

St Michael's Place

Generic Quantitative Risk Assessment and Remedial Strategy

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1 Executive Summary

Background	Genr8 Kajima Regeneration Limited commissioned BuroHappold Engineering (BuroHappold), to undertake a geoenvironmental assessment and remedial strategy of St Michael's Place, Liverpool to assist with the redevelopment of the area. An initial desk study in 2018 identified a number of potential risks. Accordingly, a site investigation was designed and carried out in 2023 / 2024 to quantify these potential risks. This report presents the results of that work and updates the previous reports to take into account changes in the proposed scheme.
Site Setting	The Site is currently occupied by Knowsley Council offices, Huyton Library and associated car parking / multi-storey car park. The proposed development comprises a mix of commercial, leisure and residential developments as part of the wider Huyton Village Masterplan. A planning application is proposed to be submitted for the enabling works at this stage, including demolition and earthworks. This document is therefore focused on the enabling works and should be updated once the development is finalised.
History	Prior to the first published map in 1850, the site was broadly agricultural. Huyton was about 50m north, with the Liverpool / Manchester railway line about 90m south. By 1894 the surrounding area was developed, and the site was surrounded by the residential conurbation of Huyton. By 1955 the surrounding area had significantly expanded, typically with residential properties, although light industry and commercial properties were still located adjacent to the west and south west (assumed to be associated with the railway). A school was located in the east of the site. By 1974 the site was redeveloped, with office and other commercial buildings present with associated open land (assumed to be carparking). The area adjacent to the east had been redeveloped with larger industrial / commercial warehouse buildings. By 1999 the site was broadly developed into what is currently seen on site (with the addition of a council building that was removed c.2021), and a structure was present adjacent to the north east, assumed to be the existing petrol station.
Geological Setting	The geology comprises Made Ground associated with previous developments typically <1m thick, with the natural geology comprising a thin veneer of Superficial Deposits (Devensian Till formally referred to as Boulder Clay) in the central and southern areas followed by the Chester Formation (Bedrock) of the Sherwood Sandstone Group.
Site Investigation	A Site Investigation was carried out in 2023 and comprised; 12 no. cable percussion boreholes, 4 no. machine dug trial pits, 14 no. dynamic (windowless) sample boreholes, monitoring installations and representative sampling. Logging and sampling of all exploratory locations was undertaken. Both groundwater and ground gas installations were incorporated into the boreholes and monitored over seven rounds of return visits.
Contamination Risk Assessment	Made Ground is present across the Site but at relatively limited thickness (<2m). 16no. samples were taken of the Made Ground or shallow natural soils. The investigation did not identify any soil contaminants above commercial screening thresholds, with the exception of single sample recording occasional PAHs above this threshold (although the 95% confidence limit of the mean concentration was below the threshold).

Suspected Asbestos Containing Materials (ACM) were not observed in the soils encountered in any of the exploratory holes. A total of 16 samples taken from the Made Ground were screened for asbestos, two samples identified the presence of asbestos fibres (12.5% of dataset). Both samples were quantified and the results were below the laboratory limits of quantification <0.001% v/v).

Ground gas concentrations were representative of Characteristic Situation 1.

At total of 16no. water samples were taken, all organic determinands were below the laboratory limits of detection. Apart from zinc, copper and nickel, all inorganic determinands were below relevant thresholds. These determinand thresholds for zinc, copper and nickel, are based on being bioavailable for aqueous organisms and are used as a conservative screen of groundwater data to provide a point of reference and a sign of impact of potential groundwater contamination to a nearby freshwater body.

Given the depth to the groundwater (Sherwood Sandstone) and the lack of a significant plausible pathway to surface water bodies, the concentrations of copper, nickel and zinc are not considered a significant source.

A Generic Quantitative Risk Assessment was carried out based upon current good practice and the site investigation data. Most risks to sensitive receptors were assessed as Low. However, there are Moderate / Low risks to ground workers and building fabric reflecting the presence of contamination (including asbestos) within the Made Ground. This risk will be suitably mitigated by the adoption of good standard construction practice (see below) and suitable water supply pipes.

The preliminary waste characterisation assessment identified around 95% of the samples to be non-hazardous, and 5% potentially hazardous (one sample of 18).

Conclusions and Recommendations No significant geoenvironmental risks have been identified which would require further investigation prior to the proposed enabling works, although it is recommended that once the buildings have been removed additional investigation is undertaken under the building footprints.

The potential risks to construction workers discussed above, are capable of mitigation by the adoption of an appropriate good standard of health, safety and hygiene regime. However, there is a potential for contamination to be present and not to have been encountered by this investigation, in particular beneath the building footprint.

This potential for unforeseen contamination should be taken into account in the contractor's method statements etc. for any below ground works. In addition, during removal of the existing building floor slab particular attention should be paid to the potential presence of contamination. Any suspect materials should be sampled and subject to chemical analysis and appropriate recommendations regarding the need for and scope of any remedial actions sought from an appropriate specialist.

Further information on the remediation and verification requirements are provided within this report.

2 Introduction

2.1 Background and commission

This report presents the results and assessment of ground investigations carried out for the St Michael's Place scheme prepared by BuroHappold on behalf of Genr8 Kajima Regeneration Limited. The report describes the geological, geoenvironmental and hydrogeological conditions present at the site that could result in geoenvironmental risks with respect to the proposed future use. It also identifies the measures necessary to mitigate those potential risks. It is based upon an existing Desk Study Report [1], Ground Investigation Report (GIR) [2] by Buro Happold, and an intrusive investigation by CC Geotechnical [3]. The report will provide information relevant to redevelopment in accordance with the requirements of the National Planning Policy Framework (NPPF) [2]. The work was carried out in general accordance with the Environment Agency Land Contamination Risk Management (EA LCRM) [3], the relevant British Standard [4], the Environment Agency Guiding Principles [5] and other current good practice guidance. This report was previously issued in 2023 (ref.: 0051610-BHE-XX-XX-RP-YG-0004 DRAFT), since which the red line has been expanded to include the Lathom Road car park to the east (see figures below).

The main Site covers some 3.15ha at Huyton Village, Liverpool, L36 9GD, centred on Grid Reference 344180, 390840, with the additional land at Lathom Road multi-storey car park to the east which is approximately 0.70ha. The Site is approximately 9.5km east of Liverpool City Centre and is irregular in shape, it currently occupied by several buildings, including Knowsley Council offices, Huyton Library and associated car parking. The outline of the site is shown in Figure 2—1 and aerial photograph, with a comparison of the 2018 red line and the current boundary in Figure 2—2.

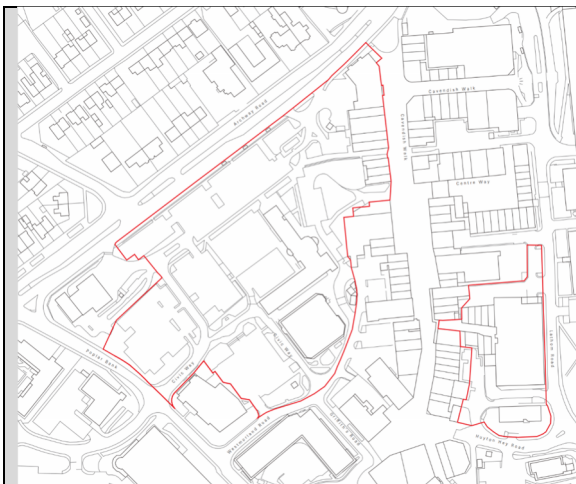


Figure 2—1 Red line boundary of the site

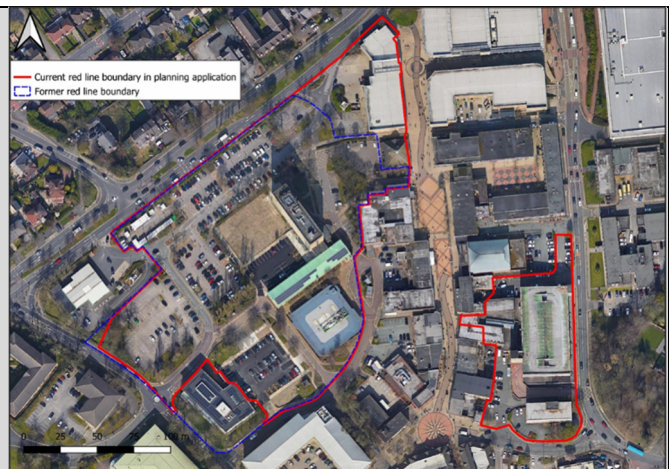


Figure 2—2 Aerial photograph of the site with comparison of previous area (blue line) and current (red line)

2.2 Aims and objectives

The overall aim of the work reported here was to assess the geological and geoenvironmental conditions of the Site and assess the associated geoenvironmental risks. Accordingly, this report presents the results of ground investigations to date (desk based and intrusive), describes the conceptual site model and presents an assessment of contamination related risks relating to the proposed development.

The objectives of the investigations were to provide an assessment of the ground model and groundwater regime and the location, nature and extent of contamination (solid, liquid and gaseous) within the Made Ground and underlying natural strata.

The report has the following objectives:

- To assess the potential risks to people and the environment (natural and built) associated with ground contamination (solid, liquid or gas) during enabling works; and
- To provide recommendations and outline scope, if necessary, for further works such as intrusive ground investigation and / or remedial action or design. The report is to support the enabling works package and provide information for the proposed redevelopment.

2.3 Information sources

The principal sources of information were a previous desk study [1] and an intrusive ground investigation [6]. The third party data has been accepted at face value and has not been independently verified. BuroHappold can therefore give no warranty, representation or assurance as to the accuracy or completeness of such information.

2.4 Competencies

The work reported here was carried out by an appropriately qualified geoenvironmental scientist and geotechnical engineers with relevant qualifications, training and experience. The work has been overseen by an Associate with experience in the assessment of land affected by contamination who is a C.WEM and initially reviewed by a Technical Director who is a chartered geologist and a registered SiLC and authorised by an Associate who is a chartered geologist.

2.5 Limitations

The scope and design of the site investigation has reflected the known history of site use, the results of previous studies and restriction on the scope requested by the Client. On this basis the spacing of the exploratory holes and the sampling and analysis plan for this investigation are considered to have provided a reasonable level of certainty about the ground conditions. No investigation, however comprehensive, can be expected to determine absolutely the nature and variation of all the geology or contamination which could be present on any site. There will always be an element of uncertainty about the ground conditions including contamination. It is also noted that the multi-storey car park to the south east, the northeast corner, the ground beneath existing buildings scheduled for demolition, and one plot in the west of site the were not investigated during the ground investigation. This is unlikely to change the risk and assessment associated with the enabling works and the commissioning of this report, however it should be taken into account with regards to any future works.

This potential for currently undetected contamination or variations in geology must therefore be taken into account not only in the risk assessment presented here but also in consideration of future development activities, for example, health and safety planning, financial planning and risk management and in the implementation of the below ground works during construction.

This report is concerned solely with the ground conditions and geoenvironmental risk and has been completed for the purposes set out above, namely to support the planning application for the pre-construction works, specifically any

below ground excavations and enabling earthworks. The geotechnical assessment and design are therefore not within the scope of this report.

3 Site Setting

3.1 Background

The site setting has been informed from the Desk Study [1], a recent Envirocheck report [7] (presented in the Desk Study [1]) and recent ground investigation by CC Geotechnical [6].

3.2 Site location and current site use

The Site is occupied by several buildings, including Knowsley Council offices, Huyton Library and associated car parking / multi-storey car park. Since the 2018 desk study a building used as offices for the council was demolished in the central northern area (c.2021) and by 2023 grassed. All other buildings and uses in 2023 were as reported in the 2018 desk study and the 2025 design note (Buro Happold note, ref.: 051610-BHE-XX-XX-RP-GE-0001 dated 16/06/2025).

No heavy industrial uses were noted in the vicinity of the site. Most of the surrounding buildings are either residential, light industrial or commercial use buildings, namely;

- to the north - Sweet Street with residential and commercial use buildings beyond;
- to the east - Westmorland Road commercial buildings beyond;
- to the south - Civic Way, Asda petrol filling station and associated car parking; and
- to the west - the B5199 Archway Road.

3.3 Site history

The previous desk study has been referred to, along with additional historic mapping obtained in 2023. Prior to the first published map in 1850, the site was broadly agricultural, intersected with field boundaries. Huyton was about 50m north, with the Liverpool / Manchester railway line about 90m south. By 1894 the surrounding area was developed, and the site was surrounded by the residential conurbation of Huyton. The south and south west of the site had residential properties along its boundary, By 1908 a residential property was present in the north. Industrial buildings were located adjacent to the south east, and by 1928 a school was located adjacent to the south.

By 1955 the surrounding area had significantly expanded, typically with residential properties, although light industry and commercial properties were still located adjacent to the west and south west (assumed to be associated with the railway). A school was located in the east of the site. By 1974 the site was redeveloped, with office and other commercial buildings present with associated open land (assumed to be carparking). The area adjacent to the east had been redeveloped with larger industrial / commercial warehouse buildings. By 1999 the site was broadly developed into what is currently seen on site (with the addition of a council building that was removed c.2021), and a structure was present adjacent to the north east, assumed to be the existing petrol station.

3.4 Proposed development

The proposed development comprises a mix of commercial, leisure and residential developments as part of the wider Huyton Village Masterplan. A planning application is proposed to be submitted for the enabling works at this stage,

including demolition and earthworks. This document is therefore focused on the enabling works and should be updated once the development is finalised.

3.5 Anticipated ground model

The anticipated geology has been determined with reference to the relevant British Geological Survey (BGS) geological maps and reports, namely Sheet 97 (1: 50, 000 scale) drift [8] and solid [9] (also shown in Figure 3—1). In summary, the natural geology comprises a thin veneer of Superficial Deposits (Devensian Till formally referred to as Boulder Clay) in the central and southern areas followed by the Chester Formation (Bedrock) of the Sherwood Sandstone Group. There are no superficial deposits recorded in the north of the site, with the Chester Formation recorded at surface. A fault runs east to west through the centre of the site, with the downthrow to the south.

Adjacent to the east is the Boundary Fault, and beyond this fault the Pennine Middle Coal Measures (formally the Westphalian B coal measures) are present below the Till.

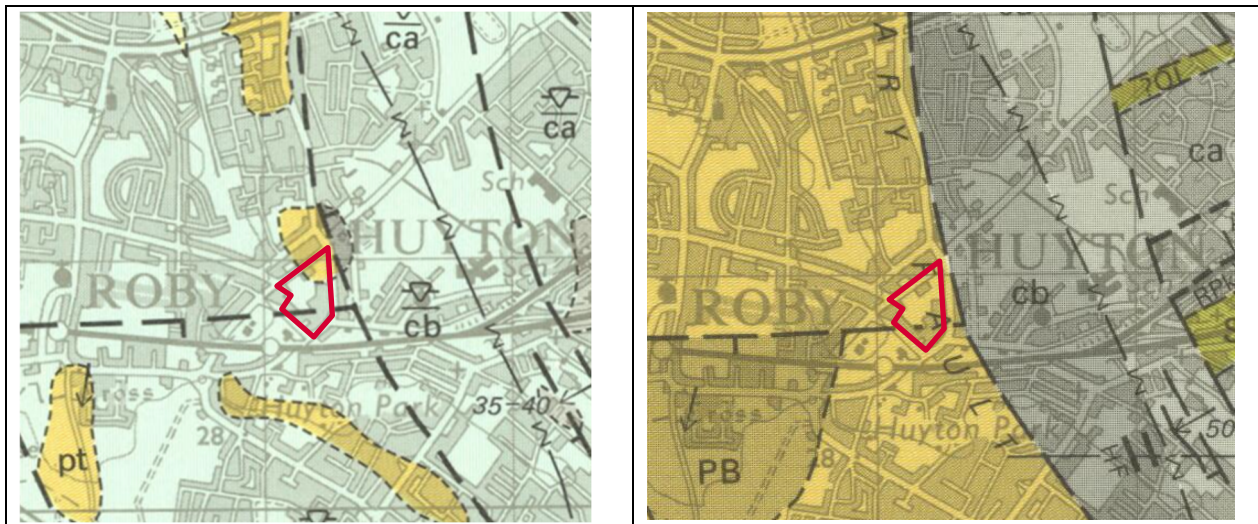


Figure 3—1 Extract of 1:50, 000 geological map at the Site, drift and solid edition respectively [8] [9] (approximate location highlighted in red).

The nearest surface water feature is 216m east comprising a small channel (possible drain). The superficial deposits are classified as a Secondary (undifferentiated) Aquifer and the bedrock is a Principal Aquifer. The site is located in a Groundwater Source Protection Zone (SPZ) – Zone III although there are no water abstractions within 1km.

3.6 Discussion of Desk Study contamination profile.

The previous desk study concluded that the site was of low sensitivity with relation to groundwater, surface water and sensitive land uses. The desk study noted that due to the previous developments on site, there was the potential for Made Ground and that Made Ground to be impacted with a variety of contaminants (metals, fuel derived hydrocarbons, oil derived hydrocarbons, asbestos and possible ground gases). No significant off-site sources were noted.

The report concluded that there was moderate / low risk from this potential contamination for future site users, property and the underlying Principal Aquifer. The preliminary conceptual site model presented in the report

concluded that a site investigation would be required to clarify the risk (although it is noted that the subsequent conclusions in the report state that only moderate or higher risks should be further assessed).

4 2023 Ground Investigation

4.1 Objectives and scope

The key geoenvironmental risks identified from the Desk Study [1], as previously summarised, are the contamination risks from the Made Ground to site users, groundwater and building [structure]. The overall objective of the site investigation was therefore to obtain data that would inform the further assessment of these risks.

In addition, the investigation has been designed to confirm the ground model, provide geotechnical information (not presented in this report) and provide a preliminary waste classification.

The following scope of works were completed by CC Geotechnical in 2023:

- 12 No. cable percussive boreholes with rotary follow on (BH01 – BH12);
- 4 No. Machine Dug Trial Pits (TP01-04);
- 14 No. Dynamic (windowless) Sample boreholes (WS01-WS11, WS15 – WS17)
- Groundwater installations;
- 6 No. return visits for post ground investigation monitoring (gas monitoring and dipping groundwater levels);
- Associated laboratory testing of soil and water samples;

During the investigation the area under the existing buildings was not investigated. It should be noted that upon demolition of the existing structures, further intrusive ground investigation works will be completed. An exploratory hole plan is presented over the page as Figure 4—1.

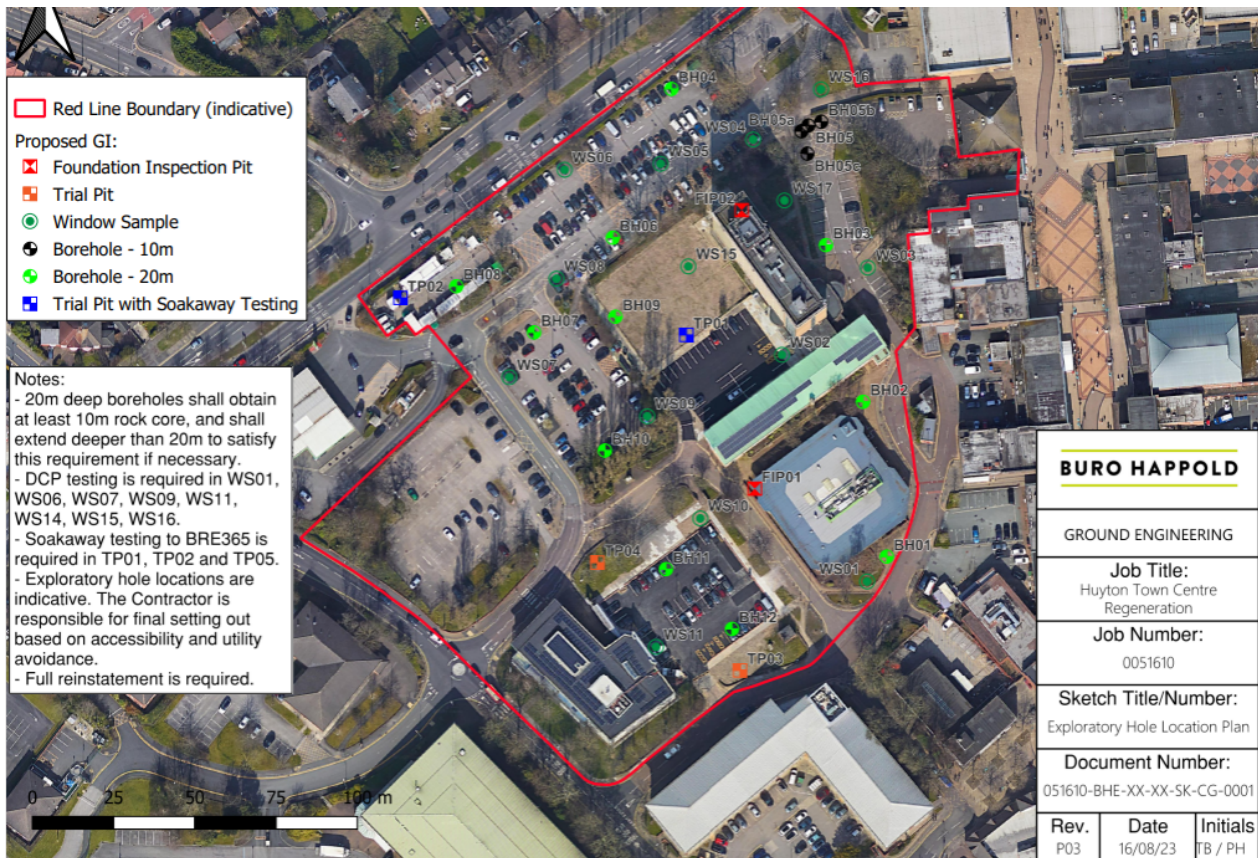


Figure 4—1 Location of 2023 exploratory holes.

The boreholes were installed to provide gas and groundwater monitoring. The detail of the various response zones is not available at the time of writing.

Table 4-1 Summary of monitoring installations

Exploratory Hole ID	Ground Level (m AOD)	Hole Final Depth (m bgl)	Installation Response Zone (pipe diameter, mm)
BH01	37.26	20.00	5.00 – 15.00 (19)
BH02	36.78	20.00	5.00 – 20.00 (19)
BH03	36.45	20.70	5.00 – 20.70 (19)
BH04	35.33	20.00	3.00 – 10.00 (19)
BH05	36.71	9.70	-
BH06	34.90	20.00	5.00 – 20.00 (19)
BH07	34.59	20.00	5.00 – 20.00 (19)
BH08	33.72	19.70	6.00 – 19.70 (19)
BH09	35.29	20.00	5.00 – 20.00 (19)
BH10	35.99	19.60	1.50 – 5.00 (50)
BH11	37.89	20.00	1.50 – 5.50 (19)
BH12	37.83	20.00	7.00 – 20.00 (19)
WS01	37.72	3.60	1.30 – 3.30 (50)

WS02	36.74	1.90	-
WS03	36.46	1.60	-
WS04	36.10	3.10	-
WS05	35.32	3.40	-
WS06	34.20	4.40	1.50 – 4.00 (50)
WS07	34.90	4.80	1.50 – 4.00 (50)
WS08	34.54	4.80	-
WS09	36.04	3.80	-
WS10	37.77	5.00	-
WS11	37.95	5.00	1.20 – 4.50 (50)
WS15	35.79	2.60	1.00 – 2.50 (50)
WS16	36.51	3.40	1.50 – 3.00 (50)
WS17	36.55	3.50	-
TP01	36.09	2.40	-
TP02	33.11	4.00	-
TP03	38.06	1.40	-
TP04	37.21	3.40	-

5 Ground Model Parameters

5.1 Encountered geology

The ground conditions beneath the Site have been assessed on the basis of the available information and comprise Made Ground which is underlain by Superficial Deposits comprising a slightly gravelly clay (Till), which in turn is underlain by Bedrock (Sandstone).

The Made Ground typically comprised a relatively thin heterogenous mix of granular deposits, including gravels of limestone (engineered subbase), brick fragments, cinders, concrete and sandstone. The Made Ground was encountered to 1.3m bgl in BH10, but was typically <1m thick.

The Made Ground was almost entirely underlain by superficial deposits, which comprised either a granular material with gravels of mudstone and sandstone or a naturally reworked clay (till). These were typically in the order of 1-2m thick, although BH08 encountered a gravelly, silty clay 4m thick.

Below this was the bedrock, the Chester Formation (encountered as a sandstone) which extended past the base of the exploratory locations.

5.2 Hydrogeology

Groundwater monitoring standpipes were installed in a number of exploratory holes (see Table 4-1) with up to six visits undertaken between the 5/10/2023 and 22/12/2023. A summary of the groundwater monitoring is provided below in **Table 5-1**.

Table 5-1 Groundwater monitoring summary

Exploratory Hole ID	Response Zone (m bgl)	Groundwater depth (m bgl)	Groundwater elevation (m AOD)	Strata groundwater encountered within
BH01	5.00 – 15.00	6.10 – 7.22	30.04 – 31.84	Sherwood Sandstone
BH02	5.00 – 20.00	4.93 – 7.54	29.24 – 31.85	Sherwood Sandstone
BH03	5.00 – 20.70	7.62 – 7.16	28.83 – 29.29	Sherwood Sandstone
BH04	3.00 – 10.00	6.33 – 6.70	28.63 – 29.00	Sherwood Sandstone
BH06	5.00 – 20.00	6.48 – 6.77	28.13 – 28.42	Sherwood Sandstone
BH07	5.00 – 20.00	6.40 – 6.72	28.01 – 27.87	Sherwood Sandstone
BH08	6.00 – 19.70	5.55 – 8.20	25.52 – 28.17	Sherwood Sandstone
BH09	5.00 – 20.00	6.46 – 7.20	28.09 – 28.83	Sherwood Sandstone
BH10	1.50 – 5.00	3.81 – 4.27	31.72 – 32.18	Sherwood Sandstone
BH11	1.50 – 5.50	Dry	Dry	-
BH12	7.00 – 20.00	9.16 – 9.38	28.45 – 28.67	Sherwood Sandstone
WS01	1.30 – 3.30	Dry	Dry	-
WS06	1.50 – 4.00	1.08 – 2.41	31.79 – 33.12	Glacial Till
WS07	1.50 – 4.00	2.16 – 3.53	31.37 – 32.74	Glacial Till
WS11	1.20 – 4.50	0.97 – 1.07	36.87 – 36.98	Made Ground
WS15	1.00 – 2.50	Dry	Dry	-
WS16	1.50 – 3.00	Dry	Dry	-

5.3 Ground gas data

Six periods of gas monitoring have been undertaken at the Site between 5th October and 22nd December 2023, during periods of falling, rising and stable pressure. Monitoring was undertaken at 17No. exploratory hole locations, but only 3No. had unsaturated / partially unsaturated response zones. The monitoring results are provided below in Table 5-2. The full monitoring results are provided within the factual report.

The ground investigation contractor undertook gas monitoring within groundwater monitoring wells within the Sherwood Sandstone. During monitoring the wells were flooded, therefore it is considered that this data is anomalous and not representative of the ground gas regime. As such, these values have been removed from this assessment.

Table 5-2 Summary of 2023 ground investigation ground gas monitoring data

Exploratory Hole ID	No. readings	Strata	Response zone flooding	Max flow rate l/hr	Peak methane %	Peak carbon dioxide %	Min oxygen (%)
WS01	6	Glacial Till	Dry	<0.1	0	0.1	19.5
WS06	6	Glacial Till	Mostly Flooded	<0.1	0	1.2	17.3
WS07	6	Glacial Till	Partially Flooded	<0.1	0	4.1	8.8
WS11	6	Made Ground / Glacial Till	Flooded	<0.1	0	0	19.5
WS15	6	Glacial Till	Dry	<0.1	0	4.2	16.1
WS16	6	Glacial Till	Dry	<0.1	0	8.6	13.8
BH10	6	Glacial Till / Sherwood Sandstone	Partially Flooded	<0.1	0.8	5.4	1.6
BH11	6	Glacial Till	Dry	<0.1	0	2.9	14.3

Note: Peak carbon monoxide and hydrogen sulphide concentrations not provided as monitoring recorded all results as 0ppm (i.e. below the limit of detection).

