

## ENVIRONMENT

Redhouse Estates Ltd  
Vicars Croft  
Conery Lane, Whatto

Phase 2 Environmental Assessment and  
Remediation Strateg

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Vicars Croft  
Conery Lane, Whatton  
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Birmingham  
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB  
T: 0121 233 3322

Leeds  
Whitehall Waterfront, 2 Riverside Way, Leeds  
LS1 4EH  
T: 0113 233 8000

London  
11 Borough High Street  
London, SE1 9SE  
T: 0207 407 3879

Manchester  
11, Portland Street, Manchester M1 3HU  
T: 0161 233 4260

**Nottingham**  
Waterfront House, Station Street, Nottingham NG2 3DQ  
T: 0115 924 1100

November 2023

## DOCUMENT ISSUE RECORD

<b>Document Number:</b>	VCW-BWB-ZZ-XX-RP-YE-0002_Ph2		
<b>BWB Reference:</b>	232723		
<b>Author:</b>	Chris Rhodes BSc MSc (Hons)	Principal Geo- Environmental Consultant	
<b>Reviewer:</b>	Richard Robinson BSc (Hons) MCIWEM	Associate Director (Service Manager)	
<b>Approver:</b>	Tim Hull BSc MSc CGeol FGS SiLC SQP	Technical Manager	

## REVISION CONTROL

Revision	Date of Issue	Status	Update Notes:	Updated:	Approved:
P1	Nov 23	S2	-	-	-

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## EXECUTIVE SUMMARY

EXECUTIVE SUMMARY	
Site Address	Vicars Croft, Conery Lane, Whatton.
Site Setting	The site currently comprises a steel framed barn with brick walls in the front and a storage shed in the north. The barn is used for maintenance of agricultural machinery and contains a large diesel tank of approximately 10,000 litres, numerous drums of oil up to 205 litres, and containers of herbicides and pesticides up to 20 litres.
Published Ground Conditions	The site is directly underlain by Arden Sandstone Formation bedrock (part of the Mercia Mudstone Group, Secondary A Aquifer), with no superficial deposits.
Site Investigation	Ground investigation comprising five dynamic sampler boreholes and chemical laboratory analysis has been completed at the site.
Ground Conditions Encountered	Ground conditions have been found to comprise limited Made Ground to a maximum depth of 0.7m below ground level overlying weathered soil of the Mercia Mudstone Formation. Groundwater was not encountered during the investigation. No visual or olfactory evidence of contamination was recorded during the ground investigation with the exception of localised clinker.
Environmental Appraisal	<p>Laboratory analysis did not identify significantly elevated contaminant concentrations associated with the identified contaminant linkage. Elevated concentrations of PAH were recorded in the Made Ground locations. Comparison to the Defra C4SL levels have demonstrated that the PAH concentrations do not represent a significant risk to human health. Further to raise site levels, imported material will be placed over the thin layer of Made Ground as part of the development further separating the slightly impacted soil from human receptors.</p> <p>A risk to controlled water receptors has not been identified at the site.</p> <p>Soil TOC analysis indicated that the Made Ground represented a source of hazardous ground gasses, commensurate with a CS2 classification however Made Ground was not recorded under the area of the proposed slab. If the new floor slab is founded on natural soils, a CS1 classification is required. If Made Ground remains under the floor slab, a CS2 classification should be adopted.</p>
This summary should be read in conjunction with BWB's full report (ref. VCW-BWB-ZZ-XX-RP-YE-0002_Ph2) and reflects an assessment of the Site based on information received by BWB at the time of production.	

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## 1. INTRODUCTION

### Instruction

- 1.1 BWB Consulting (BWB) was instructed by Redhouse Estates Ltd (the Client) to carry out a Phase 2 Environmental Assessment and Remediation Strategy. Details of the project brief are included in BWB proposal reference 230825/P01/01/232723/KES/RTR dated August 2023.
- 1.2 The proposed development is anticipated to comprise the conversion of the existing barn and farmyard into a residential property with associated parking, garden, and landscaping. An indicative masterplan is included within **Appendix 1**.
- 1.3 It is proposed that the existing ground floor slab for the barn will be retained with insulation damp proof course and new floor slab cast on top. No extensions to the barn are proposed. Externally, to accommodate site levels, it is anticipated that much of the area immediately surrounding the barn will be raised, using imported natural materials, by around 250mm.

### Previous Reports

- 1.4 The following geo-environmental reports have previously been completed for the site:  
  
*'Phase 1 Geo-Environmental Assessment, Vicars Croft, Conery Lane, Whatton'* by BWB Consulting for Redhouse Estates Ltd, reference VCW-BWB-ZZ-XX-RP-YE-0001\_Ph1, dated August 2023.

### Objectives

- 1.5 The objectives of the report are to assess:  
  
The prevailing ground and groundwater conditions across the site;  
The potential presence and extent of contamination in shallow soil beneath the site;  
The significance and magnitude of the observed contamination through comparison of analytical data to appropriate published environmental screening criteria;  
The strength properties of the soil beneath the site to enable foundation design; and  
The ground gas regime beneath the site.
- 1.6 The above objectives will allow the preliminary Conceptual Site Model presented in the Phase 1 report to be verified and updated. The report has been completed in accordance with BS10175:2011(+A2:2017) 'Investigation of Potentially Contaminated Sites, Code of Practice' and EA Guidance on Risk Management of Land Contamination <https://www.gov.uk/government/publications/land-contamination-risk-management-lcm>.
- 1.7 This report presents the information obtained from a desk study and the ground investigations. The report, together with the associated Figures and

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Appendices, provides a Ground Investigation Report (GIR), as defined in BS EN 1997-1:2004 and BS EN 1997-2:2007

### **Scope of Works**

1.8 The ground investigation scope of works was completed on 8<sup>th</sup> October 2023 and comprised the following:

Non-intrusive survey of excavation locations for underground utilities;

Five dynamic sampler boreholes; and

Chemical analysis of soils and groundwater.



## 2. THE SITE

### Site Location

- 2.1 The site is located at Vicars Croft, Conery Lane, Whatton, central grid reference 473139, 338169. The location of the site is shown in Figure 2.1.

Figure 2.1: Site Location Plan



### Site Description

- 2.2 The site is an irregularly shaped area of approximately 0.25 ha. It is flat across the site. The site currently comprises a steel framed barn with brick walls in the front half, and a storage shed in the north. The barn has potential asbestos containing roof material and has been used in the past for the small scale storage of various products and chemicals. There is also an internal tank present with evidence of oil spillage around the inlet and dispensing valves.

- 2.3 A site layout plan is presented in **Drawing 1**.

### **Published Geology**

- 2.4 British Geological Survey (BGS) mapping for the site indicates that the site is directly underlain by Arden Sandstone Formation bedrock (part of the Mercia Mudstor Group), with no superficial deposits mapped. Made Ground is expected across the site around the existing buildings and areas of hardstanding. The Edwalton Member is mapped outcropping to the north of the site.

### **Hydrogeology**

- 2.5 The underlying ground conditions have been classified by the Environm as a Secondary A Aquifer. The Edwalton Member is a Secondary B Aquifer.

### **Hydrology**

- 2.6 The closest surface water feature to the site is the River Smite/Devon, 400m to the west of the site, flowing to the northeast.

### 3. PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

3.1 The preliminary conceptual site model from the Phase I Geo-Environmental Assessment is reproduced in **Tables 3:1 – 3:3**.

**Table 3:1: Potential Sources of Contamination**

Location	Potential Source	Contaminants of Potential Concern (CoPC)
On site	<b>MADE GROUND</b> associated with the use of the existing buildings and hardstanding at site including oil and chemical storage and maintenance heavy machinery.	<ul style="list-style-type: none"> <li>Heavy metals</li> <li>Inorganics, such as cyanides, sulphates and nitrates</li> <li>pH</li> <li>Asbestos Containing Materials (ACMs)</li> <li>Volatile organic compounds (VOCs)</li> <li>Semi-volatile organic compounds (SVOC) including phenols and polycyclic aromatic hydrocarbons (PAHs)</li> <li>Petroleum hydrocarbons</li> <li>Herbicides and pesticides</li> <li>Methane, carbon dioxide</li> </ul>

**Table 3:2: Relevant Potential Pathways and Receptors**

Receptors	Pathways
<b>Human Health:</b>  Future site users (residential) Intrusive maintenance workers	<ul style="list-style-type: none"> <li>Dermal contact with soil or dust</li> <li>Incidental ingestion of soil and/or dust</li> <li>Inhalation of dust and/or fibres</li> <li>Ingestion of contaminated vegetables and attached to vegetables</li> <li>Inhalation of vapours</li> <li>Migration and accumulation of ground gas in enclosed spaces leading to inhalation or explosion</li> </ul>
<b>Controlled Waters:</b>  Groundwater (Secondary A Aquifer)	<ul style="list-style-type: none"> <li>Leaching of soil contaminants</li> <li>Vertical and lateral migration</li> </ul>

Table 3:3: Preliminary Conceptual Site Model

Source	Pathway	Receptor	Con	Prob	Risk
On-site sources as detailed in Table 3:1.	Dermal contact with, and incidental ingestion of soil and/or dust.	Future site users (residential) Intrusive maintenance workers	Md	Lw	M/L
	Inhalation of dust and/or fibres.	Intrusive maintenance workers			
	Inhalation of vapours.	Future site users (residential)			
	Ingestion of contaminated vegetables and/or soil attached to vegetables.	Future site users (residential)			
	Migration and accumulation of ground gases in enclosed spaces leading to asphyxiation (carbon dioxide) or explosion (methane).	Future site users (residential)	Md	UI	L
	Leaching and permeation through soil profile.	Groundwater: Underlying Secondary A Aquifer	Md	UI	L
	Vertical and lateral migration of contaminants.				
<p>VH = Very High, H = High, M = Moderate, M/L = Moderate/Low, L = Low, VL = Very Low  KEY: Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor, Hi = High, Li = Likely, Lw = Low Likelihood, UI = Unlikely</p>					

## 4. PHASE II ENVIRONMENTAL AND GEOTECHNICAL GROUND INVESTIGATION

4.1 Intrusive ground investigation works were undertaken on 8<sup>th</sup> October 2023 and comprised the following works:

Clearance of investigation locations by a specialist buried services tracing company;

Collection of coordinates and elevations of exploratory hole locations;

Advancement of five boreholes (DS01 – DS05) by dynamic sampling drilling techniques, to a maximum depth of 3.0m bgl; and

Collection of environmental soil samples for chemical analysis at a UKAS and MCERTS accredited laboratory.

4.2 An exploratory hole location plan is presented as **Drawing 2**. BWB exploratory hole records are presented as **Appendix 2**.

4.3 The site investigation works were carried out in general accordance with the 'Code of Practice for Site Investigations' and BS10175:2011 'Investigation of Potentially Contaminated Sites'.

### Chemical Sampling Strategy

4.4 Investigation locations were positioned adjacent to potential contamination sources identified during the Phase I, as summarised in **Table 4.1**.

**Table 4.1 : Investigation Location Rationale**

Location	Rationale
DS01	Adjacent to 8,000 litre diesel above ground storage tank (AST)
DS02	Adjacent to disused AST
DS03	Adjacent to herbicide drums
DS04	Adjacent to AST and oil dispensing pumps
DS05	Adjacent to soakaway drain.

### Chemical Analytical Strategy

#### Soil Strategy

4.5 Selected soil samples collected from exploratory hole locations were sent to i2 Analytical (UKAS and MCERTS accredited) for chemical analysis. The following chemical analytical testing was undertaken:

Eight soil samples tested for a soil suite (BWB Standard Suite) comprising arsenic, barium, beryllium, water soluble boron, cadmium, chromium, hexavalent chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate (2:1 extract), total phenols, total cyanide, free cyanide, complex cyanide, fraction of

organic carbon, pH, Polycyclic Aromatic Hydrocarbons (PAHs) (United States Environment Protection Agency priority 16 compounds) and Total Petroleum Hydrocarbons (TPH) C6-C40;

Four soil samples tested for TPH speciated to the UK Criteria Working Group (TPHCWG) aliphatic and aromatic compounds;

One sample scheduled for a pesticide and herbicide screen.

Four soil samples for asbestos screening; and

Two soil samples tested for a suite of common leachable contaminants, namely arsenic, barium, beryllium, water soluble boron, cadmium, chromium, copper, lead, mercury, nickel, selenium, vanadium, zinc, water soluble sulphate (2:1 extract), sulphate, total cyanide and pH.

4.6 The results of the soil chemical testing are presented as **Appendix 3**.

## 5. GROUND CONDITIONS ENCOUNTERED

### Geological Summary

- 5.1 The ground conditions recorded confirmed the published geology Phase 1 report comprising limited Made Ground overlying weathered deposits of the Mercia Mudstone Formation. The recorded ground conditions are summarised in Table 5:1.

Table 5:1 : Summary of Ground Conditions

Stratum	Top Depth (m)		Base Depth (m)		Thickness (m)	
	Min	Max	Min	Max	Min	Max
Topsoil/Made Ground	Ground Level		0.2	0.7	0.2	0.7
Mercia Mudstone	0.2	0.7	Not Proven			

### Geological Descriptions

#### Topsoil/Made Ground

- 5.2 Limited Made Ground was encountered within all exploratory holes at the site beneath the Topsoil at the site with thicknesses ranging between 0.20 and 0.7m.
- 5.3 Made Ground typically comprised sandy clayey gravel, with gravel of brick, quartzite, concrete and occasionally clinker and roadstone. At DS01, inside the barn, concrete was recorded at ground level to a depth of 0.15m. At DS03, the Topsoil/Made Ground was recorded to contain rare rootlets, with a layer of brick underneath.
- 5.4 A possible former subsoil, encountered as dark brown very soft silty clay or silty sand was recorded at DS02 (0.3 – 0.5m) and DS05 (0.4 – 0.7m) which was considered to represent a former subsoil layer.
- 5.5 Arisings at DS01(0.25 – 0.65m) were considered to potentially be reworked.

