2	200-181-8	53-70-3							
31	benzo[ghi]perylene				2.31 mg/kg		2.072 mg/kg	0.000207 %	✓	
		205-883-8	191-24-2							
32	coronene				0.64 mg/kg		0.574 mg/kg	0.0000574 %	✓	
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0815 %		

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 Not flammable unless saturated. Should a liquid phase be observed then flash point testing should be carried out.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0222%)

WAC results for sample: Sample 7--27/10/2021

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	1.9	3	5	6
2	LOI (loss on ignition)	%	1.7	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.05	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	86	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	39.1	100	-	-
7	pH	pH	9	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	0.1	0.5	2	25
10	barium	mg/kg	<0.2	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	0.11	0.5	10	70
13	copper	mg/kg	<0.1	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	0.19	0.5	10	30
16	nickel	mg/kg	<0.07	0.4	10	40
17	lead	mg/kg	0.07	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.05	0.1	0.5	7
20	zinc	mg/kg	0.31	4	50	200
21	chloride	mg/kg	90	800	15,000	25,000
22	fluoride	mg/kg	10.8	10	150	500
23	sulphate	mg/kg	160	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	107	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	920	4,000	60,000	100,000

Key

	User supplied data
	Not applicable
	Inert WAC criteria fail

Classification of sample: Sample 8--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 8--27/10/2021	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.1% (dry weight correction)	

Hazard properties

None identified


Determinands

Moisture content: 8.1% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	•	pH			7.9	pH		7.9	pH	7.9 pH		
2	•	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 }			<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
3	•	arsenic { arsenic trioxide }			13	mg/kg	1.32	15.774	mg/kg	0.00158 %	✓	
4	•	boron { diboron trioxide; boric oxide }			<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
5	•	cadmium { cadmium sulfide }		1	0.2	mg/kg	1.285	0.236	mg/kg	0.0000184 %	✓	
6	•	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }			22	mg/kg	1.462	29.55	mg/kg	0.00295 %	✓	
7	•	chromium in chromium(VI) compounds { chromium(VI) oxide }			<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD
8	•	copper { copper sulphate pentahydrate }			33	mg/kg	3.929	119.156	mg/kg	0.0119 %	✓	
9	•	lead { lead chromate }		1	91	mg/kg	1.56	130.446	mg/kg	0.00836 %	✓	
10	•	mercury { mercury dichloride }			<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
11	•	nickel { nickel chromate }			18	mg/kg	2.976	49.233	mg/kg	0.00492 %	✓	
12	•	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }			<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
13	•	zinc { zinc chromate }			129	mg/kg	2.774	328.878	mg/kg	0.0329 %	✓	
14	•	phenol			<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
15	•	TPH (C6 to C40) petroleum group			119	mg/kg		109.361	mg/kg	0.0109 %	✓	

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				0.12 mg/kg		0.11 mg/kg	0.000011 %	✓	
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				1.76 mg/kg		1.617 mg/kg	0.000162 %	✓	
		201-581-5	85-01-8							
21	anthracene				0.3 mg/kg		0.276 mg/kg	0.0000276 %	✓	
		204-371-1	120-12-7							
22	fluoranthene				4.84 mg/kg		4.448 mg/kg	0.000445 %	✓	
		205-912-4	206-44-0							
23	pyrene				4.13 mg/kg		3.795 mg/kg	0.00038 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				2.28 mg/kg		2.095 mg/kg	0.00021 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				2.05 mg/kg		1.884 mg/kg	0.000188 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				2.74 mg/kg		2.518 mg/kg	0.000252 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				1.12 mg/kg		1.029 mg/kg	0.000103 %	✓	
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				2.17 mg/kg		1.994 mg/kg	0.000199 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				1.49 mg/kg		1.369 mg/kg	0.000137 %	✓	
		205-893-2	193-39-5							
30	dibenz[a,h]anthracene				0.27 mg/kg		0.248 mg/kg	0.0000248 %	✓	
	601-041-00-2	200-181-8	53-70-3							
31	benzo[ghi]perylene				1.36 mg/kg		1.25 mg/kg	0.000125 %	✓	
		205-883-8	191-24-2							
32	coronene				0.37 mg/kg		0.34 mg/kg	0.000034 %	✓	
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0778 %		

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 Not flammable unless saturated. Should a liquid phase be observed then flash point testing should be carried out.


Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0109%)

Classification of sample: Sample 9--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 9--27/10/2021	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
10.8%	Entry:
(dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified


Determinands

Moisture content: 10.8% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		7.8	pH		7.8	pH	7.8 pH		
2	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 }				<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
	006-007-00-5											
3	arsenic { arsenic trioxide }				10	mg/kg	1.32	11.777	mg/kg	0.00118 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
4	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									
5	cadmium { cadmium sulfide }			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
	048-010-00-4	215-147-8	1306-23-6									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13	mg/kg	1.462	16.948	mg/kg	0.00169 %	✓	
		215-160-9	1308-38-9									
7	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									
8	copper { copper sulphate pentahydrate }				40	mg/kg	3.929	140.189	mg/kg	0.014 %	✓	
	029-023-00-4	231-847-6	7758-99-8									
9	lead { lead chromate }			1	127	mg/kg	1.56	176.702	mg/kg	0.0113 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
10	mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
11	nickel { nickel chromate }				11	mg/kg	2.976	29.203	mg/kg	0.00292 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	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											
13	zinc { zinc chromate }				76	mg/kg	2.774	188.065	mg/kg	0.0188 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
15	TPH (C6 to C40) petroleum group				85	mg/kg		75.82	mg/kg	0.00758 %	✓	
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				0.12 mg/kg		0.107 mg/kg	0.0000107 %	✓	
		201-469-6	83-32-9							
19	fluorene				0.26 mg/kg		0.232 mg/kg	0.0000232 %	✓	
		201-695-5	86-73-7							
20	phenanthrene				3.25 mg/kg		2.899 mg/kg	0.00029 %	✓	
		201-581-5	85-01-8							
21	anthracene				0.75 mg/kg		0.669 mg/kg	0.0000669 %	✓	
		204-371-1	120-12-7							
22	fluoranthene				6.26 mg/kg		5.584 mg/kg	0.000558 %	✓	
		205-912-4	206-44-0							
23	pyrene				5.11 mg/kg		4.558 mg/kg	0.000456 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				2.29 mg/kg		2.043 mg/kg	0.000204 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				2.15 mg/kg		1.918 mg/kg	0.000192 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				2.15 mg/kg		1.918 mg/kg	0.000192 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				0.87 mg/kg		0.776 mg/kg	0.0000776 %	✓	
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				1.76 mg/kg		1.57 mg/kg	0.000157 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				1.01 mg/kg		0.901 mg/kg	0.0000901 %	✓	
		205-893-2	193-39-5							
30	dibenz[a,h]anthracene				0.19 mg/kg		0.169 mg/kg	0.0000169 %	✓	
	601-041-00-2	200-181-8	53-70-3							
31	benzo[ghi]perylene				0.91 mg/kg		0.812 mg/kg	0.0000812 %	✓	
		205-883-8	191-24-2							
32	coronene				0.17 mg/kg		0.152 mg/kg	0.0000152 %	✓	
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0619 %		

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 Not flammable unless saturated. Should a liquid phase be observed then flash point testing should be carried out.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00758%)