6 Geoenvironmental Risk Assessment Criteria

6.1 Soil risk assessment criteria

In order to perform a Generic Quantitative Risk Assessment (GQRA), the soil will be compared with available Soil Guideline Values (SGVs), Category 4 Screening Values (C4SLs), and BuroHappold and other industry Generic Assessment Criteria (GAC), the details of which are presented in Appendix B.

6.1.1 Risks to human health

Chronic: For human health risk assessment, soil results will be assessed using GACs, C4SLs and SGVs for the Contaminated Land Exposure Assessment (CLEA) residential with plant uptake (Resi₁ scenario), residential without plant uptake (Resi₂ scenario) and commercial land use scenarios. The residential and commercial land use scenarios are applied to give context to the data and to provide indicative upper and lower bounds for discussion purposes only. The Resi₂ scenario is considered to be the most appropriate land use scenario against which the data is to be compared to establish suitability for use as a majority of the landscaping is for public use, on a podium level, although it is noted that some periphery planting will be undertaken at existing ground level. However, the commercial use can be considered for material that may be present beneath pavements, building footprints and under the podium level.

Acute: For acute risks to human health, soil results will be assessed using the SoBRA Acute Generic Assessment Criteria (AGAC) [10]. The exposure scenarios modelled are for the general public and occupational exposure. For determinands other than the 7 modelled by SoBRA, maximum concentrations were considered. Comparison of maximum concentrations are made with the other GACs and other screening values which provides a conservative benchmark for such short term risks (as the values are based on long term exposure).

6.1.2 Plant health (phytotoxicity)

In the case of future planting, soil test results indicating phytotoxicity are assessed using the British Standards Specification for Topsoil (BS 3882) [11].

6.1.3 Risks to below ground structures

The water industry and several water utility companies have published guidance regarding the construction of new water supply pipework on Brownfield sites [12] but there is no universally accepted guidance (or contaminant thresholds). The most recent guidance published by Water UK [13] has been adopted as best practice but is not mandatory.

6.2 Controlled waters risk assessment criteria (Section 8)

The groundwater data was assessed using UK Drinking Water Standards (DWS) [14] and the Freshwater EQS [15].

6.3 Ground gas risk assessment criteria (Section 9)

Ground gas data obtained from the Site will be used to assess the risks to the Site with reference to BS 8485 [16] and National Housing Building Council (NHBC) guidance [17].

6.4 Waste Classification (Section 10)

In order to determine the likely waste classification, soil test results have been assessed using the SEPA / EA 'Technical Guidance WM3', 'Guidance on the classification and assessment of waste' 1st Edition 2015 [18].

7 Analytical Results for Soil

7.1 Analytical Scope for Soil

A total of 19no. soils samples from the 2023 investigation have been used for this assessment. 16no. were from the Made Ground and 3no. were from the natural material directly underlying the Made Ground. Not all samples were tested for all determinands, but the general suite is shown below. Only the samples from the Made Ground have been included in datasets where statistics have been applied.

Table 7-1 Laboratory testing suites for soil

Contaminant Analysis Suite
pH, CLEA metals suite, total cyanide, total mercury, speciated PAHs, phenol, TPH CWG including BTEX, Soil Organic Matter, Asbestos.

The analytical test results for contaminants in soils from the investigation will be presented in the factual report when issued. The screening summary spreadsheet is presented in Appendix C.

7.2 Made Ground Chronic Risks

7.2.1 Inorganic Determinands

Up to 19no. samples were tested for a range of inorganic determinands (16no. from the Made Ground and 3no. from the natural soils directly under the Made Ground). No samples exceeded the commercial screening thresholds. Most determinands from most samples were below the residential thresholds.

Three samples exceeded the residential thresholds for lead (about 16% of dataset). One of these samples was from the natural soils, located approximately 5cm below the Made Ground. The maximum concentration was 460mg/kg (BH11 0.9m bgl), which is over twice the $Resi_1$ threshold, and 1.5 times the $Resi_2$ threshold. The 95% confidence limit for the full dataset (including natural soils) is 185 mg/kg and the dataset for just the Made Ground the value is 190mg/kg, both of these values are just below the $Resi_1$ threshold.

A single sample from WS06 (0.5m bgl) marginally exceeded the residential threshold for beryllium (1.7mg/kg), with a concentration of 1.8mg/kg. The 95% confidence limit for the average concentration within the Made Ground (0.96mg/kg) is well below the $Resi_1$ threshold.

A full summary of the data is presented in Appendix C with the statistical sheets in Appendix D.

7.2.2 Organic determinands

Fuel derived hydrocarbons and BTEX

Most of the organic determinands from a majority of samples were well below commercial screening thresholds. All BTEX determinands were below both residential and commercial thresholds, with all samples also below the limits of laboratory detection. Almost all TPH species were also below both residential and commercial thresholds, however a single sample from WS06 (0.5m bgl) slightly exceed $Resi_1$ threshold for the aromatic C16 to C21 chain length at 530mg/kg. This sample represents 6% of the Made Ground dataset, and the recorded concentration is well below the $Resi_2$ threshold with the 95% upper confidence limit of the dataset (113mg/kg) below the $Resi_1$ threshold.

PAH

A total of 10 of the 16 PAH determinands were not recorded at concentrations above the Resi₁ threshold in any of the samples tested. Occasional samples recorded concentrations of particular PAHs above residential thresholds but most did not record any PAH determinands above the commercial thresholds. A single sample (WS06 0.5m) recorded concentrations above the commercial thresholds for dibenzo[ah]anthracene, benzo(a)pyrene and benzo(b)fluoranthene.

A summary of exceedences is provided in Table 7-2 below.

Table 7-2 Summary of chemical data for PAH determinands

Determinand	No. of Samples	No. below LOD	GAC (No. of samples exceeding GAC).			Max.	95% confidence limit
			Residential with Uptake	Residential without Uptake	Commercial		
Naphthalene	16	11	2.3 (0)	2.3 (0)	190 (0)	1.30	
Acenaphthylene	16	15	170 (0)	2900 (0)	83000 (0)	0.55	
Acenaphthene	16	10	210 (0)	3000 (0)	84000 (0)	15.00	
Fluorene	16	10	170 (0)	2800 (0)	63000 (0)	11.00	
Phenanthrene	16	4	95 (1)	1300 (0)	22000 (0)	100.00	17.14
Anthracene	16	9	2400 (0)	31000 (0)	520000 (0)	28.00	
Fluoranthene	16	3	280 (0)	1500 (0)	23000 (0)	140.00	
Pyrene	16	3	620 (0)	3700 (0)	54000 (0)	110.00	
Benzo[a]anthracene	16	3	7.2 (1)	11 (1)	170 (0)	48.00	8.25
Chrysene	16	3	15 (1)	30 (1)	350 (0)	46.00	7.96
Benzo[b]fluoranthene	16	4	2.6 (2)	3.9 (2)	44 (1)	54.00	9.28
Benzo[k]fluoranthene	16	5	77 (0)	110 (0)	1200 (0)	21.00	
Benzo[a]pyrene	16	4	2.2 (2)	3.2 (2)	35 (1)	41.00	7.09
Indeno[123-cd]pyrene	16	5	27 (0)	45 (0)	500 (0)	20.00	
Dibenzo[ah]anthracene	16	9	0.24 (2)	0.31 (2)	3.5 (1)	4.60	0.83
Benzo[ghi]perylene	16	6	320 (0)	360 (0)	3900 (0)	23.00	

The six determinands to exceeding the residential thresholds were; Phenanthrene, Benzo[a]anthracene, Chrysene, Benzo[b]fluoranthene, Benzo[a]pyrene and Dibenzo[ah]anthracene. The samples that recorded exceedences were, BH08 at 0.5m and WS06 at 0.5m (although BH08 was only exceeded the thresholds for three determinands).

The samples that exceeded the thresholds typically contained ashy material (cinders in WS06) or were directly below an asphalt material that may have been incorporated into the sample (BH08).

All the 95% confidence limits were below the commercial thresholds for all determinands, with most also below the residential thresholds. The 95% confidence limit for Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[a]pyrene and dibenzo[ah]anthracene were above the residential thresholds (but below commercial).

7.2.3 pH in Made Ground

Measurements of soil pH are typically alkaline with an average pH of 8.3 and a maximum recorded of 10.4. The elevated pH is likely to be related to leachate from concrete present within the Made Ground.

7.2.4 Asbestos

Suspected Asbestos Containing Materials (ACM) were not observed in the soils encountered in any of the exploratory holes. A total of 16 samples taken from the Made Ground were screened for asbestos, two samples identified the presence of asbestos fibres (12.5% of dataset). Both samples were quantified and the results were below the laboratory limits of quantification <0.001% v/v).

7.3 Natural Strata Chronic Risks

The natural strata typically had concentrations of determinands below the relevant residential and commercial screening thresholds.

However it is noted that one sample recorded a concentration of lead above the $Resi_2$ threshold,- This sample was taken directly below the Made Ground and some of the overlying Made Ground could have been dragged down and incorporated into the sample during the ground investigation process.

7.4 Acute Risk to Human Health

All the relevant determinands were below the SoBRA Acute Generic Assessment Criteria (AGAC) [10] for both adult receptors and the more sensitive child receptor.

Where there are no guidance values for assessing acute risk related to soil contamination, a comparison of the maximum concentrations of the determinands discussed above has been made with the various GACs derived for chronic risks, which will provide a conservative benchmark for such short term risks (as the GACs etc. are based upon a long term exposure). Determinands with highly elevated maximum values may pose an acute risk to construction or maintenance workers. In the majority of the Made Ground, no samples contained highly elevated maximum values of any determinands with most samples recording concentrations of determinands below residential thresholds. Some samples of the Made Ground material recorded concentrations of some PAHs above the commercial thresholds.

7.5 Phytotoxicity Risk

Table 7-3 Concentrations of copper, nickel and zinc (mg/kg)

Determinand	No. of Samples	Screening threshold (No. of samples exceeding)	Max.
Copper	19	100 (0)	74
Nickel	19	60 (0)	44
Zinc	19	200 (1)	260

Analysis was carried out for copper, nickel and zinc on 19 samples. One sample (WS06 0.5m) recorded a concentration above the threshold for zinc (5.2% of dataset). All other samples recorded concentrations of all determinands below the relevant threshold.

7.6 Risks to Below Ground Structures

7.6.1 Water UK assessment

The desk study identified potential risks to buried services (potable water supply pipework) associated with the residential development and the potential for contamination to permeate any plastic water supply pipework laid directly in contaminated ground.

The data for the shallow Made Ground has been discussed in some detail in Section 7.2 with respect to human health assessment criteria. Some of the determinands assessed in that chapter (particular organic compounds) have the potential to impact not only on human health but also to affect below-ground water supply [13]. This is because there is a potential for particular organic contaminants to permeate plastic pipes and taint water supply if those pipes are laid in contact with contaminated soils.

BTEX and MTBE determinands were all below the laboratory limits of detection (and the relevant thresholds). However, some hydrocarbon bands recorded concentrations above the relevant thresholds [13], indicating that if water pipes are laid in the Made Ground some form of protection maybe required, either as barrier pipe or pipes laid in trenches with a clean backfill surround.

8 Analytical Results for Groundwater

A total of 16no. water samples were taken, with eight samples (BH01, BH02, BH03, BH04, BH06, BH08, BH10 and WS07) taken on the 29th October 2023 and eight samples (BH01, BH02, BH03, BH06, BH07, BH09 and BH12, WS11) taken on the 26th November 2023

The pH ranged from 6.6 to 11.2, with a majority of results close to neutral. The higher pH values (alkaline) was attributed to WS11, installed within the Made Ground, and this is likely due to leaching from concrete fragments.

All organic determinands were below the laboratory limits of detection.

Inorganic determinands were compared to drinking water and environmental quality thresholds. With the exception of zinc, copper and nickel, all were below relevant thresholds. Occasional samples were above the Environmental Quality Standards for these metals, with 5 of 6 samples exceeding the copper thresholds (1ug/l). These determinand thresholds are based on being bioavailable for aqueous organisms and are used as a conservative screen of groundwater data to provide a point of reference and an indication of impact of potential groundwater contamination to a nearby freshwater body.

Given the depth to the groundwater (Sherwood Sandstone) and the lack of a significant plausible pathway to surface water bodies, the concentrations of copper, nickel and zinc are not considered a significant source.

9 Analytical Results for Ground Gas and Characterisation

9.1 General

A summary of the factual gas results is presented in Table 5-2. In summary, the representative monitoring installations consistently recorded low flow rates, all below the equipment limits of detection (LoD) of <0.1l/hr. Peak carbon dioxide concentrations were between LoD (<0.1% v/v) and 8.6% v/v. Concentrations were relatively consistent at each monitoring location. Peak methane concentrations were between LoD (<0.1% v/v) and 0.8% v/v. Oxygen concentrations were recorded between 1.6% v/v and 19.6% v/v. Peak carbon monoxide and hydrogen sulphide concentrations were all recorded at <0.1 ppm (LoD).

9.2 Assessment of ground gas regime

The ground conditions (relatively thin Made Ground with , limited organic matter and no evidence of highly elevated hydrocarbons in soils) indicate a low potential for hazardous ground gas. This concurs with the ground gas monitoring. All borehole hazardous gas flow rates for the individual locations are representative of Characteristic Situation 1. A majority of the measured concentrations of CO₂ were below thresholds where BS8485 states CS2 could be considered (5% v/v). Peak concentrations of CO₂ greater than 5% were recorded in WS16 (Glacial Till) and BH10 (Glacial Till/sandstone) during 1 visit (i.e. only 2 of the 48 monitoring data point recorded CO₂ greater than the threshold).

The monitoring data described above has been assessed in accordance with BS8485 [16]. In accordance with this guidance the reliability of this data and thus characterisation of the ground gas regime is influenced by the following;

- There is a relatively limited set of monitoring data from the recent ground investigation;
- The monitoring data is generally consistent with the nature and extent of the source (Made Ground and glacial till). The Made Ground is typically shallow.
- Eight wells provided sufficient unsaturated response zones to be capable of providing data representative of the ground gas regime;
- The monitoring has been carried out during steady to rising and falling atmospheric pressure conditions;
- The large majority of borehole hazardous gas flow rate values were representative of CS1. However, carbon dioxide (2 of 48 readings) above the typical maxima for CS1 were recorded.
- An absolute worst case (maximum concentrations and maximum flow rate) falls within CS1.

Consideration of all of the above indicates that it is appropriate to consider the ground gas regime to fall within Characteristic Situation 1. This assessment considers the available data, particularly maximum concentrations, but also reflects the uncertainty associated with the limited dataset.

10 Waste Management

10.1 Introduction

It is anticipated that the development will include earthworks over a majority of the site area. Some material will likely require removal and the following section provides a preliminary waste classifications for initial design and costing purposes. The assessment rationale is presented in Appendix E.

10.2 Preliminary Waste Classification

10.2.1 Code of Waste

The most applicable codes for the material on site (Made Ground) are 17 05 03 and 17 05 04. These are mirror codes that will require further assessment to classify.

10.2.2 Chemical composition of waste

The results from the 2023 investigation for both the Made Ground and natural strata have been combined for the waste assessment, therefore a total of 19no. soil samples were subject to chemical analysis.

Preliminary waste classification has been carried out and the details are provided in Appendix F.

A single sample was classified as 17 05 03 (soils and stones containing hazardous substances) with the remaining 18no. samples (about 95% of dataset) as 17 05 04 (soils and stones not mentioned in 17 05 03, e.g. non-hazardous).

Asbestos was not identified above the hazardous waste threshold of 0.1% v/v.

Below is a summary of the sample containing hazardous substances.

Table 10-1 Samples classified as potential Hazardous Waste

Sample	Depth (m bgl)	Strata	Contaminant	Reason	Comment
WS06	0.5	MG	Total TPH	HP3, HP7, HP11	Likely due unburnt organics in Made Ground – although no evidence on logs

The above information provides a preliminary assessment for off site disposal to non-hazardous landfill or treatment facilities. If the waste is to be disposed of to hazardous or inert landfill, the waste will need to meet the relevant WAC criteria.

11 Geoenvironmental Risk Assessment

11.1 General approach

In the UK, the assessment of risk from contamination follows the source-pathway-target approach. If one of these three elements is absent it is considered that there is no risk of harm. If, however, there is considered to be a linkage between any given source and any given target / receptor then a risk-based approach is used to assess the significance or impact of any such linkage.

Source	The contaminants that have the potential to negatively affect human health and/or the health of the environment (i.e. the hazard).
Pathway	The potential route by which a receptor may come into contact with the source.
Receptor	The specific group of human beings or aspect of the environment (e.g. controlled waters) that could be affected by the source.

Risks are defined as the probability of an event occurring combined with the severity of the consequence of that event occurring. Particularly, to assess the risk to site end users posed by any given source, the sensitivity of each receptor is considered. For example, the concentration of contamination acceptable at a site to be developed as a residential property, with a garden used to grow vegetables and accessible to young children, is set lower than that for a commercial site where soil is exposed in minor areas of landscaping and the only long-term users of the site are adults. Similarly, a site overlying a major aquifer supplying potable water to a large population will be considered more stringently than a site overlying an impermeable geology with only minor seepages of groundwater.

11.2 Climate Change

It is accepted that the climate is changing and that this will affect future weather patterns. Recent regulations [20] requires factoring climate change into risk assessments and remedial solutions. The British Standard, 'Adaptation to Climate Change – Principles, Requirements and Guidelines' [21] states that 'climate change impacts shall be assessed comprehensively...including...contamination' and should focus 'upon understanding the implications of future climate change trends and climate events over the full lifespan of a decision'.

The changes to weather patterns in the UK may include: an increase in warmer weather; an increase in the frequency and intensity of rainfall events; and an increase in the duration or frequency of dry spells in the summer. Such events are also likely to become more extreme. There is the potential for these scenarios to impact upon potential contaminant migration pathways in particular with respect to both hazardous ground gas and contaminated groundwater via permeable strata, during both construction and operation of the proposed development. As ground conditions at the proposed development may be vulnerable to extreme weather events due to climate change during the demolition, construction and operation phases, these potential impacts have been considered in the risk assessment.

11.3 Conceptual Site Model (CSM)

The potential risks posed to the groundwater, human health and the environment by ground contamination at this site have been evaluated by a generic quantitative risk assessment which incorporates the 'source-pathway-receptor' identification and assessment methodology in accordance with the Model Procedures. The risk assessment process therefore involves the identification of each source based on the site setting information and ground investigation results and the identification of the relevant exposure pathway and each potential receptor. The potential risks to the receptors are then assessed by considering the potential effect of the source on the receptor as well as the likelihood of a pathway linking the two, i.e. a contaminant linkage as discussed above. The CSM is based on the proposed enabling works, comprising the removal of commercial units in the north east once vacated, construction of the hardcore finished surface road and service diversions with no building construction works.

11.3.1 Contamination sources

Potential contamination sources from former uses of the site have been identified following a review of site setting and desk study information and from information gained during the ground investigation. The potential sources of contamination and associated contaminants of concern are limited, no values were recorded above commercial screening thresholds, with most determinands being below the more conservative residential thresholds. Some samples recorded asbestos, but these were below the limits of detection (<0.1%) and no visible fragments were identified during the ground investigation. The ground gas regime is not yet defined but the ground conditions are indicative of a low potential for hazardous ground gas.

11.3.2 Pollutant linkages

Off-site historic land uses are not considered potential sources of contamination as there was no evidence during the various phases of investigation that the site has been impacted from them. Therefore, such uses have been excluded from the risk assessment undertaken. Site specific pathway receptor linkages have been identified for the site in Table 11-1 with respect to the sources outlined above and the anticipated future use of the site as a commercial development.

Table 11-1: Receptors and pathways

Receptor		Pathway
Human Health	Future site users, staff and visitors	Direct contact and dermal uptake, soil and dust ingestion.
	Construction / future maintenance workers / off site residents (during construction works)	Direct contact and dermal uptake, soil and dust ingestion, gas and vapour inhalation during construction / earthworks, potential explosive or asphyxiating atmospheres in confined spaces.
Controlled Waters	Underlying aquifer	No plausible source of contamination and nothing identified during 2005 or 2023 sampling. Receptor is not considered further during this assessment.
Environment	Flora and fauna.	It is not anticipated that direct planting in the Made Ground will take place; however, if planting is undertaken, direct contact/uptake by plant roots could become a viable pathway.
Buildings/ Services	Proposed development and potential underground services	Direct contact / permeation of plastic pipe work (if constructed) by contaminants in soil.

Based on the results of the intrusive ground investigation and the preliminary conceptual site model, the geoenvironmental risk assessment is presented in Table 11-2 below.

Table 11-2 Results of Geoenvironmental Risk Assessment

Source			Description of source [bold text].				
			Hazard to Receptor [bold text] / Pathway [normal text]	Risk Assessment (following CIRIA C552)			Comment on hazard realisation [normal text]
Origin	Contaminants of concern	Zone affected			Consequence	Probability	
Made Ground (soil)	Asbestos	On Site	Potentially contaminative historical uses including former residential and commercial use with light industry in surrounding area. Various phases of development and noted C&D material in Made Ground. Screening of Made Ground has identified asbestos (chrysotile) in two samples (12.5% of dataset), but where quantified, below the laboratory limits of detection (<0.001%).				
			Human health impacts to future Site users, staff and visitors Soil and dust ingestion and inhalation.	Medium	Unlikely	Low	Proposed redevelopment incorporates significant hardstanding with limited landscaping and limited disturbance during operational phase. In limited areas of soft landscaping it is anticipated that suitable soil materials will be imported to form a growing medium and a cap with a suitable thickness of cover to be implemented. which will be separated from Made Ground by a geo –textile.
			Human health impacts to construction / future maintenance workers / offsite residents Soil and dust ingestion and inhalation during construction / earthworks.	Severe	Unlikely	Moderate / Low	Development will require earthworks and disturbance of the ground. The limits of detection used during the previous investigation are for waste classification and therefore higher than standard thresholds. No visible fragments noted. No pattern of asbestos, it is likely to be part of the Made Ground. Standard good practice and Health and Safety precautions including dust control and PPE should be implemented to mitigate risks.
Made Ground (soils)	Heavy metals, PAHs and TPH	On Site	Potentially contaminative historical uses at the site. Chemical testing of the Made Ground identified some PAHs from some samples above the commercial screening thresholds, but most determinands from most samples below and 95% upper confidence limit is below commercial thresholds. Occasional lead, beryllium, PAHs and some TPH bands were above the Residential without plant uptake threshold. No samples above the acute risk thresholds. Zinc exceeded the phytotoxic thresholds in one sample (about 5% of dataset). Organics in Made Ground, specifically the TPH fractions, exceed UKWIR guidelines. Gas regime representative of Characteristic Situation 1.				
			Human health impacts to future Site users, staff and visitors Direct contact and dermal uptake, soil and dust ingestion and inhalation.	Mild	Low likelihood	Low	Proposed redevelopment incorporates significant hardstanding with limited landscaping - enabling works is just for demolition of existing buildings, construction of haul road, service divisions and some wild meadow planting. In limited areas of soft landscaping and gardens it is anticipated that suitable soil materials will be imported to form a growing medium and a cap with a suitable thickness of cover to be implemented. which will be separated from Made Ground by a geo –textile.
			Human health impacts to construction / future maintenance workers / offsite residents Direct contact and dermal uptake, soil and dust ingestion and inhalation during construction / earthworks.	Mild	Low likelihood	Low	Offsite residents distant from this area of the site. Exposure limited by duration and frequency of works, e.g. unlikely to be significant long term contact. Standard good practice and Health and Safety precautions including dust control and PPE should be implemented to mitigate risks.
			Degradation of groundwater in Secondary Aquifers	Mild	Unlikely	Very Low	No significant areas of potentially mobile contamination recorded. Potential for infiltration through permeable strata; however, risk from

			Leaching and migration of contamination via permeable strata. Surface water run-off.				leaching is low due to historical source [i.e. contaminants likely to have already leached out] and low recorded concentration in groundwater.
			Flora and fauna Direct contact and uptake by plant roots	Mild	Unlikely	Very Low	Made Ground has recorded some exceedances of phytotoxic elements. In future limited areas of soft landscaping it is anticipated that suitable soil materials will be imported which will be separated from Made Ground by a geo –textile.
			Buildings and services Leaching through services	Mild	Likely	Moderate / Low	PVC pipes may not be appropriate for potable water supply due to the elevated concentrations of hydrocarbons recorded in Made Ground. If Made Ground remains in-situ and the pipes are laid within the Made Ground, barrier pipe materials are likely to be required unless otherwise agreed with the utility company.

11.4 Risk Assessment Summary

The following risks have been identified above Low, this assessment assumes that in future use the site will be covered mostly in hardstanding or that in landscape areas such as the proposed wildflower planting a suitable cap of a minimum thickness of 450mm with a geo-textile marker layer at its base will be installed as is planned.

- A Moderate/ Low risk to construction workers, future maintenance workers and offsite residents due to disturbance of Made Ground during construction. The adoption of good construction practice, use of PPE and dust control measures will satisfactorily mitigate this risk;
- A Moderate / Low risk to building services has been identified due to the presence of certain contaminants within the Made Ground. Depending on the material they are to be installed into future water supply pipes may require the use of specific materials to mitigate the identified risk.

These results have been discussed on the following pages, with remedial / mitigation requirements to reduce these risks and allow safe redevelopment.

It is acknowledged that this risk assessment is for the enabling works planning application, with no proposed enclosed spaces or buildings, therefore this will need to be reassessed for the main development planning application (e.g. any vapour assessments or similar for occupied building spaces).

12 Recommendations and Remedial Actions

12.1 General

This section sets out the various remediation elements and demonstrates will be protective of the various receptors associated with the Proposed Development, specifically the enabling works. It is considered there will not be a significant contaminant-pathway-receptor on completion of the development and therefore contamination risks will have been appropriately mitigated. This section demonstrates how this will be accomplished.

It is understood that a contractor (i.e. the Principal Contractor under Construction (Design and Management) Regulations 2015 (CDM 2015)) [22] will be appointed to undertake the demolition and construction work, and by proxy the remediation work. This may require the engagement of a specialist subcontractors for some aspects of the work.

It is envisaged that in due course the Contractor would prepare an appropriately detailed remediation method statement which would accord with the objectives of the following recommended remedial actions. The Contractor would also be responsible for obtaining the evidence necessary for the completion of a Verification Report. That report would demonstrate that the overall strategy had met its objectives in accordance with the verification process and plan set out below. In addition, this report has been produced for the enabling works, therefore further ground investigation will be required to address the development requirements. For example, further ground investigation will be required for the multi-storey car park to the south east, the northeastern area, the western plot, and under existing building footprints.

It is recommended that an Environmental Consultant should be appointed to provide independent oversight during the remediation works, including independent confirmation that the validation sampling and chemical analysis obtained by the Contractor meets the requirements of the Remediation Strategy. The Environmental Consultant would then collate the data and produce the Verification Report.

12.2 Remediation Objectives

As detailed above, there are potentially unacceptable risks to people and building services (water pipes) associated with the presence of elevated concentrations of asbestos and hydrocarbon/PAH containing material in the Made Ground. The remedial objectives for the site can be defined in three categories; (i) contamination related, (ii) engineering related and (iii) management/ amenity related. The engineering objectives will be met by the construction of the building and the various structural / geotechnical assessments and have not been considered further in this report.