#### Mercia Mudstone

- 5.6 Weathered deposits of the Mercia Mudstone were recorded under the Made Ground in all locations. Arisings were commonly encountered as soft to firm reddish brown mottled light grey slightly silty clay, considered to be representative of the Edwalton Member.
- 5.7 A slightly gravelly sand layer was recorded at DS03 (0.3 – 0.4m) and DS04 (0.5 – 1.1m) with gravels of weak sandstone encountered. A slightly clayey sand band was recorded at DS05 (0.7 – 0.8m) and DS02 (0.5 – 1.15m). The shallow granular soils could be representative of the base of the Arden Sandstone.

## Hydrogeology

- 5.8 Groundwater was not encountered during the investigation. Slightly damp soils were recorded below 2.0m in DS05, which coincided with the base of the soakaway (inferred to be c. 2m bgl based on GPR survey).

## Contamination Observations

- 5.9 No contamination observations were noted during the ground investigation, with the exception of localised clinker.



## 6. GROUND GAS ASSESSMENT

### Ground Gas Sources

- 6.1 The desk study identified the potential presence of Made Ground to represent a source of low-level hazardous ground gas generation.
- 6.2 The ground investigation identified minimal Made Ground across the site. Where present, the anthropogenic inclusions were predominantly brick, and not indicated to contain degradable or organic material. On this basis, there is not considered to be a significant source of ground gas present on site.

### Organic Content of Soils

- 6.3 Eight soil samples scheduled for Fraction Organic Carbon (FOC) analysis within both Made Ground and Mercia Mudstone Formation. FOC concentrations ranged between <0.001 up to a maximum of 0.021 (recorded in the Topsoil/Made Ground), which equates to a Total Organic Carbon (TOC) range of 0.1 – 2.1%. The values are summarised below in **Table 6:1**.

**Table 6:1 : Summary of Total Organic Content Levels**

Geology	Location and Depth (m)	TOC Concentration (%)
Topsoil/Made Ground	DS03 at 0.15	2.1
Made Ground	DS01 at 0.4	0.21
	DS02 at 0.2	1.8
	DS04 at 0.2	1.1
	DS05 at 0.2	0.91
Mercia Mudstone	DS01 at 0.8	0.25
	DS04 at 0.7	0.21
	DS05 at 2.5	<0.1

### Risk Assessment

- 6.4 BS8485 (2015 +A1 2019) guidance states that total organic carbon can be utilised to assess ground gas risk where the following can be demonstrated:
  - the preliminary conceptual site model has not identified any high gas generation sources; and
  - the source is made ground that has less than 3m average depth and 5m maximum depth, and with TOC less than the limit for CS3.
- 6.5 Both of these are applicable to the site given the absence of a significant source, and the presence of shallow Made Ground across the site.
- 6.6 Where soil TOC levels are <1.0%, a Characteristic Situation 1 (CS1) categorisation can be applied, where levels of between 1% and 3% are recorded, a CS2 categorisation is considered appropriate.

- 
- 6.7 Based on the information within **Table 6:1**, the highest TOC value was recorded within the Topsoil/Made Ground, as expected. This material will not be under the building footprint and is not considered within this assessment.
- 6.8 The TOC levels within the Made Ground samples are a mix of those below 1% (CS1) and marginally above 1% (CS2), whilst the natural samples are all <1% (CS1).
- 6.9 The existing slab which is to be retained is cast on natural soils and so the proposed development does not require any gas protection measures.

## 7. HUMAN HEALTH RISK ASSESSMENT

- 7.1 Contamination data have been compared to Land Quality Management Suitable for Use Levels (LQM S4ULs) for a residential end use. The soil chemical laboratory results are presented as **Appendix 3**, with screening sheets presented as **Appendix 4**. The criteria includes reference to the LQM/CIEH S4ULs for Human Health Risk Assessment Copyright Land Quality Management Limited reproduced with permission; publication number S4UL3271.
- 7.2 The screening criteria have been developed with the following assumptions which have been changed from the CLEA default parameter set. Soil type is a sandy loam with an organic matter content of 1%. This is considered to be more representative of shallow Made Ground found on most brownfield sites than the CLEA default of 6% organic matter.

### Contaminant Distribution

- 7.3 Concentrations of heavy metals were recorded at relatively low levels, and at a similar order of magnitude across the site, in both Made Ground and natural soils.
- 7.4 Concentrations of hydrocarbons were recorded at low levels within the majority of samples, with BTEX speciated TPH concentrations all below the limits of detection. An increased concentration of Total TPH (1,200mg/kg) was recorded at 0.15m at DS03 within the Topsoil, located away from the potential source of hydrocarbon contamination.
- 7.5 Concentrations of PAH were recorded within the Made Ground samples across the site, with a maximum Total PAH concentration of 47mg/kg recorded at DS02 (0.2m). Detectable concentrations were not recorded within the natural soils.
- 7.6 The pesticide and herbicide screen has not recorded concentrations above the detection limits.
- 7.7 Asbestos was not recorded within any of the samples.

### Pathways

- 7.8 The site is to be developed for residential end use therefore considered to be a female child in the first six years of life and GSACs for residential with plant uptake have been adopted. Exposure pathways considered in this assessment are presented in **Table 7:1**.

**Table 0:1 : Residual Exposure Pathways**

Source:	Shallow Soils			Deep Soils
Pathway	Residential housing with private gardens	Residential housing with communal landscaped area	Residential housing with hard standing areas	Residential housing
Ingestion of Soil			x	x
Ingestion of site derived household dust			x	x
Ingestion of contaminate vegetables		x	x	x
Ingestion of soil attached to vegetables		x	x	x
Dermal contact with Soil			x	x
Dermal contact with site derived household dust			x	x
Inhalation of fugitive soil dust			x	x
Inhalation of fugitive site derived household dust			x	x
Inhalation of vapours outside				
Inhalation of vapours inside				

## Risk Assessment

- 7.9 One slightly elevated pH value has been recorded within the soils at DS03 (0.15m). The slightly increased value (10.4) is considered to reflect the presence of clinker recorded in this sample. Clinker was not identified elsewhere on site. In the context of the proposed development, the pH concentrations are not considered to represent a risk to human health.
- 7.10 One exceedance of total TPH was recorded at DS03 (0.15m). This sample was not located near to one of the hydrocarbon sources and was taken from Topsoil/Made Ground with organic rootlets present. It is considered that the high result is reflective of organic material interfering with laboratory analysis, and not reflective of hydrocarbon impact.
- 7.11 Exceedances of benzo(b)fluoranthene, benzo(a)pyrene and dibenzo(ghi)perylene were recorded within the Top soil/Made Ground at DS03 (0.15m) in the soft landscaped area and DS02 (0.2m) adjacent to a disused AST. The two exceedances are up to twice the LQM screening criteria, however, when the benzo(a)pyrene concentrations are compared to the Defra C4SL levels (5mg/kg), they are not indicative exceedances. Whilst there aren't Defra C4SL levels for benzo(b)fluoranthene and dibenzo(ghi)perylene, they are very similar compounds at very similar orders of magnitude, so it is therefore considered that the localised PAH in the Made Ground represents a very low risk to human health and does not warrant mitigation.

7.12 The Defra C4SL working sheets are presented within **Appendix 5**.

### Summary

7.13 Slightly elevated concentrations of PAH have been recorded in the Made Ground in two locations. Comparison to the Defra C4SL levels have demonstrated that the PAH concentrations do not represent a significant risk to human health. Furthermore, to raise site levels, imported material will be placed over the thin layer of Made Ground, further separating the slightly impacted soils from human receptors.

## 8. CONTROLLED WATERS RISK ASSESSMENT

8.1 No groundwater or surface water testing has been undertaken as part of the risk assessment. However, soil leachability has been undertaken for a number of metals in the Made Ground. The soil leachability results are presented within **Appendix 6**.

8.2 The controlled waters assessment considers the potential impact of on-site contamination to pertinent controlled waters receptors identified at the site including:

Secondary A Aquifer beneath the site within Arden Sandstone Formation;

Secondary B Aquifer within the Edwalton Member; and

River Smite/Devon located 400m west of site.

### Pathways

8.3 Controlled water risk assessment has been undertaken through assessment of leachable concentrations of contaminants in soil referring to exposure pathways considered and referencing **Table 8:1**.

**Table 8:1 : Controlled Water Exposure Pathways**

Controlled Waters Exposure Pathway	Receptor
Leaching of soil contamination into recharge infiltration	
Vertical migration of impacted pore water through unsaturated zone into underlying aquifer	
Horizontal migration of groundwater through aquifer to off site receptors	

8.4 Given the distance to the River Smite/Devon, and the predominantly cohesive nature of the soils, it is considered that the underlying Secondary Aquifer represents the primary receptor. Therefore, the UK Drinking Water Standards (UKDWS) have been adopted when assessing soil leachate concentrations. Where UKDWS screening criteria are absent, the environmental quality standards (EQS) or World Health Organisation Standards (WHO) have been adopted.

### Soil Leachability

8.5 A summary of the soil leachate concentrations and adopted guideline concentrations are presented within **Appendix 6**.

8.6 Marginal exceedances of chromium III (5.2µg/l compared to screening level of 4.7µg/l) and lead (14.0µg/l compared to screening level of 10µg/l) were recorded in the Made Ground at DS03 (0.15m). The concentrations are only marginally above the screening criteria, and considering that the shallow soils are principally cohesive, and shallow groundwater was not encountered, it is unlikely that the low concentrations would migrate towards the deeper aquifers at elevated concentrations.

8.7 It is considered that the site does not pose a risk to controlled waters in the context of the proposed development.

## 9. ENVIRONMENTAL RISK ASSESSMENT

- 9.1 The conceptual site model has been updated based on the findings of the ground investigation. This is presented as **Table 9:1** and further information about the risk classification scheme is included within **Appendix 7**.

**Table 9:1 : Conceptual Site Model**

Source	Pathway	Receptor	Con	Prob	Risk	Mitigation/Investigation
S1: Marginally elevated localised PAH in Made Ground	P1: Direct contact, incidental ingestion and inhalation of particulates.	R1: Construction/ services personnel	Mi	UI	VL	Slightly elevated concentrations of PAH have recorded in the Made Ground in two Comparison to the Defra C4SL levels have demonstrated that the PAH concentrations represent a significant risk to human health. Furthermore, to raise site levels, imported material be placed over the thin layer of Made Ground as of the development further separating the slig impacted soils from human receptors.
		R2: Future site users	Mi	UI	VL	
S2: Accumulation of hazardous ground gasses.	P2: Migration and accumulation of ground gases in enclosed spaces leading to asphyxiation (carbor dioxide) or explosion (methane).	R3: Future site users (residential)	Mr	UI	VL	The TOC levels within the Made Ground samples are mix of those below 1% (CS1) and marginally above 1 (CS2), whilst the natural samples are all <1% (CS1). As the existing slab is to be retained and natural soils, no gas protection measures are requir
<p style="text-align: center;"> <span style="background-color: #ff0000; color: white; padding: 2px;">VH = Very High</span>,  <span style="background-color: #ff6600; color: white; padding: 2px;">H = High</span>,  <span style="background-color: #ff9900; color: white; padding: 2px;">M = Moderate</span>,  <span style="background-color: #ffff00; color: black; padding: 2px;">M/L = Moderate/Low</span>,  <span style="background-color: #99ff99; color: black; padding: 2px;">L = Low</span>,  <span style="background-color: #00ff00; color: black; padding: 2px;">VL = Very Low</span> </p> <p style="text-align: center;">KEY: Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor Hi = High, Li = Likely, Lw = Low Likelihood, UI = Unlikely</p>						
<p><b>Pollutant Linkage Assessment Summary</b></p> <p>When considered in the context of the conceptual site model and the historical activities that have taken place (agricultural usage), the proposed development is considered to pose a Low risk to human health. A risk to controlled waters has not been identified at the site.</p>						



## 10. WASTE MANAGEMENT

### Waste Classification

- 10.1 Soil samples have been characterised against hazardous waste criteria using Hazwasteonline. The results of the waste classification are presented in **Appendix 8**. The assessment indicates that the majority of soils analysed are likely to be classified as non-hazardous, with the exception of the sample at DS03 (0.15m) due to the elevated TPH concentration, associated with inclusions of clinker in the soils at this location. The waste classification assessment only applies to those soils that have been tested. If other soils are to be disposed of off-site then further analysis may be required.
- 10.2 Asbestos has not been found in soils at the site. The presence of visible asbestos containing materials in waste or at concentrations exceeding 0.1% by weight will classify the waste as mixed and require disposal as hazardous waste irrespective of the chemical properties of the waste.
- 10.3 Should any soils require disposal off site an assessment of waste classification of the soils for disposal should be made by a competent person. Further chemical analysis may be required to fully characterise waste soils for disposal to landfill or re-use off site. WAC analysis may be required for disposal of soils as inert or hazardous.

## 11. REMEDIATION STRATEGY

11.1 Based on the conceptual site model, the proposed development has not identified a potential source of contamination which would require remedial or mitigation.

11.2 Proposed remedial measures for the proposed development are set out below.

### Chemical Suitability of Imported Materials

11.3 It is expected that materials will need to be imported to raise levels and provide a suitable growing medium in landscaped areas. To confirm chemical suitability, the imported materials should be chemically analysed. Imported materials for use on site should meet the acceptance criteria presented in **Appendix 9**. To reduce the likelihood of unsuitable materials being imported onto site, chemical laboratory testing certificates should be obtained from the source site and compared to the acceptance criteria prior to importation to ensure that the material complies with the strategy.

11.4 Soil samples should be taken from the imported materials once on site and analysed at a MCERTs and UKAS accredited laboratory for the contaminants listed in **Appendix 9**. Other testing may also be required depending upon the existing and previous uses of the source site. One sample per 250m<sup>3</sup> of material should be tested with a minimum of three per source (thus six or more samples if separate sub soil and Topsoil layers). The results should be compared to the criteria set out in **Appendix 9** to confirm suitability (or otherwise). Additionally, the material should be:

A suitable growing medium (Topsoil only);

Free from obvious contamination (i.e. staining / free product etc.);

Not come from areas where Japanese Knotweed or other invasive or injurious plants are suspected to have been growing;

Not odorous (could be considered a statutory nuisance); and

Free from unsuitable material (e.g. bricks, brick, tiles, metal, timber and glass etc.).

