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GEOENVIRONMENTAL APPRAISAL of land at

GRAVEN HILL, BICESTER, OX25 2BF

Prepared on behalf of LNT Care Developments (3) Limited Report 7218/1

July 2024

GEOENVIRONMENTAL SUMMARY

Site Description	The site comprises a roughly rectangular parcel of land that is generally devoid of vegetation or other surface coverings. Original site levels appear to have been reduced by around 700mm leaving bear ground with raised sewer manhole covers and a thin strip of asphalt along the eastern boundary. The only structure on site is a square of low brick wall in the south-central area.
History	The site appears to have first been developed form part of a larger agricultural field during the Second World War. The Rodney House complex development comprised three buildings with two tanks and areas of soft and car parking; this appears to have been used as Civil Service Social Club throughout its existence.
Made Ground	Made ground was not encountered at the site.
Natural Ground	Firm becoming stiff clay extended from the surface to depths of around 1.7m where very weak mudstone was encountered.
Contamination & Remediation	The historical information suggests that the site was developed in the 1940's as a social club and remained in that use until its recent demolition. Two likely water but possible fuel tanks were located on site. Made ground appears to have been removed from site.
	Analysis has determined that all soils at the site is 'clean' and suitable for reuse either on or off-site and remediation is not required.
	There are no known or suspected areas of landfilling within 250m, and the site is not in area considered susceptible to mines gas, nor is it underlain by shallow mineworkings.
Hazardous Gas	The site is in an area where less than 1% of homes are estimated to be above the radon action level.
	As such, no special precautions against hazardous gas are required.
Mining & Quarrying	The site is located outside of any potential mining areas.
	There are no quarries within 250m of the site.
Foundations	Conventional strip foundations will be suitable for the two-storey care home founding in the clay at around 1m depth deepened near to any proposed trees. Sub-surface concrete should be Design Sulphate Class DS-3/AC-3.
Groundwater & Excavations	Groundwater was not encountered during he investigation but previous monitoring suggest that groundwater might seep into excavations over a longer period of time.
	The stability of excavations was good.
	The site lies in Flood Zone 1, where the risk of flooding from rivers or the sea is classified as low.
Flooding & Drainage	Due to very slow infiltration rates recorded during <i>insitu</i> testing soakaways will not provide a suitable means of surface water disposal.
This brief summary shou	Id not be assumed to represent a complete account of

This brief summary should not be assumed to represent a complete account of all the potential geoenvironmental issues that may exist at the site. As such it is strongly recommended that the report be read in its entirety.





FOREWORD (Geoenvironmental Investigation Report)

This report has been prepared for the sole internal use and reliance of the LNT Care Developments (3) Limited. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Calabrian Limited (Calabrian); such authorisation not to be unreasonably withheld. If any unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill.

The report presents observations and factual data obtained during our site investigation and provides an assessment of geoenvironmental issues with respect to information provided by the Client regarding the proposed development. Further advice should be sought from Calabrian prior to significant revision of the development proposals.

The report should be read in its entirety, including all associated drawings and appendices. Calabrian cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

The findings and opinions conveyed in this report (including review of any third-party reports) are based on information obtained from a variety of sources as detailed within this report, and which Calabrian believes are reliable. All reasonable care and skill has been applied in examining the information obtained. Nevertheless, Calabrian cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

The report represents the findings and opinions of experienced geoenvironmental consultants. Calabrian does not provide legal advice and the advice of lawyers may also be required.

Intrusive investigation can only investigate shallow ground beneath a small proportion of the total site area. It is possible therefore that the intrusive investigation undertaken by Calabrian, whilst fully appropriate, may not have encountered all significant subsurface conditions. Consequently, no liability can be accepted for conditions not revealed by the exploratory holes. Any opinion expressed as to the possible configuration of strata between or below exploratory holes is for guidance only and no responsibility is accepted as to its accuracy

It should be borne in mind that the timescale over which the investigation was undertaken may not allow the establishment of equilibrium groundwater levels. Particularly relevant in this context is that groundwater levels are susceptible to seasonal and other variations and may be higher during wetter periods than those encountered during this commission.

Where the report refers to the potential presence of invasive weeds such as Japanese Knotweed, or the presence of asbestos containing materials, it should be noted that the observations are for information only and should be verified by a suitably qualified expert.

This report assumes that ground levels will not change significantly from those existing at present and that the care home will be of two-storey construction. If this is not to be the case, then some modification to this report may be required.

Calabrian cannot be responsible for the consequences of changing practices, revisions to waste management legislation etc that may affect the viability of proposed remediation options.

Calabrian reserve the right to amend their conclusions and recommendations in the light of further information that may become available.

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1 INTRODUCTION

1.1 THE COMMISSION AND BRIEF

Calabrian Limited (Calabrian), were commissioned by LNT Care Developments (3) Limited (LNT) to carry out a geoenvironmental appraisal of land at Graven Hill, Bicester, OX25 2BF.

Correspondence regarding Calabrian's appointment, including the brief for this investigation, is included in Appendix A. The agreed scope of works included:

- A review of third-party reports;
- a site walkover and inspection;
- an assessment of the land use history;
- determination of the site's environmental setting;
- an intrusive ground investigation comprising six trial pits;
- assessment of the geotechnical properties of the near surface deposits to enable provision of foundation and highway recommendations;
- a qualitative assessment of contamination risks; and,
- recommendations for the necessary site preparatory and remediation works.

1.2 OBJECTIVES

Primary aims of this investigation were to identify salient geoenvironmental issues affecting the site to enable LNT to obtain budget costs for the necessary foundation, site preparatory and remediation works, and to support the submission of a planning application to the local authority.

1.3 DEVELOPMENT PROPOSALS

It is understood that consideration is being given to redevelopment of the site with a twostorey residential care home with associated gardens/landscaping, access road and car park. A proposed site layout has been provided by LNT and is copied as Drawing 7218/2.

1.4 REPORT FORMAT AND LIMITATIONS

General notes and limitations relevant to all Calabrian investigations are described in the Foreword and should be read in conjunction with this report. The text of the report draws specific attention to any modification to these procedures and to any other special techniques employed.

2 SITE DESCRIPTION

2.1 GENERAL

Details of the site are given below:

- Location: 1.8km south of Bicester town centre
- Nearest Post Code: OX25 2BF
- National Grid Reference: SP 589 212
- Area: 1 hectare

Known Services:

- Underground sewer; and,
- Water main.

2.2 SITE FEATURES

Calabrian completed a walkover survey of the site on 4th July 2024.

The site comprises a roughly rectangular parcel of land that is generally devoid of vegetation or other surface coverings. Original site levels appear to have been reduced by around 700mm leaving bear ground with raised sewer manhole covers and a thin strip of asphalt along the eastern boundary. The only structure on site is a square of low brick wall in the south-central area.

The site has evidently been flooded in recent times with some ponding of water still remaining in the north.

An open and heavily vegetated ditch/watercourse runs along the western boundary. In general, the site boundaries are marked by temporary Heras style fencing.

Existing salient features, at the time of the walkover are presented on Drawing No. 7218/3. A selection of site photographs are included on Drawing 7218/4.

3 SITE HISTORY

In order to investigate the development history and previous land uses at the site and immediate surrounding land, site centred extracts from Ordnance Survey (OS) plans dating back to 1881 have been examined. These plans are presented in Appendix B.

From the historical OS maps the site appears to have first been developed from part of a larger agricultural field during the Second World War. The Rodney House complex development comprised three buildings with two tanks (these appear to have been water holding) and areas of soft and car parking.

Surrounding land to the north and east appear to have remained as agricultural land or a sports field. Land to the south comprised parts of the wider Graven Hill MOD site.

Rodney House Complex¹

The complex was constructed during World War Two. It was originally accessed from a drive via from the A41 and was used as the Civil Service Social Club (CSSC) until the early twenty first century. Buildings located in the Rodney House Complex, at the time of recording, include two long prefabricated single storey huts and a service/plant building with water tower (see photograph below).

The original use of the Rodney House Complex is unknown but may have always functioned as a social club, this would account for why it has its own entrance and is separated from E Site at the south. Aerial photography taken at the end of World War Two shows that the complex was originally much bigger than existing at the time of recording, which only accounts for about 25% of the original buildings. A road extended to the south of the existing buildings with an 'in and out' drive which serviced four detached huts. A football pitch was also located on the east side of the complex.



Calabrian

¹ Extract from: Graven Hill, MOD Bicester, Oxfordshire. Archaeological Building Recording. Prepared by Waterman Infrastructure & Environment Limited on behalf of Graven Hill Village Development Company Document Reference: WIB13983-106_R_1_1_3_TM, dated October 2015.

4.1 GENERAL

The responses received from ZeticaUXO, the BGS and Landmark are presented in Appendix C.

lssue Data Reviewed	Remark
Geology 1:50,000 BGS map Borehole Data	Superficial – None. Solid - Peterborough Member (mudstone). Shallowest coal seam - None. Strata Dip – Not recorded. Faults – None beneath the site.
Mining Coal Authority BGS maps	The site is located beyond the CA's defined coalfields.
Quarrying Landmark Report Historical OS Plans	None within 500m.
Radon UKHSA Map Landmark Report	No protective measures required. The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level).
Hydrogeology Landmark Report Groundwater Vulnerability map	Source Protection Zone? No. Aquifers: None (Superficial); Unproductive (Bedrock). Groundwater abstractions? Nearest 1.1km north-west. Pollution incidents? None relating to the site.
Hydrology Landmark Report	Nearest watercourse(s) – Un-named watercourse along western boundary. Water quality – Nearest 615m north, C in Langford Beck. Pollution incidents? A minor pollution incident relating to oil in the adjacent watercourse was recorded within 100m of the site in December 1999. Abstractions? Nearest 1.8km north-east. Discharge consents? None relating to the site.
Landfill Sites Landmark Report	None within 500m. No potentially infilled land within 250m.
Flood Risk	The site lies in Flood Zone 1, where the risk of flooding from rivers or the sea is classified as low.