12.2.1 Contamination related objectives

The contamination related objectives are;

- to ensure workers engaged in the enabling works / redevelopment are not exposed to concentrations of contamination in the solid or gaseous/ vapour phase at concentrations which could give rise to acute risks;
- to ensure site occupiers and neighbours are not exposed to concentrations of contamination in dusts or gaseous/ vapour phase at concentrations which could give rise to acute risks;
- to ensure the soils in areas of soft landscaping meet appropriate physical and chemical criteria;
- to ensure potable water supply is not impacted by any residual contamination, and

to ensure that the redeveloped site cannot be determined as "Contaminated Land".

12.2.2 Management and amenity related objectives

The management and amenity related objectives are;

- to deliver the redeveloped site to time and budget;
- to minimise environmental impacts and ensure that "nuisance" effects to neighbours are mitigated to acceptably low levels, and any perception of hazard (and blight) associated with the site is removed; and
- to ensure the remedial works undertaken are cost effective.

12.3 Remediation Design

12.3.1 Consideration of options

The following text provides a written statement for meeting the remedial objectives set out above, taking into account the proposed development. The evaluation of potential treatment actions follows the procedure required by relevant guidance. However, it is recognised, that because of the proposed nature of the development and the enabling works for the buildings (which will initially include utility diversions, groundworks followed by the excavation to construction level and subsequent removal / partial removal of the Made Ground in the respective parts of the site) there are a relatively small range of options for suitable remedial action.

The actions below have been considered for both the enabling works requirements (e.g. earthworks) and the subsequent works for construction (e.g. building fabric and landscaping requirements).

12.3.2 Protection of construction workers (enabling works requirements)

The potential for direct contact, vapour and dust inhalation (including asbestos fibres) during the enabling works earthworks and any subsequent below ground work will be mitigated by a combination of the measures set out below. The measures comprise;

- Avoiding below ground excavations / earthworks not required for development purposes;
- Ensuring awareness of the potential for contamination in the construction workforce engaged in any below ground works by the provision of briefing and site induction including description of the potential for and the nature of potential contaminants and setting out the provisions being implemented on site;
- Providing an appropriate level of personal protective equipment (PPE) and ensuring that this is worn at all times;
- Ensuring that supplementary PPE that may become necessary (e.g. vapour masks) are immediately available to be used if required;
- Ensuring a good standard of hygiene with the consumption of food and drink permitted only in designated areas. Smoking will not be permitted on site;
- Ensuring good construction practice (including appropriate mitigation measures) is followed during excavation and any below ground works to prevent the generation and the migration of dusts created by below ground works and other construction activities; and

In the unlikely event of a requirement for entry into below ground confined spaces, precautions will be adopted to accord with HSE guidance and Regulations [23].

Once the enabling works are complete it is anticipated that the majority of the Made Ground will have been either removed or encapsulated by either a piling mat, pavement or hardstanding. This significantly reduces the potential for direct contact or dust inhalation. However, subsequent localised excavations will still require control as implemented during the enabling works.

12.3.3 Protection of neighbours (enabling works requirements)

The potential for vapour and dust inhalation (including asbestos fibres) during earthworks will be mitigated by ensuring good construction practice to prevent the generation and the migration of dusts created by below ground works and other construction activities.

The Control of Asbestos Regulations (CAR) 2012 [24] requires actions to ensure the protection of workers and general public from asbestos exposures resulting from work activities. The Contractor is required to put in place appropriate measures to deal with dust and the identified contamination during the works. This is particularly important when moving Made Ground soils which are known to be contaminated with asbestos.

Once the enabling works are complete it is anticipated that the majority of the Made Ground will have been either removed or encapsulated by either a piling mat, pavement or hardstanding. This significantly reduces the potential for the generation of dust and its migration and inhalation. However, subsequent localised excavations will still require control as implemented during the enabling works.

12.3.4 Protection of future site users and occupiers (enabling and construction requirements)

The proposed development for this application relates to the enabling works which will typically remove and grub out some of the existing Made Ground, which will mitigate the potential for direct contact and dust generation from any residual contaminated soils that remain in situ. There will be limited landscaping at ground level, although this is noted akin to public open space rather than residential gardens, and therefore the frequency and duration of any potential exposure will be significantly reduced.

Where soft landscaping is present (landscaping) an appropriate thickness of subsoil/topsoil will be provided primarily for horticultural/landscaping reasons, it is anticipated that this will be up to 450mm. This will comprise the import of suitable subsoil and topsoil as described in Appendix G. The subsoil / topsoil should be separated from the underlying Made Ground with an appropriate marker layer (geotextile or granular separation layer). This soil cover will also provide a suitable barrier between people on site and any underlying Made Ground and will also mitigate the generation of contaminated dust during the operational phase. It will therefore meet the physical and chemical criteria set out in this report.

The Contractor will source suitable fill/subsoil/topsoil and be responsible for importing it onto site in line with the relevant regulation, waste exemption (if applicable) or CL:AIRE Definition of Waste Code of Practice (DoW CoP). Any imported material will be appropriately recorded and included in the Verification Report (see Chapter 13).

12.3.5 Protection for the built environment (enabling and construction requirements)

Ground concrete will be mitigated by designing the below ground concrete in accordance with the BRE guidance [25]. This design will therefore take account of the ground conditions in classification of the Design Sulphate Class and the Aggressive Chemical Environment for Concrete (ACEC).

The potential for contaminant permeation of water supply pipework will be mitigated by designing the below ground water supply pipework to take account of the Water UK [13] and UKWIR guidance [12] and to meet the requirements of the water utility provider.

12.3.6 Unforeseen Contamination (enabling and construction requirements)

The site investigation data does not indicate the presence of widespread and/ or gross contamination. However, there is a potential that unforeseen contamination may be present on the site which may be encountered during the planned below ground works. The potential risks related to any such contamination will be mitigated by the following management regime;

1. A "watching brief" will be held by a suitably qualified Engineer to involve periodic inspection, appropriately recorded in a site diary. This will supplement the daily records maintained by the Contractor.
2. The Contractor's tool box talk will alert the construction workforce to the potential for such unforeseen contamination. Encountering any such unforeseen contamination will require immediate cessation of excavation and notification of the Contractor's Site Manager and the Engineer;
3. In the event of any such unforeseen contamination being encountered, an appropriately qualified environmental specialist from the Environmental Consultant will be contacted and will visit the site as soon as practicable (but within a minimum of 48 hours) to determine the need for and scope of any remedial action. Proposals for any such action (investigation, analysis, monitoring or remedial action) will be notified to, or if possible, discussed and agreed with, the local authority (and Environment Agency if appropriate) prior to implementation; and

Any such action will be appropriately recorded and included in the Verification Report (see Chapter 13 below).

12.3.7 Spoil Disposal

To manage waste and off-site disposal routes and costs, soils should be appropriately segregated by the Contractor during excavation. It is important to segregate soils to maximise sustainability, enhance the potential for on-site re-use, to ensure appropriate disposal and to provide a cost benefit. The Contractor will need to be able to demonstrate this and provide a method statement for how it will approach the management of waste soil and other material.

The Made Ground at the site is likely to be classified as Non-Hazardous Waste. Notwithstanding this preliminary assessment, it is the earthworks contractor's responsibility, in association with the operator and / or owner of the landfill to classify any such materials for disposal in line with current guidance. Landfill waste acceptance criteria (WAC) leachate testing and classification prior to disposal to landfill should be undertaken to confirm the waste classification. Any Made Ground (fill) material considered for re-use on site (e.g. as sub soil in landscaping) will meet the criteria for sub soil set out in Appendix G. Natural uncontaminated spoil arisings (e.g. of the Till or Sandstone) will be classified as Inert Waste. Excavated materials may need to be temporarily stockpiled whilst awaiting disposal. The materials should be stockpiled in accordance with the following, in addition to any other good practice or legal requirements:

- In order to minimise waste disposal costs, soils excavated should be segregated during excavation based on visual and olfactory evidence of contamination, and stockpiled separately.
- All stockpiles will be placed in an impermeable area of the site (e.g. concrete in good condition with no surface water drains), covered with impermeable sheeting and secured.

12.3.8 Obstructions

Due to the development history of the site area and proposed earthworks, encountering sub-surface obstructions from former structures cannot be discounted. Photographs and logs with measurements will be required before removal to record such features and to delineate the extent, size and orientation of previous building foundations, other historic obstructions or redundant buried structures.

13 Verification Requirements

13.1 Summary

This section provides a summary of the works required to confirm and verify that the site has been remediated successfully. The documentation of these works will form part of the Verification Report for the site.

The Contractor will be required to provide evidence that the works, including installation of the cover system / hardstanding, removal of unexpected areas of contamination, construction of below ground infrastructure and waste management have been completed in accordance with the relevant legislation and guidance.

The Verification Report will be submitted to the Local Authority in connection with the discharge of planning conditions. It is recommended that a suitably qualified Environmental Consultant is appointed to collate the data required, as specified in the subsequent sections, for the verification and author the report. The Verification Report will be prepared in general accordance with relevant good practice guidance and will include:

- an executive summary
- a summary of the design and a record design changes
- site investigation data
- a record of the remediation actions, including details of treated areas, volumes
- record photographs of the works, relevant drawings, of both the as found and as built conditions
- validation results and monitoring results
- materials processing, waste management
- health and safety, quality assessment, and
- final site condition including As built plans including topographic survey data of all relevant levels in three dimensions, to an accuracy of X,Y,Z (+/- 0.01m), and to National Grid and Datum. All electronic data shall be reported in industry standard formats.

13.2 Environmental Consultant Watching Brief

The Environmental Consultant will undertake a part-time watching brief during the earthworks and any remedial works. It is envisaged that this will comprise part time site attendance during the demolition and removal of hardstanding, the bulk dig, piling works, and the placement of landscaping materials.

The Contractor shall liaise with the Environmental Consultant with regards to the programme and timing of the works, to ensure that the Environmental Consultant can attend site at appropriate times.

13.3 Verification of Materials (sampling requirements)

The verification requirements for any material imported or reused at site should be in broad accordance with published requirements for cover systems [26]. Prior to import onto site the Contractor will provide the Environmental Consultant with information on the imported materials (fill/subsoil/topsoil), to include:

- the source of origin (be it one site or multiple sites);
- the volume of topsoil / subsoil required;
- the name and address of the producer;
- any quality information on the sub-soil/ topsoil from the producer/vendor, including laboratory testing; and
- analytical sample results to confirm compliance with the characteristics set out in Appendix G.

Verification samples will be collected from the topsoil by the Environmental Consultant once placed in-situ at the development, to verify that the soil is not contaminated. Verification sampling and analysis of the following soils is envisaged to be as follows:

- Imported topsoil should be sampled in-situ, with at least three samples per source site. The results should be analysed for the suite of contaminants specified in Appendix G and should not exceed the soil import criteria.
- Verification samples will be collected from the topsoil by the Environmental Consultant once placed in-situ at the development, to verify that the soil is not contaminated. The verification sampling should be undertaken at around one sample for every 250m³ of imported materials.
- Imported engineering fill for areas that are filled (e.g. haul road), should be sampled at a frequency of one sample for every 250m³ of imported material with at least three samples per source site.

Excavations of unexpected contamination. Should such excavations be required, the remaining sides, wall and base of the excavated area should be sampled at a rate of one sample per 10 m face of an excavation and one sample per 10 m² of the base of an excavation. However, validation will be tailored to the unexpected contamination found. The samples should comply with the appropriate geotechnical and environmental re-use criteria developed in the MMP (if implemented) and as agreed with the Environmental Consultant. All samples to be analysed at a UKAS and MCERTS accredited laboratory. The results will be presented in the Verification Report.

The depth / thickness of the placed soils will be confirmed by the contractor providing as built topographical surveys which include the levels of the base of formation layer and top of formation layer. This will be verified with in situ observations of either the placement or by post-placement trial pits.

13.4 Other Contractor Documentation

During the works the Contractor should also collect, collate and retain:

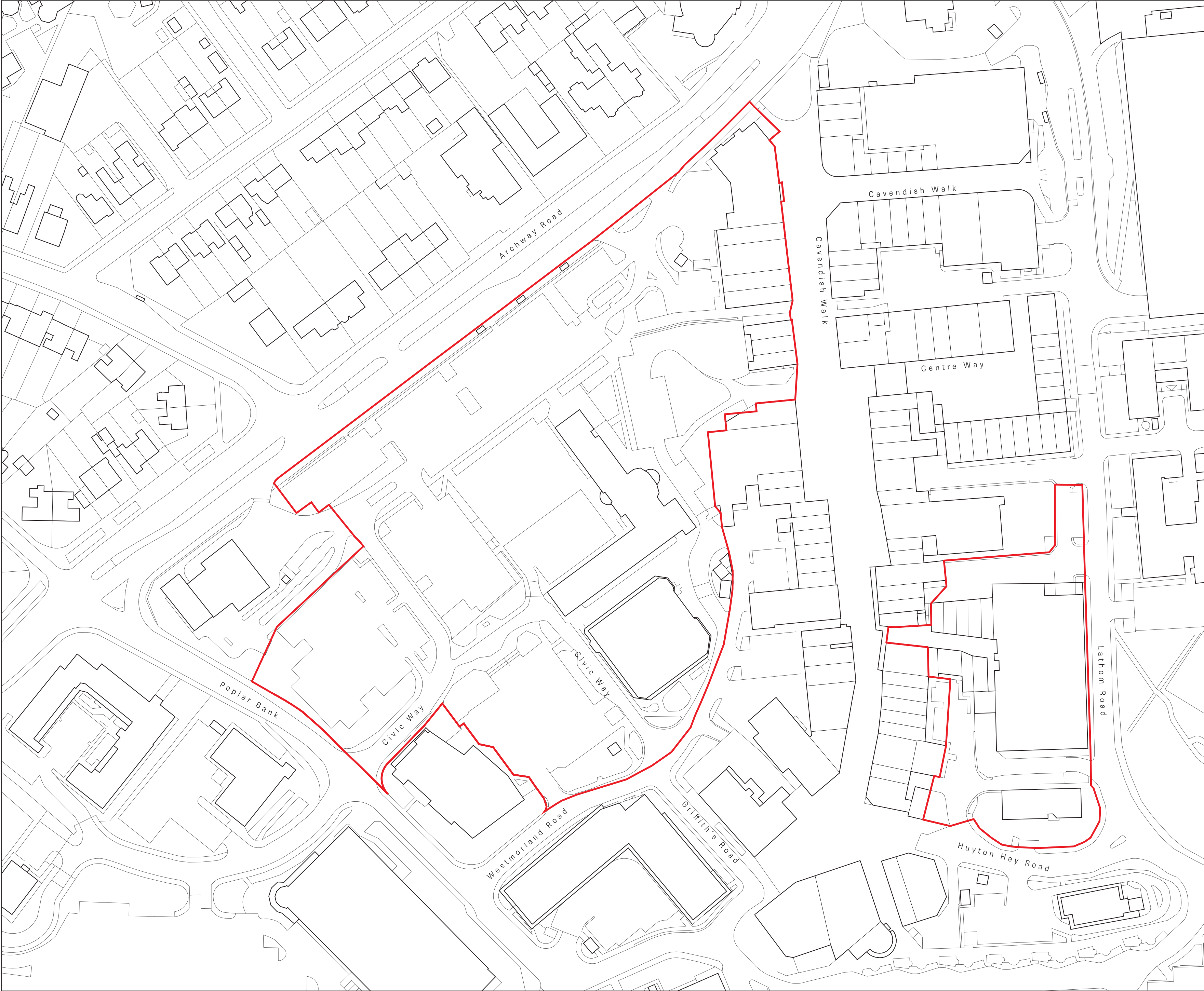
- Documentation on any environmental controls during excavation works (e.g. dust / noise monitoring);
- 'As-dug' plans showing the location and depth of excavations and verification samples, sub-surface voids and obstructions (if encountered), location and description of unexpected contamination (if encountered) and detailed of where any backfill materials have been placed on site;
- Results of laboratory analysis, consents, exemptions and permits for the works;
- Waste duty of care information (including the types and amounts of waste disposed of, waste classification and WAC analysis, waste transfer and consignment notes and applicable site and carriers' licenses; and
- Documentation obtained from the producer of any imported recycled aggregate and topsoil and delivery notes for imported materials.

14 References

- [1] Sutcliffe, "Phase I Preliminary Risk Assessment at Huyton Village. Ref. 30104LG," 2018.
- [2] Department for Levelling Up, Housing and Communities, "National Planning Policy Framework," Department for Levelling Up, Housing and Communities., 2025.
- [3] Environment Agency, "Land Contamination Risk Management (LCRM)," Environment Agency, 2025.
- [4] British Standards Institute, "BS10175:2011 +A2:2017 Investigation of Potentially Contaminated Sites - Code of Practice," British Standards Institute, 2011.
- [5] Environment Agency, "GPLC1 - Guiding principles for land contamination," Environment Agency, 2010.
- [6] CCG, "Ground Investigaiton at Huyton Town Centre CCG-C-23-14178," CCG, 2024.
- [7] Landmark Information Group, "Envirocheck Ref.: 313640178_1_1," 2023.
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- [9] British Geological Survey, "Runcorn. England and Wales Sheet 97. Solid. 1:50 000.," British Geological Survey, 1980.
- [10] SoBRA, "Development of Acute Generic Assessment Criteria for Assessing Risks to Human Health from Contaminants in Soil," SoBRA, 2019.
- [11] British Standard Institute, "BS3882: 2015 British Standard Specification for Topsoil," British Standard Institute, London, 2015.
- [12] UKWIR, "Guidance for the selection of water supply pipes to be used in brownfield sites," 2010.
- [13] Water UK and Home Builders Federation, Contaminated land assessment guidance, 2014.
- [14] UK Drinking Water Inspectorate, "UK Drinking Water Standards (UK DWS)," 2000.
- [15] The Water Framework Directive (Standards and Classification) Directions (England and Wales), "Environmental Quality Standards (EQS)," 2015.
- [16] British Standards Institute, "BS8485:2015 Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings," British Standards Institute, 2015.
- [17] N. H. B. C. (NHBC), "NF94. Hazardous ground gas - an essential guide for housebuilders," 2023.

- [18] Environment Agency, "Technical Guidance WM3. Guidance on the classification and assessment of waste. 1st Edition.," Environment Agency, 2015.
- [19] British Standards Institution, "Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. BS8485:2015 +A1:2019," British Standards Institution, 2019.
- [20] Environment Agency, "GPLC2 - Guiding Principles for Land Contamination," 2010.
- [21] British Standards Institute, "Adaptation to Climate Change - Principles, Requirements and Guidelines (BS EN ISO 14090:2019)," 2019.
- [22] Secretary of State, "The Construction (Design and Management) Regulations," 2015.
- [23] HSE, "Safe Work in Confined Spaces INDG 258," HSE, 2011.
- [24] Secretary of State, "The Control of Asbestos Regulations," 2012.
- [25] BRE, "Special Digest 1. Concrete in Aggressive Ground.," BRE, 2005.
- [26] Yorkshire and Lincolnshire Pollution Advisory Group, Verification Requirements for Cover Systems, 2021.

Appendix A Relevant Drawings



Notes:
1. Do not scale from this drawing
2. Drawing must not be copied without prior written consent from Lucid Design Studio Ltd.
3. Drawing information based on:

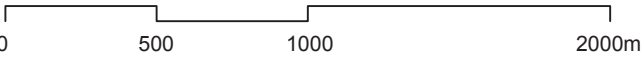
Key:

Application boundary

Revision	Reason	Initial	Date
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Client
Genr8 Kajima
Project Name
St. Michael's Place, Huyton
Drawing Title
Red Line Boundary Plan

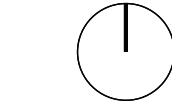
Status
Planning
Scale Bar



Scale
1:1000@A2

Drawn by
MF

Drawing Number
SMP-LUD-MP-ZZ-DR-U-91-00-01



Date
10/04/25

Checked
AW

Revision
00



Renold Building, 32a Atrincham Street, Manchester, M1 7JR



LEGEND

GENERAL

Application boundary

Detailed public realm boundary

Outline development plots / meanwhile space

HARDWORKS

Paving type 1: Natural stone
Material: Porphyry Setts
Sizes: 100 x 100mm
Colour/finish: Pink-grey mix / Riven
Notes: Permeable jointing, maintenance vehicle access

Paving type 2: Natural stone
Material: granite mix
Sizes: 200-400 x 200mm
Colour/finish: Buff/gray mix / flamed top with sawn sides & base
Notes: Permeable jointing, pedestrian areas with vehicle overrun

Paving type 3: Natural stone
Material: Buff/gray granite mix
Sizes: 150-300 x 100mm
Colour/finish: Flamed top / sawn sides & base
Notes: Vehicular traffic

Paving type 4: Stone aggregate paving
Material: PCC paving with buff coating
Sizes: 210 x 100mm
Colour/finish: Natural stone aggregate top layer
Notes: Permeable drain joint

Paving type 5: Block paving
Material: PCC unit block paving
Sizes: 300 x 200mm
Colour: Natural
Notes: Permeable unit / jointing

Paving type 6: Self-binding gravel
Material: Self-binding gravel
Sizes: 0-6mm particles / 75mm depth
Colour: Gold

Paving type 7: Play surfacing
Material: Rubber bonded mulch
Sizes: Depth dependent on critical fall height
Colour: Red/Orange
Notes: Porous, compliant with BS EN 1177

Paving type 8: Play bark
Material: FSC Pine bark-based loose impact absorbing surface
Sizes: 10-40mm particles / 100mm depth
Colour: Natural
Notes: Compliant with BS EN 1176 and BS 4790:1987

Paving type 9: Asphalt
Colour: Black
Notes: To Engineer's specification

Paving type 10: PCC block paving
Material: PCC unit block paving to match existing on Civic Way
Sizes: 100 x 200mm
Colour/finish: To match existing
Notes: To KMCB adopted specification

Paving type 11: Gravel
Material: Loose granite gravel
Sizes: 10mm
Colour: Grey/pink mix
Notes: Inert

Paving type 12: In situ Concrete
Material: In situ concrete to match existing
Colour / finish: Grey / brushed - to match existing

PLANTING

Existing trees retained
Retained in accordance with BS 5837:2012
Refer Arboricultural Impact Assessment for details

Existing trees to be removed

Proposed tree planting
Size: 25-30cm, H 4.5-6.0m, semi-mature
Spec: Min. 2m clear stem, rootballed
Notes: Below ground guying system, irrigation/aeration pipe and cap

Existing hedgerow retained
Retained in accordance with BS 5837:2012
Refer Arboricultural Impact Assessment for details

Existing hedgerow to be removed

Proposed hedge planting
Size: H 1.0-1.5m
Spec: Rootballed
Spacing: Double staggered rows

Planting type 1: shrub-herbaceous mix
Type: Mix of shrubs, herbaceous perennials and bulbs
Sizes: Specimen shrubs 10-12L, shrubs 5L, herbaceous 2-5L pots
Spec: Container grown

Planting type 2: SuDS rain garden mix
Type: Mix of shrubs, herbaceous perennials and bulbs suitable for regular periods of rainwater inundation
Sizes: Specimen shrubs 10-12L, shrubs 5L, herbaceous 2-5L pots
Spec: Container grown

Planting type 3: Species-rich lawn
Type: Biodiverse lawn suitable for regular cutting and use by people and dogs

EXTERNAL STRUCTURES

Planter wall
Material: Granite cladding & coping
Sizes: H 450mm x L varies (cladding/coping 50mm thickness)
Colour/finish: Grey / flamed
Notes: Anti-skate groves to coping, Cladding/coping mechanically fixed

Steps & Handrails
Material: Steps - solid granite unit / handrails - PPC Steel, s/s fixings
Sizes: Steps - 150 riser x 300mm tread / handrails - H 900-1000mm, 50mm dia.
Colour/finish: TBC / polyester powder coated
Notes: Contrasting nosing to steps

EXTERNAL FURNITURE

Furniture Type 1: Seating wall
Material: FSC Hardwood seating slats with s/s fixings
Sizes: D 500mm x L varies
Colour/finish: Natural/smooth planed
Notes: Back and armrests at regular intervals

Furniture Type 2: Bench
Material: FSC Hardwood bench
Sizes: H 450mm x length varies
Colour/finish: Natural/smooth planed
Notes: Back and armrests

Furniture Type 3: Seating boulders
Material: Locally sourced red sandstone
Sizes: H 400-600 x W 400-600 x L 800-1200mm
Finish: Free from sharp edges
Notes:

Furniture Type 4: Play equipment
Material: PPC Steel with s/s fixings
Sizes: varies
Colour/finish: TBC / polyester powder coated
Notes: Specification by specialist play contractor

Furniture Type 5: Natural play elements
Material: FSC Hardwood & natural stone
Sizes: Varies
Finish: Smooth finish, free from sharp edges
Notes: e.g. Balance beams, stepping logs, stepping planks, play boulders

Furniture Type 6: Litter & recycling bins
Material: PPC Steel with s/s fixings
Sizes: 1200 H x 650 L x 400mm D
Colour/finish: TBC / polyester powder coated
Notes: Place branding added to exterior

Furniture Type 7: Cycle stands
Material: Stainless steel
Sizes: TBC
Finish: Satin
Notes: TBC

Furniture Type 8: Cycle repair station
Material: PPC Steel with s/s fixings
Sizes: 1504 H x 250 D x 500mm W
Colour/finish: TBC / polyester powder coated
Notes: Integral cycle repair tools and wheel pump

Furniture Type 9: Bollards
Material: PPC Steel with s/s fixings
Sizes: 670 H x 90mm dia.
Colour/finish: TBC / polyester powder coated
Notes: FT9A - Telescopic bollard with locking mechanism

Furniture Type 10: Wayfinding finger post
Material: PPC Steel with s/s fixings
Sizes: 3000 H x 100mm dia. post
Colour/finish: TBC / polyester powder coated
Notes: To be coordinated with town centre strategy

Furniture Type 11: Hotel totem sign
Details and specification to be confirmed by hotel operator

Furniture Type 12: Bee posts
Material: FSC Timber
Sizes: 1800 H x 120 D x 120mm W
Colour/finish: Natural / planed
Notes: Pre-drilled habitat holes & routed branding

Furniture Type 13: Log planters
Material: Site won timber logs
Sizes: 300-500mm H x L X W varies
Colour/finish: Natural
Notes: Raised planting beds formed from felled site trees

Furniture Type 14: Interpretation Boards
Material: PPC Steel
Sizes: 1200 H x 250 D x 5mm D
Colour/finish: TBC / polyester powder coated
Notes: Lectern sign with bespoke display

Vehicle Barrier
Vehicle barrier and intercom - specification by others

EXTERNAL LIGHTING

Lighting type 1: Column light
Type: Down light mounted on lighting column
Material:
Sizes:
Colour/finish:

Lighting type 2: Recessed wall light
Type: Recessed brick light
Material:
Sizes:
Colour/finish:

Lighting type 3: Recessed strip light
Type: LED Strip light
Material:
Sizes:
Colour/finish:

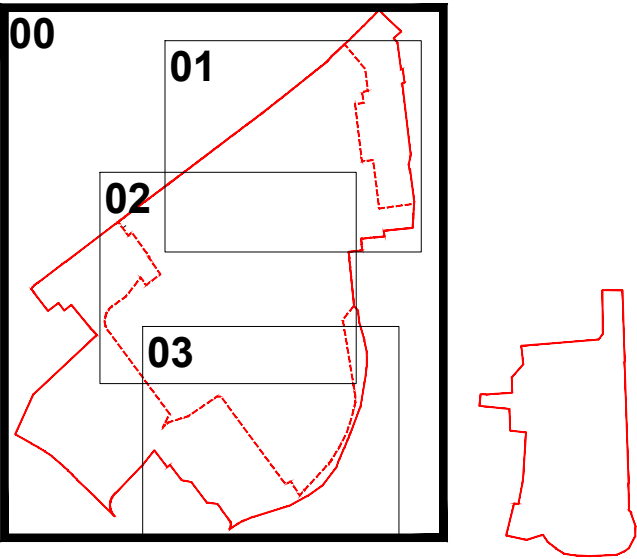
Lighting type 4: Bollard light
Type: Low level bollard light
Material:
Sizes:
Colour/finish:

Lighting type 5: Tree uplighter
Type: Uplighter located in soft landscape
Material:
Sizes:
Colour/finish:

Lighting type 6: Building mounted light
Type: Downlight mounted on building facade
Material:
Sizes:
Colour/finish:

Existing Highways Lighting
Existing lighting on boundary of public realm works, to be retained subject to agreement with KMCB Highways

- Notes:
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Key Plan

02	Additional benches added & hotel service area amended	AW	18/06/25
01	Street furniture and lighting added	AW	05/06/25
Revision	Reason	Initial	Date

Client

Genr8 Kajima

Project Name

St Michael's Place, Huyton

Drawing Title

Public Realm - General Arrangement Plan



Status

Information

Scale Bar

Scale

1:500@A1

Drawn by

AW

Drawing Number

SMP-LUD-MP-ZZ-DR-L-91-02-00

Date

17/04/25

Checked

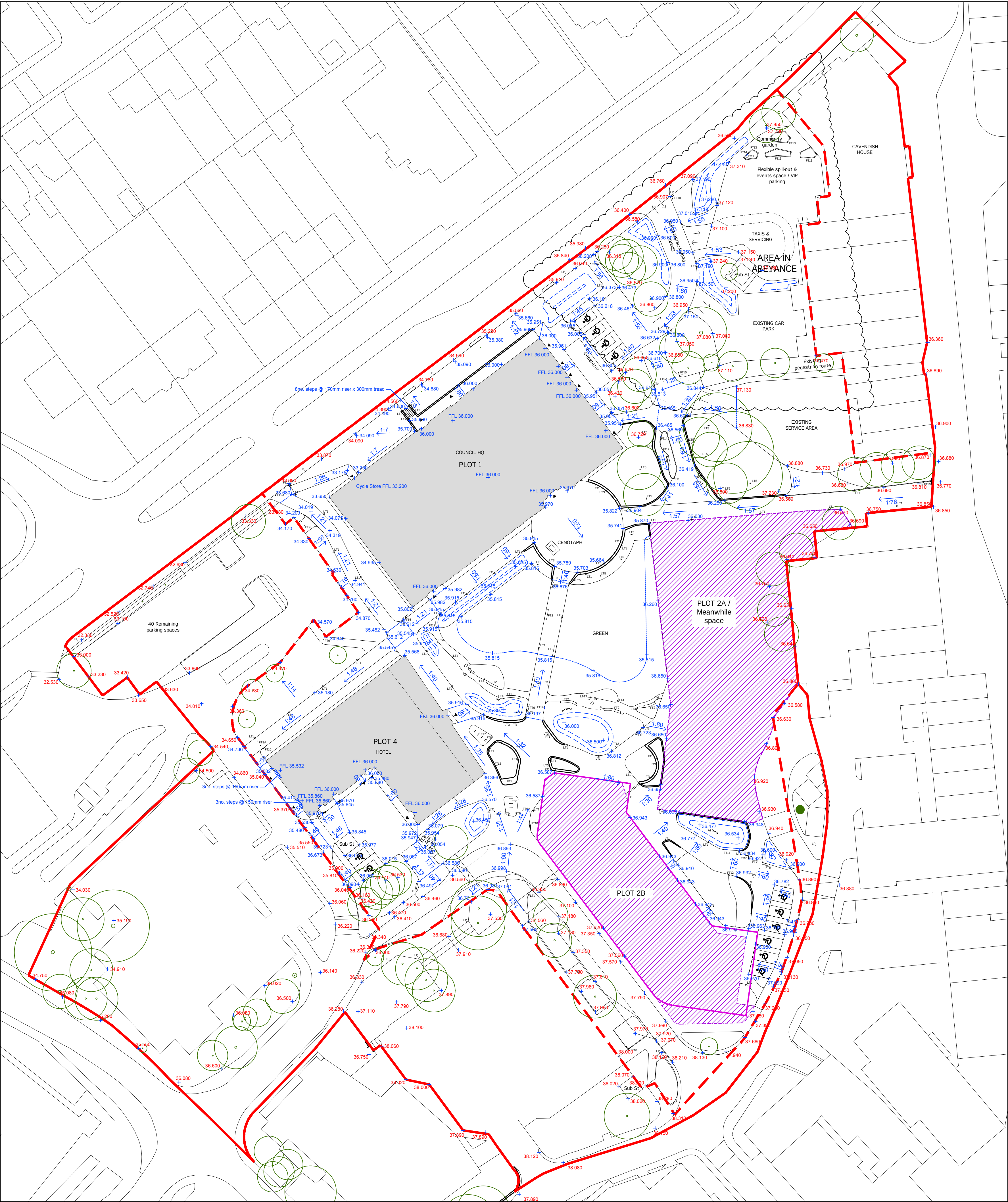
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Revision

02

Lucid
design studio

Renold Building, 32a Atrincham Street, Manchester, M1 7JR



LEGEND

GENERAL

Application boundary

Detailed public realm boundary

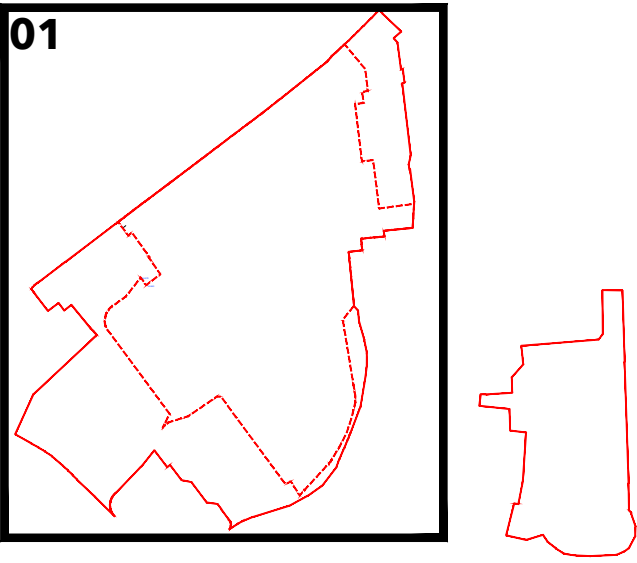
LEVELS & GRADIENTS

Existing level retained

Proposed level

Proposed gradient

Notes:
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Key Plan

01	Civic Way and Westmoreland Avenue interfaces updated	AW	18/06/25
Revision	Reason	Initial	Date

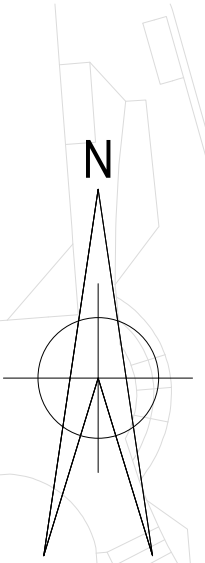
Client
Genr8 Kajima
Project Name
St Michael's Place, Huyton
Drawing Title
Public Realm - Levels Plan

Status

Information

Scale Bar

Scale	Date
1:500@A1	25/04/25
Drawn by	Checked
AW	-
Drawing Number	Revision
SMP-LUD-MP-ZZ-DR-L-96-00-01	00



CAD

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IN ADDITION TO THE HAZARD RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING
CONSTRUCTION
- WORK WITHIN POTENTIAL CONFINED SPACE CONDITIONS - WORKS IN PROXIMITY TO EXISTING BELOW GROUND LIVE SERVICES & UTILITIES - WORKS ADJACENT TO LIVE ROADS - WORK ADJACENT TO EXISTING HIGHWAY STRUCTURE AND FOUNDATIONS
MAINTENANCE/CLEANING/OPERATION
- WORK WITHIN POTENTIAL CONFINED SPACE CONDITIONS - WORKS IN PROXIMITY TO EXISTING BELOW GROUND LIVE SERVICES & UTILITIES - WORKS ADJACENT TO LIVE ROADS - WORK ADJACENT TO EXISTING HIGHWAY STRUCTURE AND FOUNDATIONS
DECOMMISSIONING/DEMOLITION
- WORK WITHIN POTENTIAL CONFINED SPACE CONDITIONS - WORKS IN PROXIMITY TO EXISTING BELOW GROUND LIVE SERVICES & UTILITIES - WORKS ADJACENT TO LIVE ROADS - WORK ADJACENT TO EXISTING HIGHWAY STRUCTURE AND FOUNDATIONS

- NOTES:
- THE DESIGN OF THIS SCHEME IS BASED ON THE FOLLOWING DRAWINGS AND INFORMATION:
 - TOPOGRAPHICAL SURVEY FROM SURVEY OPS 23F247.PDF RECEIVED ON 12.09.2023.
 - LANDSCAPE ARCHITECT PROPOSED SITE PLAN (250515).DWG RECEIVED ON 25.05.2025.
 - THE PREPARATION OF THE SITE STRIPPED SURFACE HAS BEEN BASED ON THE TOPOGRAPHICAL SURVEY ABOVE WITH A 300mm DEPTH OF TOP SOIL REMOVED FROM GREEN LANDSCAPED AREAS. IT IS ASSUMED THAT THE HARD LANDSCAPED SURFACING CAN BE RE-USED AND SO IT HAS BEEN INCLUDED IN THE CUT FILL ANALYSIS.
 - THE PREPARATION OF THE PROPOSED LEVELS SURFACE AND PROPOSED LEVELS FORMATION SURFACE HAS BEEN BASED ON THE ABOVE LANDSCAPE ARCHITECT MASTER PLAN.
 - THE PROPOSED FORMATION SURFACE IS 450mm IN ALL AREAS EXCEPT PLOT 2A WHICH IS INTENDED TO BE DEVELOPED IN A SUBSEQUENT PHASE AND WILL HAVE A MEANWHILE USE. AS A RESULT, THE PROPOSED FORMATION LEVELS DO NOT EXACTLY TIE IN WITH EXISTING AROUND THE PERIMETER OF THE EARTHWORKS BOUNDARY. LOCAL EARTHWORKS WILL BE REQUIRED IN PHASES AS THE SITE IS DEVELOPED.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE CUT FILL ANALYSIS DRAWING HTO-BHE-XX-XX-DR-C-001120
 - ALL DIMENSIONS ARE IN METERS UNLESS STATED OTHERWISE.
 - THE LEVEL AND MANAGEMENT OF RE-USEABLE MATERIALS IS TO BE EVALUATED BY THE CONTRACTOR ON SITE. THE CONTRACTOR SHALL UNDERTAKE THIS MATERIALS MANAGEMENT EXERCISE TO ASCERTAIN MATERIAL WHICH IS SUITABLE FOR USE/ CAN BE PROCESSED AND RE-USED ON SITE. AT THIS STAGE ALL MATERIAL HAS BEEN CONSIDERED AS RE-USEABLE.

LEGEND:

---	PHASE 1 BOUNDARY
---	EARTHWORKS ASSESSMENT BOUNDARY
---	DESIGN CONTOURS MAJOR 0.5m
---	DESIGN CONTOURS MINOR 0.1m
---	EXISTING CONTOURS

P01 FOR INFORMATION		20.06.2025	WM	PA	PA
Rev	Description	Date	Iss'd	Rev'd	App'd

ENABLING WORKS

Project Stage

INFORMATION

Status of Drawing

BURO HAPPOLD

2nd Floor Eastgate
2 Castle Street
Manchester M3 4LZ
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Fax: +44 (0)870 787 4143
Email: 0054419@burohappold.com
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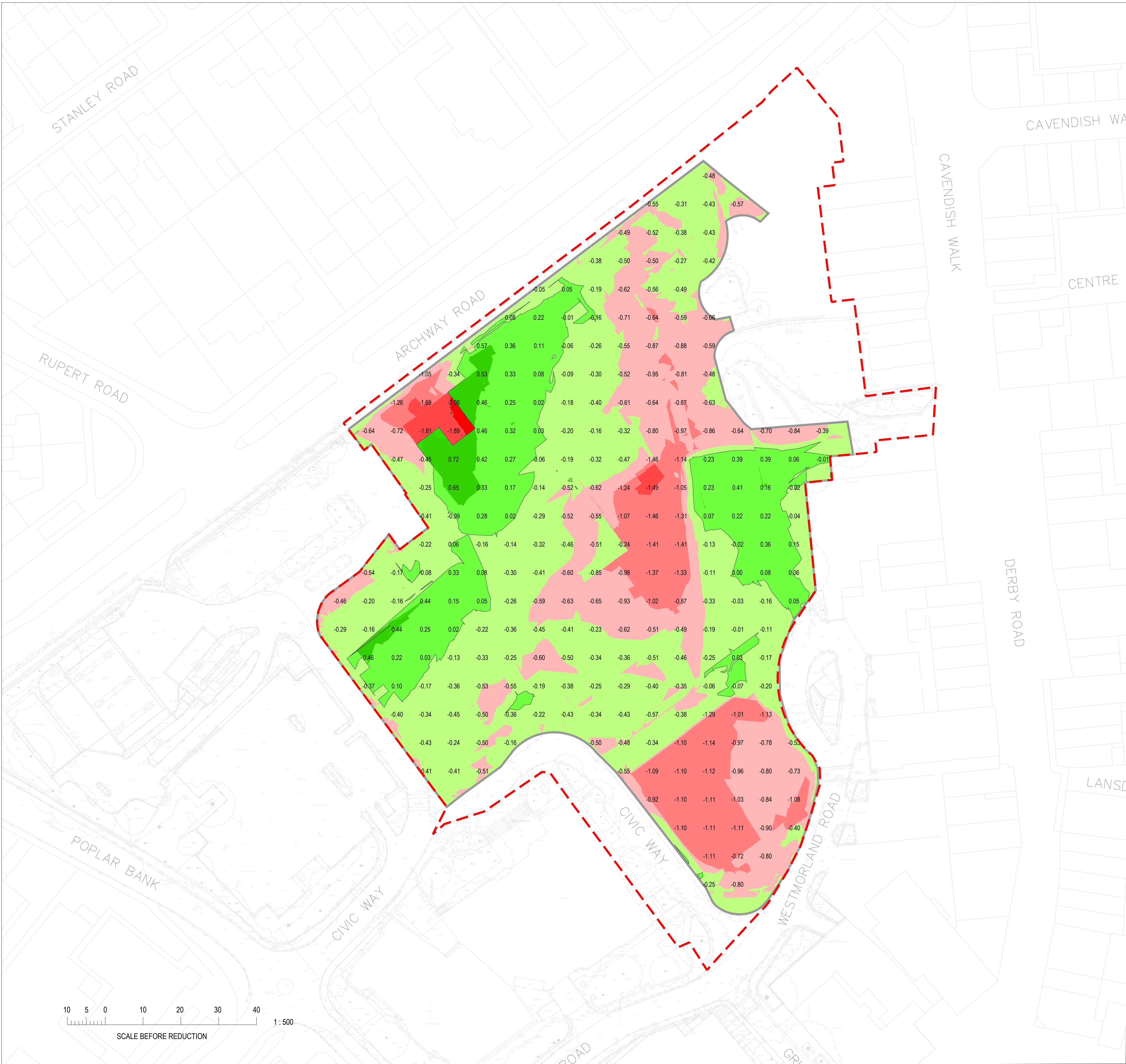
Client: GENR8 KAJIMA REGENERATION LTD

Architect: 5PLUS

Project: Huyton Town Centre Regeneration

Dwg Title: EARTHWORKS PROPOSED FORMATION CONTOURS

Job No.	Scale@A1	
0054419	1:500	
Drawn/Designed By:	Checked By:	Approved By:
WM	PA	PA
Drawing No.	Revision	
HTO-BHE-XX-DR-C-001110	P01	



VOLUMETRIC (TOPSOIL) DATA	
DESCRIPTION	TOTALS
RED LINE BOUNDARY AREA (m²)	18687.753
EARTHWORKS AREA (m²)	15260.224
TOPSOIL DEPTH (m)	0.300
TOPSOIL VOLUME (CUT) (m³)	315.000
VOLUMETRIC (BULK EARTHWORKS) DATA	
CUT VOLUME (m³)	6667.089
FILL VOLUME (m³)	802.080
FINAL NET VOLUME (m³)	5865.009 [CUT]
NOTES: THE VOLUME DATA FOR BULK EARTHWORKS IS VOLUMISED BETWEEN THE PROPOSED FORMATION LEVELS SURFACE AND THE SITE STRIPPED TOPOGRAPHICAL SURFACE	
SITE STRIP DEPTHS USED FOR THE DESIGN: - SITE WIDE ASSUMPTION ONLY CUT FROM EXISTING GREEN LANDSCAPED AREAS - 300mm SITE STRIP OFF TOPO	
FORMATION DEPTHS USED FOR THE DESIGN: - SITE WIDE ASSUMPTION - 450mm REFER TO NOTE 3 FOR ADDITIONAL ASSUMPTIONS	
THE VOLUMETRIC DATA LISTED ABOVE DOES NOT INCLUDE: - ANY FORMATION FOR CHANGES TO AREAS OUTSIDE OF THE GIVEN PLAN - ANY ARISING FROM DRAINAGE - ANY BULKING FACTORS - ANY MATERIALS ARISING FROM DEMOLITION OF ANY EXISTING BUILDING SUPERSTRUCTURE	

Cut/Fill Table			
Number	Range From [m]	Range To [m]	Colour
1	-3.000	-2.500	
2	-2.500	-2.000	
3	-2.000	-1.500	
4	-1.500	-1.000	
5	-1.000	-0.500	
6	-0.500	0.000	
7	0.000	0.500	
8	0.500	1.000	
9	1.000	1.500	

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CONSTRUCTION:

- WORK WITHIN POTENTIAL CONFINED SPACE CONDITIONS
- WORKS IN PROXIMITY TO EXISTING BELOW GROUND LIVE SERVICES & UTILITIES
- WORKS ADJACENT TO LIVE ROADS
- WORK ADJACENT TO EXISTING HIGHWAY STRUCTURE AND FOUNDATIONS

MAINTENANCE/CLEANING/OPERATION:

- WORK WITHIN POTENTIAL CONFINED SPACE CONDITIONS
- WORKS IN PROXIMITY TO EXISTING BELOW GROUND LIVE SERVICES & UTILITIES
- WORKS ADJACENT TO LIVE ROADS
- WORK ADJACENT TO EXISTING HIGHWAY STRUCTURE AND FOUNDATIONS

DECOMMISSIONING/DEMOLITION:

- WORK WITHIN POTENTIAL CONFINED SPACE CONDITIONS
- WORKS IN PROXIMITY TO EXISTING BELOW GROUND LIVE SERVICES & UTILITIES
- WORKS ADJACENT TO LIVE ROADS
- WORK ADJACENT TO EXISTING HIGHWAY STRUCTURE AND FOUNDATIONS

- NOTES:**
1. THE DESIGN OF THIS SCHEME IS BASED ON THE FOLLOWING DRAWINGS AND INFORMATION:
 - TOPOGRAPHICAL SURVEY FROM SURVEY OPS 23F247.PDF RECEIVED ON 12.09.2023.
 - LANDSCAPE ARCHITECT PROPOSED SITE PLAN (250515).DWG RECEIVED ON 25.05.2025.
 2. THE PREPARATION OF THE SITE STRIPPED SURFACE HAS BEEN BASED ON THE TOPOGRAPHICAL SURVEY ABOVE WITH A 300mm DEPTH OF TOP SOIL REMOVED FROM GREEN LANDSCAPED AREAS. IT IS ASSUMED THAT THE HARD LANDSCAPED SURFACING CAN BE RE-USED AND SO IT HAS BEEN INCLUDED IN THE CUT FILL ANALYSIS.
 3. THE PREPARATION OF THE PROPOSED LEVELS SURFACE AND PROPOSED LEVELS FORMATION SURFACE HAS BEEN BASED ON THE ABOVE LANDSCAPE ARCHITECT MASTER PLAN.
 4. THE PROPOSED FORMATION SURFACE IS 450mm IN ALL AREAS EXCEPT PLOT 2A WHICH IS INTENDED TO BE DEVELOPED IN A SUBSEQUENT PHASE AND WILL HAVE A MEANWHILE USE. AS A RESULT, THE PROPOSED FORMATION LEVELS DO NOT EXACTLY TIE IN WITH EXISTING AROUND THE PERIMETER OF THE EARTHWORKS BOUNDARY. LOCAL EARTHWORKS WILL BE REQUIRED IN PHASES AS THE SITE IS DEVELOPED.
 5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE CUT FILL ANALYSIS DRAWING HTO-BHE-XX-XX-DR-C-001120
 6. ALL DIMENSIONS ARE IN METERS UNLESS STATED OTHERWISE.
 7. THE LEVEL AND MANAGEMENT OF RE-USEABLE MATERIALS IS TO BE EVALUATED BY THE CONTRACTOR ON SITE. THE CONTRACTOR SHALL UNDERTAKE THIS MATERIALS MANAGEMENT EXERCISE TO ASCERTAIN MATERIAL WHICH IS SUITABLE FOR USE/ CAN BE PROCESSED AND RE-USED ON SITE. AT THIS STAGE ALL MATERIAL HAS BEEN CONSIDERED AS RE-USEABLE.

LEGEND:

- PHASE 1 BOUNDARY
- EARTHWORKS ASSESSMENT BOUNDARY
- EXISTING CONTOURS

P01	FOR INFORMATION	20.06.2025	WM	PA	PA
Rev	Description	Date	Iss'd	Rev'd	App'd

ENABLING WORKS

Project Stage

INFORMATION

Status of Drawing

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Architect **5PLUS**

Project **Huyton Town Centre Regeneration**

Orig Title **EARTHWORKS CUT/FILL ISOPACHYTE**

Job No. 0054419	Scale@A1 1:500	
Drawn/Designed By. WM	Checked By. PA	Approved By. PA
Drawing No. HTO-BHE-XX-DR-C-001120	Revision P01	

Appendix B Contamination Risk Assessment Criteria

Introduction

A risk-based approach is used for the assessment of contamination, requiring identification of a contaminant source, a receptor and a realistic pathway via which the contaminant may reach the receptor. The key receptors considered in this assessment are site end-users, construction workers and controlled waters. In order to perform a generic quantitative risk assessment, the soil test results have been compared with available Soil Guideline Values (SGVs), Category 4 Screening Levels (C4SLs), BuroHappold and other industry Generic Assessment Criteria (GAC).

General Contaminants

Analytical data derived from the investigation has been put into context by comparison with published guidance or derived thresholds values. Current UK guidance published thresholds comprise SGVs and C4SLs, which are available for a limited number of determinands (Reference. 1 to Reference. 9) and land uses. For contaminants without published SGVs or C4SLs or where soil conditions are different to those assumed for the published guideline values (6% soil organic matter content and sandy loam soil), GACs have been derived. The derivation of GACs has been carried out based on published statutory guidance documents (Reference. 10, Reference. 11 and Reference. 12) and with consideration of the most sensitive receptors in the respective CLEA standard land- uses scenarios (the 0 to 6 year old child for the residential with plant uptake (Resi₁) and residential without plant uptake (Resi₂) scenarios and the adult for the commercial/ industrial land-use scenario) using the software model "CLEA 1.06" and "CLEA 1.071" and associated handbook (Reference. 13, Reference. 14 and Reference. 15). Contaminant specific model input values have been selected as prescribed by the Environment Agency SGV reports (Reference. 1 to Reference. 7). In the absence of SGV reports, contaminant specific input values have been selected as suggested by SC050021/SR7 (Reference. 16) and / or the LQM reports (Reference. 17 and Reference. 18) and/or the EIC/AGS report (Reference. 19).

Lead

Assessment criteria for Lead have been adopted as derived and detailed in the C4SL documents (Reference. 8).

Mercury

Assessment criteria for mercury is based on the published threshold SGV (Reference. 7) and the S4UL (Reference. 18), these have been produced for elemental, inorganic and methyl mercury. Inorganic mercury is the most common form of mercury in the environment. It is recommended by the Environment Agency that elemental and methyl mercury are used as thresholds where the Desk Study has identified a potential source otherwise inorganic mercury should be used. Concentrations of elemental mercury will also be considered where concentrations are notably higher than 'natural' background concentrations (e.g. 20mg/kg).

Nickel

Following the report by the European Food Safety Authority (EFSA) in February 2015 (Reference. 21) the Environment Agency withdrew the Soil Guideline Value (SGV) for nickel and its supporting reports. The Environment Agency have no plans to update the documents or produce any new SGV reports. Following the publication of the EFSA report, LQM advised that the TDI for oral pathways proposed by EFSA was more appropriate than the value previously used. Accordingly LQM issued a revised S4UL value for nickel which has been adopted here.

Chromium

Assessment criteria for chromium is based on the published threshold LQM value (Reference. 17 and Reference. 18) and have been produced for chromium III (trivalent) and chromium VI (hexavalent). Chromium III is the most common form of chromium in the environment, chromium VI is produced by the oxidation of chromium III through industrial processes. Therefore chromium VI should only be assessed where the Desk Study has identified a potential source otherwise chromium III should be used.

Statistical Analysis

Where individual concentrations of contaminants have been found exceeding assessment criteria, the data of the specific contaminant was analysed statistically in line with the 'Guidance on Comparing Soil Contaminant Data with Critical Concentrations' (Reference. 20). Where the distribution of data for particular determinands showed evidence of non-normality, the 95% upper confidence limits (US95) were calculated using the Chebychev Theorem in accordance with this guidance (Reference. 20).

Appendix References

- Reference. 1. Environment Agency. 2009. Soil Guideline Values for toluene in soil - Science Report SC050021 / toluene SGV. Bristol: Environment Agency
- Reference. 2. Environment Agency. 2009. Soil Guideline Values for selenium in soil - Science Report SC050021 / Selenium SGV. Bristol: Environment Agency
- Reference. 3. Environment Agency. 2009. Soil Guideline Values for inorganic arsenic in soil - Science Report SC050021/ arsenic SGV. Bristol: Environment Agency
- Reference. 4. Environment Agency. 2009. Soil Guideline Values for xylene in soil - Science Report SC050021 / xylene SGV. Bristol: Environment Agency
- Reference. 5. Environment Agency. 2009. Soil Guideline Values for benzene in soil - Science Report SC050021 / benzene SGV. Bristol: Environment Agency
- Reference. 6. Environment Agency. 2009. Soil Guideline Values for ethylbenzene in soil - Project SC050021 / ethylbenzene SGV. Bristol: Environment Agency
- Reference. 7. Environment Agency. 2009. Soil Guideline Values for mercury in soil - Science Report SC050021 / Mercury SGV. Bristol: Environment Agency
- Reference. 8. Department for Environment, Food and Rural Affairs. 2014. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document. March 2014.
- Reference. 9. Contaminated Land: Applications in Real Environments. 2013 SP1010 – Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. Final Project Report. 20th December 2013.
- Reference. 10. Environment Agency. 2005. The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils. Science Report P5-080/TR3, February 2005
- Reference. 11. Environment Agency. 2009. Updated technical background to the CLEA model. Science Report – SC050021/SR3 January 2009
- Reference. 12. Environment Agency. 2009. Human health toxicological assessment of contaminants in soil. Science Report – SC050021/SR2, January 2009
- Reference. 13. Environment Agency 2009. CLEA Software (Version 1.06), Retrieved from the internet: <http://www.environment-agency.gov.uk/research/planning/40397.aspx>.
- Reference. 14. Environment Agency 2015. CLEA Software (Version 1.071), Retrieved from the internet: <https://www.gov.uk/government/publications/contaminated-land-exposure-assessment-clea-tool>
- Reference. 15. Environment Agency. 2009. CLEA Software (Version 1.05) Handbook. Science Report – SC050021/SR4, January 2009
- Reference. 16. Environment Agency. 2008. Science report SC050021/SR7 - Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values. Bristol: Environment Agency.
- Reference. 17. LQM/CIEH. 2009. Generic Assessment Criteria for Human Health Risk Assessment – 2nd edition. Land Quality Press. Nottingham.
- Reference. 18. LQM/CIEH. 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham.
- Reference. 19. Environmental Industries Commission (EIC), The Association of Geotechnical and Geoenvironmental Specialists (AGS) and Contaminated Land: Applications in Real Environments (CL:AIRE), Soil Generic Assessment Criteria for Human Health Risk Assessment, January 2010.