11.5 Soils imported into areas of landscaping may also need to meet the specifications as set out in BS 3882:2015 – Specification for topsoil and requirements for use or BS 8601:2013 - Specification for subsoil and requirements for use where appropriate or as specified by the Landscape Architect.

11.6 The results should be provided to the LPA demonstrating chemical suitability.

### Procedure for Dealing with Unexpected Contamination

11.7 For the duration of the redevelopment, a 'Hotspot Protocol' will need to be implemented at the site to allow ground workers to act upon should they suspect any previously unknown soil and/or groundwater contamination to be present.

11.8 If previously unidentified contamination is encountered, the geo-environmental consultant shall be informed immediately, and the Contaminated Land Officer at Nottingham County Council and EA (if necessary) also informed. Suspected

contaminated materials should be stockpiled separately for subsequent analysis, and if necessary, off-Site disposal. The stockpile should be placed on an impermeable surface to ensure that contaminants do not leach into the underlying soils. Any remediation approach will require agreement with the regulators prior to implementation. The contractor should prepare as part of their method statement a specification to be agreed with the Local Planning Authority setting out the actions to be taken if unforeseen contamination is identified. The specification should comply with all requirements set out in this strategy and cover all plausible situations including, but not be limited to discovery of:

- Underground storage tanks;
- Contaminated perched groundwater; and
- Odorous or visually contaminated soils.

## 12. CONCLUSION AND RECOMMENDATIONS

### Conclusions

- 12.1 Ground conditions have been found to comprise limited Made Ground to maximum depths of 0.7m below ground level overlying weathered soils of the Mercia Mudstone Formation. Groundwater was not encountered during the investigation. No visual or olfactory evidence of contamination was recorded during the ground investigation with the exception of localised clinker.
- 12.2 Laboratory analysis did not identify significantly elevated contaminant concentrations associated with the identified contaminant linkages. Slightly elevated concentrations of PAH were recorded in the Made Ground in two locations. Comparison to the Defra C4SL levels have demonstrated that the PAH concentrations do not represent a significant risk to human health. Furthermore, to raise site levels, imported material will be placed over the thin layer of Made Ground as part of the development further separating the slightly impacted soils from human receptors.
- 12.3 A risk to controlled water receptors has not been identified at the site.
- 12.4 No significant sources of hazardous ground gases have been identified with ground gas protection measures not required for the proposed development.

### Recommendations

- 12.5 Chemical suitability of imported materials should be undertaken for the proposed development with testing to be undertaken in accordance with **Section 11**.
- 12.6 Any previously unforeseen sources of contamination identified during the development should be reported and dealt with in accordance with **Section 11**.

## 13. REFERENCES

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2. British Standards Institution, (BSI), BS 8576:2013, Guidance on investigations for ground gas – Permanent gases and Volatile Organic Compounds (VOCs)
3. British Standards Institution, (BSI), BS 10175:2011+A2:2017, Investigation of Contaminated Sites – Code of Practice
4. British Standards Institution, (BSI), BS5930:2015+A1:2020 Code of practice for ground investigations
5. British Standards Institution, (BSI), BS EN 1997-1:2004+A1:2013, Incorporating corrigendum February 2009, Eurocode 7 – Geotechnical Design – Part 1: General rules.
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8. Building Research Establishment (BRE) BR211, Radon; Guidance on Protective Measures for New Buildings (2015)
9. Construction Industry Research and Information Association (CIRIA), Report 132, A Guide to Safe working on Contaminated Sites (1996).
10. Construction Industry Research and Information Association (CIRIA). 2001, C522 Contaminated land risk assessment, A guide to good practice.
11. Construction Industry Research and Information Association (CIRIA). 2007, Report C665, Assessing Risk Posed by on Hazardous Ground Gases to Buildings
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14. Environment Agency report Land Contamination Risk Management, 2020.
15. Environment Agency 2008, Updated technical background to the CLEA model Science Report – SC050021/SR3
16. Environment Agency 2008, Human health toxicological assessment of contaminants in soil Science Report – SC050021/SR2
17. Environment Agency 2009, CLEA Software (Version 1.05) Handbook Better Regulation Science Programme Science report: SC050021/SR4
18. Environment Agency 2008, A review of body weight and height data used within the Contaminated Land Exposure Assessment model (CLEA) Project SC050021/ Technical Review 1

- 
19. Environment Agency, 2006, Remedial Targets Methodology, Hydrogeological Risk Assessment for Land Contamination
  20. Health and Safety Executive (HSE) 'Protection of workers and the general public during the Development of Contaminated Land (1991).
  21. NHBC Guidance for the Safe Development of Housing on Land Affect Contamination, R&D Publication 66: 2008.

*DRAWINGS*

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**Drawing 1: Site Layout Plan**

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Drawing 2: Investigation Location Plan

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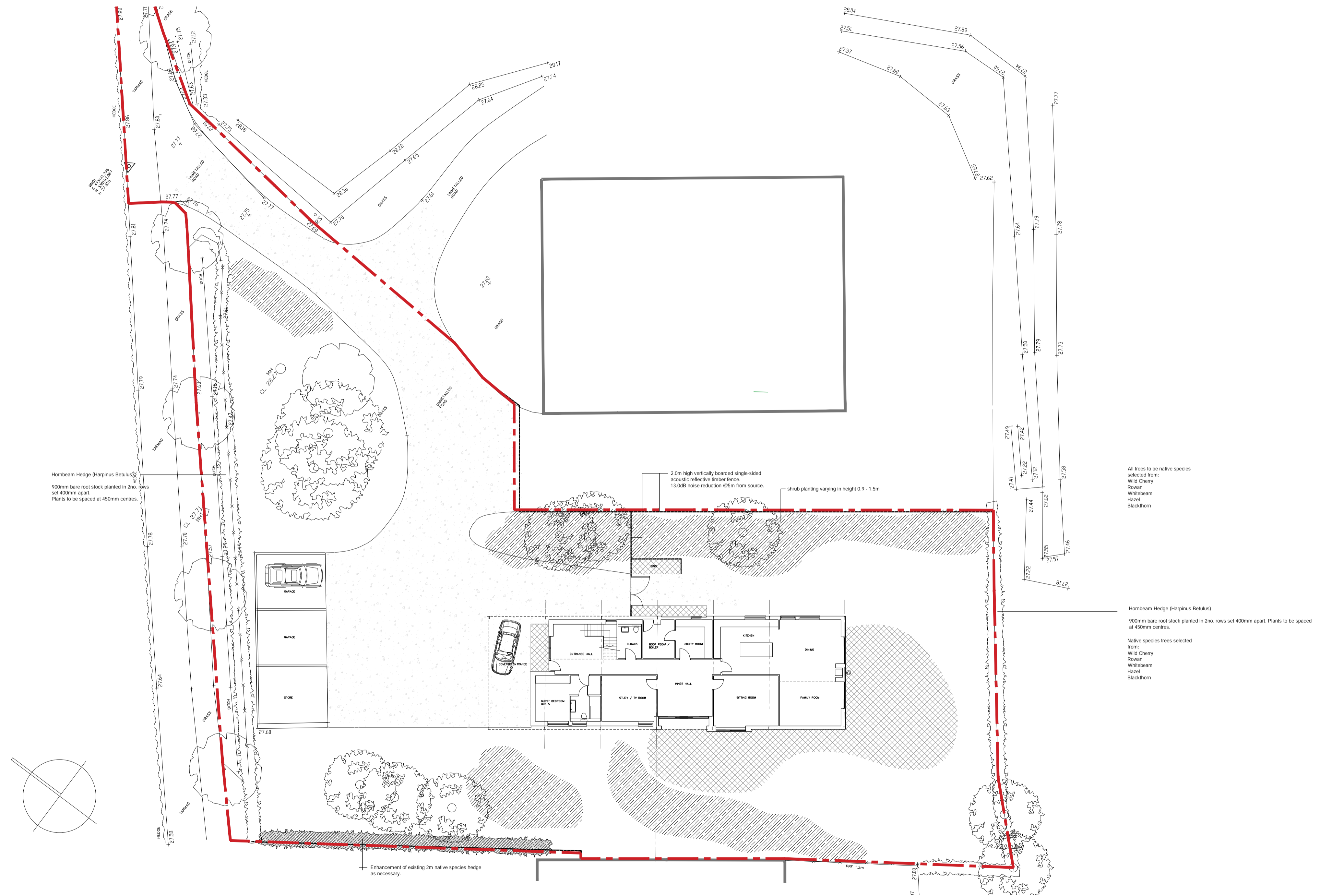
*APPENDICES*

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## Appendix 1: Indicative Masterplan

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10	20	30	40	50	60	70	80	90	100	
100MM ON ORIGINAL A1 DRAWING										
SEE DRAWING ISSUE SHEET FOR DRAWING STATUS										
This drawing is not to be used in whole or part other than for the intended purpose and project as defined on this drawing. Refer to the contract for full terms and conditions. If signed dimensions to be followed in preference to those scaled from drawing. All dimensions to be verified on site by the contractors and such dimensions to be their responsibility.										
rev	revision date	purpose of revision					drawn by	checked by		



beckett jackson thompson		architects	
6 elton chambers - wheeler gate - nottingham - NG1 2NS		t: 0115 9243268	
client			
project			
Whatton Manor Barn Conversion			
drawing title			
Site Plan DRAFT			
scale	date	drawn by	checked by
1:200	02.03.21	RT	
project no.	drawing no.	revision	
WM	03	d4	

## Appendix 2: Investigation Logs

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Boring	
Strike	Well



Boring	
Strike	Well

Boring	
Strike	Well

Boring	
Strike	Well

Boring	
Strike	Well

### Appendix 3: Soil Chemical Laboratory Results

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**Chris Rhodes**  
BWB Consulting Limited  
11 Borough High Street  
London  
SE1 9SE

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

**t:** 0203 1027844

**t:** 01923 225404

**e:** Chris.Rhodes@bwbconsulting.com

**f:** 01923 237404

**e:** reception@i2analytical.com

## **Analytical Report Number : 23-61602**

Replaces Analytical Report Number: 23-61602, issue no. 1  
Additional analysis undertaken.  
LC Herbicide Suite added to sample DS03 at 0.15m by laboratory.

<b>Project / Site name:</b>	Vicars Croft	<b>Samples received on:</b>	09/10/2023
<b>Your job number:</b>	232723	<b>Samples instructed on/ Analysis started on:</b>	10/10/2023
<b>Your order number:</b>	6255	<b>Analysis completed by:</b>	07/11/2023
<b>Report Issue Number:</b>	2	<b>Report issued on:</b>	09/11/2023
<b>Samples Analysed:</b>	2 leachate samples - 8 soil samples		

**Signed:** 

Dominika Warjan  
Reporting Specialist  
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-61602

Project / Site name: Vicars Croft

Your Order No: 6255

Lab Sample Number				2840351	2840352	2840353	2840354	2840355
Sample Reference				DS01	DS01	DS02	DS03	DS04
Sample Number				ES	ES	ES	ES	ES
Depth (m)				0.40	0.80	0.20	0.15	0.20
Date Sampled				08/10/2023	08/10/2023	08/10/2023	08/10/2023	08/10/2023
Time Taken				0900	0900	1700	0900	1700
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	12	17	17	7.2	12
Total mass of sample received	kg	0.001	NONE	0.8	0.3	0.8	0.8	0.8

Asbestos in Soil	Type	N/A	ISO 17025	-	-	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	N/A	N/A	KSZ	KSZ	KSZ

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.1	8	7.7	10.4	8.3
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0237	0.0286	0.0427	0.176	0.0807
Total Sulphur	mg/kg	50	MCERTS	60	84	430	620	330
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.0021	0.0025	0.018	0.021	0.011

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.1	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.66	0.1	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.51	0.09	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	5.8	1.4	0.32
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.2	0.47	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	9.1	5	0.69
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	7.8	4.6	0.62
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.6	2.3	0.31
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.7	2.8	0.4
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	4.2	3.5	0.5
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	2.2	1.8	0.25
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	3.7	3.2	0.37
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	2	2.1	0.26
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.48	0.53	0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	2.2	2.2	0.31

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	< 0.80	47	30.2	4.13
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Analytical Report Number: 23-61602  
 Project / Site name: Vicars Croft  
 Your Order No: 6255

Lab Sample Number	2840351	2840352	2840353	2840354	2840355
Sample Reference	DS01	DS01	DS02	DS03	DS04
Sample Number	ES	ES	ES	ES	ES
Depth (m)	0.40	0.80	0.20	0.15	0.20
Date Sampled	08/10/2023	08/10/2023	08/10/2023	08/10/2023	08/10/2023
Time Taken	0900	0900	1700	0900	1700
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		

**Heavy Metals / Metalloids**

Element	Unit	Limit of detection	Accreditation Status	2840351	2840352	2840353	2840354	2840355
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	1.7	5.1	6.5	6.1	5.9
Barium (aqua regia extractable)	mg/kg	1	MCERTS	26	130	120	100	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.21	1.3	1.1	1	0.73
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.4	0.6	0.5	1.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	0.4	0.3	0.3
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	5.7	32	15	21	16
Copper (aqua regia extractable)	mg/kg	1	MCERTS	21	14	28	24	21
Lead (aqua regia extractable)	mg/kg	1	MCERTS	3.7	7	46	39	51
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.4	29	14	15	14
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	8.8	33	24	35	21
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	19	60	110	73	150

**Monoaromatics & Oxygenates**

Compound	Unit	Limit of detection	Accreditation Status	2840351	2840352	2840353	2840354	2840355
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0^	-	-	-
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0##	-	-	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
o-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	-	-	-

**Petroleum Hydrocarbons**

TPH C10 - C40	Unit	Limit of detection	Accreditation Status	2840351	2840352	2840353	2840354	2840355
TPH C10 - C40	mg/kg	10	MCERTS	< 10	< 10	150	1200	99

TPH2 (C6 - C10)	Unit	Limit of detection	Accreditation Status	2840351	2840352	2840353	2840354	2840355
TPH2 (C6 - C10)	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

TPH-CWG - Aliphatic >EC5 - EC6	Unit	Limit of detection	Accreditation Status	2840351	2840352	2840353	2840354	2840355
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	NONE	< 10	< 10	-	-	-