WAC results for sample: Sample 9--27/10/2021

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits		
#	Determinand	User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	% 1.7	3	5	6
2	LOI (loss on ignition)	% 3.21	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.05	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg 39	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg 27.3	100	-	-
7	pH	pH 7.8	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg <1	-	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg <0.1	0.5	2	25
10	barium	mg/kg <0.2	20	100	300
11	cadmium	mg/kg <0.005	0.04	1	5
12	chromium	mg/kg <0.05	0.5	10	70
13	copper	mg/kg <0.1	2	50	100
14	mercury	mg/kg <0.005	0.01	0.2	2
15	molybdenum	mg/kg 0.13	0.5	10	30
16	nickel	mg/kg <0.07	0.4	10	40
17	lead	mg/kg <0.05	0.5	10	50
18	antimony	mg/kg <0.05	0.06	0.7	5
19	selenium	mg/kg <0.05	0.1	0.5	7
20	zinc	mg/kg 0.06	4	50	200
21	chloride	mg/kg 54	800	15,000	25,000
22	fluoride	mg/kg 7.5	10	150	500
23	sulphate	mg/kg 123	1,000	20,000	50,000
24	phenol index	mg/kg 0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg 155	500	800	1,000
26	TDS (total dissolved solids)	mg/kg 790	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: Sample 10--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 10--27/10/2021	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
6.8%	Entry:
(dry weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

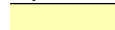
Determinands

Moisture content: 6.8% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	pH		PH		8.1	pH		8.1	pH	8.1 pH		
2	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 }				<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
	006-007-00-5											
3	arsenic { arsenic trioxide }				20	mg/kg	1.32	24.611	mg/kg	0.00246 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
4	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									
5	cadmium { cadmium sulfide }			1	0.2	mg/kg	1.285	0.24	mg/kg	0.0000186 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19	mg/kg	1.462	25.881	mg/kg	0.00259 %	✓	
		215-160-9	1308-38-9									
7	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									
8	copper { copper sulphate pentahydrate }				44	mg/kg	3.929	161.123	mg/kg	0.0161 %	✓	
	029-023-00-4	231-847-6	7758-99-8									
9	lead { lead chromate }			1	156	mg/kg	1.56	226.785	mg/kg	0.0145 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
10	mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
11	nickel { nickel chromate }				15	mg/kg	2.976	41.608	mg/kg	0.00416 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	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											
13	zinc { zinc chromate }				79	mg/kg	2.774	204.255	mg/kg	0.0204 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
15	TPH (C6 to C40) petroleum group				120	mg/kg		111.84	mg/kg	0.0112 %	✓	
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				0.13 mg/kg		0.121 mg/kg	0.0000121 %	✓	
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				0.68 mg/kg		0.634 mg/kg	0.0000634 %	✓	
		201-581-5	85-01-8							
21	anthracene				0.19 mg/kg		0.177 mg/kg	0.0000177 %	✓	
		204-371-1	120-12-7							
22	fluoranthene				2.45 mg/kg		2.283 mg/kg	0.000228 %	✓	
		205-912-4	206-44-0							
23	pyrene				2.17 mg/kg		2.022 mg/kg	0.000202 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				1.31 mg/kg		1.221 mg/kg	0.000122 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				1.2 mg/kg		1.118 mg/kg	0.000112 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				1.66 mg/kg		1.547 mg/kg	0.000155 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				0.47 mg/kg		0.438 mg/kg	0.0000438 %	✓	
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				1.23 mg/kg		1.146 mg/kg	0.000115 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				0.88 mg/kg		0.82 mg/kg	0.000082 %	✓	
		205-893-2	193-39-5							
30	dibenz[a,h]anthracene				0.18 mg/kg		0.168 mg/kg	0.0000168 %	✓	
	601-041-00-2	200-181-8	53-70-3							
31	benzo[ghi]perylene				0.83 mg/kg		0.774 mg/kg	0.0000774 %	✓	
		205-883-8	191-24-2							
32	coronene				0.21 mg/kg		0.196 mg/kg	0.0000196 %	✓	
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0747 %		

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 Not flammable unless saturated. Should a liquid phase be observed then flash point testing should be carried out.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0112%)

Classification of sample: Sample 11--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 11--27/10/2021	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)
11.8% (dry weight correction)	