4.2 UNEXPLODED ORDNANCE (UXO) RISK ASSESSMENT

Military activities including those conducted as part of both the First and Second World Wars have resulted in a legacy of unexploded ordnance (UXO) being present within the shallow soils of the UK.

UXO result from various sources including both allied (military training) and German (bombing raids) with a guide figure of approximately 10% of all munitions failing to function as designed.

The likelihood of UXO being encountered on a development site is influenced by several factors including: the proximity to strategic targets; the nature of the development works being undertaken; and evidence of local damage in the post-war periods amongst others. To determine the likelihood of UXO being present on a site, a stepwise risk assessment process is followed. This process is outlined within CIRIA C681².

An initial UXO threat assessment has been undertaken using the ZeticaUXO risk map. The site is located in a low-risk area meaning that there is no greater probability of encountering UXO than anywhere else in the UK; on this basis further assessment is not advocated.

5 PREVIOUS INVESTIGATIONS

5.1 GENERAL

LNT have provided Calabrian with a copies of the following reports:

- Desk Study Report. Bicester Health Care Hub. Prepared by Harrison Geotechnical Consulting on behalf of Rossi Long Consulting Limited. Report referenced GN23319_DS, dated February 2021.
- Site Investigation Report. Bicester Health Care Hub. Prepared by Harrison Geotechnical Consulting on behalf of Rossi Long Consulting Limited. Report referenced GN23319_SI, dated June 2021.

5.2 SUMMARY OF HARRISONS FINDINGS

- In early 2021 the site was disused after the demolition of the buildings associated with Rodney House. The eastern side of the site consisted of asphalt hard standing and to the far west of the site rough grass. Ponding of water was noted where buildings had been removed in the north-east;
- tanks were noted from historical maps and suggested as a potential source of contamination;
- topsoil and made ground were encountered across the site up to 0.7m depth. Made Ground was generally present in the east of the site and absent in the west, with the exception of DCS04 located in the west of the site where Made Ground was present to a depth of 0.4m;
- the natural ground conditions were relatively consistent across the site and comprised cohesive soils. The clay soils are recorded as soft to firm until approximately 2.0m depth, becoming firm to approximately 3.00m below which depth it becomes stiff;
- groundwater was not encountered in any exploratory locations during the investigation; however, water was recorded within all three monitoring wells during subsequent visits. Water levels ranged from 0.15m to 0.98m in DCS02, 0.35m to 0.70m in DCS03, and from 2.88m to dry in DCS06. It is considered the water present in the wells is likely to be perched within Made Ground (DCS02, DCS03) or from discrete seepages within the underlying clay (DCS06).

- elevated ground gas concentrations and flow rates were not recorded, and the site was classified as CS1 where no protective measures are required; and,
- based on a commercial end use, no contaminants exceed the screening criteria.

6 GROUND INVESTIGATION DESIGN

6.1 ANTICIPATED GROUND CONDITIONS

Based on the Environmental Setting and previous land use data reviewed anticipated ground conditions are expected to comprise:

- **Made Ground** given the reduced site levels and natural ground noted at the surface no significant made ground is anticipated.
- **Natural Soils** firm to stiff clay.
- **Bedrock** not anticipated at shallow depth.
- Mineworkings not located within a mining area.
- **Groundwater** not anticipated at shallow depth during the investigation.

6.2 POTENTIAL ISSUES

Based on the data above and that in Sections 2 (Site Description) and 3 (History), potential ground-related issues associated with this site are likely to include:

Potential on-site contamination sources:

- Possible above ground fuel tanks (although likely for used water), see Drawing 7218/6.
- 2. Possible made ground.

Potential off-site contamination sources:

1. None.

Potential geotechnical hazards:

1. None.

Other potential constraints:

1. None.

6.3 PRELIMINARY CONCEPTUAL SITE MODEL

The historical information suggests that the site was developed in the 1940's as a social club and remained in that use until its recent demolition. Two likely water but possible fuel tanks were located on site. Made ground appears to have been removed from site. There is some limited potential that former uses have caused ground contamination.

Because of this assessment, anticipated potential contaminants, within soil and/or groundwater include:

- pH, and total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc);
- asbestos;
- calorific Value (CV) within any ashy material;
- Poly Aromatic Hydrocarbons (PAH); and,
- Total Petroleum Hydrocarbons (TPH) includes BTEX.

Potential pollutant linkages are shown on a preliminary conceptual site model, presented as Drawing No 7218/5 with a summary of the possible source-pathway-receptor linkages and risk definitions provided in the table below. Clearly the conceptual model will be subject to modification in light of data arising from the proposed intrusive ground investigation.

6.4 INVESTIGATION STRATEGY

The preliminary conceptual site model has used as a basis for design of an appropriate ground investigation, the scope of which is summarised below:

Exploratory Hole Type	Purpose		
Trail Pits (Machine Excavated)	 To determine the general nature of soils underlying the site, including the: Nature, distribution, and thickness of made ground; nature, degree, and extent of contamination; proportion of undesirable elements eg biodegradable matter, foundations etc; and, suitability of the ground for founding structures and pavements. To determine whether soakaways could be utilised for storm water drainage. 		

Proposed exploratory hole locations should be selected to provide a representative view of the strata beneath the site and to target potential areas of interest identified in Section 6.2 above. A nominal 30m grid spacing should be appropriate, with additional exploratory locations scheduled as necessary in light of the ground conditions actually encountered.

The number of soil samples taken should be reflective of the geological complexity actually encountered, but in general about three samples should be taken from most exploratory holes.

Page

Preliminary Conceptual Site Model – the table below summarises the possible source-pathway-receptor linkages with risk definitions in accordance with CIRIA C552³.

Source	Exposure Pathway	Potential Receptor	Probability of Exposure	Consequence of Exposure	Discussion of Pollutant Linkage	Risk
Made ground associated with previous development, and historical tanks, (heavy metals, PAHs, asbestos, and fuel / oil hydrocarbons).		Humans – future users of site infrastructure (Residents and site workers)	Likely	Medium (dependent on the types of contaminants someone is exposed to).	Residents and site users could come into contact with made ground if near surface in garden or landscaped areas.	Moderate Risk
	Inhalation, Ingestion and Dermal Contact	Humans - construction & maintenance workers	Low (with appropriate use of PPE / RPE)	Medium (dependent on the types of contaminants someone is exposed to).	Potential for construction and maintenance workers to encounter contaminated soil / asbestos fibres. Exposure times likely to be limited and risks should be reduced by wearing appropriate personnel protective equipment (PPE/RPE).	Low to Moderate Risk
	Leaching and migration	Surface water — Adjacent drain	Low Likelihood	Medium	The Calder River is located in close proximity to the site (50 m to the south), Infiltration and migration is predicted to be limited and the migration potential is assessed as low.	Low to Moderate Risk
	Direct contact	Foundation	Likely	Mild	Potential for contaminants posing risk to new foundations and underground structures to be present.	Low to Moderate Risk

³ Contaminated land risk assessment. A guide to good practice (C552), 2001.

7 FIELDWORK

7.1 OBJECTIVES

The original investigation strategy is outlined in Section 6.4 above.

7.2 EXPLORATORY HOLE LOCATION CONSTRAINTS

No access was available in the extreme north of the site due to very soft and waterlogged ground.

7.3 SCOPE OF WORKS

Fieldwork was supervised by Calabrian on 4th July 2024 and comprised the exploratory holes listed below.

Technique Type	Exploratory Holes	Final depth(s)	Remarks
Trial pitting (machine dug)	TP101 to TP106	2.5m	Vane tests in cohesive soils
Soakaway Tests	Within TP105 and 106	1.5m to 2.5m	

Exploratory hole logs are presented in Appendix D. These logs include details of the:

- Samples taken;
- descriptions of the solid strata, and any groundwater encountered; and,
- results of the in-situ testing.

Exploratory hole locations are shown on Drawing No. 7218/6.

8 GROUND CONDITIONS

8.1 GENERAL

A complete record of strata encountered beneath the proposed development site is given on the various exploratory hole records, presented in Appendix D.

Typical ground conditions encountered in each of these areas are described below in Sections 8.2 (made ground) and 8.3 (natural ground).

8.2 MADE GROUND

Made ground was not encountered at the site.

8.3 **OBSTRUCTIONS**

It is apparent from a review of historical OS Plans (see Section 3) that buildings have been present on site; however, with the exception of the low brick structure in the south and buildings and their foundations appear to have been removed from site.

8.4 NATURAL GROUND

Natural ground was encountered within each of the exploratory holes, and typically comprised firm becoming stiff clay extended from the surface to depths of around 1.7m where very weak mudstone was encountered.

8.5 VISUAL & OLFACTORY EVIDENCE OF ORGANIC CONTAMINATION

No visual or olfactory evidence of organic contamination such as free fuel/oil product, oily sheens or discernible fuel/oil odours was noted during the investigation.

8.6 GROUNDWATER

No significant inflows of groundwater were encountered during the investigation.

8.7 STABILITY

The stability of excavations was good.

8.8 REVISED CONCEPTUAL GROUND MODEL (GROUND CONDITIONS)

The Preliminary Conceptual Site Model has been revised in light of data obtained during the ground investigation, most notably with respect to:

- The presence of made ground, including the presence of significant buried obstructions; and,
- the strength, nature, and depth of underlying natural strata.

Further refinement of the Conceptual Site Model is presented in Section 9, where the results of laboratory testing for contaminants have been considered.

9 CONTAMINATION (ANALYSIS, RISK ASSESSMENT & REMEDIATION)

9.1 GENERAL

The historical information suggests that the site was developed in the 1940's as a social club and remained in that use until its recent demolition. Two likely water but possible fuel tanks were located on site. Made ground appears to have been removed from site. There is some limited potential that former uses have caused ground contamination.

An assessment of potential contaminants associated with the former uses has been undertaken; see Section 6.3.