- Reference. 20. CI:AIRE and CIEH. 2008. Guidance on Comparing Soil Contaminant Data with Critical Concentrations.
- Reference. 21. European Food Safety Authority (EFSA). Scientific Opinion on the risks to public health related to the presence of nickel in food and drinking water. EFSA Journal 2015;13(2):4002

Appendix C – Soil chemical screening summary

Asbestos Screen	No. Samples	No. samples detected	No. samples ND	% of samples detect
	19	2	17	10.53
Asbestos Quantification	No. Quants	No. samples <0.001%	No. samples >0.001% <0.01%	No. samples >0.01%
	2	2	0	0

Soil Organic Matter 1%

N/A = no screening criteria available

No. samples exceeding

No Tests	No <LOD	Min	Max	Location of Maximum
19	19			
19		2.70	20.00	WS16 0.50mbgl
19		45.00	360.00	WS09 0.20mbgl
19		0.32	1.80	WS06 0.50mbgl
19	4	0.30	1.80	TP03 0.20mbgl
19	16	0.30	0.80	WS04 0.50mbgl
19		9.40	37.00	WS02 0.50mbgl
19		8.40	74.00	WS06 0.50mbgl
19		9.80	460.00	BH11 0.90mbgl
19	17	0.40	0.50	BH11 0.90mbgl
19		6.60	44.00	WS04 0.50mbgl
19	19			
19		13.00	39.00	WS02 0.50mbgl
19		24.00	260.00	WS06 0.50mbgl
19	12	18.00	2740.20	WS06 0.50mbgl
19	19			
19	19			
19	19			
19	19			
19	19			
19	19			
19	14	0.07	1.30	WS06 0.50mbgl
19	18	0.55	0.55	WS06 0.50mbgl
19	13	0.08	15.00	WS06 0.50mbgl
19	13	0.05	11.00	WS06 0.50mbgl
19	6	0.05	100.00	WS06 0.50mbgl
19	12	0.07	28.00	WS06 0.50mbgl
19	5	0.07	140.00	WS06 0.50mbgl
19	5	0.07	110.00	WS06 0.50mbgl
19	6	0.06	48.00	WS06 0.50mbgl
19	6	0.05	46.00	WS06 0.50mbgl
19	7	0.05	54.00	WS06 0.50mbgl
19	8	0.05	21.00	WS06 0.50mbgl
19	7	0.05	41.00	WS06 0.50mbgl
19	8	0.05	20.00	WS06 0.50mbgl
19	12	0.06	4.60	WS06 0.50mbgl
19	9	0.09	23.00	WS06 0.50mbgl
19	19			
19	19			
19	19			
19	19			
19	15	2.20	4.00	BH12 1.00mbgl
19	18	13.00	13.00	WS06 0.50mbgl
19	13	9.00	51.00	WS06 0.50mbgl
19	13	12.00	67.00	WS06 0.50mbgl
19	19			
19	19			
19	19			
19	18	1.90	1.90	WS06 0.50mbgl
19	15	2.00	84.00	WS06 0.50mbgl
19	16	16.00	530.00	WS06 0.50mbgl
19	13	10.00	690.00	WS06 0.50mbgl
19	12	14.00	1300.00	WS06 0.50mbgl
19	12	18.00	2740.20	WS06 0.50mbgl

Appendix D – Soil chemical statistics sheets

Select Chemical
Outer Confidence Limit for Mean
Inner Confidence Limit for Mean

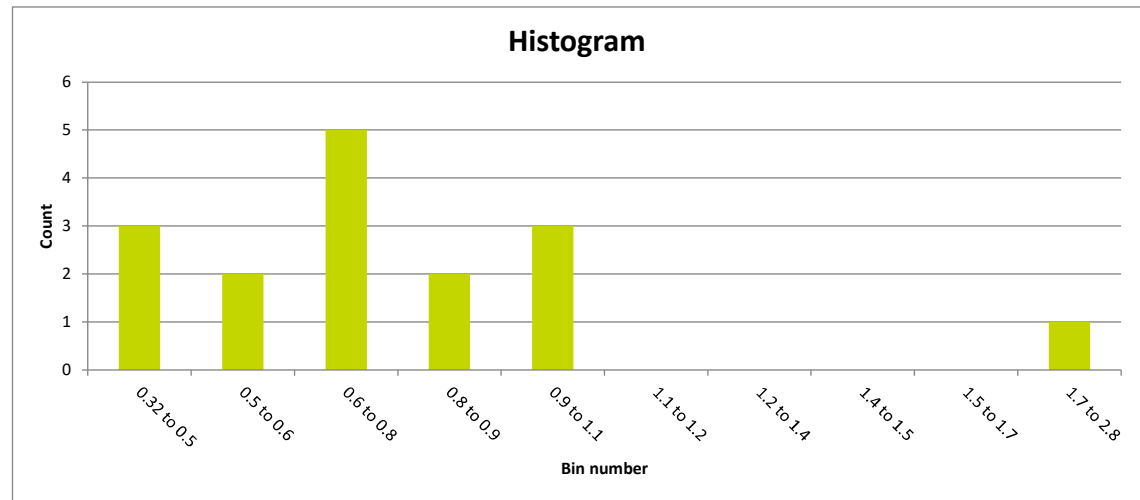
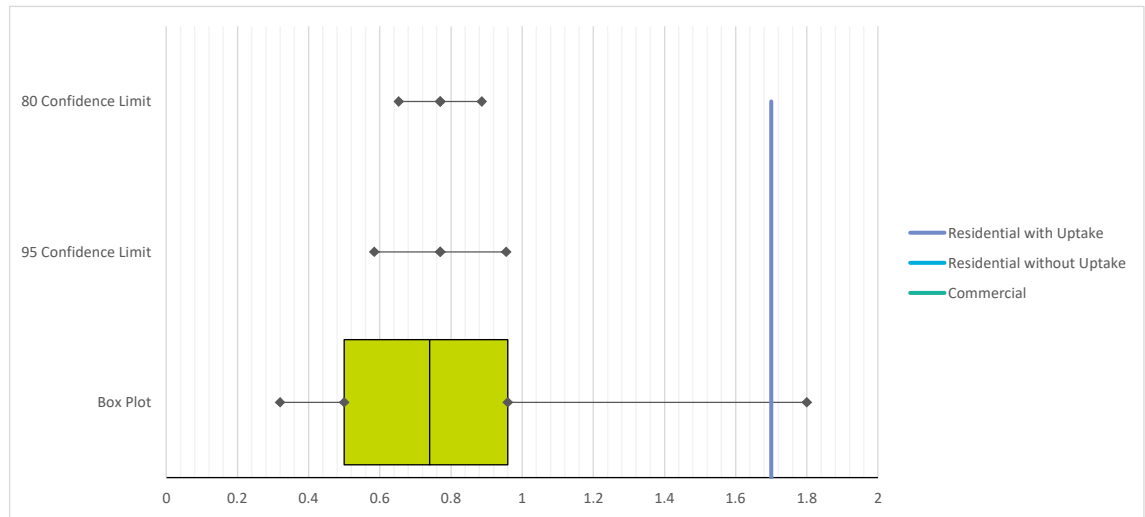
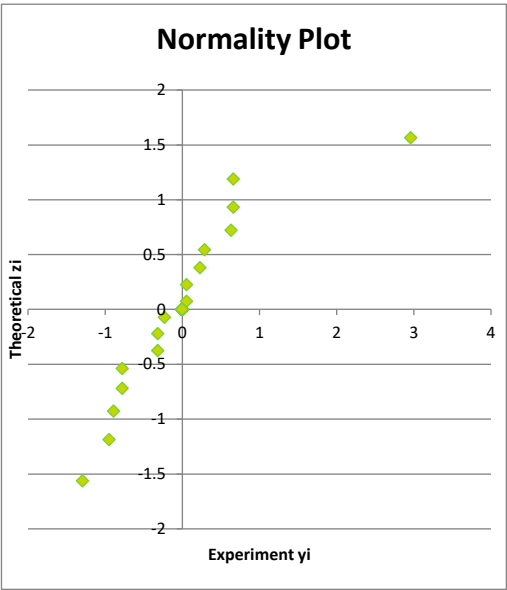
Beryllium
95
80

Statistics	
Total Tests	16
Number below detection limits	0
% below detection limits	0.0

Box Plots	
Arithmetic Mean	0.77
Median	0.74
Lower Quartile	0.50
Upper Quartile	0.96

Mean Confidence Limits	Upper	Lower
95%	0.96	0.58
80%	0.89	0.65

Threshold Values	Value	Exceedence	Upper Confidence Limit
Residential with Uptake	1.7	No	☒ Graph
Residential without Uptake	1.7	No	☐ Graph
Commercial	12	No	☐ Graph



Select Chemical
Outer Confidence Limit for Mean
Inner Confidence Limit for Mean

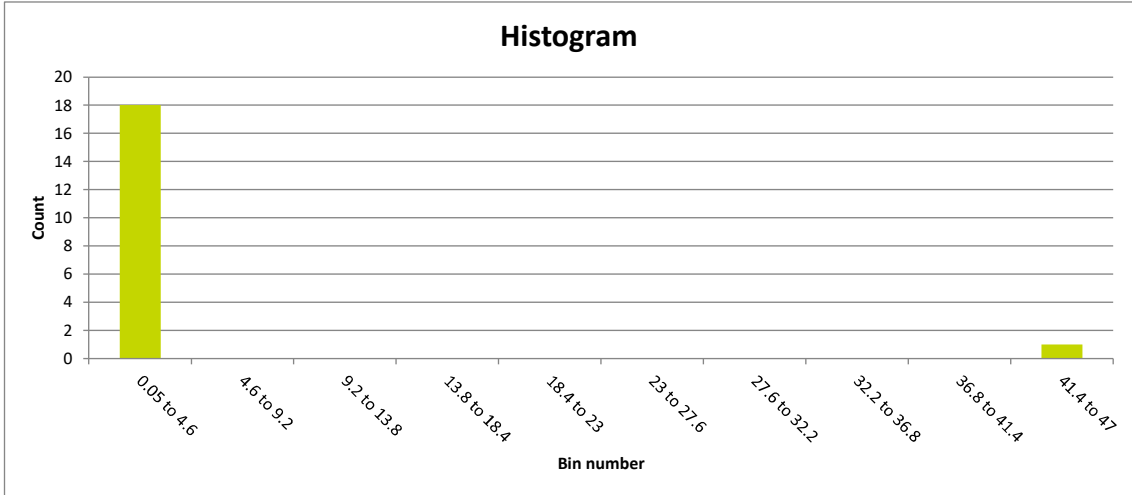
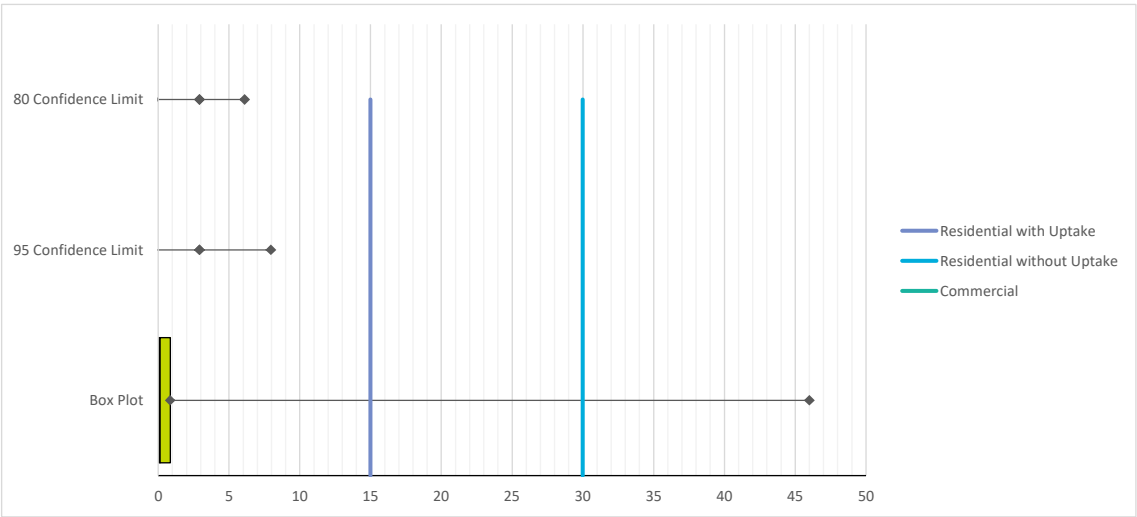
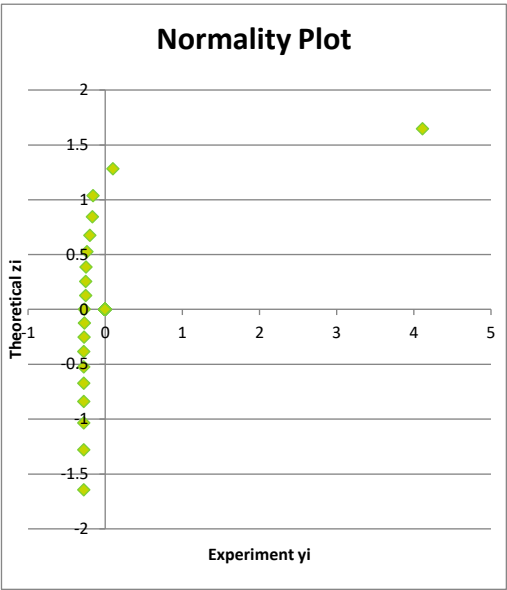
Chrysene
95
80

Statistics	
Total Tests	19
Number below detection limits	6
% below detection limits	31.6

Box Plots	
Arithmetic Mean	2.92
Median	0.12
Lower Quartile	0.05
Upper Quartile	0.85

Mean Confidence Limits	Upper	Lower
95%	7.96	-2.13
80%	6.11	-0.28

Threshold Values	Value	Exceedence Upper Confidence Limit
Residential with Uptake	15	No ☒ Graph
Residential without Uptake	30	No ☒ Graph
Commercial	350	No ☐ Graph



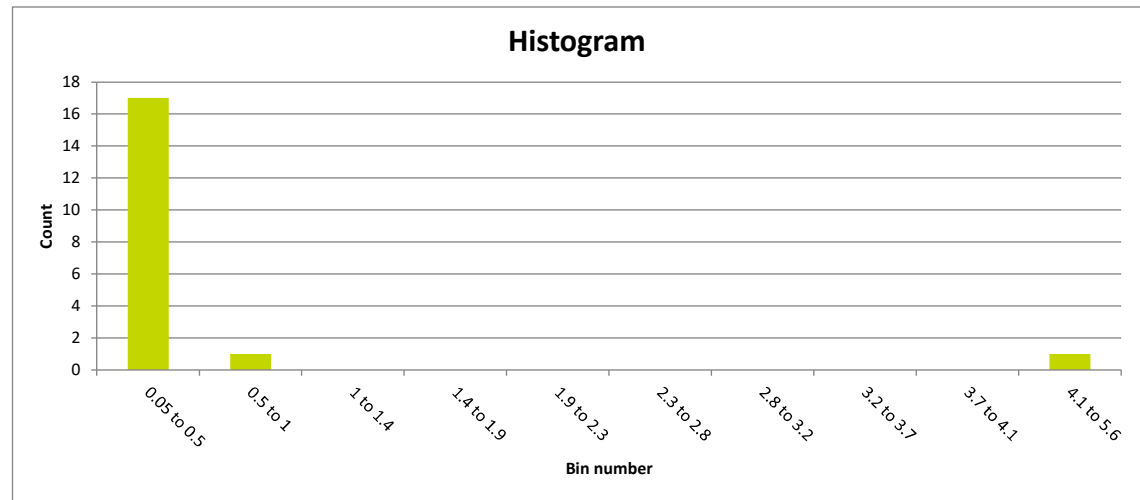
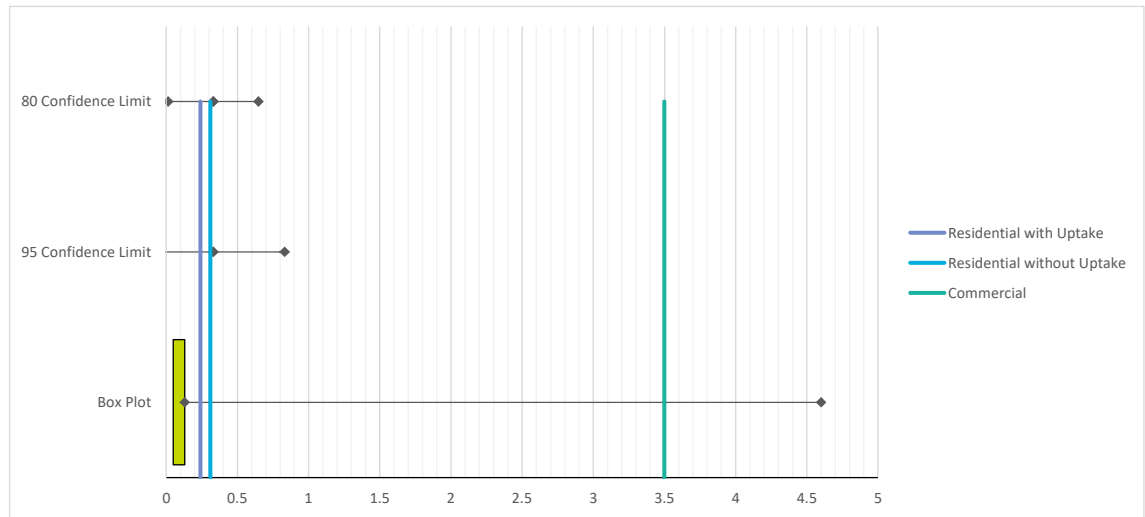
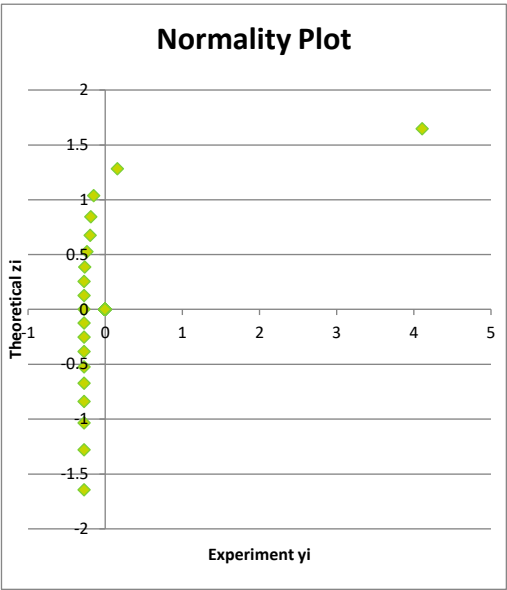
Select Chemical Dibenzo[ah]anthracene
Outer Confidence Limit for Mean 95
Inner Confidence Limit for Mean 80

Statistics	
Total Tests	19
Number below detection limits	12
% below detection limits	63.2

Box Plots	
Arithmetic Mean	0.33
Median	0.05
Lower Quartile	0.05
Upper Quartile	0.13

Mean Confidence Limits	Upper	Lower
95%	0.83	-0.17
80%	0.65	0.01

Threshold Values	Value	Exceedence Upper Confidence Limit	
Residential with Uptake	0.24	Yes	☒ Graph
Residential without Uptake	0.31	Yes	☒ Graph
Commercial	3.5	No	☒ Graph



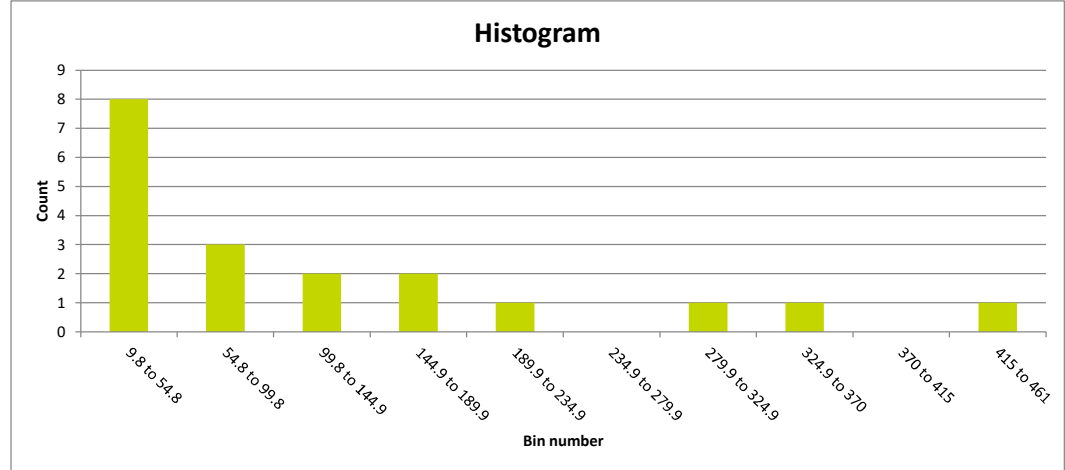
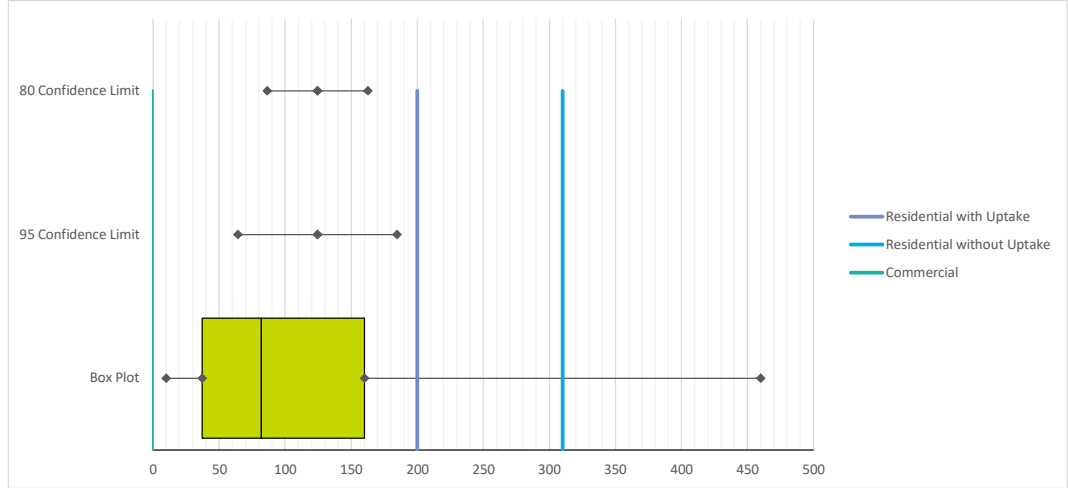
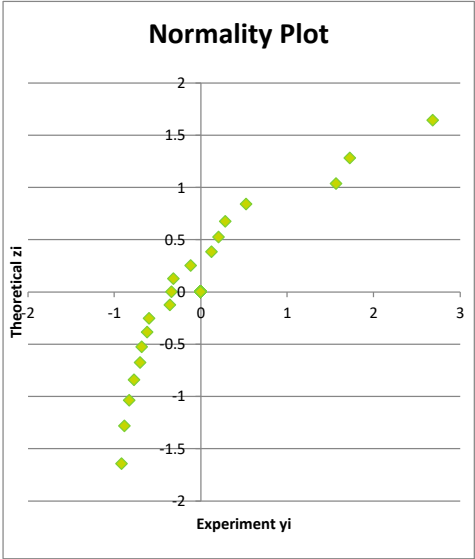
Select Chemical	Lead
Outer Confidence Limit for Mean	95
Inner Confidence Limit for Mean	80

Statistics	
Total Tests	19
Number below detection limits	0
% below detection limits	0.0

Box Plots	
Arithmetic Mean	124.36
Median	82.00
Lower Quartile	37.00
Upper Quartile	160.00

Mean Confidence Limits	Upper	Lower
95%	184.59	64.12
80%	162.50	86.21

Threshold Values	Value	Exceedence Upper Confidence Limit	
Residential with Uptake	200	No	☒ Graph
Residential without Uptake	310	No	☒ Graph
Commercial	2330	No	☐ Graph



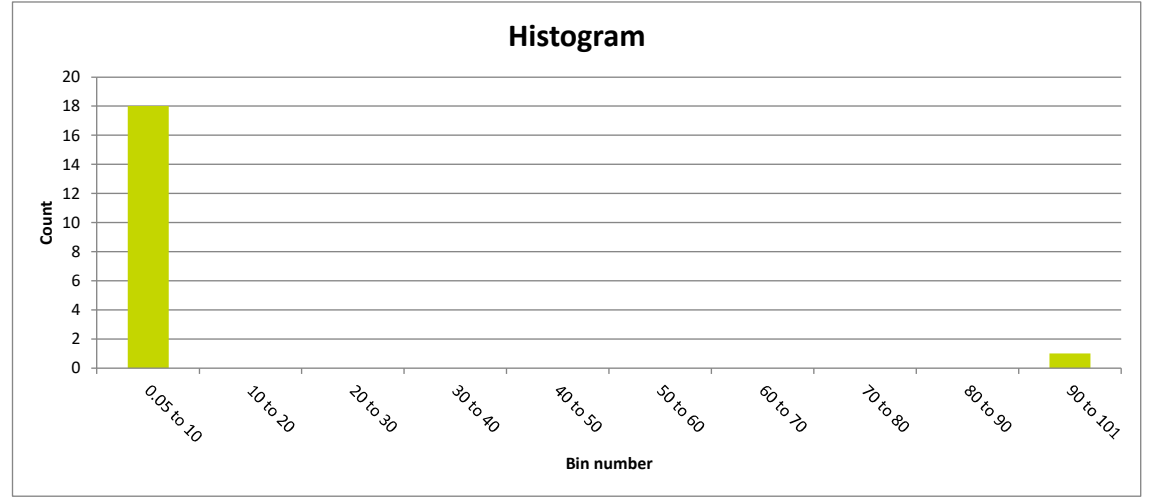
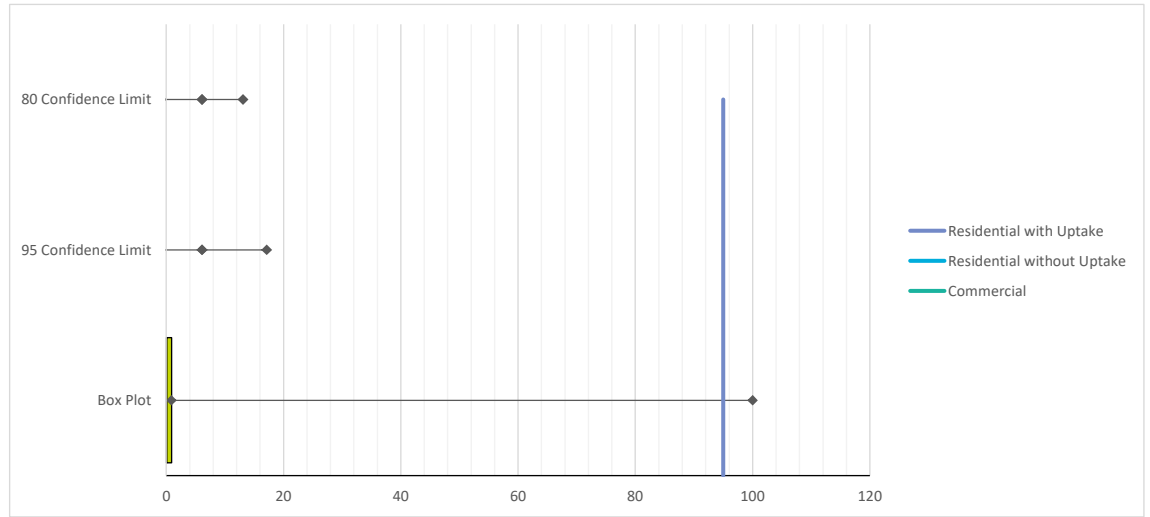
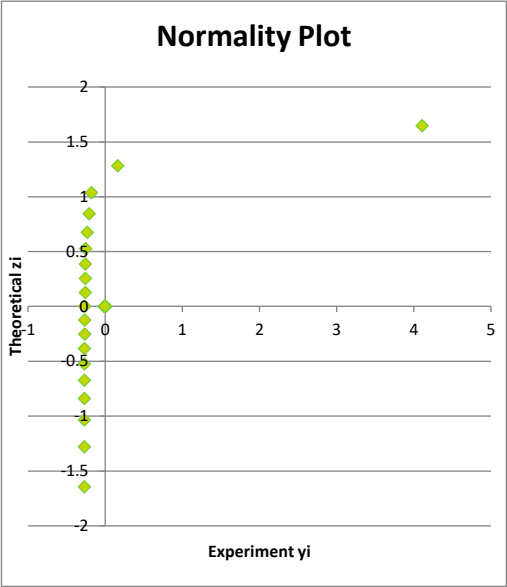
Select Chemical Phenanthrene
Outer Confidence Limit for Mean 95
Inner Confidence Limit for Mean 80