Hazard properties

None identified





Determinands

Moisture content: 11.8% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	• pH		PH		7.9	pH		7.9	pH	7.9 pH		
2	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 }				<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
	006-007-00-5											
3	arsenic { arsenic trioxide }				14	mg/kg	1.32	16.303	mg/kg	0.00163 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
4	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									
5	cadmium { cadmium sulfide }			1	0.2	mg/kg	1.285	0.227	mg/kg	0.0000176 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	23.204	mg/kg	0.00232 %	✓	
		215-160-9	1308-38-9									
7	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									
8	copper { copper sulphate pentahydrate }				48	mg/kg	3.929	166.34	mg/kg	0.0166 %	✓	
	029-023-00-4	231-847-6	7758-99-8									
9	lead { lead chromate }			1	168	mg/kg	1.56	231.127	mg/kg	0.0148 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
10	mercury { mercury dichloride }				1.3	mg/kg	1.353	1.552	mg/kg	0.000155 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
11	nickel { nickel chromate }				15	mg/kg	2.976	39.376	mg/kg	0.00394 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
	034-002-00-8											
13	zinc { zinc chromate }				94	mg/kg	2.774	229.999	mg/kg	0.023 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
	604-001-00-2	203-632-7	108-95-2									
15	TPH (C6 to C40) petroleum group				<42	mg/kg		<42	mg/kg	<0.0042 %		<LOD
			TPH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				1.18 mg/kg		1.041 mg/kg	0.000104 %	✓	
		201-581-5	85-01-8							
21	anthracene				0.25 mg/kg		0.221 mg/kg	0.0000221 %	✓	
		204-371-1	120-12-7							
22	fluoranthene				2.98 mg/kg		2.628 mg/kg	0.000263 %	✓	
		205-912-4	206-44-0							
23	pyrene				2.62 mg/kg		2.311 mg/kg	0.000231 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				1.42 mg/kg		1.252 mg/kg	0.000125 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				1.36 mg/kg		1.2 mg/kg	0.00012 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				1.76 mg/kg		1.552 mg/kg	0.000155 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				0.63 mg/kg		0.556 mg/kg	0.0000556 %	✓	
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				1.34 mg/kg		1.182 mg/kg	0.000118 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				0.83 mg/kg		0.732 mg/kg	0.0000732 %	✓	
		205-893-2	193-39-5							
30	dibenz[a,h]anthracene				0.17 mg/kg		0.15 mg/kg	0.000015 %	✓	
	601-041-00-2	200-181-8	53-70-3							
31	benzo[ghi]perylene				0.79 mg/kg		0.697 mg/kg	0.0000697 %	✓	
		205-883-8	191-24-2							
32	coronene				0.24 mg/kg		0.212 mg/kg	0.0000212 %	✓	
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.2 mg/kg		<0.2 mg/kg	<0.00002 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0699 %		

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

WAC results for sample: Sample 11--27/10/2021

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits		
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	2.7	3	5	6
2	LOI (loss on ignition)	%	3.8	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.05	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	15.6	100	-	-
7	pH	pH	7.9	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.1	0.5	2	25
10	barium	mg/kg	<0.2	20	100	300
11	cadmium	mg/kg	<0.005	0.04	1	5
12	chromium	mg/kg	<0.05	0.5	10	70
13	copper	mg/kg	<0.1	2	50	100
14	mercury	mg/kg	<0.005	0.01	0.2	2
15	molybdenum	mg/kg	0.08	0.5	10	30
16	nickel	mg/kg	<0.07	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.05	0.1	0.5	7
20	zinc	mg/kg	1.1	4	50	200
21	chloride	mg/kg	42	800	15,000	25,000
22	fluoride	mg/kg	<5	10	150	500
23	sulphate	mg/kg	70	1,000	20,000	50,000
24	phenol index	mg/kg	<0.1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	76.8	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	580	4,000	60,000	100,000