TPH-CWG - Aromatic >EC5 - EC7	Unit	Limit of detection	Accreditation Status	2840351	2840352	2840353	2840354	2840355
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.1	NONE	< 0.10	< 0.10	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	< 10	< 10	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	< 10	< 10	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	NONE	< 10	< 10	-	-	-

**Pesticide and Herbicide Screen**

GCMS Pesticide Screen	Unit	Limit of detection	Accreditation Status	2840351	2840352	2840353	2840354	2840355
GCMS Pesticide Screen	N/A	NONE		-	-	-	None Detected	-



Analytical Report Number: 23-61602

Project / Site name: Vicars Croft

Your Order No: 6255

Lab Sample Number				2840351	2840352	2840353	2840354	2840355
Sample Reference				DS01	DS01	DS02	DS03	DS04
Sample Number				ES	ES	ES	ES	ES
Depth (m)				0.40	0.80	0.20	0.15	0.20
Date Sampled				08/10/2023	08/10/2023	08/10/2023	08/10/2023	08/10/2023
Time Taken				0900	0900	1700	0900	1700
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Herbicides

Aldicarb	µg/kg	10	NONE	-	-	-	< 10	-
Aldicarb Sulfone	µg/kg	10	NONE	-	-	-	< 10	-
Aldicarb Sulfoxide	µg/kg	50	NONE	-	-	-	< 50	-
Atrazine	µg/kg	10	NONE	-	-	-	< 10	-
Carbaryl	µg/kg	10	NONE	-	-	-	< 10	-
Carbofuran	µg/kg	10	NONE	-	-	-	< 10	-
Carbofuran, 3-OH	µg/kg	20	NONE	-	-	-	< 20	-
Chlortoluron	µg/kg	10	NONE	-	-	-	< 10	-
Cyanazine	µg/kg	10	NONE	-	-	-	< 10	-
Diflufenzuron	µg/kg	50	NONE	-	-	-	< 50	-
Diuron	µg/kg	10	NONE	-	-	-	< 10	-
Fluometuron	µg/kg	10	NONE	-	-	-	< 10	-
Isoproturon	µg/kg	10	NONE	-	-	-	< 10	-
Linuron	µg/kg	20	NONE	-	-	-	< 20	-
Methiocarb	µg/kg	10	NONE	-	-	-	< 10	-
Methomyl	µg/kg	10	NONE	-	-	-	< 10	-
Oxamyl	µg/kg	10	NONE	-	-	-	< 10	-
Prometryn	µg/kg	10	NONE	-	-	-	< 10	-
Propazine	µg/kg	10	NONE	-	-	-	< 10	-
Propoxur	µg/kg	10	NONE	-	-	-	< 10	-
Siduron	µg/kg	10	NONE	-	-	-	< 10	-
Simazine	µg/kg	10	NONE	-	-	-	< 10	-
Tebuthiuron	µg/kg	10	NONE	-	-	-	< 10	-
Terbutylazine	µg/kg	10	NONE	-	-	-	< 10	-
Terbutryn	µg/kg	10	NONE	-	-	-	< 10	-
Thiadiazuron	µg/kg	10	NONE	-	-	-	< 10	-
Trietazine	µg/kg	10	NONE	-	-	-	< 10	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 23-61602

Project / Site name: Vicars Croft

Your Order No: 6255

Lab Sample Number				2840356	2840357	2840358
Sample Reference				DS04	DS05	DS05
Sample Number				ES	ES	ES
Depth (m)				0.70	0.20	2.50
Date Sampled				08/10/2023	08/10/2023	08/10/2023
Time Taken				1700	0900	0900
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Stone Content	%	0.1	NONE	< 0.1	78	< 0.1
Moisture Content	%	0.01	NONE	11	5.1	19
Total mass of sample received	kg	0.001	NONE	0.3	0.8	0.3

Asbestos in Soil	Type	N/A	ISO 17025	-	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	N/A	KSZ	N/A

#### General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.7	8.9	7.9
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Complex Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Water Soluble SO <sub>4</sub> 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0297	0.13	0.0274
Total Sulphur	mg/kg	50	MCERTS	61	570	88
Fraction Organic Carbon (FOC) Automated	N/A	0.001	MCERTS	0.0021	0.0091	< 0.0010

#### Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
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#### Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	0.35	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.09	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.9	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.86	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.49	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.53	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.84	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	0.28	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.68	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	0.38	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.09	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	0.5	< 0.05

#### Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	5.99	< 0.80
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Analytical Report Number: 23-61602

Project / Site name: Vicars Croft

Your Order No: 6255

Lab Sample Number				2840356	2840357	2840358
Sample Reference				DS04	DS05	DS05
Sample Number				ES	ES	ES
Depth (m)				0.70	0.20	2.50
Date Sampled				08/10/2023	08/10/2023	08/10/2023
Time Taken				1700	0900	0900
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
<b>Heavy Metals / Metalloids</b>						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	2	4.4	6.6
Barium (aqua regia extractable)	mg/kg	1	MCERTS	29	210	110
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.26	0.63	1.7
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.5	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	0.3	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	6	17	41
Copper (aqua regia extractable)	mg/kg	1	MCERTS	6.3	22	17
Lead (aqua regia extractable)	mg/kg	1	MCERTS	2.7	42	9.2
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	6	12	37
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	9.6	19	42
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	31	88	110

**Monoaromatics & Oxygenates**

	µg/kg					
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0^
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0##
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0##	-	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	< 5.0

**Petroleum Hydrocarbons**

TPH C10 - C40 <sub>EH,CU,1D_TOTAL</sub>	mg/kg	10	MCERTS	< 10	350	< 10
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TPH2 (C6 - C10) <sub>HS,1D_TOTAL</sub>	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1
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TPH-CWG - Aliphatic >EC5 - EC6 <sub>HS,1D_AL</sub>	mg/kg	0.1	NONE	< 0.10	-	< 0.10
TPH-CWG - Aliphatic >EC6 - EC8 <sub>HS,1D_AL</sub>	mg/kg	0.1	NONE	< 0.10	-	< 0.10
TPH-CWG - Aliphatic >EC8 - EC10 <sub>HS,1D_AL</sub>	mg/kg	0.1	NONE	< 0.10	-	< 0.10
TPH-CWG - Aliphatic >EC10 - EC12 <sub>EH,CU,1D_AL</sub>	mg/kg	1	MCERTS	< 1.0	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 <sub>EH,CU,1D_AL</sub>	mg/kg	2	MCERTS	< 2.0	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 <sub>EH,CU,1D_AL</sub>	mg/kg	8	MCERTS	< 8.0	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 <sub>EH,CU,1D_AL</sub>	mg/kg	8	MCERTS	< 8.0	-	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) <sub>EH,CU+HS,1D_AL</sub>	mg/kg	10	NONE	< 10	-	< 10

TPH-CWG - Aromatic >EC5 - EC7 <sub>HS,1D_AR</sub>	mg/kg	0.1	NONE	< 0.10	-	< 0.10
TPH-CWG - Aromatic >EC7 - EC8 <sub>HS,1D_AR</sub>	mg/kg	0.1	NONE	< 0.10	-	< 0.10
TPH-CWG - Aromatic >EC8 - EC10 <sub>HS,1D_AR</sub>	mg/kg	0.1	NONE	< 0.10	-	< 0.10
TPH-CWG - Aromatic >EC10 - EC12 <sub>EH,CU,1D_AR</sub>	mg/kg	1	MCERTS	< 1.0	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 <sub>EH,CU,1D_AR</sub>	mg/kg	2	MCERTS	< 2.0	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 <sub>EH,CU,1D_AR</sub>	mg/kg	10	MCERTS	< 10	-	< 10
TPH-CWG - Aromatic >EC21 - EC35 <sub>EH,CU,1D_AR</sub>	mg/kg	10	MCERTS	< 10	-	< 10
TPH-CWG - Aromatic (EC5 - EC35) <sub>EH,CU+HS,1D_AR</sub>	mg/kg	10	NONE	< 10	-	< 10

**Pesticide and Herbicide Screen**

GCMS Pesticide Screen		N/A	NONE	-	-	-
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Analytical Report Number: 23-61602  
 Project / Site name: Vicars Croft  
 Your Order No: 6255

Lab Sample Number				2840356	2840357	2840358
Sample Reference				DS04	DS05	DS05
Sample Number				ES	ES	ES
Depth (m)				0.70	0.20	2.50
Date Sampled				08/10/2023	08/10/2023	08/10/2023
Time Taken				1700	0900	0900
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
<b>Herbicides</b>						
Aldicarb	µg/kg	10	NONE	-	-	-
Aldicarb Sulfone	µg/kg	10	NONE	-	-	-
Aldicarb Sulfoxide	µg/kg	50	NONE	-	-	-
Atrazine	µg/kg	10	NONE	-	-	-
Carbaryl	µg/kg	10	NONE	-	-	-
Carbofuran	µg/kg	10	NONE	-	-	-
Carbofuran, 3-OH	µg/kg	20	NONE	-	-	-
Chlortoluron	µg/kg	10	NONE	-	-	-
Cyanazine	µg/kg	10	NONE	-	-	-
Diflufenzuron	µg/kg	50	NONE	-	-	-
Diuron	µg/kg	10	NONE	-	-	-
Fluometuron	µg/kg	10	NONE	-	-	-
Isoproturon	µg/kg	10	NONE	-	-	-
Linuron	µg/kg	20	NONE	-	-	-
Methiocarb	µg/kg	10	NONE	-	-	-
Methomyl	µg/kg	10	NONE	-	-	-
Oxamyl	µg/kg	10	NONE	-	-	-
Prometryn	µg/kg	10	NONE	-	-	-
Propazine	µg/kg	10	NONE	-	-	-
Propoxur	µg/kg	10	NONE	-	-	-
Siduron	µg/kg	10	NONE	-	-	-
Simazine	µg/kg	10	NONE	-	-	-
Tebuthiuron	µg/kg	10	NONE	-	-	-
Terbutylazine	µg/kg	10	NONE	-	-	-
Terbutryn	µg/kg	10	NONE	-	-	-
Thiadiazuron	µg/kg	10	NONE	-	-	-
Trietazine	µg/kg	10	NONE	-	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected



4041



Analytical Report Number: 23-61602

Project / Site name: Vicars Croft

Your Order No: 6255

Lab Sample Number	2840372	2840373	
Sample Reference	DS03	DS05	
Sample Number	ES	ES	
Depth (m)	0.15	2.50	
Date Sampled	08/10/2023	08/10/2023	
Time Taken	0900	0900	
Analytical Parameter (Leachate Analysis)	Units	Limit of detection	Accreditation Status

General Inorganics

pH (automated)	pH Units	N/A	ISO 17025	8.6	7.5
Total Cyanide	µg/l	10	ISO 17025	< 10	< 10
Sulphate as SO <sub>4</sub>	mg/l	0.1	ISO 17025	76.1	14.9

Heavy Metals / Metalloids

Arsenic (dissolved)	µg/l	1	ISO 17025	5.6	5.7
Barium (dissolved)	µg/l	0.05	ISO 17025	21	4.4
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2	< 0.2
Boron (dissolved)	µg/l	10	ISO 17025	59	74
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08
Chromium (dissolved)	µg/l	0.4	ISO 17025	5.2	2
Copper (dissolved)	µg/l	0.7	ISO 17025	32	17
Lead (dissolved)	µg/l	1	ISO 17025	14	< 1.0
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	2.1	1
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0
Vanadium (dissolved)	µg/l	1.7	ISO 17025	16	17
Zinc (dissolved)	µg/l	0.4	ISO 17025	23	1.7

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 23-61602

Project / Site name: Vicars Croft

\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2840351	DS01	ES	0.4	Brown sandy clay with gravel.
2840352	DS01	ES	0.8	Brown clay and loam.
2840353	DS02	ES	0.2	Brown loam and clay with brick and vegetation.
2840354	DS03	ES	0.15	Brown loam and sand with rubble and brick.
2840355	DS04	ES	0.2	Brown loam and clay with rubble and brick.
2840356	DS04	ES	0.7	Brown sand with gravel.
2840357	DS05	ES	0.2	Brown sand with gravel and stones.
2840358	DS05	ES	2.5	Brown clay and sand with gravel.

Analytical Report Number : 23-61602  
Project / Site name: Vicars Croft

Water matrix abbreviations:  
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
BS EN 12457-1 (2:1) Leachate Prep	2:1 (as received, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-1.	L043-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Complex Cyanide in soil	Determination of complex cyanide by calculation.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS

Analytical Report Number : 23-61602

Project / Site name: Vicars Croft

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
TPH2 (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	NONE
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation	L073B-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. Refer to CoA for band specific accreditation.	In-house method with silica gel split/clean up.	L088/76-PL	D	MCERTS
Herbicides by LC-MS	Determination of Herbicides in soil by LC MS	In-house method	L056B-PL	W	NONE
GC Pesticide Screen (TIC)	Analysis of unknown pesticides by GCMS	GC Pesticide Screen (TIC)	L064B	D	NONE
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil"	L039-PL	W	ISO 17025
Fraction Organic Carbon FOC Automated	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method	L009	D	MCERTS



Analytical Report Number : 23-61602  
 Project / Site name: Vicars Croft

Water matrix abbreviations:  
 Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).  
 For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).  
 For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.  
 Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.  
 Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

### Information in Support of Analytical Results

#### List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

## - Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

^ - Data reported unaccredited due to quality control parameter failure associated with this result; The result should be considered as being deviating and may be compromised.

## Appendix 4: CLEA Assessment Sheets - LQM

**STATISTICAL APPROACH FOR ASSESSING RISK TO HUMAN HEALTH FROM CONTAMINATED LAND 2008**

CIEH/CLAIRE Guidance on Comparing Soil Contamination Data with a Critical Concentration May 2008

**STAGE 1  
QA CHECK**

Are data of acceptable quality  
Lab sampling errors / erroneous results  
Are data sufficient to characterise area of interest

No

Review CSM, update sampling and analytical strategy

yes

**STAGE 2  
DATA SCREENING**

Compare all data against GSAC  
Do any values exceed GSAC?

No

True mean is less than critical concentration  
No action required

Yes

**STAGE 3  
ZONING AND  
OUTLIER CHECK**

Plot data on bubble chart  
Plot histogram  
Identify and deal with non

Outliers

Assess Outliers directly against GSAC

Non detects to DL or DL/2  
Remove outliers

**STAGE 4  
UPPER CONFIDENCE  
LIMIT**

With outliers removed  
do any values exceed GSAC ?