Statistics	
Total Tests	19
Number below detection limits	6
% below detection limits	31.6

Box Plots	
Arithmetic Mean	6.13
Median	0.11
Lower Quartile	0.05
Upper Quartile	0.90

Mean Confidence Limits	Upper	Lower
95%	17.14	-4.88
80%	13.10	-0.84

Threshold Values	Value	Exceedence Upper Confidence Limit
Residential with Uptake	95	No ☒ Graph
Residential without Uptake	1300	No ☐ Graph
Commercial	22000	No ☐ Graph



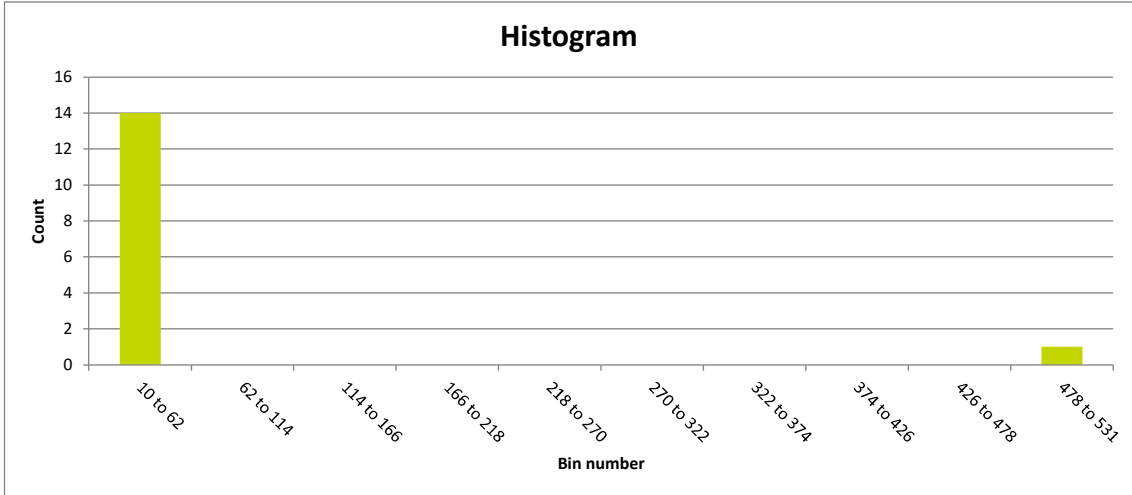
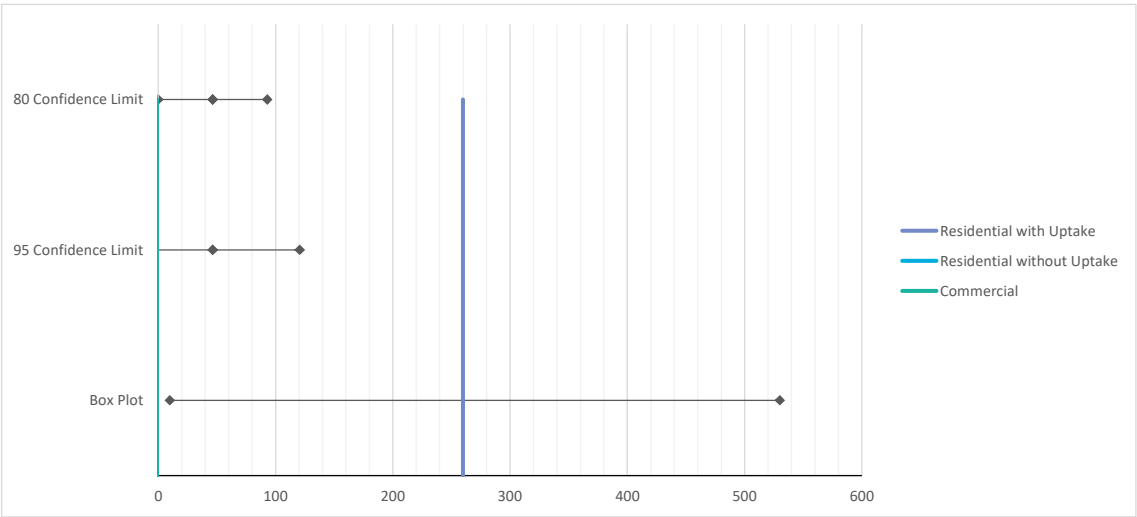
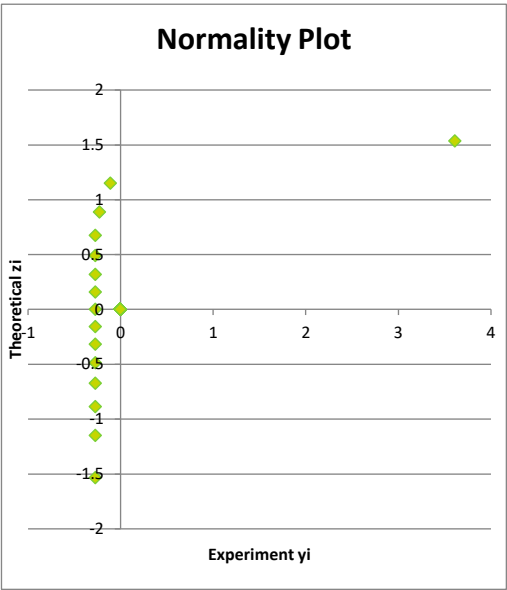
Select Chemical Aromatic C16 - C21
Outer Confidence Limit for Mean 95
Inner Confidence Limit for Mean 80

Statistics	
Total Tests	15
Number below detection limits	12
% below detection limits	80.0

Box Plots	
Arithmetic Mean	46.53
Median	10.00
Lower Quartile	10.00
Upper Quartile	10.00

Mean Confidence Limits	Upper	Lower
95%	120.67	-27.60
80%	93.02	0.04

Threshold Values	Value	Exceedence Upper Confidence Limit
Residential with Uptake	260	No ☒ Graph
Residential without Uptake	1900	No ☐ Graph
Commercial	28000	No ☐ Graph



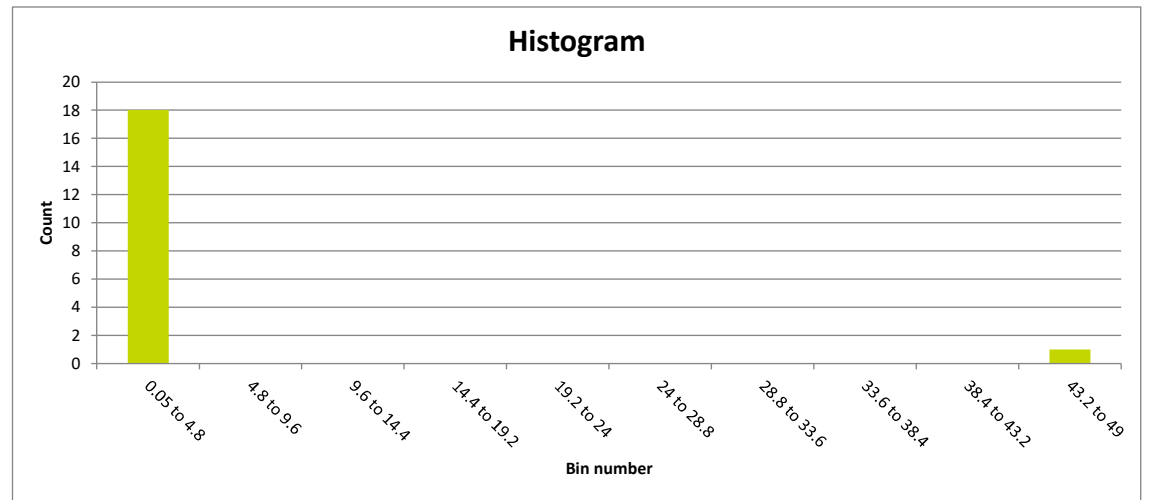
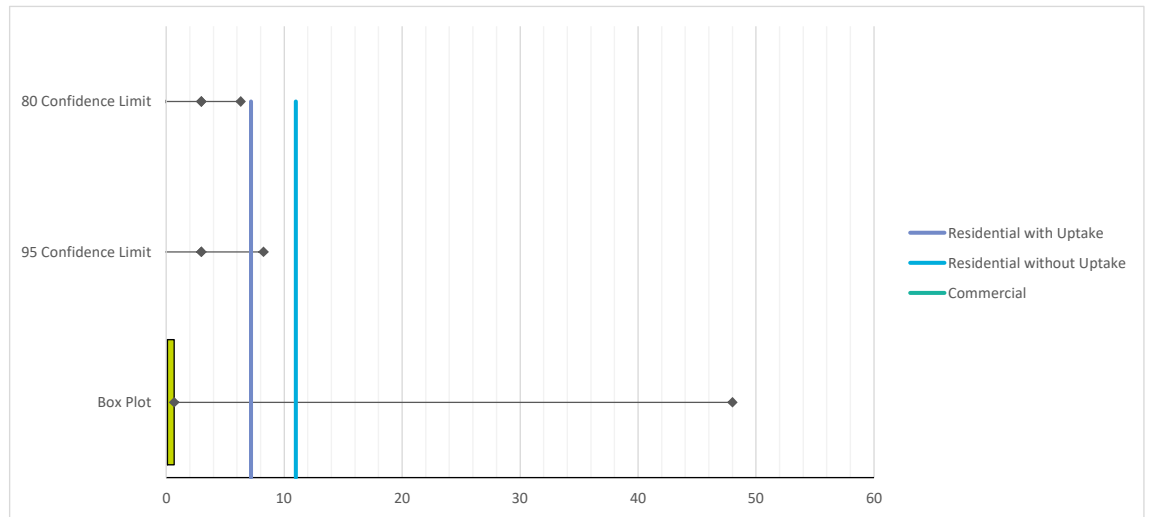
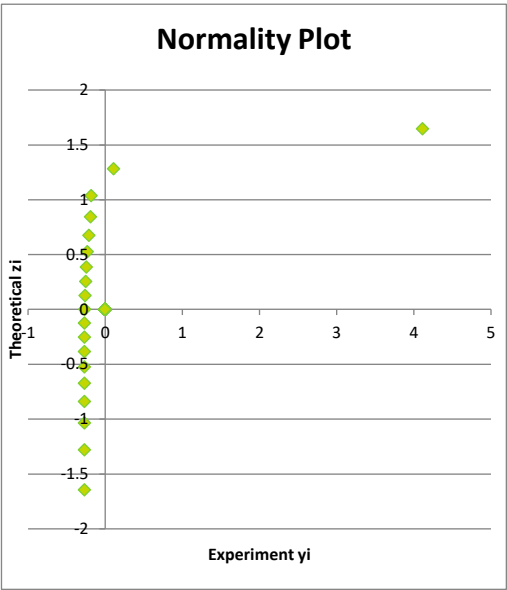
Select Chemical Benzo[a]anthracene
Outer Confidence Limit for Mean 95
Inner Confidence Limit for Mean 80

Statistics	
Total Tests	19
Number below detection limits	6
% below detection limits	31.6

Box Plots	
Arithmetic Mean	2.98
Median	0.11
Lower Quartile	0.05
Upper Quartile	0.68

Mean Confidence Limits	Upper	Lower
95%	8.25	-2.30
80%	6.32	-0.36

Threshold Values	Value	Exceedence Upper Confidence Limit
Residential with Uptake	7.2	Yes ☒ Graph
Residential without Uptake	11	No ☒ Graph
Commercial	170	No ☐ Graph



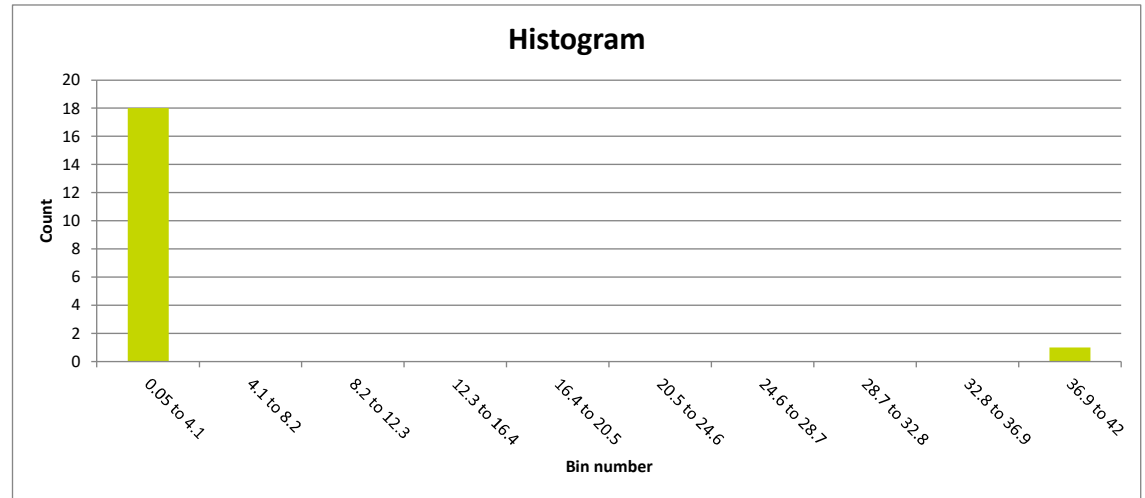
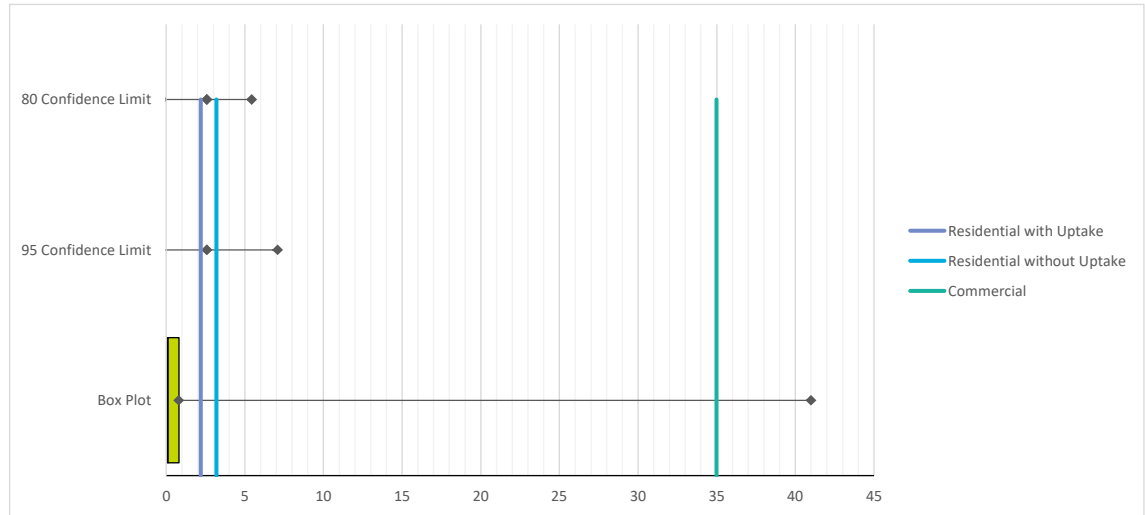
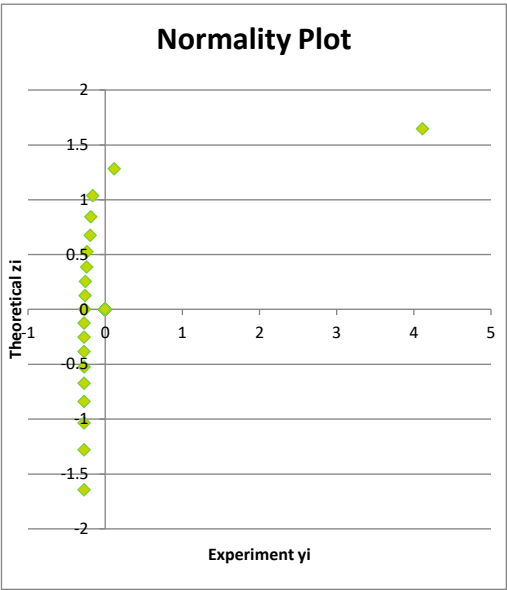
Select Chemical Benzo[a]pyrene
Outer Confidence Limit for Mean 95
Inner Confidence Limit for Mean 80

Statistics	
Total Tests	19
Number below detection limits	7
% below detection limits	36.8

Box Plots	
Arithmetic Mean	2.59
Median	0.12
Lower Quartile	0.05
Upper Quartile	0.80

Mean Confidence Limits	Upper	Lower
95%	7.09	-1.91
80%	5.44	-0.26

Threshold Values	Value	Exceedence Upper Confidence Limit
Residential with Uptake	2.2	Yes ☒ Graph
Residential without Uptake	3.2	Yes ☒ Graph
Commercial	35	No ☒ Graph



Select Chemical

Outer Confidence Limit for Mean

Inner Confidence Limit for Mean

Benzo[b]fluoranthene

95

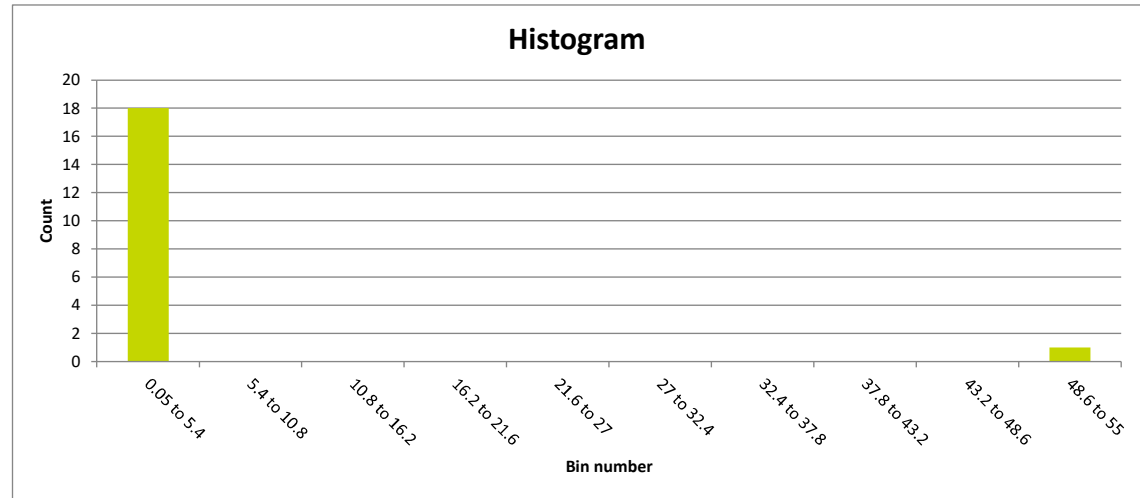
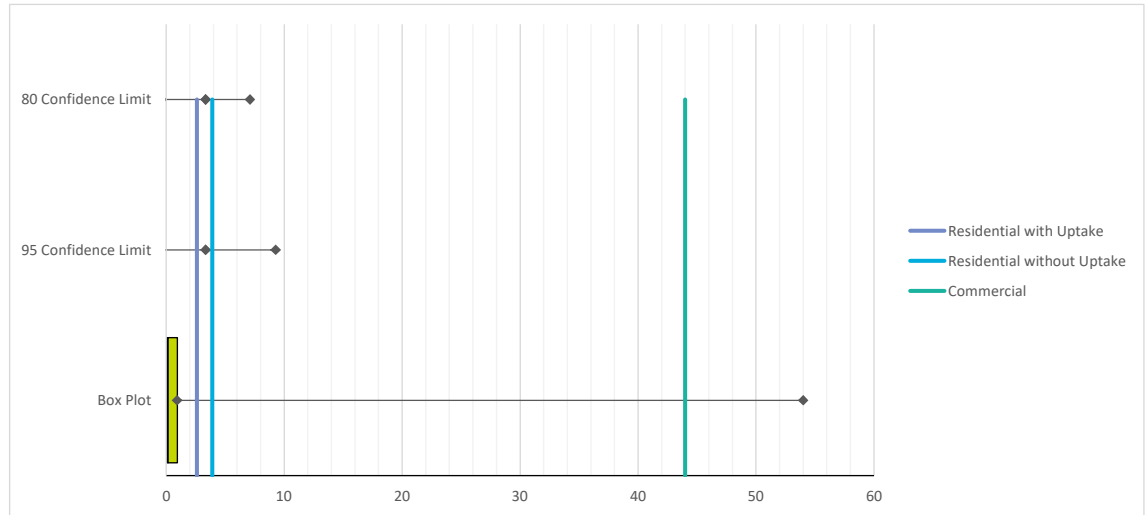
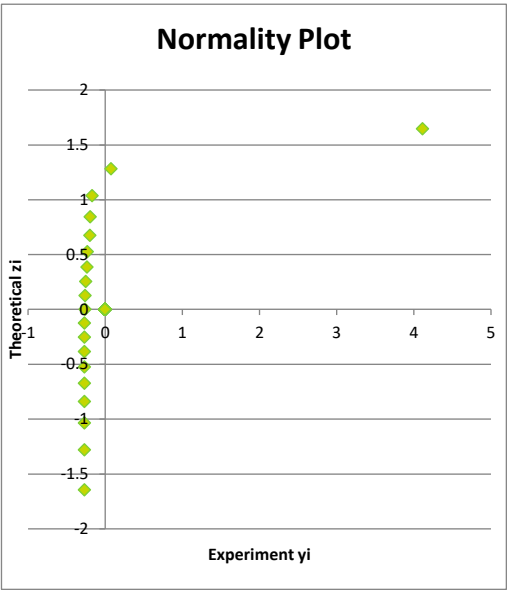
80

Statistics	
Total Tests	19
Number below detection limits	7
% below detection limits	36.8

Box Plots	
Arithmetic Mean	3.35
Median	0.16
Lower Quartile	0.05
Upper Quartile	0.93

Mean Confidence Limits	Upper	Lower
95%	9.28	-2.58
80%	7.11	-0.40

Threshold Values	Value	Exceedence	Upper Confidence Limit
Residential with Uptake	2.6	Yes	☒ Graph
Residential without Uptake	3.9	Yes	☒ Graph
Commercial	44	No	☒ Graph



Appendix E – Waste assessment summary

Introduction and legislative background

The waste assessment is based on Environment Agency Technical Guidance (WM3 (Waste Management 3), Guidance on the classification and assessment of waste (2015)), which requires a hazard based assessment. The following provides detail on the waste assessment process.

Before a waste is moved, disposed or recovered, it has to be classified. A waste is classified based on the hazard it may pose. Therefore, the first stage is to classify the waste by completing the following process:

- 1) Does the material have to be classified?
- 2) Identify the correct code for the waste.
- 3) Identify the assessment needed to select the correct code.
- 4) Determine the chemical composition of the waste
- 5) Identify if the substances in the waste are 'hazardous substances' or 'Persistent Organic Pollutants'
- 6) Assess the hazardous properties of the waste
- 7) Assign the classification code and describe the classification code

The waste classification is based on the worst case compound, which is calculated using analytical results. For example, if a fragment of asbestos is present within a stockpile (and the fragment contains >0.1% asbestos) then the entire stockpile is classified as hazardous waste.

Below is the waste classification process undertaken by BuroHappold. This is summarised on a flow diagram following the text.

BuroHappold Assessment

Classification

The preliminary assessment undertaken by BuroHappold assumes that any soils at the site may be disposed off site. This preliminary classification and assessment is to enable the Client, designers and groundworks contractors to make informed decisions regarding earthwork material management and disposal.

The classification is based on the List of Wastes presented in the Environment Agency guidance WM3. Typically, material from excavations and earthworks will comply with the following codes:

Code	Description
17 05 03	Soils and stones containing hazardous substances (mirror hazardous)
17 05 04	Soils and stones other than those mentioned in 17 05 03 (mirror non-hazardous)
17 06 05	Construction materials containing asbestos (mirror hazardous)

If a material is mirror hazardous or mirror non-hazardous, as is typical with excavation material, the producer must undertake an assessment of hazardous properties. A waste code cannot be assigned until the assessment has been completed. Below outlines the waste assessment process:

Assessment

The first stage for assessment of soils is a review of the site history, including any former or current industrial processes undertaken on site. These potential sources are reported in the relevant desk study. The potential sources identified in the desk study are quantified by site investigation, including the chemical testing of soil samples.

The data from the site investigation are assessed based on the Hazard Properties of the contaminants using the online tool HazWasteOnline™. The software follows the latest Environment Agency guidance and European regulations. HazWasteOnline™ provides an auditable tool for the classification of potentially hazardous and hazardous waste materials such as contaminated soils.

WAC testing (hazardous and inert landfill only)

Where a material is classified as hazardous and is to be disposed of in a hazardous landfill a hazardous Waste Acceptance Test should be undertaken. If the leachate and other criteria meet the hazardous landfill criteria the material can be disposed of in a hazardous landfill. If not, a alternative disposal method should be used.