In the context of risks to human health associated with residential development, the Tier 1 Soil Screening Values referenced in this report have been derived by Land Quality Management Limited as their LQM/CIEH S4ULs, but amended, where appropriate, to be more specific to redevelopment within the planning process (see Notes in Annex I). The Tier 1 Values used in this report have been derived with reference to a CSM that assumes residential gardens without homegrown produce (Calabrian Scenario B). In the event that determinands exceed these Tier 1 Values, the results will be reassessed.

9.2 TESTING SCHEDULED

Based on the above assessment, Calabrian submitted a test schedule (summarised in the table below) to a UKAS accredited laboratory.

Type of Sample	No. of Samples	Determinands
Natural Ground	12	Asbestos ID, pH, water soluble boron, and total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc).
	7	TOC, speciated Poly Aromatic Hydrocarbons (PAH) and speciated Total Petroleum Hydrocarbons (TPH) with BTEX.
	2	Water soluble sulphate, chloride, nitrate, and magnesium.

9.3 SOIL CONTAMINATION RESULTS

The soil contamination test results are summarised in the Tables in Annex I.

Laboratory test certificates as received from the laboratory are presented in Appendix F.

Inorganic Determinands

Of the twelve samples of Weathered Peterborough Member analysed for inorganic parameters none could be classified as contaminated.

These samples are classified by comparison of concentrations with Calabrian Tier 1 Values for an end use including domestic gardens and any area where plants are to be grown (the most sensitive of the proposed end-uses).

<u>Asbestos</u>

No asbestos fibres were identified in any of the samples screened.

Organic Determinands

Samples have been classified by comparison with Calabrian risk-derived Tier 1 Values. These screening values assume a Soil Organic Matter (SOM) of 6% (equivalent to a TOC of 3.5%). Many organic contaminants are more mobile when the SOM is lower, and consequently lower screening values are then more appropriate for many organic contaminants.

In order to check the validity of Calabrian Tier 1 Values, the average TOC for each common fill type (beyond any areas of obvious hydrocarbon impact) have been determined.

Fill Type	Typical TOC/%	Comparison with revised Screening Value necessary?
Weathered Peterborough Member	<0.9	Yes, but no significant organic contamination was recorded in this soil type. All determinands well below "6%" screening value; all below limit of laboratory detection.

Total Petroleum Hydrocarbons (TPH)

Calabrian have used the CLEA model to derive risk-based screening values for hydrocarbons, in accordance with the methodology detailed by the TPHCWG, and reviewed by a UK workshop of experts with respect to UK adoption of the method.

Assessment of TPH would normally be undertaken in accordance with a 3-step approach. However, given former uses and the absence of visual/olfactory evidence, only a simple banded TPH was scheduled here (compared with full speciation).

None of the fractions exceed their respective Tier 1 criteria, even if it is conservatively assumed all of each fraction is either aliphatic or aromatic.

Poly Aromatic Hydrocarbons (PAH)

Speciated PAH analysis has been undertaken in order to determine concentrations of the key "marker" compounds: benzo(a)pyrene (considered the most toxic of the PAHs); and naphthalene (the most mobile and volatile of the PAHs).

Speciated analysis has confirmed the absence of significant concentrations of naphthalene in the soils beneath this site (only one sample exceeded the limit of detection of 0.03mg/kg by 0.01mg/kg).

No concentrations of benzo(a)pyrene were recorded above Calabrian' Tier 1 Value of 3.2mg/kg; in fact, no samples exceeded the limit of detection at 0.03mg/kg.

9.4 DISCUSSION

The historical information suggests that the site was developed in the 1940's as a social club and remained in that use until its recent demolition. Two likely water but possible fuel tanks were located on site. Made ground appears to have been removed from site.

Analysis has determined that all soils at the site is 'clean' and suitable for reuse either on or off-site and remediation is not required.

9.5 WASTE CLASSIFICATION

WAC Results Exp Hole Depth (m) Classification **SNRHW*** Hazardous TP101 0.1 Non-Hazardous TP101 0.3 Non-Hazardous Pass Pass 0.1 TP102 Non-Hazardous 0.5 Non-Hazardous TP102 0.1 TP103 Non-Hazardous TP103 0.4 Non-Hazardous Pass Pass 0.1 TP104 Non-Hazardous Non-Hazardous TP104 0.5 TP105 0.1 Non-Hazardous

Soils at the site have been classified using the HazWasteOnline toolkit as non-hazardous.

Eve Hele	Douth (m)	Classification	WAC Results			
схр ноге	Depth (m)	Classification	SNRHW*	Hazardous		
TP105	0.4	Non-Hazardous				
TP106	0.1	Non-Hazardous				
TP106	0.5	Non-Hazardous	Pass	Pass		

*Stable non-reactive hazardous waste.

All soil waste will have a non-hazardous classification.

WAC testing was undertaken on three samples of non-hazardous soil; the results are presented within Appendix G. The results suggest that the soils here would be classified as inert waste. Contractors exporting waste from the site should be asked to review the site investigation data and make their own assessment.

10 HAZARDOUS GAS

10.1 Sources of Hazardous Gas Generation

The site is not believed to be affected by sources of hazardous gas generation as it is:

- Not located within 250m of a known former or current landfill site or backfilled feature (eg quarry, pond, canal etc);
- neither underlain by shallow mineworkings nor located in an area considered susceptible to mines gas emissions;
- not underlain by a significant thickness of made ground; and,
- not underlain by peat or shallow chalk deposits (chalk CO₂ only).

During a previous investigation in 2021 elevated ground gas concentrations and flow rates were not recorded, and the site was classified as CS1 where no protective measures are required.

10.2 RADON

United Kingdon Security Agency (UKHSA) launched the new radon map on in December 2022 this indicates that the site is in an area where less than 1% of homes are estimated to be above the action level, and that radon protection measures are therefore not required radon protection measures are not required for new dwellings at the site. Information from Landmark confirms this.

10.3 CONCLUSION

As such, no special precautions against hazardous gas are required on this site.

11 GEOTECHNICAL TESTING

11.1 GENERAL

A total of six samples of natural soil were delivered to a suitably accredited laboratory with a schedule of geotechnical testing drawn up by Calabrian.

The geotechnical laboratory test results are presented in Appendix F.

11.2 Atterberg Limits

The plasticity indices of six samples of cohesive soil have been determined; results are summarised below.

Soil type	Range of Plasticity Indices* (Average)	Shrinkability		
Weathered Peterborough Member	36 to 43 (39)	High		

* Modified where appropriate in accordance with revised Chapter 4.2 of the NHBC Standards (April 2003). Note. The term Shrinkability is equivalent to the term Volume Change Potential used in Chapter 4.2.

For the purposes of foundation design, it is recommended that all cohesive soils be regarded as being of high shrinkability.

11.3 SOLUBLE SULPHATE AND PH

In accordance with BRE Special Digest 1:2005, this site has been classified as brownfield with a mobile groundwater regime.

It is envisaged foundations will extend to depths of about 1m into natural strata and samples taken from this depth range have been submitted for pH and water-soluble sulphate (2:1 soil/water extract).

The concentrations of sulphate in the aqueous natural soil extracts of six samples were determined.

The highest water-soluble sulphate concentration and the lowest pH value for each soil type analysed are shown in the Table below.

Soil type	Lowest pH values	Highest Soluble Sulphate Concentration (mg/l)			
Weathered Peterborough Member	5.8	2,000			

pH values were all above 5.5, therefore concentrations of chloride and nitrate are considered insignificant.

In accordance with Tables C1 and C2 of SD1, sub-surface concrete should be Design Sulphate Class DS-3, with the site allocated an ACEC Classification of AC-3.

11.4 UNDRAINED SHEAR STRENGTH TESTING

Hand Shear Vane Testing

Hand shear vane testing was undertaken from larger blocks of excavated clay between depths of 1.0m and 1.5m. The undrained shear strength (Su) results varied from 54kPa to 90kPa.

11.5 INFILTRATION TESTS

Infiltration tests have been undertaken within TP105 and TP106. Test were carried out in general accordance with BRE365⁴ and C156:1996⁵. Where possible in accordance with C753:2015⁶ tests would be repeated three times. The locations of the soakaways are shown on Drawing No. 7218/6.

Infiltration Rates

Infiltration rates for each soakaway test have been calculated (where possible) in accordance with BRE 365. This design takes into account the time for water level in to fall from 75% to 25% of its effective depth. The effective depth is the difference between the starting water level and the soakaway pit base depth.

After four hours the water level within each trial pit had not fallen. Due to this the test was not considered suitable for calculation of an infiltration rate. Copies of the associated test data are presented in Appendix F.

The guidance within BRE365 and C753:2015 states the following:

- "Fill the pit and allow it to drain three times to near empty....The three fillings should be on the same or consecutive days." Given that the water level did not fall at all it would be impossible to repeat the test three times over a single or subsequent days.
- "The soakaway should discharge from full to half-volume within 24 hours in readiness for subsequent storm inflow." Evidently, the test conducted on site could not achieve half full volume within 24 hours and the soakaway would be ineffective.

Consequently, soakaways will not provide a suitable drainage solution for the discharge of surface water run-off at the site and therefore there may be a need for surface water balancing.

Consideration should be given to alternative sustainable drainage systems (SUDS) such as (see CIRIA C753:2015 for further details):

• <u>Swales</u> – linear grassed features in which surface water can be stored or conveyed. Where suitable, swales can be designed to allow infiltration.

⁴ BRE (1991) Soakaway Design, BRE Digest 365, Building Research Establishment, Bracknell UK.

⁵ BETTESS R (1996), Infiltration drainage - manual of good practice, R156D, CIRIA, London.

⁶ SuDS Manual. CIRIA C753 2015.

- <u>Pervious Pavements</u> provide a surface suitable for pedestrian and/or vehicular traffic, while allowing rainwater to infiltrate into subsurface storage, with subsequent infiltration or controlled discharge. Pavement could be porous (water able to infiltrate across entire surface material; e.g. reinforced grass), or permeable (water infiltrates via joints between concrete blocks).
- <u>Ponds</u> designed to have permanent pool of water, but with capacity to provide temporary storage-controlled discharge.