No

True mean is less than critical concentration  
No action required

Yes

With outliers removed are data normally Distributed  
Histogram  
Shapiro Wilkes test, q-q plot

Normal

Non-normal

Normal Distributed data  
UCL from Students t-test

Non-normal Distributed data  
UCL from Chebychev theorem

Compare UCL to GSAC  
Does UCL exceed GSAC?

No

True mean is less than critical concentration  
No action required

Yes

true mean is greater than critical concentration  
Further action required

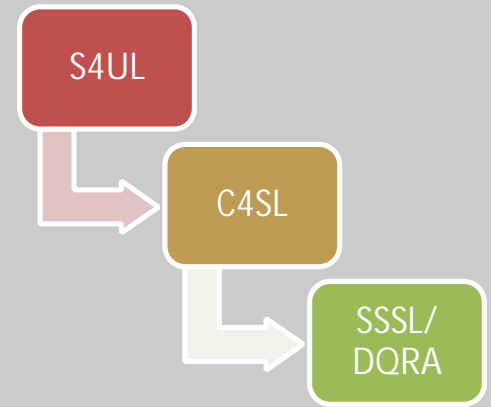
# Human Health Generic QRA Worksheet



Vicars Croft, Conery Lan, Whatton	232723
All Data	

GSAC Hierarchy

Define CSM – Is site represented by a standard land use?  
 Residential with / without homegrown produce  
 Commercial / Industrial  
 Public Open Space - Residential (S4UL/C4SL only)  
 Public Open Space - Park (S4UL/C4SL only)



GSAC Type (BWB, LQM S4UL, C4SL, Bespoke)	LQM_CIEH_S4UL
Key Receptor/CSM (Residential/Commercial/POS)	S4UL Residential with homegrown produce
Organic Matter % (If unknown use 1%)	1

## Generic Assessment Criteria

Vicars Croft, Conery Lan, Whatton  
232723S4UL Residential  
with homegrown  
produce  
mg/kg

Source

	S4UL Residential with homegrown produce mg/kg	Source
Arsenic	3.70E+01	LQM_CIEH_S4UL
Barium	1.35E+03	LQM_CIEH_S4UL
Beryllium	1.70E+00	LQM_CIEH_S4UL
Boron	2.90E+02	LQM_CIEH_S4UL
Cadmium	1.10E+01	LQM_CIEH_S4UL
Chromium VI	6.00E+00	LQM_CIEH_S4UL
Chromium III	9.10E+02	LQM_CIEH_S4UL
Copper	2.40E+03	LQM_CIEH_S4UL
Lead	2.00E+02	DEFRA_C4SL
Inorganic Mercury	4.00E+01	LQM_CIEH_S4UL
Nickel	1.80E+02	LQM_CIEH_S4UL
Selenium	2.50E+02	LQM_CIEH_S4UL
Vanadium	4.10E+02	LQM_CIEH_S4UL
Zinc	3.70E+03	LQM_CIEH_S4UL
pH	<4.5 >9.5	BWB
Cyanide (free)	4.30E+01	BWB
Cyanide (Complex)	2.13E+02	LQM_CIEH_S4UL
Phenol	1.20E+02	LQM_CIEH_S4UL
Benzene	8.70E-02	LQM_CIEH_S4UL
Toluene	1.30E+02	LQM_CIEH_S4UL
Ethylbenzene	4.70E+01	LQM_CIEH_S4UL
Total Xylene	5.60E+01	LQM_CIEH_S4UL
TPH (EC5-6) aliphatic	4.20E+01	LQM_CIEH_S4UL
TPH (>EC6-8) aliphatic	1.00E+02	LQM_CIEH_S4UL
TPH (>EC8-10) aliphatic	2.70E+01	LQM_CIEH_S4UL
TPH (>EC10-12) aliphatic	1.30E+02	LQM_CIEH_S4UL
TPH (>EC12-16) aliphatic	1.10E+03	LQM_CIEH_S4UL
TPH (>EC16-21) aliphatic	6.50E+04	LQM_CIEH_S4UL
TPH (>EC21-35) aliphatic	6.50E+04	LQM_CIEH_S4UL
TPH (>EC35-44) aliphatic	6.50E+04	LQM_CIEH_S4UL
TPH (>EC6-7) aromatic (benzene)	7.00E+01	LQM_CIEH_S4UL
TPH (>EC7-8) aromatic (toluene)	1.30E+02	LQM_CIEH_S4UL
TPH (>EC8-10) aromatic	3.40E+01	LQM_CIEH_S4UL
TPH (>EC10-12) aromatic	7.40E+01	LQM_CIEH_S4UL
TPH (>EC12-16) aromatic	1.40E+02	LQM_CIEH_S4UL
TPH (>EC16-21) aromatic	2.60E+02	LQM_CIEH_S4UL
TPH (>EC21-35) aromatic	1.10E+03	LQM_CIEH_S4UL
TPH (>EC35-44) aromatic	1.10E+03	LQM_CIEH_S4UL
Total TPH	5.00E+02	LQM_CIEH_S4UL
Naphthalene	2.30E+00	LQM_CIEH_S4UL
Acenaphthylene	1.70E+02	LQM_CIEH_S4UL
Acenaphthene	2.10E+02	LQM_CIEH_S4UL
Fluorene	1.70E+02	LQM_CIEH_S4UL
Phenanthrene	9.50E+01	LQM_CIEH_S4UL
Anthracene	2.40E+03	LQM_CIEH_S4UL
Fluoranthene	2.80E+02	LQM_CIEH_S4UL
Pyrene	6.20E+02	LQM_CIEH_S4UL
Benzo(a)anthracene	7.20E+00	LQM_CIEH_S4UL
Chrysene	1.50E+01	LQM_CIEH_S4UL

Generic Assessment Criteria

Vicars Croft, Conery Lan, Whatton  
232723

S4UL Residential  
with homegrown  
produce  
mg/kg



Source

Benzo(b)fluoranthene	2.60E+00	LQM_CIEH_S4UL
Benzo(k)fluoranthene	7.70E+01	LQM_CIEH_S4UL
Benzo(a)pyrene	2.20E+00	LQM_CIEH_S4UL
Indeno(123-cd)pyrene	2.70E+01	LQM_CIEH_S4UL
Dibenzo(ah)anthracene	2.40E-01	LQM_CIEH_S4UL
Benzo(g,h,i)perylene	3.20E+02	LQM_CIEH_S4UL

Location	Sample depth	Strata Type	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium VI	Chromium III	Copper	Lead	Inorganic Mercury	Nickel	Selenium	Vanadium	Zinc	pH	Cyanide (free)	Cyanide (Complex)	Phenol
Detection Limit			0.5	0.5	0.5	0.4	0.1	0.5	0.5	0.5	0.5	0.05	0.5	0.25	0.5	0.5	4	0.5	0.5	0.1
GSAC			37	1350	1.7	290	11	6	910	2400	200	40	180	250	410	3700	<4.5 >9.5	43	213	1.20E+05
DS01	0.40	MG	2	26	0.2	0.3	0.2	1.8	6	21	4	0.30	5	1	8.8	19	8.1	1	1	1
DS01	0.80	Natural	5	130	1.3	0.4	0.2	1.8	32	14	7	0.30	29	1	33.0	60	8.0	1	1	1
DS02	0.20	MG	7	120	1.1	0.6	0.4	1.8	15	28	46	0.30	14	1	24.0	110	7.7	1	1	1
DS03	0.15	MG	6	100	1.0	0.5	0.3	1.8	21	24	39	0.30	15	1	35.0	73	7.9	1	1	1
DS04	0.20	MG	6	110	0.7	1.7	0.3	1.8	16	21	51	0.30	14	1	21.0	150	8.3	1	1	1
DS04	0.70	Natural	2	29	0.3	0.3	0.2	1.8	6	6	3	0.30	6	1	9.6	31	7.7	1	1	1
DS05	0.20	MG	4	210	0.6	0.5	0.3	1.8	17	22	42	0.30	12	1	19.0	88	8.9	1	1	1
DS05	2.50	Natural	7	110	1.7	0.5	0.2	1.8	41	17	9	0.30	37	1	42.0	110	7.9	1	1	1

Location	Sample depth	Benzene	Toluene	Ethylbenzene	Total Xylene	TPH (EC5-6) aliphatic	TPH (>EC6-8) aliphatic	TPH (>EC8-10) aliphatic	TPH (>EC10-12) aliphatic	TPH (>EC12-16) aliphatic	TPH (>EC16-21) aliphatic	TPH (>EC35-44) aliphatic	TPH (>EC6-7) aromatic (benzene)	TPH (>EC7-8) aromatic (toluene)	TPH (>EC8-10) aromatic	TPH (>EC10-12) aromatic	TPH (>EC12-16) aromatic	TPH (>EC16-21) aromatic	TPH (>EC21-35) aromatic	TPH (>EC35-44) aromatic
Detection Limit		1	1	1	0.001	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GSAC		8.70E+01	1.30E+05	4.70E+04	56	42	100	27	130	1100	65000	65000	70	130	34	74	140	260	1100	1100
DS01	0.40	0.005	0.005	0.005	0.01	0.1	0.1	0.10	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	
DS01	0.80	0.005	0.005	0.005	0.01	0.1	0.1	0.10	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	
DS02	0.20																			
DS03	0.15																			
DS04	0.20																			
DS04	0.70	0.005	0.005	0.005	0.01	0.1	0.1	0.1	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	
DS05	0.20																			
DS05	2.50	0.005	0.005	0.005	0.01	0.1	0.1	0.10	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	



Location	Sample depth	Total TPH	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,23-cd)pyrene	Dibenzo(ah)anthracene	Benzo(g,h,i)perylene
Detection Limit		10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GSAC		500	2.3	170	210	170	95	2400	280	620	7.2	15	2.6	77	2.2	27	0.24	320
DS01	0.40	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DS01	0.80	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DS02	0.20	150	0.05	0.05	0.66	0.51	5.8	1.2	9.1	7.8	3.6	3.7	3.1	2.2	3.1	2	0.43	2.2
DS03	0.15	2.05	0.05	0.1	0.1	0.09	1.40	0.47	5.0	4.6	2.30	2.80	1.95	1.80	1.25	2.10	0.53	2.20
DS04	0.20	99	0.05	0.05	0.05	0.05	0.32	0.05	0.69	0.62	0.31	0.4	0.5	0.25	0.37	0.26	0.05	0.31
DS04	0.70	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DS05	0.20	350	0.05	0.05	0.05	0.05	0.35	0.09	0.9	0.86	0.49	0.53	0.84	0.28	0.68	0.38	0.09	0.5
DS05	2.50	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05

## Appendix 5: CLEA Assessment Sheets – Defra C4SLs

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# Human Health Generic QRA Worksheet



Vicars Croft, Conery Lan, Whatton	232723
All Data	

GSAC Hierarchy

Define CSM – Is site represented by a standard land use?

- Residential with / without homegrown produce
- Commercial / Industrial
- Public Open Space - Residential (S4UL/C4SL only)
- Public Open Space - Park (S4UL/C4SL only)



GSAC Type (BWB, LQM S4UL, C4SL, Bespoke)	DEFRA_C4SL
Key Receptor/CSM (Residential/Commercial/POS)	C4SL Residential (with home-grown produce)
Organic Matter % (If unknown use 1%)	

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 Publication Number S4UL3271

V8, April 2023

Generic Assessment Criteria

Vicars Croft, Conery Lan, Whatton  
232723

C4SL Residential  
(with home-  
grown produce)  
mg/kg



Source

		Source
Arsenic	3.70E+01	DEFRA_C4SL
Barium	NC Use GSAC	N/A
Beryllium	NC Use GSAC	N/A
Boron	NC Use GSAC	N/A
Cadmium	2.60E+01	DEFRA_C4SL
Chromium VI	2.10E+01	N/A
Chromium III	NC Use GSAC	N/A
Copper	NC Use GSAC	N/A
Lead	2.00E+02	DEFRA_C4SL
Inorganic Mercury	NC Use GSAC	N/A
Nickel	NC Use GSAC	N/A
Selenium	NC Use GSAC	N/A
Vanadium	NC Use GSAC	N/A
Zinc	NC Use GSAC	N/A
pH	<4.5 >9.5	BWB
Cyanide (free)	NC Use GSAC	BWB
Cyanide (Complex)	NC Use GSAC	N/A
Phenol	NC Use GSAC	DEFRA_C4SL
Benzene	8.70E-01	N/A
Toluene	NC Use GSAC	N/A
Ethylbenzene	NC Use GSAC	N/A
Total Xylene	NC Use GSAC	N/A
TPH (EC5-6) aliphatic	NC Use GSAC	N/A
TPH (>EC6-8) aliphatic	NC Use GSAC	N/A
TPH (>EC8-10) aliphatic	NC Use GSAC	N/A
TPH (>EC10-12) aliphatic	NC Use GSAC	N/A
TPH (>EC12-16) aliphatic	NC Use GSAC	N/A
TPH (>EC16-21) aliphatic	NC Use GSAC	N/A
TPH (>EC21-35) aliphatic	NC Use GSAC	N/A
TPH (>EC35-44) aliphatic	NC Use GSAC	DEFRA_C4SL
TPH (>EC6-7) aromatic (benzene)	8.70E-01	N/A
TPH (>EC7-8) aromatic (toluene)	NC Use GSAC	N/A
TPH (>EC8-10) aromatic	NC Use GSAC	N/A
TPH (>EC10-12) aromatic	NC Use GSAC	N/A
TPH (>EC12-16) aromatic	NC Use GSAC	N/A
TPH (>EC16-21) aromatic	NC Use GSAC	N/A
TPH (>EC21-35) aromatic	NC Use GSAC	N/A
TPH (>EC35-44) aromatic	NC Use GSAC	N/A
Total TPH	NC Use GSAC	N/A
Naphthalene	NC Use GSAC	N/A
Acenaphthylene	NC Use GSAC	N/A
Acenaphthene	NC Use GSAC	N/A
Fluorene	NC Use GSAC	N/A
Phenanthrene	NC Use GSAC	N/A
Anthracene	NC Use GSAC	N/A
Fluoranthene	NC Use GSAC	N/A
Pyrene	NC Use GSAC	N/A
Benzo(a)anthracene	NC Use GSAC	N/A
Chrysene	NC Use GSAC	N/A
Benzo(b)fluoranthene	NC Use GSAC	N/A