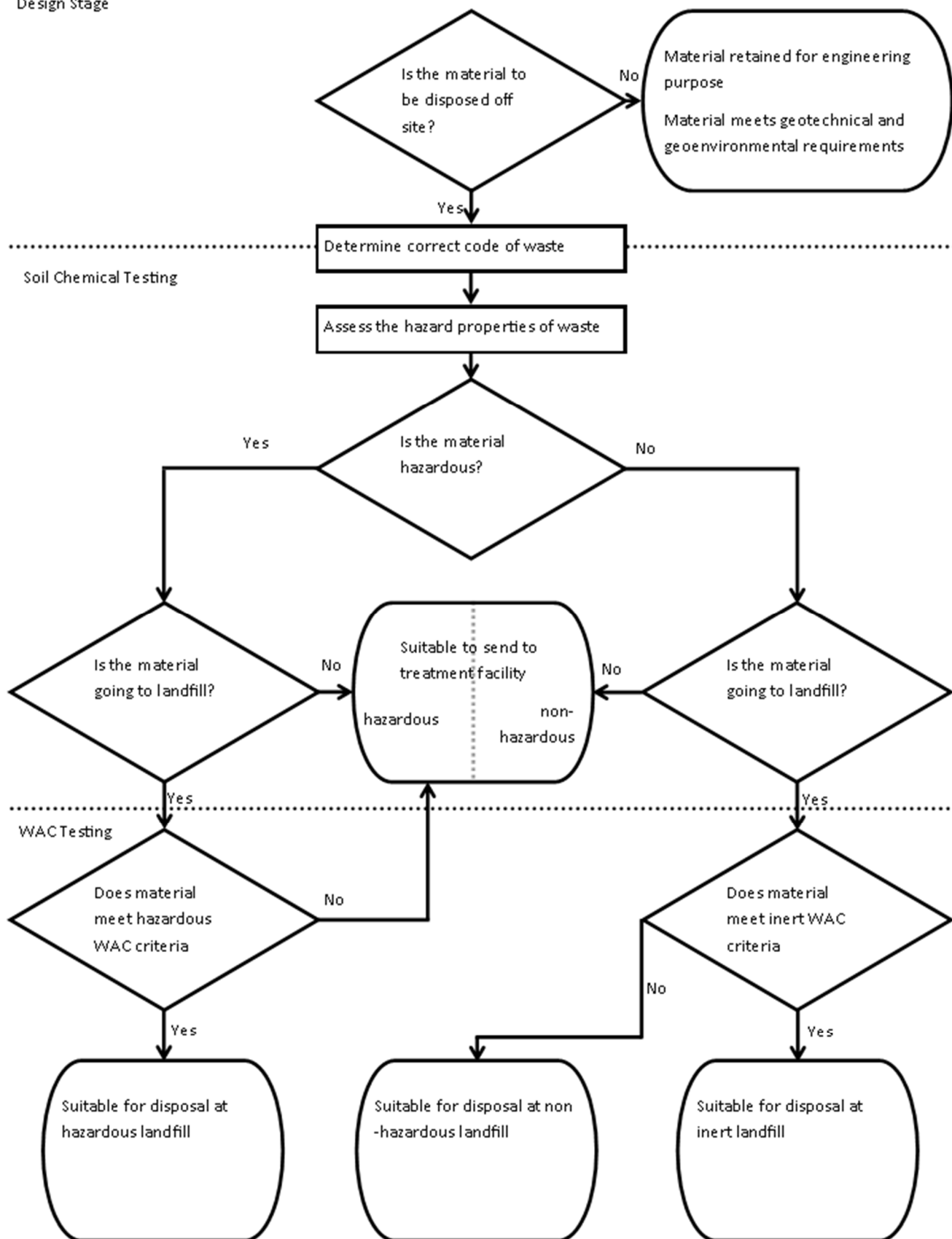
Where a material is classified as non-hazardous, an inert WAC test will determine if the leachate from the waste meets inert landfill criteria. If the WAC test does meet inert thresholds the material is suitable for disposal in an inert landfill. Where the criteria are exceeded the material should be disposed in a non-hazardous landfill.

WAC tests are **not** required where waste is sent for treatment or being disposed in a non-hazardous landfill.

Contractors Responsibility

The above provides a method that BuroHappold employ to provide a preliminary assessment of waste. It is the earthwork contractor's responsibility, in association with the operator and / or owner of the landfill to classify the materials for disposal in line with current guidance. Landfill waste acceptance criteria (WAC) leachate testing and classification prior to disposal to landfill should be undertaken to confirm the waste classification of the natural soils.

Design Stage



Appendix F – Waste assessment sheets

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)



9VYG6-AMOV6-WP53N

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

Job name

Huyton Town Centre Redevelopment

Description/Comments

Project

0051610

Site

Huyton Town Centre Redevelopment

Classified by

Name:

Geoffrey Perrett

Date:

02 Nov 2023 14:47 GMT

Telephone:

020 7927 9700

Company:

Buro Happold

71 Newman Street

London

W1T 1PD

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:

-

Course

Hazardous Waste Classification

Date

-

Purpose of classification

2 - Material Characterisation

Address of the waste

Huyton Town Centre

Post Code N/A

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment of brownfield site

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

Excavation during redevelopment

Description of the waste

Made Ground

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS09[2]	0.20	Non Hazardous		3
2	BH11[2]	0.90	Non Hazardous		6
3	WS17[2]	0.50	Non Hazardous		9
4	BH12[3]	0.50	Non Hazardous		12
5	BH12[4]	1.00	Non Hazardous		15
6	TP04[2]	1.40	Non Hazardous		17
7	TP03[2]	0.20	Non Hazardous		19
8	WS10[2]	0.25	Non Hazardous		22
9	WS16[2]	0.50	Non Hazardous		24
10	BH07[2]	0.50	Non Hazardous		26
11	BH10[2]	1.00	Non Hazardous		28
12	WS07[2]	1.50	Non Hazardous		30
13	WS03[2]	1.00	Non Hazardous		32
14	WS02[2]	0.50	Non Hazardous		34
15	BH08[2]	0.50	Non Hazardous		36
16	WS04[2]	0.50	Non Hazardous		39
17	WS06[2]	0.50	Hazardous	HP 3(i), HP 7, HP 11	41
18	BH01[2]	0.40	Non Hazardous		44
19	WS15	0.5	Non Hazardous		46

Related documents

#	Name	Description
1	2022 Geoff	waste stream template used to create this Job

Report

Created by: Geoffrey Perrett

Created date: 02 Nov 2023 14:47 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	48
Appendix B: Rationale for selection of metal species	49
Appendix C: Version	50

Classification of sample: WS09[2]


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

Sample details

Sample name:	LoW Code:
WS09[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.20 m	Entry:

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				2.7	mg/kg	1.32	3.565	mg/kg	0.000356 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				360	mg/kg	1.117	401.942	mg/kg	0.0402 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.44	mg/kg	2.775	1.221	mg/kg	0.000122 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				9.4	mg/kg	2.27	21.338	mg/kg	0.00213 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				8.4	mg/kg	1.126	9.457	mg/kg	0.000946 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	47	mg/kg	1.56	73.311	mg/kg	0.0047 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				6.6	mg/kg	2.976	19.643	mg/kg	0.00196 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				22	mg/kg	1.785	39.274	mg/kg	0.00393 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				45	mg/kg	2.774	124.837	mg/kg	0.0125 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	toluene				<		<		<		ND
	601-021-00-3	203-625-9	108-88-3								
16	ethylbenzene				<5 mg/kg		<5 mg/kg		<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4								
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg		<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4								
18	TPH (C6 to C40) petroleum group				288.3 mg/kg		288.3 mg/kg		0.0288 %		
			TPH								
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		205-917-1	208-96-8								
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		201-469-6	83-32-9								
22	fluorene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		201-695-5	86-73-7								
23	phenanthrene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		201-581-5	85-01-8								
24	anthracene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		204-371-1	120-12-7								
25	fluoranthene				0.09 mg/kg		0.09 mg/kg		0.000009 %		
		205-912-4	206-44-0								
26	pyrene				0.09 mg/kg		0.09 mg/kg		0.000009 %		
		204-927-3	129-00-0								
27	benzo[a]anthracene				0.06 mg/kg		0.06 mg/kg		0.000006 %		
	601-033-00-9	200-280-6	56-55-3								
28	chrysene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-048-00-0	205-923-4	218-01-9								
29	benzo[b]fluoranthene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-034-00-4	205-911-9	205-99-2								
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9								
31	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.05 mg/kg		0.000005 %		
	601-032-00-3	200-028-5	50-32-8								
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		205-893-2	193-39-5								
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3								
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg		<0.000005 %		<LOD
		205-883-8	191-24-2								
35	pH				8.9 pH		8.9 pH		8.9 pH		
			PH								
Total:									0.0977 %		

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 No free product. Found in soils with natural moisture content. Unlikely to be flammable.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0288%)

Classification of sample: BH11[2]



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

Sample details

Sample name:	LoW Code:
BH11[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.90 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %			
	033-003-00-0	215-481-4	1327-53-3								
2	barium { barium oxide }				210 mg/kg	1.117	234.466 mg/kg	0.0234 %			
		215-127-9	1304-28-5								
3	beryllium { beryllium oxide }				0.87 mg/kg	2.775	2.415 mg/kg	0.000241 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				1 mg/kg	3.22	3.22 mg/kg	0.000322 %			
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				0.7 mg/kg	1.142	0.8 mg/kg	0.00008 %			
	048-002-00-0	215-146-2	1306-19-0								
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				18 mg/kg	2.27	40.86 mg/kg	0.00409 %			
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				55 mg/kg	1.126	61.924 mg/kg	0.00619 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	460 mg/kg	1.56	717.515 mg/kg	0.046 %			
	082-004-00-2	231-846-0	7758-97-6								
9	nickel { nickel chromate }				20 mg/kg	2.976	59.525 mg/kg	0.00595 %			
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				28 mg/kg	1.785	49.985 mg/kg	0.005 %			
	023-001-00-8	215-239-8	1314-62-1								
12	zinc { zinc chromate }				160 mg/kg	2.774	443.863 mg/kg	0.0444 %			
	024-007-00-3	236-878-9	13530-65-9								
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
14	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				18 mg/kg		18 mg/kg	0.0018 %		
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				0.09 mg/kg		0.09 mg/kg	0.000009 %		
		201-469-6	83-32-9							
22	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
23	phenanthrene				1.5 mg/kg		1.5 mg/kg	0.00015 %		
		201-581-5	85-01-8							
24	anthracene				0.19 mg/kg		0.19 mg/kg	0.000019 %		
		204-371-1	120-12-7							
25	fluoranthene				2.2 mg/kg		2.2 mg/kg	0.00022 %		
		205-912-4	206-44-0							
26	pyrene				2.1 mg/kg		2.1 mg/kg	0.00021 %		
		204-927-3	129-00-0							
27	benzo[a]anthracene				0.9 mg/kg		0.9 mg/kg	0.00009 %		
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				1.3 mg/kg		1.3 mg/kg	0.00013 %		
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				0.93 mg/kg		0.93 mg/kg	0.000093 %		
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				0.63 mg/kg		0.63 mg/kg	0.000063 %		
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				0.88 mg/kg		0.88 mg/kg	0.000088 %		
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				0.47 mg/kg		0.47 mg/kg	0.000047 %		
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				0.13 mg/kg		0.13 mg/kg	0.000013 %		
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				0.56 mg/kg		0.56 mg/kg	0.000056 %		
		205-883-8	191-24-2							
35	pH				9.1 pH		9.1 pH	9.1 pH		
			PH							
Total:								0.143 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product. Found in soils with natural moisture content. Unlikely to be flammable.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0018%)

Classification of sample: WS17[2]

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

Sample details

Sample name:	LoW Code:
WS17[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m	Entry:

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	asbestos				<0.001 mg/kg		<0.001 mg/kg		<0.0000001 %		<LOD
	650-013-00-6	-----	12001-28-4								
			132207-32-0								
			12172-73-5								
			77536-66-4								
			77536-68-6								
2	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg		0.00185 %		
	033-003-00-0	215-481-4	1327-53-3								
3	barium { barium oxide }				120 mg/kg	1.117	133.981 mg/kg		0.0134 %		
		215-127-9	1304-28-5								
4	beryllium { beryllium oxide }				0.85 mg/kg	2.775	2.359 mg/kg		0.000236 %		
	004-003-00-8	215-133-1	1304-56-9								
5	boron { diboron trioxide; boric oxide }				0.7 mg/kg	3.22	2.254 mg/kg		0.000225 %		
	005-008-00-8	215-125-8	1303-86-2								
6	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg		<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
7	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				23 mg/kg	2.27	52.21 mg/kg		0.00522 %		
	024-017-00-8										
8	copper { dicopper oxide; copper (I) oxide }				43 mg/kg	1.126	48.413 mg/kg		0.00484 %		
	029-002-00-X	215-270-7	1317-39-1								
9	lead { lead chromate }			1	110 mg/kg	1.56	171.58 mg/kg		0.011 %		
	082-004-00-2	231-846-0	7758-97-6								
10	nickel { nickel chromate }				22 mg/kg	2.976	65.478 mg/kg		0.00655 %		
	028-035-00-7	238-766-5	14721-18-7								
11	selenium { selenium compounds with the exception of cadmium selenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg		<0.000141 %		<LOD
	034-002-00-8										
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				31 mg/kg	1.785	55.341 mg/kg		0.00553 %		
	023-001-00-8	215-239-8	1314-62-1								
13	zinc { zinc chromate }				150 mg/kg	2.774	416.122 mg/kg		0.0416 %		
	024-007-00-3	236-878-9	13530-65-9								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
15	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
19	TPH (C6 to C40) petroleum group				46.8 mg/kg		46.8 mg/kg	0.00468 %			
			TPH								
20	naphthalene				0.22 mg/kg		0.22 mg/kg	0.000022 %			
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				0.27 mg/kg		0.27 mg/kg	0.000027 %			
		201-469-6	83-32-9								
23	fluorene				0.16 mg/kg		0.16 mg/kg	0.000016 %			
		201-695-5	86-73-7								
24	phenanthrene				2.1 mg/kg		2.1 mg/kg	0.00021 %			
		201-581-5	85-01-8								
25	anthracene				0.43 mg/kg		0.43 mg/kg	0.000043 %			
		204-371-1	120-12-7								
26	fluoranthene				2.7 mg/kg		2.7 mg/kg	0.00027 %			
		205-912-4	206-44-0								
27	pyrene				2.6 mg/kg		2.6 mg/kg	0.00026 %			
		204-927-3	129-00-0								
28	benzo[a]anthracene				1 mg/kg		1 mg/kg	0.0001 %			
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				1.2 mg/kg		1.2 mg/kg	0.00012 %			
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				1.3 mg/kg		1.3 mg/kg	0.00013 %			
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				0.54 mg/kg		0.54 mg/kg	0.000054 %			
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				1.1 mg/kg		1.1 mg/kg	0.00011 %			
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				0.61 mg/kg		0.61 mg/kg	0.000061 %			
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				0.18 mg/kg		0.18 mg/kg	0.000018 %			
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				0.74 mg/kg		0.74 mg/kg	0.000074 %			
		205-883-8	191-24-2								
36	pH				9 pH		9 pH	9pH			
			PH								
Total:									0.099 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product. Found in soils with natural moisture content. Unlikely to be flammable.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00468%)

Classification of sample: BH12[3]



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

Sample details

Sample name:	LoW Code:
BH12[3]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				9.3	mg/kg	1.32	12.279	mg/kg	0.00123 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				91	mg/kg	1.117	101.602	mg/kg	0.0102 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.66	mg/kg	2.775	1.832	mg/kg	0.000183 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.9	mg/kg	3.22	2.898	mg/kg	0.00029 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				20	mg/kg	2.27	45.4	mg/kg	0.00454 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				28	mg/kg	1.126	31.525	mg/kg	0.00315 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	160	mg/kg	1.56	249.57	mg/kg	0.016 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				17	mg/kg	2.976	50.597	mg/kg	0.00506 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				25	mg/kg	1.785	44.63	mg/kg	0.00446 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				85	mg/kg	2.774	235.802	mg/kg	0.0236 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				69.2 mg/kg		69.2 mg/kg	0.00692 %		
			TPH							
19	naphthalene				0.07 mg/kg		0.07 mg/kg	0.000007 %		
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				0.09 mg/kg		0.09 mg/kg	0.000009 %		
		201-469-6	83-32-9							
22	fluorene				0.07 mg/kg		0.07 mg/kg	0.000007 %		
		201-695-5	86-73-7							
23	phenanthrene				0.9 mg/kg		0.9 mg/kg	0.00009 %		
		201-581-5	85-01-8							
24	anthracene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
		204-371-1	120-12-7							
25	fluoranthene				1.5 mg/kg		1.5 mg/kg	0.00015 %		
		205-912-4	206-44-0							
26	pyrene				1.5 mg/kg		1.5 mg/kg	0.00015 %		
		204-927-3	129-00-0							
27	benzo[a]anthracene				0.68 mg/kg		0.68 mg/kg	0.000068 %		
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				0.85 mg/kg		0.85 mg/kg	0.000085 %		
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				1 mg/kg		1 mg/kg	0.0001 %		
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				0.35 mg/kg		0.35 mg/kg	0.000035 %		
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				0.8 mg/kg		0.8 mg/kg	0.00008 %		
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				0.46 mg/kg		0.46 mg/kg	0.000046 %		
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
		205-883-8	191-24-2							
35	pH				9.2 pH		9.2 pH	9.2 pH		
			PH							
Total:								0.0788 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product. Found in soils with natural moisture content. Unlikely to be flammable.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00692%)

Classification of sample: BH12[4]


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

Sample details

Sample name:	LoW Code:
BH12[4]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				7.5	mg/kg	1.32	9.902	mg/kg	0.00099 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				55	mg/kg	1.117	61.408	mg/kg	0.00614 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.62	mg/kg	2.775	1.721	mg/kg	0.000172 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				24	mg/kg	2.27	54.48	mg/kg	0.00545 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				25	mg/kg	1.126	28.147	mg/kg	0.00281 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	39	mg/kg	1.56	60.833	mg/kg	0.0039 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				20	mg/kg	2.976	59.525	mg/kg	0.00595 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				27	mg/kg	1.785	48.2	mg/kg	0.00482 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				37	mg/kg	2.774	102.643	mg/kg	0.0103 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
23	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
25	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
26	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
27	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
35	pH				7.5 pH		7.5 pH	7.5 pH		
			PH							
Total:								0.0442 %		

Key

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

Classification of sample: TP04[2]


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

Sample details

Sample name:	LoW Code:
TP04[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.40 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				6 mg/kg	1.32	7.922 mg/kg	0.000792 %			
	033-003-00-0	215-481-4	1327-53-3								
2	barium { barium oxide }				45 mg/kg	1.117	50.243 mg/kg	0.00502 %			
		215-127-9	1304-28-5								
3	beryllium { beryllium oxide }				0.5 mg/kg	2.775	1.388 mg/kg	0.000139 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				<0.2 mg/kg	3.22	<0.644 mg/kg	<0.0000644 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				21 mg/kg	2.27	47.67 mg/kg	0.00477 %			
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				11 mg/kg	1.126	12.385 mg/kg	0.00124 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	14 mg/kg	1.56	21.837 mg/kg	0.0014 %			
	082-004-00-2	231-846-0	7758-97-6								
9	nickel { nickel chromate }				16 mg/kg	2.976	47.62 mg/kg	0.00476 %			
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				25 mg/kg	1.785	44.63 mg/kg	0.00446 %			
	023-001-00-8	215-239-8	1314-62-1								
12	zinc { zinc chromate }				24 mg/kg	2.774	66.58 mg/kg	0.00666 %			
	024-007-00-3	236-878-9	13530-65-9								
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
14	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
23	phenanthrene				0.28 mg/kg		0.28 mg/kg	0.000028 %		
		201-581-5	85-01-8							
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
25	fluoranthene				0.19 mg/kg		0.19 mg/kg	0.000019 %		
		205-912-4	206-44-0							
26	pyrene				0.19 mg/kg		0.19 mg/kg	0.000019 %		
		204-927-3	129-00-0							
27	benzo[a]anthracene				0.08 mg/kg		0.08 mg/kg	0.000008 %		
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				0.11 mg/kg		0.11 mg/kg	0.000011 %		
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
35	pH				7.7 pH		7.7 pH	7.7 pH		
			PH							
Total:								0.0328 %		

Key

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

Classification of sample: TP03[2]


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

Sample details

Sample name:	LoW Code:
TP03[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.20 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				6.4	mg/kg	1.32	8.45	mg/kg	0.000845 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				67	mg/kg	1.117	74.806	mg/kg	0.00748 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.32	mg/kg	2.775	0.888	mg/kg	0.0000888 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				1.8	mg/kg	3.22	5.796	mg/kg	0.00058 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				10	mg/kg	2.27	22.7	mg/kg	0.00227 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				33	mg/kg	1.126	37.154	mg/kg	0.00372 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	150	mg/kg	1.56	233.972	mg/kg	0.015 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				9.1	mg/kg	2.976	27.084	mg/kg	0.00271 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				13	mg/kg	1.785	23.207	mg/kg	0.00232 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				80	mg/kg	2.774	221.932	mg/kg	0.0222 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				56 mg/kg		56 mg/kg	0.0056 %		
			TPH							
19	naphthalene				0.07 mg/kg		0.07 mg/kg	0.000007 %		
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
23	phenanthrene				0.3 mg/kg		0.3 mg/kg	0.00003 %		
		201-581-5	85-01-8							
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
25	fluoranthene				0.46 mg/kg		0.46 mg/kg	0.000046 %		
		205-912-4	206-44-0							
26	pyrene				0.45 mg/kg		0.45 mg/kg	0.000045 %		
		204-927-3	129-00-0							
27	benzo[a]anthracene				0.25 mg/kg		0.25 mg/kg	0.000025 %		
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				0.33 mg/kg		0.33 mg/kg	0.000033 %		
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				0.29 mg/kg		0.29 mg/kg	0.000029 %		
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				0.17 mg/kg		0.17 mg/kg	0.000017 %		
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				0.21 mg/kg		0.21 mg/kg	0.000021 %		
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				0.21 mg/kg		0.21 mg/kg	0.000021 %		
		205-883-8	191-24-2							
35	pH				7.9 pH		7.9 pH	7.9 pH		
			PH							
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
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product. Found in soils with natural moisture content. Unlikely to be flammable.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0056%)

Classification of sample: WS10[2]



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

Sample details

Sample name:	LoW Code:
WS10[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.25 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	asbestos										
	650-013-00-6	-----	12001-28-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %	<LOD		
			132207-32-0								
			12172-73-5								
			77536-66-4								
			77536-68-6								
			77536-67-5								
			12001-29-5								
2	arsenic { arsenic trioxide }				9.1 mg/kg	1.32	12.015 mg/kg	0.0012 %			
	033-003-00-0	215-481-4	1327-53-3								
3	barium { barium oxide }				94 mg/kg	1.117	104.952 mg/kg	0.0105 %			
		215-127-9	1304-28-5								
4	beryllium { beryllium oxide }				0.46 mg/kg	2.775	1.277 mg/kg	0.000128 %			
	004-003-00-8	215-133-1	1304-56-9								
5	boron { diboron trioxide; boric oxide }				0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %			
	005-008-00-8	215-125-8	1303-86-2								
6	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
7	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				16 mg/kg	2.27	36.32 mg/kg	0.00363 %			
	024-017-00-8										
8	copper { dicopper oxide; copper (I) oxide }				33 mg/kg	1.126	37.154 mg/kg	0.00372 %			
	029-002-00-X	215-270-7	1317-39-1								
9	lead { lead chromate }			1	85 mg/kg	1.56	132.584 mg/kg	0.0085 %			
	082-004-00-2	231-846-0	7758-97-6								
10	nickel { nickel chromate }				13 mg/kg	2.976	38.691 mg/kg	0.00387 %			
	028-035-00-7	238-766-5	14721-18-7								
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				21 mg/kg	1.785	37.489 mg/kg	0.00375 %			
	023-001-00-8	215-239-8	1314-62-1								
13	zinc { zinc chromate }				57 mg/kg	2.774	158.126 mg/kg	0.0158 %			
	024-007-00-3	236-878-9	13530-65-9								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
14	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
15	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
16	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
17	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
18	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
19	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
20	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
21	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
23	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
24	phenanthrene				0.36 mg/kg		0.36 mg/kg	0.000036 %			
		201-581-5	85-01-8								
25	anthracene				0.08 mg/kg		0.08 mg/kg	0.000008 %			
		204-371-1	120-12-7								
26	fluoranthene				0.85 mg/kg		0.85 mg/kg	0.000085 %			
		205-912-4	206-44-0								
27	pyrene				0.88 mg/kg		0.88 mg/kg	0.000088 %			
		204-927-3	129-00-0								
28	benzo[a]anthracene				0.45 mg/kg		0.45 mg/kg	0.000045 %			
	601-033-00-9	200-280-6	56-55-3								
29	chrysene				0.49 mg/kg		0.49 mg/kg	0.000049 %			
	601-048-00-0	205-923-4	218-01-9								
30	benzo[b]fluoranthene				0.53 mg/kg		0.53 mg/kg	0.000053 %			
	601-034-00-4	205-911-9	205-99-2								
31	benzo[k]fluoranthene				0.2 mg/kg		0.2 mg/kg	0.00002 %			
	601-036-00-5	205-916-6	207-08-9								
32	benzo[a]pyrene; benzo[def]chrysene				0.36 mg/kg		0.36 mg/kg	0.000036 %			
	601-032-00-3	200-028-5	50-32-8								
33	indeno[123-cd]pyrene				0.28 mg/kg		0.28 mg/kg	0.000028 %			
		205-893-2	193-39-5								
34	dibenz[a,h]anthracene				0.09 mg/kg		0.09 mg/kg	0.000009 %			
	601-041-00-2	200-181-8	53-70-3								
35	benzo[ghi]perylene				0.34 mg/kg		0.34 mg/kg	0.000034 %			
		205-883-8	191-24-2								
36	pH				10.4 pH		10.4 pH	10.4 pH			
			PH								
Total:									0.0551 %		

Key

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

Classification of sample: WS16[2]



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

Sample details

Sample name:	LoW Code:
WS16[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				20	mg/kg	1.32	26.407	mg/kg	0.00264 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				82	mg/kg	1.117	91.553	mg/kg	0.00916 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.79	mg/kg	2.775	2.193	mg/kg	0.000219 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				23	mg/kg	2.27	52.21	mg/kg	0.00522 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				32	mg/kg	1.126	36.028	mg/kg	0.0036 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	82	mg/kg	1.56	127.905	mg/kg	0.0082 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				20	mg/kg	2.976	59.525	mg/kg	0.00595 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				29	mg/kg	1.785	51.77	mg/kg	0.00518 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				91	mg/kg	2.774	252.447	mg/kg	0.0252 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
23	phenanthrene				0.09 mg/kg		0.09 mg/kg	0.000009 %		
		201-581-5	85-01-8							
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
25	fluoranthene				0.46 mg/kg		0.46 mg/kg	0.000046 %		
		205-912-4	206-44-0							
26	pyrene				0.44 mg/kg		0.44 mg/kg	0.000044 %		
		204-927-3	129-00-0							
27	benzo[a]anthracene				0.32 mg/kg		0.32 mg/kg	0.000032 %		
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				0.3 mg/kg		0.3 mg/kg	0.00003 %		
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				0.48 mg/kg		0.48 mg/kg	0.000048 %		
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				0.17 mg/kg		0.17 mg/kg	0.000017 %		
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				0.39 mg/kg		0.39 mg/kg	0.000039 %		
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				0.23 mg/kg		0.23 mg/kg	0.000023 %		
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				0.27 mg/kg		0.27 mg/kg	0.000027 %		
		205-883-8	191-24-2							
35	pH				7.9 pH		7.9 pH	7.9 pH		
			PH							
Total:								0.0692 %		

Key

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

Classification of sample: BH07[2]