Key

	User supplied data
	Not applicable

Classification of sample: Sample 12--27/10/2021

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

Sample details

Sample name:	LoW Code:
Sample 12--27/10/2021	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.3% (dry weight correction)	

Hazard properties

None identified

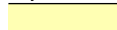



Determinands

Moisture content: 9.3% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	• pH		PH		7.9	pH		7.9	pH	7.9 pH		
2	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 }				<2	mg/kg	1.884	<3.768	mg/kg	<0.000377 %		<LOD
3	arsenic { arsenic trioxide }				14	mg/kg	1.32	16.765	mg/kg	0.00168 %	✓	
4	boron { diboron trioxide; boric oxide }				<1	mg/kg	3.22	<3.22	mg/kg	<0.000322 %		<LOD
5	cadmium { cadmium sulfide }			1	0.2	mg/kg	1.285	0.233	mg/kg	0.0000181 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18	mg/kg	1.462	23.861	mg/kg	0.00239 %	✓	
7	chromium in chromium(VI) compounds { chromium(VI) oxide }				<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD
8	copper { copper sulphate pentahydrate }				37	mg/kg	3.929	131.855	mg/kg	0.0132 %	✓	
9	lead { lead chromate }			1	124	mg/kg	1.56	175.429	mg/kg	0.0112 %	✓	
10	mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
11	nickel { nickel chromate }				15	mg/kg	2.976	40.492	mg/kg	0.00405 %	✓	
12	selenium { selenium compounds with the exception of cadmium selenosulfide and those specified elsewhere in this Annex }				<2	mg/kg	1.405	<2.81	mg/kg	<0.000281 %		<LOD
13	zinc { zinc chromate }				74	mg/kg	2.774	186.195	mg/kg	0.0186 %	✓	
14	phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
15	TPH (C6 to C40) petroleum group		TPH		<42	mg/kg		<42	mg/kg	<0.0042 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
16	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
17	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
18	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
19	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
20	phenanthrene				0.14 mg/kg		0.127 mg/kg	0.0000127 %	✓	
		201-581-5	85-01-8							
21	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
22	fluoranthene				0.25 mg/kg		0.227 mg/kg	0.0000227 %	✓	
		205-912-4	206-44-0							
23	pyrene				0.22 mg/kg		0.2 mg/kg	0.00002 %	✓	
		204-927-3	129-00-0							
24	benzo[a]anthracene				0.12 mg/kg		0.109 mg/kg	0.0000109 %	✓	
	601-033-00-9	200-280-6	56-55-3							
25	chrysene				0.14 mg/kg		0.127 mg/kg	0.0000127 %	✓	
	601-048-00-0	205-923-4	218-01-9							
26	benz[e]acephenanthrylene				0.18 mg/kg		0.163 mg/kg	0.0000163 %	✓	
	601-034-00-4	205-911-9	205-99-2							
27	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
28	benzo[a]pyrene; benzo[def]chrysene				0.13 mg/kg		0.118 mg/kg	0.0000118 %	✓	
	601-032-00-3	200-028-5	50-32-8							
29	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
30	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							
31	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
32	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
33	benzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
34	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
35	ethylbenzene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
36	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]							
37	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							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	monohydric phenols				<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
			P1186							
Total:								0.0575 %		

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

Appendix A: Classifier defined and non CLP determinands

• pH (CAS Number: PH)

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

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

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

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

Description/Comments: Data from C&L Inventory Database
Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4 H332 , Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Resp. Sens. 1 H334 , Skin Sens. 1 H317 , Repr. 1B H360FD , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

• TPH (C6 to C40) petroleum group (CAS Number: TPH)

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

• 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

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

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

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

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

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

CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

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

Appendix B: Rationale for selection of metal species

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

Worst Case

arsenic {arsenic trioxide}

(enter justification for selecting this species)

boron {diboron trioxide; boric oxide}

(enter justification for selecting this species)

cadmium {cadmium sulfide}

(enter justification for selecting this species)

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

(enter justification for selecting this species)