Generic Assessment Criteria

Vicars Croft, Conery Lan, Whatton  
232723

C4SL Residential  
(with home-  
grown produce)  
mg/kg



Source

Benzo(k)fluoranthene	NC Use GSAC	N/A
Benzo(a)pyrene	5.00E+00	N/A
Indeno(123-cd)pyrene	NC Use GSAC	N/A
Dibenzo(ah)anthracene	NC Use GSAC	N/A
Benzo(g,h,i)perylene	NC Use GSAC	N/A

Location	Sample depth	Strata Type	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium VI	Chromium III	Copper	Lead	Inorganic Mercury	Nickel	Selenium	Vanadium	Zinc	pH	Cyanide (free)	Cyanide (Complex)	Phenol
Detection Limit			0.5	0.5	0.5	0.4	0.1	0.5	0.5	0.5	0.5	0.05	0.5	0.25	0.5	0.5	4	0.5	0.5	0.1
GSAC			37	Use GSAC	Use GSAC	Use GSAC	26	21	Use GSAC	Use GSAC	200	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	<4.5 >9.5	Use GSAC	Use GSAC	#VALUE!
DS01	0.40	MG	2	26	0.2	0.3	0.2	1.8	6	21	4	0.30	5	1	8.8	19	8.1	1	1	1
DS01	0.80	Natural	5	130	1.3	0.4	0.2	1.8	32	14	7	0.30	29	1	33.0	60	8.0	1	1	1
DS02	0.20	MG	7	120	1.1	0.6	0.4	1.8	15	28	46	0.30	14	1	24.0	110	7.7	1	1	1
DS03	0.15	MG	6	100	1.0	0.5	0.3	1.8	21	24	39	0.30	15	1	35.0	73	7.9	1	1	1
DS04	0.20	MG	6	110	0.7	1.7	0.3	1.8	16	21	51	0.30	14	1	21.0	150	8.3	1	1	1
DS04	0.70	Natural	2	29	0.3	0.3	0.2	1.8	6	6	3	0.30	6	1	9.6	31	7.7	1	1	1
DS05	0.20	MG	4	210	0.6	0.5	0.3	1.8	17	22	42	0.30	12	1	19.0	88	8.9	1	1	1
DS05	2.50	Natural	7	110	1.7	0.5	0.2	1.8	41	17	9	0.30	37	1	42.0	110	7.9	1	1	1

Location	Sample depth	Benzene	Toluene	Ethylbenzene	Total Xylene	TPH (EC5-6) aliphatic	TPH (>EC6-8) aliphatic	TPH (>EC8-10) aliphatic	TPH (>EC10-12) aliphatic	TPH (>EC12-16) aliphatic	TPH (>EC16-21) aliphatic	TPH (>EC35-44) aliphatic	TPH (>EC6-7) aromatic (benzene)	TPH (>EC7-8) aromatic (toluene)	TPH (>EC8-10) aromatic	TPH (>EC10-12) aromatic	TPH (>EC12-16) aromatic	TPH (>EC16-21) aromatic	TPH (>EC21-35) aromatic	TPH (>EC35-44) aromatic
Detection Limit		1	1	1	0.001	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GSAC		8.70E+02	#VALUE!	#VALUE!	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	0.87	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC
DS01	0.40	0.005	0.005	0.005	0.01	0.1	0.1	0.10	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	
DS01	0.80	0.005	0.005	0.005	0.01	0.1	0.1	0.10	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	
DS02	0.20																			
DS03	0.15																			
DS04	0.20																			
DS04	0.70	0.005	0.005	0.005	0.01	0.1	0.1	0.1	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	
DS05	0.20																			
DS05	2.50	0.005	0.005	0.005	0.01	0.1	0.1	0.10	1.0	2.0	8.0		0.1	0.1	0.1	1	2	10	10	

Location	Sample depth	Total TPH	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,23-cd)pyrene	Dibenzo(ah)anthracene	Benzo(g,h,i)perylene
Detection Limit		10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GSAC		Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	Use GSAC	5	Use GSAC	Use GSAC	Use GSAC
DS01	0.40	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DS01	0.80	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DS02	0.20	150	0.05	0.05	0.66	0.51	5.8	1.2	9.1	7.8	3.6	3.7	4.2	2.2	3.7	2	0.48	2.2
DS03	0.15	1200	0.05	0.1	0.1	0.09	1.40	0.47	5.0	4.6	2.30	2.80	3.50	1.80	3.20	2.10	0.53	2.20
DS04	0.20	99	0.05	0.05	0.05	0.05	0.32	0.05	0.69	0.62	0.31	0.4	0.5	0.25	0.37	0.26	0.05	0.31
DS04	0.70	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
DS05	0.20	350	0.05	0.05	0.05	0.05	0.35	0.09	0.9	0.86	0.49	0.53	0.84	0.28	0.68	0.38	0.09	0.5
DS05	2.50	10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05



## Appendix 6 : Leachate Assessment Sheet

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\*EQS Standard: Phenol and Benzene ann average of 300µg/l; Toluene 500µg/l for Freshwater, 400µg/l for Saltwater; 1,1,1-TCA 1,000µg/l.

Project Name:	Vicars Croft
Project Number:	232723
Assessment for:	Soil Leachate Assessment
Laboratory:	i2
Receptor:	Drinking Water
Receptor Water Hardness:	>200



Contaminant	Units	Detection Limit	Guideline Concentration	Source	Number of Samples	Min	Max	No of Exceedences	DS03	DS05	
									0.15	2.50	
Heavy Metals	Arsenic	µg/l	1	10	UK DWS	2	5.60	5.70	0	5.60	5.70
	Barium	mg/l	0.05	700	UK DWS	2	4.40	21.00	0	21.00	4.40
	Beryllium	µg/l	0.2	None Available		0	0.00	0.00	0	< 0.2	< 0.2
	Cadmium	µg/l	0.08	3	UK DWS	0	0.00	0.00	0	< 0.08	< 0.08
	Chromium III	µg/l	0.4	4.7	EQS Freshwater	2	2.00	5.20	1	5.20	2.00
	Chromium VI	µg/l		3.4	EQS Freshwater	0	0.00	0.00	0		
	Copper	µg/l	0.7	2000	UK DWS	2	17.00	32.00	0	32.00	17.00
	Lead	µg/l	1	10	UK DWS	1	14.00	14.00	1	14.00	< 1.0
	Mercury	µg/l	0.5	1	UK DWS	0	0.00	0.00	0	< 0.5	< 0.5
	Nickel	µg/l	0.3	20	UK DWS	2	1.00	2.10	0	2.10	1.00
	Selenium	µg/l	4	10	UK DWS	0	0.00	0.00	0	< 4.0	< 4.0
	Vanadium	µg/l	1.7	None Available		2	16.00	17.00	0	16.00	17.00
	Zinc	µg/l	0.4	5000	UK DWS	2	1.70	23.00	0	23.00	1.70
	Sulphate	mg/l	0.1	250	UK DWS	2	14.90	76.10	0	76.10	14.90
	Boron	µg/l	10	1000	UK DWS	2	59.00	74.00	0	59.00	74.00
pH					2	7.50	8.60	0	8.60	7.50	
Inorganics	Cyanide (total)	µg/l	10	70	UK DWS	0	0.00	0.00	0	< 10	< 10
	Phenol*	µg/l		7.7	EQS Freshwater	0	0.00	0.00	0		
	Ammonia (NH3 as N)	mg/l		0.015	EQS Freshwater	0	0.00	0.00	0		

Appendix 7: CIRIA Risk Classification Scheme

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## BWB RISK ASSESSMENT CLASSIFICATION (REFERENCE CIRIA C552, *CONTAMINATED LAND RISK ASSESSMENT: A GUIDE TO GOOD PRACTICE*, 2001)

CIRIA C552, *Contaminated Land Risk Assessment A Guide to Good Practice*, 2001 sets out a methodology for estimating risk. The methodology for risk evaluation is a qualitative method for interpreting the output for the risk estimation stage of the assessment. It involves the classification of the:

- Magnitude of the potential consequence (severity) of risk occurring; and
- Magnitude of the probability (likelihood) of the risk occurring.

The classification of consequence and probability are replicated in **Table 1** and **Table 2**, respectively.

**Table 1: Classification of Consequence**

Classification	Definition	Examples
<b>Severe (Sv)</b>	Short term (acute) risk to human health likely to result in “significant harm” as defined by the Environment Protection Act 1990, Part IIA. Short term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem.	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
<b>Medium (Md)</b>	Chronic damage to Human Health (“significant harm”). Pollution of sensitive water resources. A significant change in a particular ecosystem, or organism forming part of such ecosystem.	Concentrations of a contaminant from site exceeding the generic or site-specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of species within a designated nature reserve.
<b>Mild (Mi)</b>	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
<b>Minor (Mr)</b>	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by measures such as protective clothing etc.). Easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentration that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

The classification of consequence does not take into account the probability of the consequence being realised. Therefore, there may be more than one consequence for a particular pollutant linkage. Both a severe and medium classification can result in death.

Severe relates to short term (acute) risk while medium relates to long term (chronic) risk. Mild relates to significant harm but to less sensitive receptors. Minor classification relates to harm which is not significant but could have a financial cost.

**Table 2: Classification of Probability**

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

The classification gives a guide as to the severity and consequence of identified risk when compared with other risk presented on the site. It should be noted that if a risk is identified it cannot be classified as “no risk” but as “very low risk”. Differing stakeholders may have a different view on the acceptability of a risk.

Once the consequence and probability have been classified these can be compared using a matrix to identify an overall risk category, as shown in **Table 3**. These categories and the actions required are categorised in **Table 4**.

**Table 3: Risk Evaluation Matrix**

Consequence		Severe (Sv)	Medium (Md)	Mild (Mi)	Minor (Mr)
Probability	High likelihood (Hi)	Very High Risk (VH)	High Risk (H)	Moderate Risk (M)	Mod/Low Risk (M/L)
	Likely (Li)	High Risk (H)	Moderate Risk (M)	Mod/Low Risk (M/L)	Low Risk (L)
	Low likelihood (Lw)	Moderate Risk (M)	Mod/Low Risk (M/L)	Low Risk (L)	Very Low Risk (VL)
	Unlikely (Ui)	Mod/Low Risk (M/L)	Low Risk (L)	Very Low Risk (VL)	Very Low Risk (VL)

Table 4: Risk Categorisations

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

**Reference:**

CIRIA C552 *Contaminated land risk assessment. A guide to good practice*. Rudland, D J, Lancefield, R M, Mayell, P N, 2001.

## Appendix 8: Hazwaste Online Report

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## 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)



HBEWK-BWSND-R0QUP

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

### Job name

232723 Vicars Croft

### Description/Comments

### Project

232723 Vicars Croft

### Site

232723 Vicars Croft

### Classified by

Name: **Richard Robinson**  
Date: **02 Nov 2023 15:53 GMT**  
Telephone: **0115 924 1100**

Company: **BWB Consulting Ltd**  
**Waterfront House, Station Street**  
**Nottingham**  
**NG2 3DQ**

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  
3 year Refresher overdue

### Date

08 Dec 2016

### Purpose of classification

2 - Material Characterisation

### Address of the waste

Conery Lane, Nottingham

Post Code n/a

### SIC for the process giving rise to the waste

41202 Construction of domestic buildings

### Description of industry/producer giving rise to the waste

Construction

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

Construction

### Description of the waste

Soils



### Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	DS01[2]	0.80	Non Hazardous		3
2	DS04[2]	0.70	Non Hazardous		5
3	DS05[2]	2.50	Non Hazardous		7
4	DS01	0.40	Non Hazardous		9
5	DS02	0.20	Non Hazardous		11
6	DS03	0.15	Hazardous	HP 7, HP 11	13
7	DS04	0.20	Non Hazardous		16
8	DS05	0.20	Non Hazardous		18

### Related documents

#	Name	Description
1	BWB Contaminated Land Suite WM3	waste stream template used to create this Job


### Report

Created by: Richard Robinson

Created date: 02 Nov 2023 15:53 GMT

Appendices	Page
<a href="#">Appendix A: Classifier defined and non GB MCL determinands</a>	20
<a href="#">Appendix B: Rationale for selection of metal species</a>	21
<a href="#">Appendix C: Version</a>	22

Classification of sample: DS01[2]

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

**Sample details**

Sample name:	LoW Code:	
<b>DS01[2]</b>	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)
<b>0.80 m</b>		
Moisture content:		
<b>17%</b>		
(dry weight correction)		

**Hazard properties**

None identified

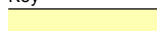



**Determinands**

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


#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide } 033-003-00-0   215-481-4   1327-53-3				5.1	mg/kg	1.32	5.755	mg/kg	0.000576 %	✓	
2	beryllium { beryllium oxide } 004-003-00-8   215-133-1   1304-56-9				1.3	mg/kg	2.775	3.084	mg/kg	0.000308 %	✓	
3	boron { boron tribromide/trichloride/trifluoride (combined) }     10294-33-4, 10294-34-5, 7637-07-2				0.4	mg/kg	13.43	4.591	mg/kg	0.000459 %	✓	
4	cadmium { cadmium sulfide } 048-010-00-4   215-147-8   1306-23-6			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
5	chromium { chromium(III) oxide (worst case) }   215-160-9   1308-38-9				32	mg/kg	1.462	39.974	mg/kg	0.004 %	✓	
6	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				14	mg/kg	1.126	13.472	mg/kg	0.00135 %	✓	
7	lead { lead chromate } 082-004-00-2   231-846-0   7758-97-6			1	7	mg/kg	1.56	9.332	mg/kg	0.000598 %	✓	
8	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
9	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				29	mg/kg	1.579	39.15	mg/kg	0.00391 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex } 034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
11	zinc { zinc chromate } 024-007-00-3   236-878-9   13530-65-9				60	mg/kg	2.774	142.264	mg/kg	0.0142 %	✓	
12	pH     PH				8	pH		8	pH	8pH		
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 } 006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	benzene				<		<	<		ND
	601-020-00-8	200-753-7	71-43-2							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	toluene				<		<	<		ND
	601-021-00-3	203-625-9	108-88-3							
18	xylene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
22	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
23	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							
24	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
26	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
27	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	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							
29	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
30	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
31	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
32	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
33	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
34	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
35	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.028 %		