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

Sample details

Sample name:	LoW Code:
BH07[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				5.1	mg/kg	1.32	6.734	mg/kg	0.000673 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				48	mg/kg	1.117	53.592	mg/kg	0.00536 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.45	mg/kg	2.775	1.249	mg/kg	0.000125 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				1.3	mg/kg	3.22	4.186	mg/kg	0.000419 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				15	mg/kg	2.27	34.05	mg/kg	0.0034 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	320	mg/kg	1.56	499.141	mg/kg	0.032 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				11	mg/kg	2.976	32.739	mg/kg	0.00327 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				16	mg/kg	1.785	28.563	mg/kg	0.00286 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				48	mg/kg	2.774	133.159	mg/kg	0.0133 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
23	phenanthrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		201-581-5	85-01-8								
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
25	fluoranthene				0.07 mg/kg		0.07 mg/kg	0.000007 %			
		205-912-4	206-44-0								
26	pyrene				0.07 mg/kg		0.07 mg/kg	0.000007 %			
		204-927-3	129-00-0								
27	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
28	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
29	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
31	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-893-2	193-39-5								
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
35	pH				8.6 pH		8.6 pH	8.6 pH			
			PH								
Total:									0.0662 %		

Key

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

Classification of sample: BH10[2]



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

Sample details

Sample name:	LoW Code:
BH10[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.00 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	26.407 mg/kg	0.00264 %			
	033-003-00-0	215-481-4	1327-53-3								
2	barium { barium oxide }				100 mg/kg	1.117	111.651 mg/kg	0.0112 %			
		215-127-9	1304-28-5								
3	beryllium { beryllium oxide }				1 mg/kg	2.775	2.775 mg/kg	0.000278 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %			
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				24 mg/kg	2.27	54.48 mg/kg	0.00545 %			
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				71 mg/kg	1.126	79.938 mg/kg	0.00799 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	190 mg/kg	1.56	296.365 mg/kg	0.019 %			
	082-004-00-2	231-846-0	7758-97-6								
9	nickel { nickel chromate }				21 mg/kg	2.976	62.502 mg/kg	0.00625 %			
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				33 mg/kg	1.785	58.911 mg/kg	0.00589 %			
	023-001-00-8	215-239-8	1314-62-1								
12	zinc { zinc chromate }				79 mg/kg	2.774	219.158 mg/kg	0.0219 %			
	024-007-00-3	236-878-9	13530-65-9								
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
14	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
23	phenanthrene				0.11 mg/kg		0.11 mg/kg	0.000011 %			
		201-581-5	85-01-8								
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
25	fluoranthene				0.2 mg/kg		0.2 mg/kg	0.00002 %			
		205-912-4	206-44-0								
26	pyrene				0.19 mg/kg		0.19 mg/kg	0.000019 %			
		204-927-3	129-00-0								
27	benzo[a]anthracene				0.11 mg/kg		0.11 mg/kg	0.000011 %			
	601-033-00-9	200-280-6	56-55-3								
28	chrysene				0.12 mg/kg		0.12 mg/kg	0.000012 %			
	601-048-00-0	205-923-4	218-01-9								
29	benzo[b]fluoranthene				0.16 mg/kg		0.16 mg/kg	0.000016 %			
	601-034-00-4	205-911-9	205-99-2								
30	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-036-00-5	205-916-6	207-08-9								
31	benzo[a]pyrene; benzo[def]chrysene				0.12 mg/kg		0.12 mg/kg	0.000012 %			
	601-032-00-3	200-028-5	50-32-8								
32	indeno[123-cd]pyrene				0.08 mg/kg		0.08 mg/kg	0.000008 %			
		205-893-2	193-39-5								
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
34	benzo[ghi]perylene				0.09 mg/kg		0.09 mg/kg	0.000009 %			
		205-883-8	191-24-2								
35	pH				7.6 pH		7.6 pH	7.6 pH			
			PH								
Total:									0.0842 %		

Key

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

Classification of sample: WS07[2]

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

Sample details

Sample name:	LoW Code:
WS07[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.50 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }				9.2 mg/kg	1.32	12.147 mg/kg	0.00121 %			
	033-003-00-0	215-481-4	1327-53-3								
2	 barium { barium oxide }				85 mg/kg	1.117	94.903 mg/kg	0.00949 %			
		215-127-9	1304-28-5								
3	 beryllium { beryllium oxide }				0.87 mg/kg	2.775	2.415 mg/kg	0.000241 %			
	004-003-00-8	215-133-1	1304-56-9								
4	 boron { diboron trioxide; boric oxide }				0.5 mg/kg	3.22	1.61 mg/kg	0.000161 %			
	005-008-00-8	215-125-8	1303-86-2								
5	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
6	 chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				36 mg/kg	2.27	81.72 mg/kg	0.00817 %			
	024-017-00-8										
7	 copper { dicopper oxide; copper (I) oxide }				21 mg/kg	1.126	23.644 mg/kg	0.00236 %			
	029-002-00-X	215-270-7	1317-39-1								
8	 lead { lead chromate }			1	9.8 mg/kg	1.56	15.286 mg/kg	0.00098 %			
	082-004-00-2	231-846-0	7758-97-6								
9	 nickel { nickel chromate }				35 mg/kg	2.976	104.169 mg/kg	0.0104 %			
	028-035-00-7	238-766-5	14721-18-7								
10	 selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
11	 vanadium { divanadium pentaoxide; vanadium pentoxide }				37 mg/kg	1.785	66.052 mg/kg	0.00661 %			
	023-001-00-8	215-239-8	1314-62-1								
12	 zinc { zinc chromate }				45 mg/kg	2.774	124.837 mg/kg	0.0125 %			
	024-007-00-3	236-878-9	13530-65-9								
13	 cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
14	 benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
23	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-581-5	85-01-8								
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
25	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-912-4	206-44-0								
26	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-927-3	129-00-0								
27	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
28	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
29	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
31	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-893-2	193-39-5								
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
35	pH				7.2 pH		7.2 pH	7.2 pH			
			PH								
Total:									0.0556 %		

Key

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

Classification of sample: WS03[2]



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

Sample details

Sample name:	LoW Code:
WS03[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.00 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				14 mg/kg	1.32	18.485 mg/kg	0.00185 %			
	033-003-00-0	215-481-4	1327-53-3								
2	barium { barium oxide }				100 mg/kg	1.117	111.651 mg/kg	0.0112 %			
		215-127-9	1304-28-5								
3	beryllium { beryllium oxide }				1 mg/kg	2.775	2.775 mg/kg	0.000278 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				0.9 mg/kg	3.22	2.898 mg/kg	0.00029 %			
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				35 mg/kg	2.27	79.45 mg/kg	0.00795 %			
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				34 mg/kg	1.126	38.28 mg/kg	0.00383 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	50 mg/kg	1.56	77.991 mg/kg	0.005 %			
	082-004-00-2	231-846-0	7758-97-6								
9	nickel { nickel chromate }				36 mg/kg	2.976	107.146 mg/kg	0.0107 %			
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				38 mg/kg	1.785	67.837 mg/kg	0.00678 %			
	023-001-00-8	215-239-8	1314-62-1								
12	zinc { zinc chromate }				66 mg/kg	2.774	183.094 mg/kg	0.0183 %			
	024-007-00-3	236-878-9	13530-65-9								
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
14	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				0.08 mg/kg		0.08 mg/kg	0.000008 %		
		201-469-6	83-32-9							
22	fluorene				0.05 mg/kg		0.05 mg/kg	0.000005 %		
		201-695-5	86-73-7							
23	phenanthrene				0.46 mg/kg		0.46 mg/kg	0.000046 %		
		201-581-5	85-01-8							
24	anthracene				0.07 mg/kg		0.07 mg/kg	0.000007 %		
		204-371-1	120-12-7							
25	fluoranthene				0.36 mg/kg		0.36 mg/kg	0.000036 %		
		205-912-4	206-44-0							
26	pyrene				0.35 mg/kg		0.35 mg/kg	0.000035 %		
		204-927-3	129-00-0							
27	benzo[a]anthracene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				0.28 mg/kg		0.28 mg/kg	0.000028 %		
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				0.19 mg/kg		0.19 mg/kg	0.000019 %		
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				0.17 mg/kg		0.17 mg/kg	0.000017 %		
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				0.11 mg/kg		0.11 mg/kg	0.000011 %		
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				0.06 mg/kg		0.06 mg/kg	0.000006 %		
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				0.14 mg/kg		0.14 mg/kg	0.000014 %		
		205-883-8	191-24-2							
35	pH				7.8 pH		7.8 pH	7.8 pH		
			PH							
Total:								0.0698 %		

Key

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

Classification of sample: WS02[2]



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

Sample details

Sample name:	LoW Code:
WS02[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				8.7 mg/kg	1.32	11.487 mg/kg	0.00115 %			
	033-003-00-0	215-481-4	1327-53-3								
2	barium { barium oxide }				75 mg/kg	1.117	83.738 mg/kg	0.00837 %			
		215-127-9	1304-28-5								
3	beryllium { beryllium oxide }				0.66 mg/kg	2.775	1.832 mg/kg	0.000183 %			
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				0.6 mg/kg	3.22	1.932 mg/kg	0.000193 %			
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				37 mg/kg	2.27	83.99 mg/kg	0.0084 %			
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	20.266 mg/kg	0.00203 %			
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	37 mg/kg	1.56	57.713 mg/kg	0.0037 %			
	082-004-00-2	231-846-0	7758-97-6								
9	nickel { nickel chromate }				23 mg/kg	2.976	68.454 mg/kg	0.00685 %			
	028-035-00-7	238-766-5	14721-18-7								
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %			<LOD
	034-002-00-8										
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				39 mg/kg	1.785	69.622 mg/kg	0.00696 %			
	023-001-00-8	215-239-8	1314-62-1								
12	zinc { zinc chromate }				73 mg/kg	2.774	202.513 mg/kg	0.0203 %			
	024-007-00-3	236-878-9	13530-65-9								
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %			<LOD
	006-007-00-5										
14	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
23	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
25	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
26	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
27	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
35	pH				7.9 pH		7.9 pH	7.9 pH		
			PH							
Total:								0.0615 %		

Key

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

Classification of sample: BH08[2]

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

Sample details

Sample name:	LoW Code:
BH08[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				110	mg/kg	1.117	122.816	mg/kg	0.0123 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.5	mg/kg	2.775	1.388	mg/kg	0.000139 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				22	mg/kg	2.27	49.94	mg/kg	0.00499 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				56	mg/kg	1.126	63.05	mg/kg	0.0063 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	140	mg/kg	1.56	218.374	mg/kg	0.014 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				15	mg/kg	2.976	44.644	mg/kg	0.00446 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				29	mg/kg	1.785	51.77	mg/kg	0.00518 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				59	mg/kg	2.774	163.675	mg/kg	0.0164 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				162.1 mg/kg		162.1 mg/kg	0.0162 %		
			TPH							
19	naphthalene				0.12 mg/kg		0.12 mg/kg	0.000012 %		
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				0.55 mg/kg		0.55 mg/kg	0.000055 %		
		201-469-6	83-32-9							
22	fluorene				0.81 mg/kg		0.81 mg/kg	0.000081 %		
		201-695-5	86-73-7							
23	phenanthrene				9.9 mg/kg		9.9 mg/kg	0.00099 %		
		201-581-5	85-01-8							
24	anthracene				2.7 mg/kg		2.7 mg/kg	0.00027 %		
		204-371-1	120-12-7							
25	fluoranthene				11 mg/kg		11 mg/kg	0.0011 %		
		205-912-4	206-44-0							
26	pyrene				8.8 mg/kg		8.8 mg/kg	0.00088 %		
		204-927-3	129-00-0							
27	benzo[a]anthracene				4.2 mg/kg		4.2 mg/kg	0.00042 %		
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				4 mg/kg		4 mg/kg	0.0004 %		
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				4.3 mg/kg		4.3 mg/kg	0.00043 %		
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				1.6 mg/kg		1.6 mg/kg	0.00016 %		
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				3.7 mg/kg		3.7 mg/kg	0.00037 %		
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				2 mg/kg		2 mg/kg	0.0002 %		
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				0.5 mg/kg		0.5 mg/kg	0.00005 %		
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				1.9 mg/kg		1.9 mg/kg	0.00019 %		
		205-883-8	191-24-2							
35	pH				8.7 pH		8.7 pH	8.7 pH		
			PH							
Total:								0.0894 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product. Found in soils with natural moisture content. Unlikely to be flammable.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0162%)

Classification of sample: WS04[2]


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

Sample details

Sample name:	LoW Code:
WS04[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				5.5	mg/kg	1.32	7.262	mg/kg	0.000726 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				160	mg/kg	1.117	178.641	mg/kg	0.0179 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.99	mg/kg	2.775	2.748	mg/kg	0.000275 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.3	mg/kg	3.22	0.966	mg/kg	0.0000966 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				0.8	mg/kg	1.142	0.914	mg/kg	0.0000914 %		
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				25	mg/kg	2.27	56.75	mg/kg	0.00568 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				33	mg/kg	1.126	37.154	mg/kg	0.00372 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	28	mg/kg	1.56	43.675	mg/kg	0.0028 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				44	mg/kg	2.976	130.956	mg/kg	0.0131 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				31	mg/kg	1.785	55.341	mg/kg	0.00553 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				73	mg/kg	2.774	202.513	mg/kg	0.0203 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
23	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
25	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
26	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
27	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
35	pH				8.3 pH		8.3 pH	8.3 pH		
			PH							
Total:								0.0735 %		

Key

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

Classification of sample: WS06[2]

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

Sample details

Sample name:	LoW Code:
WS06[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.274%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.274%)

Hazard properties (substances considered hazardous until shown otherwise)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.274%)

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	26.407	mg/kg	0.00264 %		
	033-003-00-0	215-481-4	1327-53-3								
2	barium { barium oxide }				280 mg/kg	1.117	312.622	mg/kg	0.0313 %		
		215-127-9	1304-28-5								
3	beryllium { beryllium oxide }				1.8 mg/kg	2.775	4.996	mg/kg	0.0005 %		
	004-003-00-8	215-133-1	1304-56-9								
4	boron { diboron trioxide; boric oxide }				1.6 mg/kg	3.22	5.152	mg/kg	0.000515 %		
	005-008-00-8	215-125-8	1303-86-2								
5	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				23	mg/kg	2.27	52.21	mg/kg	0.00522 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				74	mg/kg	1.126	83.316	mg/kg	0.00833 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	340	mg/kg	1.56	530.337	mg/kg	0.034 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				23	mg/kg	2.976	68.454	mg/kg	0.00685 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				38	mg/kg	1.785	67.837	mg/kg	0.00678 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				260	mg/kg	2.774	721.278	mg/kg	0.0721 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
15	toluene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
16	ethylbenzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
18	TPH (C6 to C40) petroleum group				2740.2	mg/kg		2740.2	mg/kg	0.274 %		
			TPH									
19	naphthalene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
	601-052-00-2	202-049-5	91-20-3									
20	acenaphthylene				0.55	mg/kg		0.55	mg/kg	0.000055 %		
		205-917-1	208-96-8									
21	acenaphthene				15	mg/kg		15	mg/kg	0.0015 %		
		201-469-6	83-32-9									
22	fluorene				11	mg/kg		11	mg/kg	0.0011 %		
		201-695-5	86-73-7									
23	phenanthrene				100	mg/kg		100	mg/kg	0.01 %		
		201-581-5	85-01-8									
24	anthracene				28	mg/kg		28	mg/kg	0.0028 %		
		204-371-1	120-12-7									
25	fluoranthene				140	mg/kg		140	mg/kg	0.014 %		
		205-912-4	206-44-0									
26	pyrene				110	mg/kg		110	mg/kg	0.011 %		
		204-927-3	129-00-0									
27	benzo[a]anthracene				48	mg/kg		48	mg/kg	0.0048 %		
	601-033-00-9	200-280-6	56-55-3									
28	chrysene				46	mg/kg		46	mg/kg	0.0046 %		
	601-048-00-0	205-923-4	218-01-9									
29	benzo[b]fluoranthene				54	mg/kg		54	mg/kg	0.0054 %		
	601-034-00-4	205-911-9	205-99-2									
30	benzo[k]fluoranthene				21	mg/kg		21	mg/kg	0.0021 %		
	601-036-00-5	205-916-6	207-08-9									
31	benzo[a]pyrene; benzo[def]chrysene				41	mg/kg		41	mg/kg	0.0041 %		
	601-032-00-3	200-028-5	50-32-8									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
32	indeno[123-cd]pyrene	205-893-2	193-39-5		20 mg/kg		20 mg/kg	0.002 %		
33	dibenz[a,h]anthracene	601-041-00-2	200-181-8		4.6 mg/kg		4.6 mg/kg	0.00046 %		
34	benzo[ghi]perylene	205-883-8	191-24-2		23 mg/kg		23 mg/kg	0.0023 %		
35	pH		PH		9.3 pH		9.3 pH	9.3 pH		
Total:								0.511 %		

Key

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

Classification of sample: BH01[2]

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

Sample details

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

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				7.5	mg/kg	1.32	9.902	mg/kg	0.00099 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				85	mg/kg	1.117	94.903	mg/kg	0.00949 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.79	mg/kg	2.775	2.193	mg/kg	0.000219 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				<0.2	mg/kg	3.22	<0.644	mg/kg	<0.0000644 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				37	mg/kg	2.27	83.99	mg/kg	0.0084 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				23	mg/kg	1.126	25.895	mg/kg	0.00259 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	21	mg/kg	1.56	32.756	mg/kg	0.0021 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				34	mg/kg	2.976	101.193	mg/kg	0.0101 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				38	mg/kg	1.785	67.837	mg/kg	0.00678 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				46	mg/kg	2.774	127.611	mg/kg	0.0128 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
23	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
25	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
26	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
27	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
28	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
29	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
30	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
31	benzo[a]pyrene; benzo[def]chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
32	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
35	pH				8.7 pH		8.7 pH	8.7 pH		
			PH							
Total:								0.0569 %		

Key

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

Classification of sample: WS15



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

Sample details

Sample name:	LoW Code:
WS15	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				9.6	mg/kg	1.32	12.675	mg/kg	0.00127 %		
	033-003-00-0	215-481-4	1327-53-3									
2	barium { barium oxide }				73	mg/kg	1.117	81.505	mg/kg	0.00815 %		
		215-127-9	1304-28-5									
3	beryllium { beryllium oxide }				0.69	mg/kg	2.775	1.915	mg/kg	0.000191 %		
	004-003-00-8	215-133-1	1304-56-9									
4	boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.288	mg/kg	0.000129 %		
	005-008-00-8	215-125-8	1303-86-2									
5	cadmium { cadmium oxide }				<0.2	mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
6	chromium { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				24	mg/kg	2.27	54.48	mg/kg	0.00545 %		
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				31	mg/kg	1.126	34.903	mg/kg	0.00349 %		
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	80	mg/kg	1.56	124.785	mg/kg	0.008 %		
	082-004-00-2	231-846-0	7758-97-6									
9	nickel { nickel chromate }				21	mg/kg	2.976	62.502	mg/kg	0.00625 %		
	028-035-00-7	238-766-5	14721-18-7									
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
	034-002-00-8											
11	vanadium { divanadium pentaoxide; vanadium pentoxide }				31	mg/kg	1.785	55.341	mg/kg	0.00553 %		
	023-001-00-8	215-239-8	1314-62-1									
12	zinc { zinc chromate }				63	mg/kg	2.774	174.771	mg/kg	0.0175 %		
	024-007-00-3	236-878-9	13530-65-9									
13	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
14	benzene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
15	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
17	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<5 mg/kg		<5 mg/kg	<0.0005 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
18	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
19	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
21	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
22	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								
23	phenanthrene				0.09 mg/kg		0.09 mg/kg	0.000009 %			
		201-581-5	85-01-8								
24	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		204-371-1	120-12-7								
25	fluoranthene				0.13 mg/kg		0.13 mg/kg	0.000013 %			
		205-912-4	206-44-0								
26	pyrene				0.13 mg/kg		0.13 mg/kg	0.000013 %			
		204-927-3	129-00-0								
27	benzo[a]anthracene				0.07 mg/kg		0.07 mg/kg	0.000007 %			
	601-033-00-9	200-280-6	56-55-3								
28	chrysene				0.08 mg/kg		0.08 mg/kg	0.000008 %			
	601-048-00-0	205-923-4	218-01-9								
29	benzo[b]fluoranthene				0.09 mg/kg		0.09 mg/kg	0.000009 %			
	601-034-00-4	205-911-9	205-99-2								
30	benzo[k]fluoranthene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
	601-036-00-5	205-916-6	207-08-9								
31	benzo[a]pyrene; benzo[def]chrysene				0.07 mg/kg		0.07 mg/kg	0.000007 %			
	601-032-00-3	200-028-5	50-32-8								
32	indeno[123-cd]pyrene				0.05 mg/kg		0.05 mg/kg	0.000005 %			
		205-893-2	193-39-5								
33	dibenz[a,h]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
34	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-883-8	191-24-2								
35	pH				7.3 pH		7.3 pH	7.3 pH			
			PH								
Total:									0.0594 %		

Key

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

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from ECHA's C&L Inventory Database, Sigma Aldrich SDS dated 6/2/20
Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/88825>
Data source date: 02 Apr 2020
Hazard Statements: Acute Tox. 3; H301 , Skin Corr. 1B; H314 , Eye Dam. 1; H318 , Acute Tox. 1; H332

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

GB MCL index number: 023-001-00-8
Description/Comments: Hazard statements H301, H330, H350 added by HazWasteOnline due to ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List]. Substance has therefore been self-classified.
Additional Hazard Statement(s): Carc. 1B; H350 , Acute Tox. 3; H301 , Acute Tox. 2; H330
Reason for additional Hazards Statement(s):
20 Sep 2022 - Carc. 1B; H350 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be Carc. 1B; H350. The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].
Substance has therefore been self-classified.
28 Sep 2022 - Acute Tox. 3; H301 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 3; H301". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].
Substance has therefore been self-classified.
28 Sep 2022 - Acute Tox. 2; H330 hazard statement sourced from: ATP 18 (Regulation (EU) 2022/692) considers vanadium pentoxide to be "Acute tox 2; H330". The GB MCL Agency has reached the same opinion [but is yet to formerly make this change to the MCL List].
Substance has therefore been self-classified.

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

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

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

GB MCL index number: 601-023-00-4
Description/Comments:
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

■ **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

• **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

barium {barium oxide}

No history of metal works or similar. Found in soils.

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics (edit as required)

boron {diboron trioxide; boric oxide}

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

cadmium {cadmium oxide}

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

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

Worst case scenario

copper {dicopper oxide; copper (I) oxide}

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

lead {lead chromate}

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

nickel {nickel chromate}

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

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

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

vanadium {divanadium pentaoxide; vanadium pentoxide}

Worst Case Scenario

zinc {zinc chromate}

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

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

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

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**
HazWasteOnline Classification Engine Version: 2023.304.5791.10713 (31 Oct 2023)
HazWasteOnline Database: 2023.304.5791.10713 (31 Oct 2023)

This classification utilises the following guidance and legislation:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021

Appendix G – Material reuse and import criteria

General

All material that is imported into site, including geotechnical fill, topsoil and subsoil for landscaping, is required to meet the parameters set out in this specification.

Landscaping Soil Specification

It is not anticipated that any topsoil/subsoil that is presently on site will be retained due to its chemical and physical composition. If any material is to be retained and reused, it should be stripped and stored in stockpiles which are separate from other stockpiled soils. Topsoil must not be stockpiled for longer than two years, after two years the stockpile is to be excavated, reconditioned and formed into a new stockpile.

The existing site topsoil has not been characterised to date and will therefore require characterisation as outlined below.

Topsoil and Subsoil Specification

All topsoil and subsoil to be used as part of the landscaping areas must comply with the physical, biological and chemical parameters set out in the following sections.

All topsoil must comply with British Standard 3882:2015 as a multipurpose soil (as set out in Table 1 of that Standard). The soil should be a clay loam as defined in BS3882:2015. The soil is to have a defined granular or blocky structure and be free from non-soil material i.e. brick, other building materials, wastes, hydrocarbons, plant matter, roots and rhizomes of perennial weeds and any other foreign matter or material or substance that would render the topsoil unsuitable for use.

Table 1 Physical Parameters

Determinand	Unit	Sub soil Value	Topsoil Value
Clay (less than 0.002mm)	%	5 - 40	5 – 27
Silt (0.002 - 0.06mm)	%	5 - 60	5 -45
Sand (0.06 - 2.00mm)	%	20 – 65	50 - 90
Max. Stone Content (2 - 50mm)	% by weight	<50	<35
Max. Stone Size in any dimension	mm	75	30

Soil Quality Parameters

Topsoil must contain sufficient nutrients that it allows plant growth as detailed in Table 2.

Table 2 Soil Quality Parameters (suitability as a growing medium related)

Determinand	Unit	Concentration
pH value	pH units	5.0 - 8.0
Electrical Conductivity (1:2.5 extract)	µS/cm	100 to 1500
Organic Matter	%	4.0 – 15.0
Total Nitrogen	%	>0.2
Extractable Phosphorus	mg/l	>26
Extractable Potassium	mg/l	>240
Extractable Magnesium	mg/l	>50

Chemical (contamination related) Parameters

Table 3 below details the chemical compounds that require testing for each sample and also details the maximum permissible average concentration of those compounds (i.e. the US⁹⁵ average value for an imported material batch must not exceed these values for the material to be accepted). A batch is considered to be a material that has the same origin (i.e. is made up of the same material and/or is from the same source location).

In the first instance the values have been derived from the LQM Suitable for Use Levels (S4UL) or the phytotoxic values and with lead C4SL values have been used.

Table 3 - Chemical (contamination related) Parameters

Determinand	Concentration (mg/kg)	Determinand	Concentration (mg/kg)
Arsenic	40 ¹	Cadmium	85 ¹
Chromium (total)	910 ¹	Lead	310 ²
Mercury	56 ¹	Selenium	430 ¹
Boron	11000 ¹	Copper	200 ³
Nickel	40 ¹	Zinc	300 ³
Naphthalene	2.3 ¹	Benzo[a]anthracene	11 ¹
Acenaphthylene	2900 ¹	Chrysene	30 ¹
Acenaphthene	3000 ¹	Benzo[b]fluoranthene	3.9 ¹
Fluorene	2800 ¹	Benzo[k]fluoranthene	110 ¹
Phenanthrene	1300 ¹	Benzo[a]pyrene	3.2 ¹
Anthracene	31000 ¹	Indeno[123-cd]pyrene	45 ¹
Fluoranthene	1500 ¹	Dibenzo[ah]anthracene	0.31 ¹
Pyrene	3700 ¹	Benzo[ghi]perylene	360 ¹
TPH aliphatic >C5-C6	42 ¹	TPH aromatic >C5-C7	370 ¹
TPH aliphatic >C6-C8	100 ¹	TPH aromatic >C7-C8	860 ¹
TPH aliphatic >C8-C10	27 ¹	TPH aromatic >C8-C10	47 ¹

Determinand	Concentration (mg/kg)	Determinand	Concentration (mg/kg)
TPH aliphatic >C10-C12	130 ¹	TPH aromatic >C10-C12	250 ¹
TPH aliphatic >C12-C16	1100 ¹	TPH aromatic >C12-C16	1800 ¹
TPH aliphatic >C16-C35	65000 ¹	TPH aromatic >C16-C21	1900 ¹
Free cyanide	25 ¹	TPH aromatic >C21-C35	1900 ¹
Benzene	0.38	Toluene	880 ¹
Ethylbenzene	83 ¹	Xylene	79 ¹
		Asbestos	No detectable fibres

¹ Value derived from LQM Suitable for Use Levels

² Value derived from Category 4 Screening Levels

³ Value derived from British Standard BS3882:2007

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