12 GEOTECHNICAL ISSUES

12.1 CONCEPTUAL SITE MODEL

Made ground was not encountered at the site. With the exception of the low brick structure in the south and buildings and their foundations appear to have been removed from site.

Natural ground was encountered within each of the exploratory holes, and typically comprised firm becoming stiff clay extended from the surface to depths of around 1.7m where very weak mudstone was encountered.

12.2 MINING & QUARRYING

This site is located beyond the CA's defined coalfields.

There are no known quarries on, or within 500m of the site.

12.3 FOUNDATION RECOMMENDATIONS

General

Foundation recommendations assume that development will be two-storey construction and that line loads will not exceed 110kN/m run. If this is not the case significant alteration to these recommendations will be required.

We have assumed that final development levels will not differ significantly from ground levels existing at the time of investigation. Any digital terrain modelling undertaken or commissioned by Client should consider implications for the foundation recommendations outlined below.

In accordance with Tables C1 and C2 of SD1, sub-surface concrete should be Design Sulphate Class DS-3, with the site allocated an ACEC Classification of AC-3.

Strip/Trench Fill Footings

It is considered that shallow strip or deepened trench fill footings will be the most suitable foundation solution for the proposed two-storey care home. This solution is viable where stiff clay is the founding material.

Clay/Cohesive Soils

The care home has an assumed maximum foundation line load of 110kN/m run, a foundation geometry of length = 50m, breadth = 0.6m, thickness = 225mm, founding below 1m depth and assuming an undrained shear strength of 50kPa for the firm clay then theoretical safe bearing capacities as detailed below can be calculated:

- Meyerhof (Factor of Safety) Approach = >150kPa (FoS=2.5)
- Lumped Factor of Safety = >150kPa (FoS=2.5)

A Eurocode 7 approach provides the following ultimate bearing capacities including the use of depth factors. Applying 75mm of eccentricity to the line load has negligible effect in either case:

- DA1 Combination 1 = >150kPa (ultimate)
- DA2 Combination 2 = >150kPa

However, consideration should also be given to the effect of settlement on the above safe bearing capacities in order to assess meaningful allowable bearing capacities. Assuming the foundation geometry detailed above minimal settlements would be anticipated.

Clay classification tests suggest that natural cohesive soils at the site should be regarded as being of high shrinkability. A minimum founding depth of 1,000mm is therefore recommended for all soils on the site where strip footings are proposed.

<u>General</u>

Reinforcement, as a precaution against differential settlement, is recommended only where foundation excavations encounter significant lateral and vertical variations in strata. One layer of B385 mesh placed 75mm above the base of the footing is likely to provide suitable reinforcement, but further advice should be sought from the Structural Engineer.

Founding depths are from original or finished ground level, whichever is the lower, to the underside of the footing.

Foundations should be deepened near trees in accordance with NHBC Standards Chapter 4.2. Overdeepened foundations should be stepped in accordance with NHBC Standards, Chapter 4.4.

LNT or their groundworker should seek further advice from Calabrian if unexpected ground conditions are encountered in foundation or sewer excavations.

12.4 EXCAVATIONS

Based on the results of the investigation it is unlikely that major groundwater flows will be encountered in shallow excavations.

Excavations should remain stable in the short term but if left open for any significant period of time may require shoring.

12.5 DRAINAGE

Based on *insitu* infiltration testing undertaken during the investigation, soakaways will not provide a suitable drainage solution for surface water run-off at the site. Consequently, it will be necessary to consider alternative sustainable drainage systems (SuDS), and there may be a need for surface water balancing.

12.6 PAVEMENTS

Based on visual inspection of the natural materials and the recorded plasticity indices at the site, published tables (Interim Advice Note 73/06 Revision 1 (2009), Chapter 5. Characterisation of Materials Design Guidance for Road Pavement Foundations - Draft HD25) PDF p25 indicate that the natural clay will have a CBR value of at least 3%. These values should be verified prior to or during construction.

13 REDEVELOPMENT ISSUES

13.1 GENERAL

This report has presented options with respect to foundation solutions and contamination assessment that are considered technically feasible and in line with current good practice. Consequently, we would expect to obtain regulatory approval for whichever option is adopted, although this cannot be guaranteed. Copies of this report should be forwarded to the relevant regulatory authorities (Local Authority) for their comment/approval.

13.2 PREPARATION WORKS

Given the absence of any significant contamination, a remediation strategy is not considered necessary. Nonetheless, some preparatory works will be required, most notably general site clearance of remaining structures, surface materials, unprotected trees, and vegetation

It should be ensured that the groundworker understands the need for good materials management. Most notably the importance of not mixing different materials within a given stockpile; i.e. there should be separate stockpiles of topsoil and natural ground.

No areas of gross contamination were encountered during the site investigation. However, if any buried drums, "oily", odorous, brightly coloured etc. materials are encountered, further advice should be sought from Calabrian. Further advice should also be sought if deep foundations etc associated with the former building (highly unlikely) are encountered during the preparatory works; such obstructions might necessitate revised foundation design.

13.3 HEALTH & SAFETY ISSUES - CONSTRUCTION WORKERS

Access into excavations etc. must be controlled and only undertaken in accordance with the Confined Spaces Regulations 1997. The atmosphere in shored trenches in excess of 1.2m should be monitored for oxygen and hazardous gas (methane & carbon dioxide), prior to personnel entering such excavations. Monitoring should continue whilst personnel are working in deep excavations.

Before site operations are started, the necessary COSHH statements and Health & Safety Plan should be drafted in accordance with the CDM regulations.

13.4 New UTILITIES

It is strongly recommended that all statutory service bodies are consulted at an early stage with respect to the ground conditions within which they will lay services in order to enable them to assess at an early stage any potential abnormal costs.

This site is essentially greenfield, and no previous or current usage of the site or its immediate surroundings is likely to have resulted in ground contamination. Furthermore, no significant made ground was encountered in any of the exploratory holes during the ground investigation.

Consequently, the use of 'standard' polyethylene water supply pipes should be acceptable, although the Client should consult the local water company at the earliest opportunity to confirm this.

14 CONCLUSIONS & RECOMMENDATIONS

14.1 DEVELOPMENT PROPOSALS

Consideration is being given to redevelopment of the site with a two-storey residential care home with associated gardens/landscaping, access road and car park.

14.2 HISTORY

From the historical OS maps the site appears to have first been developed form part of a larger agricultural field in the mid 1960's. The Rodney House complex development comprised three buildings with two tanks (these appear to have been water holding) and areas of soft and car parking.

14.3 GROUND CONDITIONS

Made ground was not encountered at the site. With the exception of the low brick structure in the south and buildings and their foundations appear to have been removed from site.

Natural ground was encountered within each of the exploratory holes, and typically comprised firm becoming stiff clay extended from the surface to depths of around 1.7m where very weak mudstone was encountered.

14.4 HAZARDOUS GAS

There are no known or suspected areas of landfilling within 250m, and the site is not in area considered susceptible to mines gas, nor is it underlain by shallow mineworkings. Following on site monitoring a 2021 investigation classified the site as CS1 where no protective measures are required.

The site is in an area where less than 1% of homes are estimated to be above the radon action level.

As such, no special precautions against hazardous gas are required.

14.5 MINING & QUARRYING

This site is located beyond the CA's defined coalfields.

There are no known quarries on, or within 500m of the site.

14.6 CONTAMINATION & REMEDIATION

The historical information suggests that the site was developed in the 1940's as a social club and remained in that use until its recent demolition. Two likely water but possible fuel tanks were located on site. Made ground appears to have been removed from site.

Analysis has determined that all soils at the site is 'clean' and suitable for reuse either on or off-site and remediation is not required.

14.7 FOUNDATIONS

Conventional strip foundations will be suitable for the two-storey care home founding in the clay at around 1m depth deepened near to any proposed trees. Sub-surface concrete should be Design Sulphate Class DS-3/AC-3.

14.8 FLOODING

The EA indicate that the site is not located within an indicative floodplain.

14.9 DRAINAGE

Due to negligible infiltration rates, soakaways will not provide a suitable drainage solution for surface water run-off at the site. Consequently, it will be necessary to consider alternative sustainable drainage systems (SUDS), and there may be a need for surface water balancing.

14.10 PAVEMENTS

The natural clay will have a CBR value of at least 3%. These values should be verified prior to or during construction.

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DRAWINGS						
7218/1	Site Location Plan					
7218/2	Proposed Site Layout					
7218/3	Existing Site Features					
7218/4	Site Photographs					
7218/5	Preliminary Conceptual Site Model					
7218/6	Exploratory Hole Location Plan					
7218/7	Geoenvironmental Summary					



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Proposed layout reproduced from LNT Construction drawing referenced 'OX25 2BF - GRAVEN HILL - WIP SITE PLAN'.

notes



<u>rev. descripțion</u>

LNT	Care Developments
client	L
project	GRAVEN HILL, BICESTER, OX25 2BF
	PROPOSED LAYOUT
drawing title	L
drawing number	7218/2
revision	
drawing status	Final
scale	1:500 @A3
date	10/06/2024
drawn by	RJH
checked by	-
	calabrian
GEOTEC	HNICAL GEOENVIRONMENTAL info@calabrian.co.uk





rev. descripțion







APPROXIMATE SITE BOUNDARY

LOCATION & ORIENTATION OF PHOTOGRAPH

notes

rev. descripțion

LN	Care Developments						
client	I						
project	GRAVEN HILL, BICESTER, OX25 2BF						
	PHOTOGRAPHS						
drawing title							
drawing number	7218/4						
revision							
drawing status	l Final						
scale	1:1000 @A3						
date	05/07/2024						
drawn by	, RJH						
checked by							
	calabrian						
GEOTECHNICAL GEOENVIRONMENTAL info@calabrian.co.uk							



GEOLOGY





SOURCES



LEAKAGE\SPILLAGE FROM TANKS S2 (organics)

POTENTIAL PATHWAYS

- P1 DERMAL CONTACT
- P2 INGESTION\INHALATION
- **P3** LEACHING OF CONTAMINANTS
- **P4** UPTAKE BY PLANTS
- **P5** VOLATILISATION

SIGNIFICANT RECEPTORS **R1 END USERS** (residents and workers)

- **R2** SITE WORKERS **R3** VEGETATION
- SURFACE WATERS **R4**

rev. descripțion

notes

LN	Care Developments
client	
	GRAVEN HILL, BICESTER, OX25 2BF
project	1
drawing title	PRELIMINARY CONCEPTUAL SITE MODEL
drawing number	7218/5
revision	, -
drawing status	I Final
scale	Not to Scale
date	10/06/2024
drawn by	RJH
checked by	-
	≤calabrian
GEOTE	CHNICAL GEOENVIRONMENTAL info@calabrian.co.uk







<u>rev. descripțion</u>

Rev A (01/07/2024): Addition of historical features and amendment of exploratory hole locations.