### Key

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

Classification of sample: DS04[2]

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

**Sample details**

Sample name:	LoW Code:
<b>DS04[2]</b>	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)
<b>0.70 m</b>	
Moisture content:	
<b>11%</b>	
(dry weight correction)	

**Hazard properties**

None identified

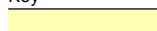



**Determinands**

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


#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide } 033-003-00-0   215-481-4   1327-53-3				2	mg/kg	1.32	2.379	mg/kg	0.000238 %	✓	
2	beryllium { beryllium oxide } 004-003-00-8   215-133-1   1304-56-9				0.26	mg/kg	2.775	0.65	mg/kg	0.000065 %	✓	
3	boron { boron tribromide/trichloride/trifluoride (combined) } 10294-33-4, 10294-34-5, 7637-07-2				0.3	mg/kg	13.43	3.63	mg/kg	0.000363 %	✓	
4	cadmium { cadmium sulfide } 048-010-00-4   215-147-8   1306-23-6			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
5	chromium { chromium(III) oxide (worst case) } 215-160-9   1308-38-9				6	mg/kg	1.462	7.9	mg/kg	0.00079 %	✓	
6	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				6.3	mg/kg	1.126	6.39	mg/kg	0.000639 %	✓	
7	lead { lead chromate } 082-004-00-2   231-846-0   7758-97-6			1	2.7	mg/kg	1.56	3.794	mg/kg	0.000243 %	✓	
8	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
9	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				6	mg/kg	1.579	8.538	mg/kg	0.000854 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex } 034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
11	zinc { zinc chromate } 024-007-00-3   236-878-9   13530-65-9				31	mg/kg	2.774	77.476	mg/kg	0.00775 %	✓	
12	pH PH				7.7	pH		7.7	pH	7.7 pH		
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 } 006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
18	xylene				<		<	<		ND
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
22	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
23	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							
24	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
26	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
27	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	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							
29	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
30	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
31	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
32	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
33	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
34	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
35	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.014 %		

### Key

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

## Classification of sample: DS05[2]

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

### Sample details

Sample name:	LoW Code:	
<b>DS05[2]</b>	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)
<b>2.50 m</b>		
Moisture content:		
<b>19%</b>		
(dry weight correction)		

### Hazard properties

None identified

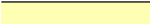



### Determinands

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


#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide } 033-003-00-0   215-481-4   1327-53-3				6.6	mg/kg	1.32	7.323	mg/kg	0.000732 %	✓	
2	beryllium { beryllium oxide } 004-003-00-8   215-133-1   1304-56-9				1.7	mg/kg	2.775	3.965	mg/kg	0.000396 %	✓	
3	boron { boron tribromide/trichloride/trifluoride (combined) } 10294-33-4, 10294-34-5, 7637-07-2				0.5	mg/kg	13.43	5.643	mg/kg	0.000564 %	✓	
4	cadmium { cadmium sulfide } 048-010-00-4   215-147-8   1306-23-6			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
5	chromium { chromium(III) oxide (worst case) } 215-160-9   1308-38-9				41	mg/kg	1.462	50.356	mg/kg	0.00504 %	✓	
6	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				17	mg/kg	1.126	16.084	mg/kg	0.00161 %	✓	
7	lead { lead chromate } 082-004-00-2   231-846-0   7758-97-6			1	9.2	mg/kg	1.56	12.059	mg/kg	0.000773 %	✓	
8	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
9	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				37	mg/kg	1.579	49.11	mg/kg	0.00491 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex } 034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
11	zinc { zinc chromate } 024-007-00-3   236-878-9   13530-65-9				110	mg/kg	2.774	256.434	mg/kg	0.0256 %	✓	
12	pH PH				7.9	pH		7.9	pH	7.9 pH		
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 } 006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	benzene				<		<	<		ND
	601-020-00-8	200-753-7	71-43-2							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	toluene				<		<	<		ND
	601-021-00-3	203-625-9	108-88-3							
18	xylene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
22	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
23	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							
24	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
26	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
27	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	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							
29	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
30	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
31	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
32	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
33	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
34	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
35	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0422 %		

### Key

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

Classification of sample: DS01

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

**Sample details**

Sample name:	LoW Code:
<b>DS01</b>	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)
<b>0.40 m</b>	
Moisture content:	
<b>12%</b>	
(dry weight correction)	

**Hazard properties**

None identified

**Determinands**

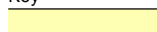



Moisture content: 12% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide } 033-003-00-0   215-481-4   1327-53-3				1.7	mg/kg	1.32	2.004	mg/kg	0.0002 %	✓	
2	beryllium { beryllium oxide } 004-003-00-8   215-133-1   1304-56-9				0.21	mg/kg	2.775	0.52	mg/kg	0.000052 %	✓	
3	boron { boron tribromide/trichloride/trifluoride (combined) } 10294-33-4, 10294-34-5, 7637-07-2				0.3	mg/kg	13.43	3.597	mg/kg	0.00036 %	✓	
4	cadmium { cadmium sulfide } 048-010-00-4   215-147-8   1306-23-6			1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
5	chromium { chromium(III) oxide (worst case) } 215-160-9   1308-38-9				5.7	mg/kg	1.462	7.438	mg/kg	0.000744 %	✓	
6	copper { dicopper oxide; copper (I) oxide } 029-002-00-X   215-270-7   1317-39-1				21	mg/kg	1.126	21.11	mg/kg	0.00211 %	✓	
7	lead { lead chromate } 082-004-00-2   231-846-0   7758-97-6			1	3.7	mg/kg	1.56	5.153	mg/kg	0.00033 %	✓	
8	mercury { mercury dichloride } 080-010-00-X   231-299-8   7487-94-7				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
9	nickel { nickel dihydroxide } 028-008-00-X   235-008-5 [1]   12054-48-7 [1] 234-348-1 [2]   11113-74-9 [2]				5.4	mg/kg	1.579	7.615	mg/kg	0.000762 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex } 034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
11	zinc { zinc chromate } 024-007-00-3   236-878-9   13530-65-9				19	mg/kg	2.774	47.061	mg/kg	0.00471 %	✓	
12	pH PH				8.1	pH		8.1	pH	8.1 pH		
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 } 006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD




#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	benzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	ethylbenzene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
17	toluene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
18	xylene				<5 mg/kg		<5 mg/kg	<0.0005 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
20	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
21	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
22	benzo[a]anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
23	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							
24	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
25	benzo[ghi]perylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2							
26	benzo[k]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
27	chrysene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
28	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							
29	fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0							
30	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
31	indeno[123-cd]pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5							
32	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
33	phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8							
34	pyrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0							
35	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0128 %		

### 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: DS02

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

### Sample details

Sample name:	LoW Code:
<b>DS02</b>	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)
<b>0.20 m</b>	
Moisture content:	
<b>17%</b>	
(dry weight correction)	

### Hazard properties

None identified

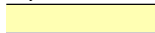



### Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				6.5	mg/kg	1.32	7.335	mg/kg	0.000734 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	beryllium { beryllium oxide }				1.1	mg/kg	2.775	2.609	mg/kg	0.000261 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
3	boron { boron tribromide/trichloride/trifluoride (combined) }				0.6	mg/kg	13.43	6.887	mg/kg	0.000689 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
4	cadmium { cadmium sulfide }			1	0.4	mg/kg	1.285	0.439	mg/kg	0.0000342 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
5	chromium { chromium(III) oxide (worst case) }				15	mg/kg	1.462	18.738	mg/kg	0.00187 %	✓	
		215-160-9	1308-38-9									
6	copper { dicopper oxide; copper (I) oxide }				28	mg/kg	1.126	26.944	mg/kg	0.00269 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
7	lead { lead chromate }			1	46	mg/kg	1.56	61.326	mg/kg	0.00393 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
8	mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
9	nickel { nickel dihydroxide }				14	mg/kg	1.579	18.9	mg/kg	0.00189 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
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	zinc { zinc chromate }				110	mg/kg	2.774	260.817	mg/kg	0.0261 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
12	pH				7.7	pH		7.7	pH	7.7 pH		
			PH									
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											

#	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	TPH (C6 to C40) petroleum group				150 mg/kg		128.205 mg/kg	0.0128 %	✓	
			TPH							
15	acenaphthene				0.66 mg/kg		0.564 mg/kg	0.0000564 %	✓	
		201-469-6	83-32-9							
16	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
17	anthracene				1.2 mg/kg		1.026 mg/kg	0.000103 %	✓	
		204-371-1	120-12-7							
18	benzo[a]anthracene				3.6 mg/kg		3.077 mg/kg	0.000308 %	✓	
	601-033-00-9	200-280-6	56-55-3							
19	benzo[a]pyrene; benzo[def]chrysene				3.7 mg/kg		3.162 mg/kg	0.000316 %	✓	
	601-032-00-3	200-028-5	50-32-8							
20	benzo[b]fluoranthene				4.2 mg/kg		3.59 mg/kg	0.000359 %	✓	
	601-034-00-4	205-911-9	205-99-2							
21	benzo[ghi]perylene				2.2 mg/kg		1.88 mg/kg	0.000188 %	✓	
		205-883-8	191-24-2							
22	benzo[k]fluoranthene				2.2 mg/kg		1.88 mg/kg	0.000188 %	✓	
	601-036-00-5	205-916-6	207-08-9							
23	chrysene				3.7 mg/kg		3.162 mg/kg	0.000316 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	dibenz[a,h]anthracene				0.48 mg/kg		0.41 mg/kg	0.000041 %	✓	
	601-041-00-2	200-181-8	53-70-3							
25	fluoranthene				9.1 mg/kg		7.778 mg/kg	0.000778 %	✓	
		205-912-4	206-44-0							
26	fluorene				0.51 mg/kg		0.436 mg/kg	0.0000436 %	✓	
		201-695-5	86-73-7							
27	indeno[123-cd]pyrene				2 mg/kg		1.709 mg/kg	0.000171 %	✓	
		205-893-2	193-39-5							
28	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
29	phenanthrene				5.8 mg/kg		4.957 mg/kg	0.000496 %	✓	
		201-581-5	85-01-8							
30	pyrene				7.8 mg/kg		6.667 mg/kg	0.000667 %	✓	
		204-927-3	129-00-0							
31	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0555 %		

### 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 significant volatile contamination identified.


Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0128%)

Classification of sample: DS03

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

Sample details

Sample name:	LoW Code:
<b>DS03</b>	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
<b>0.15 m</b>	
Moisture content:	
<b>7.2%</b> (dry weight correction)	

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.112%)

**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.: 0.112%)


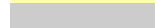



Determinands

Moisture content: 7.2% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				6.1	mg/kg	1.32	7.513	mg/kg	0.000751 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	beryllium { beryllium oxide }				1	mg/kg	2.775	2.589	mg/kg	0.000259 %	✓	
	004-003-00-8	215-133-1	1304-56-9									
3	boron { boron tribromide/trichloride/trifluoride (combined) }				0.5	mg/kg	13.43	6.264	mg/kg	0.000626 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2									
4	cadmium { cadmium sulfide }			1	0.3	mg/kg	1.285	0.36	mg/kg	0.000028 %	✓	
	048-010-00-4	215-147-8	1306-23-6									
5	chromium { chromium(III) oxide (worst case) }				21	mg/kg	1.462	28.631	mg/kg	0.00286 %	✓	
		215-160-9	1308-38-9									
6	copper { dicopper oxide; copper (I) oxide }				24	mg/kg	1.126	25.206	mg/kg	0.00252 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
7	lead { lead chromate }			1	39	mg/kg	1.56	56.747	mg/kg	0.00364 %	✓	
	082-004-00-2	231-846-0	7758-97-6									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
8	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	nickel { nickel dihydroxide }				15 mg/kg	1.579	22.101 mg/kg	0.00221 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
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	zinc { zinc chromate }				73 mg/kg	2.774	188.911 mg/kg	0.0189 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
12	pH		PH		10.4 pH		10.4 pH	10.4 pH		
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	TPH (C6 to C40) petroleum group		TPH		1200 mg/kg		1119.403 mg/kg	0.112 %	✓	
15	acenaphthene	201-469-6	83-32-9		0.1 mg/kg		0.0933 mg/kg	0.00000933 %	✓	
16	acenaphthylene	205-917-1	208-96-8		0.1 mg/kg		0.0933 mg/kg	0.00000933 %	✓	
17	anthracene	204-371-1	120-12-7		0.47 mg/kg		0.438 mg/kg	0.0000438 %	✓	
18	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.3 mg/kg		2.146 mg/kg	0.000215 %	✓	
19	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	3.2 mg/kg		2.985 mg/kg	0.000299 %	✓	
20	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	3.5 mg/kg		3.265 mg/kg	0.000326 %	✓	
21	benzo[ghi]perylene	205-883-8	191-24-2		2.2 mg/kg		2.052 mg/kg	0.000205 %	✓	
22	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	1.8 mg/kg		1.679 mg/kg	0.000168 %	✓	
23	chrysene	601-048-00-0	205-923-4	218-01-9	2.8 mg/kg		2.612 mg/kg	0.000261 %	✓	
24	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.53 mg/kg		0.494 mg/kg	0.0000494 %	✓	
25	fluoranthene	205-912-4	206-44-0		5 mg/kg		4.664 mg/kg	0.000466 %	✓	
26	fluorene	201-695-5	86-73-7		0.09 mg/kg		0.084 mg/kg	0.0000084 %	✓	
27	indeno[123-cd]pyrene	205-893-2	193-39-5		2.1 mg/kg		1.959 mg/kg	0.000196 %	✓	
28	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
29	phenanthrene	201-581-5	85-01-8		1.4 mg/kg		1.306 mg/kg	0.000131 %	✓	
30	pyrene	204-927-3	129-00-0		4.6 mg/kg		4.291 mg/kg	0.000429 %	✓	
31	phenol	604-001-00-2	203-632-7	108-95-2	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
Total:								0.147 %		