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

(enter justification for selecting this species)

copper {copper sulphate pentahydrate}

(enter justification for selecting this species)

lead {lead chromate}

(enter justification for selecting this species)

mercury {mercury dichloride}

(enter justification for selecting this species)

nickel {nickel chromate}

(enter justification for selecting this species)

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

(enter justification for selecting this species)

zinc {zinc chromate}

(enter justification for selecting this species)

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**

HazWasteOnline Classification Engine Version: 2021.293.4891.9295 (20 Oct 2021)

HazWasteOnline Database: 2021.293.4891.9295 (20 Oct 2021)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

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

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

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

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

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

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

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

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

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

Revised List of 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 2019 - UK: 2019 No. 720 of 27th March 2019

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

POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

APPENDIX D

Risk Assessment Methodology

CGL Risk Assessment Methodology

The following risk Assessment methodology is based on CIRIA C552 (2001) Contaminated Land Risk Assessment – A Guide to Good Practice¹, in order to quantify potential risk via risk estimation and risk evaluation, which can be adopted at the Phase I stage. This will then determine an overall risk category which can be used to identify likely actions. This methodology uses qualitative descriptors and therefore is a qualitative approach and is undertaken for each potential pollution linkage (source-pathway-receptor) identified for the site in accordance with Contaminated Land Reports 6² and 11³.

The methodology requires the classification of:

- The magnitude of the consequence (severity) of a risk occurring, and
- The magnitude of the probability (likelihood) of a risk occurring.

The potential consequences of contamination risks occurring at this site are classified in accordance with Table 1 below, which is adapted from the CIRIA guidance¹.

Table 1. Classifications of Consequence ratings

Classification	Definition of Consequence	Examples
Severe	Short-term (acute) risks to human health. Short-term (acute) risk of pollution of sensitive water resource or ecosystem. Catastrophic damage to crops/buildings/property/infrastructure, including off-site soils.	High concentration of cyanide on the surface of an informal recreation area Major spillage of contaminants from site into controlled waters Explosion causing building collapse
Medium	Long-term (chronic) risks to human health Long-term (chronic) pollution of sensitive water resource Significant change in an ecosystem/contamination of off-site soils	Concentrations of a contaminant from site exceeding the generic or site specific assessment criteria Leaching of contaminants from a site into a major or minor aquifer Death of a species within a designated nature reserve
Mild	Pollution of non-sensitive water resource Significant damage to crops/ buildings/property/infrastructure Damage to an ecosystem or sensitive buildings/structures/services	Pollution of a non-classified groundwater Damage to a building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
Minor	Easily preventable non-permanent health effects Harm, although not necessarily significant harm, which may result in financial loss or expenditure to resolve Easily repairable effects of damage to buildings/structures/services	Presence of contamination at concentrations which require the use of personal protective equipment during site work Loss of plants in a landscaping scheme/dischouration of concrete

¹ CIRIA, (2001). *Contaminated Land Risk Assessment. A Guide to Good Practice*. CIRIA C552.

² M.J. Carter Associates, (1995). *Prioritisation and Categorisation Procedure for Sites Which May Be Contaminated*. Contaminated Land Report 6. Department of the Environment. C

³ Environment Agency, (2004). *Model Procedures for the Management of Land Contamination*. Contaminated Land Report 11.

The potential probability of the risks being realised are classified in accordance with the ratings set out in Table 2 which are adapted from the CIRIA guidance¹. It should be noted that where a pollutant linkage has not been identified the likelihood is considered to be zero.

Table 2. Classifications of probability ratings

Classification	Definition
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor that an event has occurred
Likely	There is a pollution 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 pollution 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 an event would take place and is less likely in the short term.
Unlikely	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term

In accordance with C552 the risk classification for each pollution linkage are classified in accordance with the matrix for consequence and probability set out in Table 3. The definitions for the risk classifications are presented in Table 4.

Table 3. Risk classification matrix

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

Table 4. Risk classification definitions

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