HISTORICAL BUILDINGS

LNT	Care Developments
Gione	GRAVEN HILL, BICESTER, OX25 2BF
project drawing title	EXPLORATORY HOLE LOCATION PLAN
drawing number	7218/6
revision	Rev A
drawing status	FINAL
scale	1:500 @A3
date	05/07/2024
drawn by	RJH
checked by	
GEOTEC	

info@calabrian.co.uk

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ANNEX I	SUMMARY CONTAMINATION DATA (SOILS)
Table A	Summary of Contamination Results (Inorganics)
Table B	Summary of Contamination Results (Organics)
Table C	Cumulative Effects

Expl Hole	Depth (m)	Material	Concentrations in mg/kg unless otherwise stated. Results are quoted to 1 decimal place if <10, and whole numbers if >10. Trigger Level Concentrations are shown in BLACK and assume a residential without homegrown produce end-use (Calabrian scenario B).												
				As	В	Cd	Cr (III)	Cu	Pb	linorgania)	Ni	Se	Zn	Asbes	tos
			рН	40	290	85	910	7100	310	56	180	430	40000	Indentification	Quantity (% mass)
TP101	0.1	Weathered Peterborough Member	5.5	10	1.1	0.1	28	16	14	< 0.05	20	< 0.5	81	Not Identified	
TP101	0.3	Weathered Peterborough Member	7.2	9	0.7	0.2	37	39	13	< 0.05	49	< 0.5	140	Not Identified	
TP102	0.1	Weathered Peterborough Member	7.2	9	1.1	0.2	23	15	19	< 0.05	17	< 0.5	63	Not Identified	
TP102	0.5	Weathered Peterborough Member	7.6	8.8	4	0.3	31	24	15	< 0.05	27	< 0.5	65	Not Identified	
TP103	0.1	Weathered Peterborough Member	7.7	7.9	0.9	0.2	26	13	13	< 0.05	25	< 0.5	72	Not Identified	
TP103	0.4	Weathered Peterborough Member	7.8	8.2	1.9	1.2	34	35	16	< 0.05	130	< 0.5	200	Not Identified	
TP104	0.1	Weathered Peterborough Member	5.7	7.9	1.4	0.1	22	14	15	< 0.05	16	< 0.5	67	Not Identified	
TP104	0.5	Weathered Peterborough Member	7.4	11	0.8	0.2	27	14	14	< 0.05	23	< 0.5	69	Not Identified	
TP105	0.1	Weathered Peterborough Member	7.9	13	1	0.3	29	18	13	< 0.05	42	< 0.5	64	Not Identified	
TP105	0.4	Weathered Peterborough Member	7.6	11	0.7	0.1	34	22	12	< 0.05	53	< 0.5	120	Not Identified	
TP106	0.1	Weathered Peterborough Member	4.9	8.8	2.1	< 0.1	28	24	14	< 0.05	18	< 0.5	66	Not Identified	
TP106	0.5	Weathered Peterborough Member	6.5	8.3	1.6	< 0.1	30	20	12	< 0.05	29	< 0.5	120	Not Identified	

Summary of Degree of Ground Contamination (Inorganics)

<u>KEY</u>

36	Parameter tested for and found to be in excess of Tier 1 concentration						
179	Parameter tested for and found to be > 5 x Tier 1 concentration						
12	Parameter tested for but not found to be in excess of Tier 1 concentration						

	Depth (m)	Material	Concentrations in mg/kg. Results are quoted to 1 decimal place if <10, and whole numbers if >10. Trigger Level Concentrations are shown in BLUE and assume a residential without homegrown produce (Calabrian Scenario B)										
Expl Hole			% TOC	Benzene	Toluene	Ethyl Benzene	Xylenes	РАН		TPH - C6 to C40			
								B(a)P	Naphthale ne	GRO~ C ₆ to C ₁₀	DRO◊ C ₁₀ to C ₂₀	LRO C ₂₀ to C ₄₀	
				1.4	3900	440	430	3.2	13	42	130	1000	
TP101	0.1	Weathered Peterborough Member	0.7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	< 0.03	< 0.01	<1.5	< 3.4	
TP101	0.3	Weathered Peterborough Member	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	< 0.03	< 0.01	63.2	380	
TP102	0.1	Weathered Peterborough Member	0.9					< 0.03	< 0.03				
TP102	0.5	Weathered Peterborough Member	< 0.5					< 0.03	< 0.03				
TP103	0.1	Weathered Peterborough Member	0.6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	< 0.03	< 0.01	<1.5	< 3.4	
TP103	0.4	Weathered Peterborough Member	< 0.5					< 0.03	< 0.03				
TP104	0.1	Weathered Peterborough Member	0.7					< 0.03	< 0.03				
TP104	0.5	Weathered Peterborough Member	0.7	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	0.04	< 0.01	<1.5	< 3.4	
TP105	0.1	Weathered Peterborough Member	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	< 0.03	< 0.01	<1.5	< 3.4	
TP105	0.4	Weathered Peterborough Member	0.6					< 0.03	< 0.03				
TP106	0.1	Weathered Peterborough Member	0.6	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	< 0.03	< 0.01	<1.5	< 3.4	
TP106	0.5	Weathered Peterborough Member	< 0.5	< 0.01	< 0.01	< 0.01	< 0.01	< 0.03	< 0.03	< 0.01	<1.5	< 3.4	

Summary of Degree of Ground Contamination (Organics)

<u>KEY</u>

36	Parameter tested for and found to be in excess of Tier 1 concentration																
179	Parameter tested for and found to be > 5 x Tier 1 concentration																
12	Parameter tested for but not found to be in excess of Tier 1 concentration																
	Denth		Concentrations in mg/kg. Results are quoted to 1 decimal place if <10, and whole numbers if >10. Trigger Level Concentrations are shown in BLUE and assume a residential with gardens with home grown produce a						0. duce and 1	% SOM.	SOM.						
-----------	-------	-------------------------------	--	--------	--------	-----------	---------	---------	------------------	--------	--------	--------	----------	---------	---------	---------	---------
Expl Hole	(m)	Material				Aliphatic							Aromatic				Index
			C5-C6	C6-C8	C8-C10	C10-C12	C12-C16	C16-C21	C21-C35	C5-C7	C7-C8	C8-C10	C10-C12	C12-C16	C16-C21	C21-C35	
			42	100	27	130	1100	65000	65000	70	130	34	74	140	260	1100	
TP101	0.1	Weathered Peterborough Member	< 0.01	< 0.01	< 0.01	< 1.5	< 1.2	< 1.5	< 3.4	< 0.01	< 0.01	< 0.01	< 0.9	< 0.5	< 0.6	< 1.4	0
TP101	0.3	Weathered Peterborough Member	< 0.01	< 0.01	< 0.01	< 1.5	3.9	31	220	< 0.01	< 0.01	< 0.01	< 0.9	2.3	26	160	0.26929
TP103	0.1	Weathered Peterborough Member	< 0.01	< 0.01	< 0.01	< 1.5	< 1.2	< 1.5	< 3.4	< 0.01	< 0.01	< 0.01	< 0.9	< 0.5	< 0.6	< 1.4	0
TP104	0.5	Weathered Peterborough Member	< 0.01	< 0.01	< 0.01	< 1.5	< 1.2	< 1.5	< 3.4	< 0.01	< 0.01	< 0.01	< 0.9	< 0.5	< 0.6	< 1.4	0
TP105	0.1	Weathered Peterborough Member	< 0.01	< 0.01	< 0.01	< 1.5	< 1.2	< 1.5	< 3.4	< 0.01	< 0.01	< 0.01	< 0.9	< 0.5	< 0.6	< 1.4	0
TP106	0.1	Weathered Peterborough Member	< 0.01	< 0.01	< 0.01	< 1.5	< 1.2	< 1.5	< 3.4	< 0.01	< 0.01	< 0.01	< 0.9	< 0.5	< 0.6	< 1.4	0
TP106	0.5	Weathered Peterborough Member	< 0.01	< 0.01	< 0.01	< 1.5	< 1.2	< 1.5	< 3.4	< 0.01	< 0.01	< 0.01	< 0.9	< 0.5	< 0.6	< 1.4	0

TPH Assessment (Step 3 - Consideration of cumulative effects).

<u>Key</u>

123 Actual CLEA derived value(mg/kg)

Soil Screening Values used by Calabrian

In March 2002 DEFRA and the Environment Agency published a series of technical papers (R&D Publications CLR 7, 8, 9 and 10) outlining the UK approach to the assessment of risk to human health from land contamination. In 2008 CLR 7, 9 and 10 and all corresponding SGV and Tox reports were withdrawn and superseded by new guidance including:

- Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration- CL:AIRE, 2020
- Evaluation of models for predicting plant uptake of chemicals from soil Science Report SC050021/SR
- Human health toxicological assessment of contaminants in soil Science Report: SC050021/SR2
- Updated technical background to the CLEA model Science Report: SC050021/SR3
- CLEA Software (Version 1.05) Handbook Science report: SC050021/SR4
- Compilation of data for priority organic pollutants for derivation of Soil Guideline Values Science Report: SC050021/SR7

The approach set out in these documents represents current scientific knowledge and thinking; and includes the Contaminated Land Exposure Model (CLEAv1.06). The Environment Agency are in the process of using this updated approach to regenerate a selection of Soil Guideline Values (SGVs).