### 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
<b>&lt;LOD</b>	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 significant volatile contamination identified.**


Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.112%)

### Classification of sample: DS04

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

### Sample details

Sample name:	LoW Code:	
<b>DS04</b>	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)
<b>0.20 m</b>		
Moisture content:		
<b>12%</b>		
(dry weight correction)		

### Hazard properties

None identified





### Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				5.9 mg/kg	1.32	6.955 mg/kg	0.000696 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	beryllium { beryllium oxide }				0.73 mg/kg	2.775	1.809 mg/kg	0.000181 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
3	boron { boron tribromide/trichloride/trifluoride (combined) }				1.7 mg/kg	13.43	20.385 mg/kg	0.00204 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2							
4	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.344 mg/kg	0.0000268 %	✓	
	048-010-00-4	215-147-8	1306-23-6							
5	chromium { chromium(III) oxide (worst case) }				16 mg/kg	1.462	20.879 mg/kg	0.00209 %	✓	
		215-160-9	1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }				21 mg/kg	1.126	21.11 mg/kg	0.00211 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	51 mg/kg	1.56	71.027 mg/kg	0.00455 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	nickel { nickel dihydroxide }				14 mg/kg	1.579	19.744 mg/kg	0.00197 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
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	zinc { zinc chromate }				150 mg/kg	2.774	371.537 mg/kg	0.0372 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
12	pH				8.3 pH		8.3 pH	8.3 pH		
			PH							
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									

#	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	TPH (C6 to C40) petroleum group				99 mg/kg		88.393 mg/kg	0.00884 %	✓	
			TPH							
15	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
16	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
17	anthracene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7							
18	benzo[a]anthracene				0.31 mg/kg		0.277 mg/kg	0.0000277 %	✓	
	601-033-00-9	200-280-6	56-55-3							
19	benzo[a]pyrene; benzo[def]chrysene				0.37 mg/kg		0.33 mg/kg	0.000033 %	✓	
	601-032-00-3	200-028-5	50-32-8							
20	benzo[b]fluoranthene				0.5 mg/kg		0.446 mg/kg	0.0000446 %	✓	
	601-034-00-4	205-911-9	205-99-2							
21	benzo[ghi]perylene				0.31 mg/kg		0.277 mg/kg	0.0000277 %	✓	
		205-883-8	191-24-2							
22	benzo[k]fluoranthene				0.25 mg/kg		0.223 mg/kg	0.0000223 %	✓	
	601-036-00-5	205-916-6	207-08-9							
23	chrysene				0.4 mg/kg		0.357 mg/kg	0.0000357 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	dibenz[a,h]anthracene				0.05 mg/kg		0.0446 mg/kg	0.00000446 %	✓	
	601-041-00-2	200-181-8	53-70-3							
25	fluoranthene				0.69 mg/kg		0.616 mg/kg	0.0000616 %	✓	
		205-912-4	206-44-0							
26	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
27	indeno[123-cd]pyrene				0.26 mg/kg		0.232 mg/kg	0.0000232 %	✓	
		205-893-2	193-39-5							
28	naphthalene				0.05 mg/kg		0.0446 mg/kg	0.00000446 %	✓	
	601-052-00-2	202-049-5	91-20-3							
29	phenanthrene				0.32 mg/kg		0.286 mg/kg	0.0000286 %	✓	
		201-581-5	85-01-8							
30	pyrene				0.62 mg/kg		0.554 mg/kg	0.0000554 %	✓	
		204-927-3	129-00-0							
31	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0605 %		

### 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 significant volatile contamination identified.

Hazard Statements hit:


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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00884%)



### Classification of sample: DS05

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

### Sample details

Sample name:	LoW Code:	
<b>DS05</b>	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)
<b>0.20 m</b>		
Moisture content:		
<b>5.1%</b>		
(dry weight correction)		

### Hazard properties

None identified





### Determinands

Moisture content: 5.1% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				4.4 mg/kg	1.32	5.528 mg/kg	0.000553 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	beryllium { beryllium oxide }				0.63 mg/kg	2.775	1.664 mg/kg	0.000166 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
3	boron { boron tribromide/trichloride/trifluoride (combined) }				0.5 mg/kg	13.43	6.389 mg/kg	0.000639 %	✓	
			10294-33-4, 10294-34-5, 7637-07-2							
4	cadmium { cadmium sulfide }			1	0.3 mg/kg	1.285	0.367 mg/kg	0.0000285 %	✓	
	048-010-00-4	215-147-8	1306-23-6							
5	chromium { chromium(III) oxide (worst case) }				17 mg/kg	1.462	23.641 mg/kg	0.00236 %	✓	
		215-160-9	1308-38-9							
6	copper { dicopper oxide; copper (I) oxide }				22 mg/kg	1.126	23.568 mg/kg	0.00236 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	42 mg/kg	1.56	62.333 mg/kg	0.004 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	nickel { nickel dihydroxide }				12 mg/kg	1.579	18.034 mg/kg	0.0018 %	✓	
	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]							
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	zinc { zinc chromate }				88 mg/kg	2.774	232.279 mg/kg	0.0232 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
12	pH				8.9 pH		8.9 pH	8.9 pH		
			PH							
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									

#	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	TPH (C6 to C40) petroleum group				350 mg/kg		333.016 mg/kg	0.0333 %	✓	
			TPH							
15	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
16	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8							
17	anthracene				0.09 mg/kg		0.0856 mg/kg	0.0000856 %	✓	
		204-371-1	120-12-7							
18	benzo[a]anthracene				0.49 mg/kg		0.466 mg/kg	0.0000466 %	✓	
	601-033-00-9	200-280-6	56-55-3							
19	benzo[a]pyrene; benzo[def]chrysene				0.68 mg/kg		0.647 mg/kg	0.0000647 %	✓	
	601-032-00-3	200-028-5	50-32-8							
20	benzo[b]fluoranthene				0.84 mg/kg		0.799 mg/kg	0.0000799 %	✓	
	601-034-00-4	205-911-9	205-99-2							
21	benzo[ghi]perylene				0.5 mg/kg		0.476 mg/kg	0.0000476 %	✓	
		205-883-8	191-24-2							
22	benzo[k]fluoranthene				0.28 mg/kg		0.266 mg/kg	0.0000266 %	✓	
	601-036-00-5	205-916-6	207-08-9							
23	chrysene				0.53 mg/kg		0.504 mg/kg	0.0000504 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	dibenz[a,h]anthracene				0.09 mg/kg		0.0856 mg/kg	0.0000856 %	✓	
	601-041-00-2	200-181-8	53-70-3							
25	fluoranthene				0.9 mg/kg		0.856 mg/kg	0.0000856 %	✓	
		205-912-4	206-44-0							
26	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7							
27	indeno[123-cd]pyrene				0.38 mg/kg		0.362 mg/kg	0.0000362 %	✓	
		205-893-2	193-39-5							
28	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
29	phenanthrene				0.35 mg/kg		0.333 mg/kg	0.0000333 %	✓	
		201-581-5	85-01-8							
30	pyrene				0.86 mg/kg		0.818 mg/kg	0.0000818 %	✓	
		204-927-3	129-00-0							
31	phenol				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	604-001-00-2	203-632-7	108-95-2							
Total:								0.0695 %		

## 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 significant volatile contamination identified.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0333%)

## Appendix A: Classifier defined and non GB MCL determinands

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

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

Data source: N/A

Data source date: 06 Aug 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

### • pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

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

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

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

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

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

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

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

Description/Comments:

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

Reason for additional Hazards Statement(s):

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

### • anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

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

Data source date: 17 Jul 2015

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

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

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

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

Data source date: 23 Jul 2015

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

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

Description/Comments: Data from C&L Inventory Database  
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>  
Data source date: 21 Aug 2015  
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database  
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>  
Data source date: 06 Aug 2015  
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

Description/Comments: Data from C&L Inventory Database  
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>  
Data source date: 06 Aug 2015  
Hazard Statements: Carc. 2; H351

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

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

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

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

## Appendix B: Rationale for selection of metal species

### arsenic {arsenic trioxide}

Worst case species based on risk phrases

### beryllium {beryllium oxide}

Worst case species based on risk phrases

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

Worst case species based on risk phrases

### cadmium {cadmium sulfide}

Worst case species based on risk phrases

### chromium {chromium(III) oxide (worst case)}

All chromium VI concentrations below the laboratory LoD (<1.8mg/kg).

### copper {dicopper oxide; copper (I) oxide}

Most likely common species

### lead {lead chromate}

Worst case species based on risk phrases

### mercury {mercury dichloride}

Worst case species based on risk phrases

### nickel {nickel dihydroxide}

Worst case species based on risk phrases

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

Worst case species based on risk phrases

### zinc {zinc chromate}

Worst case species based on risk phrases

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

Worst case species

### Appendix C: Version

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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** - 1stEditionv1.2.GB-Oct2021

**CLP Regulation** - Regulation1272/2008/ECof16December2008

**1st ATP** - Regulation790/2009/ECof10August2009

**2nd ATP** - Regulation286/2011/ECof10March2011

**3rd ATP** - Regulation618/2012/EUof10July2012

**4th ATP** - Regulation487/2013/EUof8May2013

**Correction to 1st ATP** - Regulation758/2013/EUof7August2013

**5th ATP** - Regulation944/2013/EUof2October2013

**6th ATP** - Regulation605/2014/EUof5June2014

**WFD Annex III replacement** - Regulation1357/2014/EUof18December2014

**Revised List of Waste 2014** - Decision2014/955/EUof18December2014

**7th ATP** - Regulation2015/1221/EUof24July2015

**8th ATP** - Regulation(EU)2016/918of19May2016

**9th ATP** - Regulation(EU)2016/1179of19July2016

**10th ATP** - Regulation(EU)2017/776of4May2017

**HP14 amendment** - Regulation(EU)2017/997of8June2017

**13th ATP** - Regulation(EU)2018/1480of4October2018

**14th ATP** - Regulation(EU)2020/217of4October2019

**15th ATP** - Regulation(EU)2020/1182of19May2020

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

**Regulations 2020** - UK:2020No.1567of16thDecember2020


**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** - version1.1of09June2021

**Appendix 9: Soil Import Acceptance Criteria**

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Generic Assessment Criteria		
Vicars Croft, Conery Lane, Whatton 232723	S4UL Residential with homegrown produce mg/kg	 A CAF GROUP COMPANY
		Source
Arsenic	37.00	LQM_CIEH_S4UL
Barium	1350.00	LQM_CIEH_S4UL
Beryllium	1.70	LQM_CIEH_S4UL
Boron	290.00	LQM_CIEH_S4UL
Cadmium	11.00	LQM_CIEH_S4UL
Chromium VI	6.00	LQM_CIEH_S4UL
Chromium III	910.00	LQM_CIEH_S4UL
Copper	2400.00	LQM_CIEH_S4UL
Lead	200.00	DEFRA_C4SL
Inorganic Mercury	40.00	LQM_CIEH_S4UL
Nickel	180.00	LQM_CIEH_S4UL
Selenium	250.00	LQM_CIEH_S4UL
Vanadium	410.00	LQM_CIEH_S4UL
Zinc	3700.00	LQM_CIEH_S4UL
Cyanide (free)	43.00	BWB
Cyanide (Complex)	213.00	LQM_CIEH_S4UL
Phenol	120.00	LQM_CIEH_S4UL
Benzene	0.09	LQM_CIEH_S4UL
Toluene	130.00	LQM_CIEH_S4UL
Ethylbenzene	47.00	LQM_CIEH_S4UL
Total Xylene	56.00	LQM_CIEH_S4UL
TPH (EC5-6) aliphatic	42.00	LQM_CIEH_S4UL
TPH (>EC6-8) aliphatic	100.00	LQM_CIEH_S4UL
TPH (>EC8-10) aliphatic	27.00	LQM_CIEH_S4UL
TPH (>EC10-12) aliphatic	130.00	LQM_CIEH_S4UL
TPH (>EC12-16) aliphatic	500.00	See note 1.
TPH (>EC16-21) aliphatic	500.00	See note 1.
TPH (>EC21-35) aliphatic	500.00	See note 1.
TPH (>EC35-44) aliphatic	500.00	See note 1.
TPH (>EC6-7) aromatic (benzene)	70.00	LQM_CIEH_S4UL
TPH (>EC7-8) aromatic (toluene)	130.00	LQM_CIEH_S4UL
TPH (>EC8-10) aromatic	34.00	LQM_CIEH_S4UL
TPH (>EC10-12) aromatic	74.00	LQM_CIEH_S4UL
TPH (>EC12-16) aromatic	140.00	LQM_CIEH_S4UL
TPH (>EC16-21) aromatic	260.00	LQM_CIEH_S4UL
TPH (>EC21-35) aromatic	500.00	See note 1.
TPH (>EC35-44) aromatic	500.00	See note 1.
Total TPH	500.00	See note 1.
Naphthalene	2.30	LQM_CIEH_S4UL
Acenaphthylene	100.00	LQM_CIEH_S4UL
Acenaphthene	100.00	LQM_CIEH_S4UL
Fluorene	100.00	LQM_CIEH_S4UL

Phenanthrene	95.00	LQM_CIEH_S4UL
Anthracene	100.00	LQM_CIEH_S4UL
Fluoranthene	100.00	LQM_CIEH_S4UL
Pyrene	100.00	LQM_CIEH_S4UL
Benzo(a)anthracene	7.20	LQM_CIEH_S4UL
Chrysene	15.00	LQM_CIEH_S4UL
Benzo(b)fluoranthene	2.60	LQM_CIEH_S4UL
Benzo(k)fluoranthene	77.00	LQM_CIEH_S4UL
Benzo(a)pyrene	2.20	LQM_CIEH_S4UL
Indeno(123-cd)pyrene	27.00	LQM_CIEH_S4UL
Dibenzo(ah)anthracene	0.24	LQM_CIEH_S4UL
Benzo(g,h,i)perylene	100.00	LQM_CIEH_S4UL
Total PAH (US EPA 16)	100.00	See note 1.
Asbestos	Non-Detect	N/A

1. Limited to prevent import of new contamination sources.





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