CLEA SGVs were derived for standard land use scenarios predominantly in the context of Part IIA, using a conceptual site model (CSM) defined in SR3. Calabrian have incorporated amendments to the CSM used to derive SGVs that more accurately reflect redevelopment within the planning regime; consequently, Calabrian have not necessarily adopted any published SGV as a screening value.

The CLEA conceptual site model assumes a source located in a sandy loam, with 6% soil organic matter (SOM) - equivalent to 3.5% total organic carbon (TOC). Calabrian consider it reasonable to adopt the CLEA default TOC for made ground. However, where the average TOC value for a particular soil type is significantly lower than the 3.5%, Calabrian adopt refined Screening Values.

In March 2014 DEFRA published Category 4 Screening Levels (C4SLs) for six substances (arsenic, cadmium, chromium IV, lead, benzene & benzo(a)pyrene) for four generic land-uses comprising residential, commercial, allotments and public open space.

The methodology for deriving both the previous Soil Guideline Values and the new Category 4 Screening Levels is based on the Environment Agency's Contaminated Land Exposure Assessment (CLEA) methodology. Development of Category 4 Screening Levels has been achieved by modifying the toxicological and\or exposure parameters used within CLEA (while maintaining current exposure parameters).

The Part 2A Statutory Guidance was developed on the basis that Category 4 Screening Levels could be used under the planning regime. However, policy responsibility for the National Planning Policy Framework falls to the Department for Communities and Local Government. Defra anticipate that, where they exist, C4SLs will be used as generic screening criteria, and Calabrian consider C4SLs to be suitable for use as Tier 1 Screening Values. Calabrian have discussed this matter with both NHBC and YAHPAC (collection of Yorkshire & Humberside local authorities) and received confirmation that they are satisfied with this approach.

In general Calabrian have adopted the use of the LQM/CIEH Suitable 4 Use Levels (S4ULs) as Tier 1 Screening Criteria. Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3373. All rights reversed.

Calabrian have adopted Tier 1 Screening Criteria for five different CSMs (Scenarios); these are:

- A Residential with homegrown produce.
- B Residential without homegrown produce.
- C Residential apartments with landscaping/public open space (POS).
- D Commercial/industrial with landscaping.
- E Dedicated sports grounds or parkland/ public open space (POS).

The **exposure** pathways considered for each scenario are detailed in the Table below.

Scenario	Land use	Pathways	Justification
A	Residential with homegrown produce, but no cover (or only up to 300mm)	 Direct ingestion of soil Dermal contact Consumption of vegetables and soil attached to vegetables Inhalation of indoor vapours and dust Inhalation of outdoor vapours and dust 	Minimal cover – insufficient to break any pathways therefore all exposure pathways are relevant
В	Residential apartments with landscaped areas and minimum 300mm cover	 Direct ingestion of soil Dermal contact Inhalation of indoor vapours and dust Inhalation of outdoor vapours and dust 	All pathways applicable due to possible exposure from landscaped areas. However consumption of home grown produce not included as unlikely to be grown in landscaped areas. Where vegetables are to be grown site specific QRA may be required.
C	Grassed area or play park in close proximity to housing. Assumes minimum 300mm cover (growing medium).	 Direct ingestion of soil Dermal contact Inhalation of outdoor vapours and dust 	All pathways applicable due to possible exposure from landscaped areas. Assumes an area where some children play regularly and others less.
D	Commercial/ industrial with landscaped areas no cover	 Direct ingestion of soil Dermal contact Inhalation of indoor vapours and dust Inhalation of outdoor vapours and dust 	All pathways applicable due to possible exposure from landscaped areas. Assumed the commercial development consists of offices to provide a conservative assessment.
E	Dedicated sports grounds. Assumes minimum 300mm cover (growing medium).	 Direct ingestion of soil Dermal contact Inhalation of outdoor vapours and dust 	All pathways applicable due to possible exposure from landscaped areas. Assumes an where exposure only occurs to players and grounds staff

The Soil Screening Values referred to in this document are **not** intended to be used when considering potential risks associated with:

- Existing land uses in the context of Part IIA of the Environment Protection Act 1990;
 - end uses such as allotments, sports fields, children's playgrounds, care homes, hospitals etc; and
 - controlled waters.

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D 640 190 8,600 2,330 980 110 (pH>7) 12,000 11,000	E 170 532 33,000 1,300 3,400 1,800	Comments/Notes LQM/CIEH S4UL adopted. LQM/CIEH S4UL adopted. LQM/CIEH S4UL adopted. Assumes Cr is CrIII. C4SLs adopted. LQM/CIEH S4UL. Assessment of health risk only. Phytotoxicity. LQM/CIEH S4UL adopted.
640 190 8,600 2,330 980 110 (pH>7) 12,000 11,000	170 532 33,000 1,300 3,400 1,800	LQM/CIEH S4UL adopted. LQM/CIEH S4UL adopted. LQM/CIEH S4UL adopted. Assumes Cr is CrIII. C4SLs adopted. LQM/CIEH S4UL. Assessment of health risk only. <i>Phytotoxicity.</i> LQM/CIEH S4UL adopted.
190 8,600 2,330 980 110 (pH>7) 12,000 11,000	532 33,000 1,300 3,400 1,800	LQM/CIEH S4UL adopted. LQM/CIEH S4UL adopted. Assumes Cr is CrIII. C4SLs adopted. LQM/CIEH S4UL. Assessment of health risk only. <i>Phytotoxicity.</i> LQM/CIEH S4UL adopted.
8,600 2,330 980 110 (pH>7) 12,000 11,000	33,000 1,300 3,400 1,800	LQM/CIEH S4UL adopted. Assumes Cr is CrIII. C4SLs adopted. LQM/CIEH S4UL. Assessment of health risk only. <i>Phytotoxicity.</i> LQM/CIEH S4UL adopted.
2,330 980 110 (pH>7) 12,000 11,000	1,300 3,400 1,800	C4SLs adopted. LQM/CIEH S4UL. Assessment of health risk only. <i>Phytotoxicity.</i> LQM/CIEH S4UL adopted.
980 110 (pH>7) 12,000 11,000	3,400	LQM/CIEH S4UL. Assessment of health risk only. <i>Phytotoxicity.</i> LQM/CIEH S4UL adopted.
110 (pH>7) 12,000 11,000	1,800	Phytotoxicity. LQM/CIEH S4UL adopted.
12,000 11,000	1,800	LQM/CIEH S4UL adopted.
11,000		
	240	LQM/CIEH S4UL. Assumes in an inorganic compound.
240,000	46,000	LQM/CIEH S4UL adopted.
68,000	44,000	LQM/CIEH S4UL adopted. Assessment of health risk only.
'), 200 (pH>7)		Phytotoxicity.
73,000	170,000	LQM/CIEH S4UL adopted. Assessment of health risk only.
>7.0)		Phytotoxicity.
14,000		SSV
	68,000 7), 200 (pH>7) 73,000 >7.0) 14,000	68,000 44,000 7), 200 (pH>7) 73,000 >7.0) 170,000 14,000 14,000

With respect to inorganic determinands, Calabrian derived Tier 1 values for the four Scenarios A to E are presented below:

With respect to **organic** determinands, Calabrian derived Tier 1 values (assuming 6% SOM) for the four Scenarios A to E are presented below:

Organic Contaminant		Tier 1 Asse	ssment Crite	ria (mg/kg) for Scenario	Commonts (Notos	
(all sourced via CLEA)	А	В	С	D	E	Comments/Notes
Benzene	0.37	1.4	73	90	110	LQM/CIEH S4UL adopted.
Toluene	660	3900	56,000	180,000 ^{VAP} (4,360)	100,000 ^{vap} (4,360)	LQM/CIEH S4UL adopted.
Ethyl Benzene	260	440	25,000	27,000 ^{VAP} (2,840)	27,000 ^{VAP} (2,840)	LQM/CIEH S4UL adopted.
Xylenes	310	430	43,000	30,000 ^{sol} (3,170)	31,000 ^{sol} (3,170)	LQM/CIEH S4UL adopted (assumes worst-case p-xylene).
Phenol	412	557	557	38,700		
PCBs	1.7	1.8	1.8	1.8		Based on toxicity of EC7.
Benzo(a)pyrene	3.0	3.2	5.7	36	13	LQM/CIEH S4UL adopted.
Naphthalene	13	13	4,900	1,100	3,000	LQM/CIEH S4UL adopted.
Gasoline Range Organics#	42	42	1,000	1,000	1,000	
Diesel Range Organics#	130	130	5,000	5,000	1,000	See 3-step assessment of TPH below.
Lubricating Range Org [#]	1,000	1,000	5,000	5,000	1,000	

* For a residential end use

LQM/CIEH S4UL adopted, 6% SOM

Note: **PAH** cannot be assessed as a single "total" value, as each individual PAH compound has different toxicity and mobility in the environment. Speciated analysis is required to determine the concentrations of the various compounds, most notably the key PAHs: Benzo(a)Pyrene (considered the most toxic of the PAHs); and Naphthalene (the most mobile and volatile of the PAHs).

Similarly, **TPH** cannot be assessed as a single "total" value, and reference has been made to the Environment Agency's document P5-080/TR3, "*The UK approach for evaluating human health risks from petroleum hydrocarbons in soils*". This document supports the assumptions and recommendations made by the US Total Petroleum Hydrocarbons Criteria Working Group (TPHCWG). The TPHCWG have broken down "TPH" into thirteen representative constituent fractions or "EC Bandings". The TPHCWG have derived a series of physiochemical and toxicological parameters for each of the thirteen bandings. The significance of speciated TPH results can be assessed by following the 3 steps outlined in the below.

Step	Result	Action
1 Consider indicator compounds: Are DTEV Nonhthelene, Denze(a) purche above their respective Tier 1 values?	Yes	Remediation or DQRA required
1. Consider indicator compounds: Are BTEX, Naphthalene, Benzo(a)pyrene above their respective her 1 values?	No	Proceed to Step 2
2 Consider individual TDH fractions: are they above respective screeping values?	Yes	Remediation or DQRA required
2. Consider individual TPH fractions: are they above respective screening values?		Proceed to Step 3
2 Access Cumulative offects, Is the coloulated Upperd Index for each source >1	Yes	Remediation or DQRA required
3. Assess cumulative effects. Is the calculated mazard muex for each source >1	No	TPH compounds pose no significant risk

Step 1 - Assessing indicator compounds

TPH fraction Indicator	End use specific screening value (mg/kg)							
compound	A: Residential with produce	B: Residential without produce	C: Residential with POS	D: Commercial\ Industrial				
Benzene	0.37	1.4	1.4	90				
Toluene	660	3900	3900	180,000 ^{VAP} (4,360)				
Ethyl Benzene	260	440	440	27,000 ^{VAP} (2,840)				
Xylenes	310	430	430	30,000 ^{sol} (3,170)				
Naphthalene	13	13	13	1,100				

Step 2 - Assessing individual TPH fractions

TPH fraction		End use specific screening value ^{S4UL} (mg/kg) assuming 1% SOM								
		А	В	с	D	E				
Aliphatic 5-6	GRO	42	42							
Aliphatic 6-8	GRO	100	100	5,000^	5,000^					
Aliphatic 8-10	GRO	27	27							
Aliphatic 10-12	DRO	130	130			5 0004				
Aliphatic 12-16	DRO	1,100	1,100			5,000^				
Aliphatic 16-21	DRO	5,000^	5,000^							
Aliphatic 21-35	LRO									
Aromatic 5-7	GRO	70	370							
Aromatic 7-8	GRO	130	860	1,000^	1,000^	1,000^				
Aromatic 8-10	GRO	34	47							
Aromatic 10-12	DRO	74	250	5,000^						
Aromatic 12-16	DRO	140	1,800		5,000^	5,000^				
Aromatic 16-21	DRO	260	1,900	2 800						
Aromatic 21-35	LRO	1,100	1,900	5,800						

^ Calculated Screening Value close to soil saturation limit, screening value selected by Calabrian considering visual and olfactory impacts.

S4UL LQM/CIEH S4UL adopted, 1% SOM

Step 3 - Assessing Cumulative Effects

$$HI = \sum_{F_i=1}^{16} HQ F_i = \frac{Measured \ concentration F_i \ (mg \ kg^{-1})}{SGV \ F_i \ (mg \ kg^{-1})}$$
where $HI = Hazard \ Index$
 $HQ = Hazard \ Quotient$
 $F_i = Fraction_i$
 $SGV = Soil \ Guideline \ Value$

With respect to the interpretation of the **calorific values**, at present there are no accepted methods to assess whether a sample is combustible and under what circumstances it might smoulder. Some guidance is given in ICRCL Note 61/84 "Notes on the fire hazards of contaminated land" which states that:

"In general ... it seems likely that materials whose CV's exceed 10MJ/kg are almost certainly combustible, while those with values below 2MJ/kg are unlikely to burn".

Tier 1 groundwater risk assessments are undertaken by comparing leachate or groundwater concentrations with the appropriate water quality standard. Tier 1 Screening Values have been discussed with the Environment Agency, and typically those in **bold** below are adopted.

		Source of Tier 1 Screer	ning Value (μg/l)	
Analyte	Surface Water (Abstraction for Drinking) 1996	Water Supply Regulations. 2000	Water Framework Directive	Environment Agency Advice
Arsenic	50	10	50	
Selenium	10	10		
Cadmium	5	5	1.5	
Chromium	50	50	32	
Copper	50	2,000	28	
Lead	50	10	7.2	
Nickel		20	20	
Zinc	3,000		125	
Boron		1,000		
Mercury	1	1	0.05	
Polyromantic Hydrocarbons		0.01~	0.002#	
Petroleum Hydrocarbons				10
1,1,1-Trichloroethane			100	
1,1 Dichloroethane				100
1,2-Dichloroethane		3	10	
1,1-Dichloroethene				100
Benzene		1	10	
Ethylbenzene				10
Tetrachloroethene		10	10	
Toluene			50	
Trichloroethene		10	10	
Vinyl Chloride		0.5		
Trichloromethane			2.5	
Xylenes			30	
Chloroethane				100

~ sum of benzo(g,h,i)perylene + indeno(1,2,3-cd)pyrene

[#] sum of Benzo(b)fluoranthene + Benzo(k)fluoranthene + Benzo(g,h,i)perylene + Indeno(1,2,3-cd)pyrene

Possible Action in event of Tier I exceedance

Should any of the Tier I criteria detailed above be exceeded, then three potential courses of action are available. (The first is only applicable in terms of human health, but the second and third could also be applied to groundwater or landfill gas).

- 1. Undertake further statistical analysis following the approach set out in "Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration- CL:AIRE, 2020" in order to determine whether contaminant concentrations of inorganic contaminants within soil/fill actually present a risk (only applicable to assessing the risk to human health).
- 2. Carry out a more detailed quantitative risk assessment in order to determine whether contamination risks actually exist.
- 3. Based on a qualitative risk assessment, advocate an appropriate level of remediation to "break" the pollutant linkage for example the removal of the contaminated materials or the provision of a clean cover.

Prior to undertaking any statistical analysis the issue of the **averaging area** requires further consideration. The CL:AIRE\CIEH document still refers to CLR 7, which suggests averaging area should reflect receptor behaviour and therefore might be a single garden, or an open area used by the local community as a play area. This approach to averaging areas is considered applicable within the context of Part IIA of the Environmental Protection Act (EPA) 1990, in terms of an existing residential development.

However, Calabrian consider the concept of a single garden as an averaging area to be inappropriate with respect to brownfield redevelopment, which is regulated by the planning regime. In this context, contamination across the entire site needs to be characterised by reference to the Conceptual Site Model. Consequently, Calabrian gather and analyse sample results by fill type, and\or by former use in a given sub-area of the site, before undertaking statistical analysis; ie the averaging area is associated with the extent of a particular fill type, or an area affected by spillage\leakage.

In terms of brownfield redevelopment, this is considered a more appropriate methodology which provides a more representative sample population for statistical analysis. As such the entire site is considered in terms of the proposed end use, be this residential with, or without gardens.

Analysis by soil/fill type is appropriate for essentially immobile contaminants associated with a particular fill type, for example arsenic in colliery spoil, metals in ash & clinker, sulphate in plaster-rich demolition rubble etc.

Analysis by former use is appropriate where more mobile contaminants have entered the ground, for example diesel associated with leakage from a former fuel tank, downward migration of leachable metals through granular materials, various soluble contaminants present in a wastewater leaking into the ground via a fractured sewer etc. In these circumstances, it may be appropriate to undertake statistical analysis of sample results from a variety of different soil/fill types. However, consideration would have to be given to factors such as porosity which might influence impregnation of a mobile contaminant into the soil mass; ie contamination would normally be more pervasive and significant in granular soils than cohesive soils.



APPENDIX A COMMISSION

7218/002/RJH/rjh

14th December 2022

S Rose LNT Care Developments Helios 47 Leeds West Yorkshire LS25 2DY

Dear Sam

Graven Hill, Bicester, OX25 2BF – Fee Proposal

Please find enclosed our fee proposal for undertaking a site investigation on the above land in general accordance with your standard brief.

The site consists of a single parcel of land with a plan area of approximately 0.76 hectares. The site currently comprises open land that is currently being used as a soil stockpile area as part of a wider development.

Your proposed layout referenced OX25 2BF-F03 and dated 12th May 2022 indicates a two-storey residential care home development with associated gardens/landscaping, access road and car park.

A brief review of our archives and publically available data suggests the site:

- Appears to have remained undeveloped throughout its history;
- is not within 250m of an area of current or known historical landfilling;
- is located beyond the Coal Authority's defined coalfields; and,
- is not within a source protection zone.

The geological map for the area suggests the site is underlain by Peterborough Member (mudstone). A trial, pit excavated on site in 1984 for the Bicester Southern By-Pass found 0.4m of topsoil overlying firm becoming very stiff clay.

Our site investigation proposal allows for the following works:

Phase 1 Desk Study

Environmental search data and historical maps (obtained from Landmark) will be reviewed in order to determine whether any past land uses have had any effect on the proposed development. In addition, published geological plans of the area will be examined. We will also visit site to undertake a walkover survey.

Preliminary and detailed unexploded ordnance (UXO) risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'. An initial UXO threat assessment has been undertaken using the ZeticaUXO risk map. The site is located in a low-risk area meaning that there is no greater probability of encountering UXO than anywhere else in the UK; on this basis further assessment is not advocated.

Fieldwork

We have allowed for one day's trial pitting (around six trial pits). All trial pits will be supervised and logged by an experienced geoenvironmental engineer.

Soakaway testing will also be carried out in one trial pit in order to assess suitability of the ground for surface water drainage. In line with current UK guidance, (most notably BRE365 and CIRIA C753) where possible three soakaway tests will be undertaken within the trial pit over one or two consecutive days as necessary. It should be noted that the envisaged ground conditions mean that minimal infiltration is likely, and three tests may not be possible.

Given the potential for excavation instability and to maintain overnight safety, we have allowed for the import 20mm gravel to site to backfill the soakaway test pits. We will leave stone at least 300mm below ground level, so that the pits can be reinstated with topsoil. However, we will have to 'lose' the surplus subsoil arisings somewhere on site.

Representative soil samples of natural and man-made ground, including any contaminated samples, will be taken during the works. In-situ shear strengths of any cohesive soils encountered will be determined by the use of a hand-held shear vane.

We will make every effort to compact arisings and 'sweep' them over each pit. However, you should be aware that on completion of the investigation, "graves" of spoil (each about 3m long by 1m wide) unsuitable for trafficking, will be left up to 400mm proud at each trial pit location. At this stage, no allowance has been made for any further reinstatement such as removal of excess arisings, replacement of turf.

This site is greenfield and therefore highly unlikely to be underlain by made ground. Furthermore, we are not aware of any other sources of hazardous gas (shallow mine workings, landfill sites etc) within influencing distance of the site. Consequently, at this stage, we have not allowed for undertaking a hazardous gas risk assessment, but we will review the need for this in light of desk study data and the ground conditions actually encountered.

This proposal has been put together without a visit to the site and it has been assumed that access is available for a tracked 5-tone type excavator along with road going water tanker.

Soils Testing: This will comprise routine geotechnical soils analysis, typical of that normally required for greenfield sites. Although no allowance has been made for in-situ or laboratory CBR testing, CBR values will be estimated from the strata descriptions and classification test results, where appropriate (ie. if no significant regrading or reworking of made ground is proposed).

The site is understood to be essentially Greenfield, and therefore testing of potentially contaminated samples should only be required if made ground is encountered in the exploratory holes. However, we have allowed for analysis ten samples for a suite including asbestos, heavy metals, TPH and PAH.

Reporting & Timescales

In order to provide you with sufficient information to enable assessment of abnormal costs at the earliest opportunity we will issue a concise overview report within five days of fieldwork completion.

On completion of the desk study, fieldwork and laboratory testing a comprehensive, factual, and interpretative report will be issued. This will contain detailed engineering records, laboratory test results, copies of all relevant correspondence and drawings of the site. The report will include qualitative risk assessment with respect to both controlled waters and human health.

The report will also provide technically feasible options for redevelopment of the site with a care home, including consideration of foundation types and treatment\removal of contamination.

Fieldwork could be commenced within two to three weeks of receipt of your written instruction to proceed. Our comprehensive geoenvironmental appraisal report will be issued within four weeks of fieldwork completion.

A copy of the final report will be issued to the relevant regulatory authorities on receipt of written instruction from yourselves.

Invoicing: The attached proposal provides a breakdown of the costs associated with this project. This breakdown is for information only and the proposal can be regarded as a lump sum price of \pm^{**} , *** plus VAT. Variation will only occur in the event that a given item is not undertaken or that substantial additional works are recommended, in which case we will inform you immediately, provide costs for the required works, and seek your prior consent.

Our proposal allows for submission of the report to the Local Authority and for submission of a single piece of subsequent correspondence with each regulator to address any queries they may have. Any further meetings, correspondence etc, would be chargeable.

The investigation should be considered to comprise two elements. Each will be invoiced on completion of the relevant report as defined below:

- 1. Items A to D within five days of fieldwork completion, with exploratory hole logs and an interim letter report outlining our initial findings and Preliminary Recommendations Report;
- 2. Items E to H on issue of the comprehensive geoenvironmental appraisal report.

Health, Safety & Welfare

The works outlined above will be carried out in accordance with Calabrian task- and site- specific Risk Assessments and Method Statements.

Details of welfare will be included within the Method Statements.

Utility plans are required in order to protect operatives from the hazards associated with striking buried services and avoid potentially substantial disruption\repair costs. We will make every effort not to damage any services (including review of utility plans and use of a CAT detector).

Calabrian will obtain copies of the necessary utility plans in a Landmark Utility Report; however, if you already hold these it would be appreciated if you could forward these prior to the proposed fieldworks.

Terms & Conditions

This work will be undertaken in accordance with our Standard Terms and Conditions, a copy of which are enclosed.

Should you require any further information, please contact the undersigned.

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Yours sincerely X C

Richard Hey - Managing Director for and on behalf of CALABRIAN LIMITED

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Terms and Conditions for the Appointment of Calabrian Limited

1 DEFINITIONS AND INTERPRETATION

1.1 In this Agreement, unless the context otherwise requires, the following words and expressions have the following meanings:

"Agreement" shall mean these Terms (entitled "Terms and Conditions for the Appointment of Calabrian Limited"), the Proposal, any document recording the Client's unequivocal acceptance of the Proposal and any other documents or parts of other documents expressly referred to in any of the foregoing:

"Client" shall mean the party for whom the Services are being provided by Calabrian;

"Documents" shall mean all documents of any kind and includes plans, drawings, reports, programmes, specifications, Bills of Quantities, calculations, letters, e-mails, faxes, memoranda, films, and photographs (including negatives), or any other form of record prepared or provided or received by, or on behalf of Calabrian, and whether in paper form or stored electronically or on disk, or otherwise;

"Calabrian" shall mean Calabrian Limited whose registered office is at Spring Royd, Clapham Road, Austwick, Lancaster, LA2 8BE.

"Intellectual Property" includes all rights to, and any interests in, any patents, designs, trademarks, right, know-how, trade secrets and any other proprietary rights or forms of intellectual property (protectable by registration or not) in respect of any technology, concept, idea, data, programme, or other software (including source and object codes), specification, plan, drawing, schedule, minutes, correspondence, scheme, programme, design, system, process logo, mark, style, or other matter or thing, existing or conceived, used, developed, or produced by any person;

"Parties" shall mean the Client and Calabrian

"Project" shall mean the project described in the Proposal and any enquiry from the Client on which Calabrian has based its Proposal;

"Proposal" means the offer document prepared by Calabrian in response to an enquiry or otherwise, in connection with the proposed provision of the Services;

"Services" means the work and services relating to the Project to be provided by Calabrian pursuant to the Agreement and as set out in the Proposal and shall include any additions or amendments thereto made in accordance with these Terms;

"Terms" means these terms entitled "Calabrian Terms of Appointment";

- 1.2 Words importing the singular only shall also include the plural and vice versa, where the context requires
- 1.3 Words importing persons or parties shall include firms, corporations and any organisation having legal capacity and vice versa, where the context requires; and words importing a particular gender include all genders.
- 1.4 The sub-headings to the clauses of these Terms are for convenience only and shall not affect the construction of the Agreement.
- 1.5 A reference to legislation includes that legislation as from time to time amended, re-enacted or substituted and any Orders in Council, orders, rules, regulations, schemes, warrants, by-laws, directives or codes of practice issued under any such legislation.
- 1.6 In the event of conflict between the documents forming part of the Agreement, the Proposal shall prevail, followed by the Terms

2 APPOINTMENT

2.1 The Client agrees to engage Calabrian and Calabrian agrees to provide the Services in accordance with the provisions of the Agreement.

3 OBLIGATIONS OF CALABRIAN

- 3.1 Calabrian shall perform the Services using the reasonable standard of skill and care normally exercised by similar professional Environmental firms in performing similar services under similar conditions.
- 3.2 Calabrian shall perform the Services in accordance with all relevant environmental and safety legislation at the time of undertaking the project.

4 OBLIGATIONS OF THE CLIENT

- 4.1 Throughout the period of this Agreement the Client shall afford to Calabrian or procure the affording to Calabrian of access to any site where access is required for the performance of the Services.
- 4.2 The Client accepts responsibility for ensuring that Calabrian is notified in writing of all special site and/or plant conditions, including without prejudice to the generality of the foregoing, the existence and precise location of all underground services; cables, pipes, drains or underground buildings; constructions or any hazards known or suspected by the Client, which the Client shall clearly mark on the ground or identify on accurate location plans supplied to Calabrian prior to the commencement of the Services. The Client shall also inform Calabrian regulations relevant to the carrying out of the Services. The Client shall also inform calabrian in writing of any relevant operating procedures including any site safe operating procedures and any other regulations relevant to the carrying out of the Services. The Client shall indemnify Calabrian against all costs, claims, demands and expenses arising as a result of any non-disclosure in this respect, including but not limited to indemnification against any action brought by the owner of the land or otherwise.
- 4.3 If the Client discovers any conflict, defect or other fault in the information or designs provided by Calabrian pursuant to the Agreement, he will advise Calabrian in writing of such defect, conflict or other fault and Calabrian shall have the right to rectify the same or where necessary, to design the solution for rectification of any works carried out by others pursuant the conflicting, defective or in any other way faulty information or designs. Calabrian shall indemnify the client against all costs claims demands and expenses arising as a result of any conflict, defect, or other fault in this respect.

5 INTELLECTUAL PROPERTY

- 5.1 The copyright in all Intellectual Property prepared by or on behalf of Calabrian in connection with the Project for delivery to the Client shall remain vested in Calabrian.
- 5.2 The Client shall have a non-exclusive licence to copy and use such Intellectual Property for purposes directly related to the Project. Such licence shall enable the Client to copy and use the Intellectual Property but solely for its own purposes in connection with the Project and such use shall not include any licence to reproduce any conceptual designs or professional opinions contained therein nor shall it include any license to amend any drawing, design or other Intellectual Property produced by Calabrian.
- 5.3 Should the Client wish to use such Intellectual Property in connection with any other works or for any other purpose not directly related to the Project or wish to pass any Intellectual Property to any third party, it must obtain the prior written consent of Calabrian. The giving of such consent shall be at the discretion of Calabrian and shall be upon such terms as may be required by Calabrian. Calabrian shall not be liable for the use by any person of such Intellectual Property for any purpose other than that for which the same were prepared by or on behalf of Calabrian.
- 5.4 Ownership of any proposals submitted to the Client that are not subsequently confirmed as part of the Services to be provided for the Client remain with Calabrian and such proposals must not be used as the basis for any future work undertaken by the Client or a third party and no liability can be accepted howsoever arising from such proposals.
- 5.5 In the event of the Client being in default of payment of any fees or other amounts due, Calabrian may suspend further use of the licence on that Project on giving 2 days' notice of the intention to do so. Use of the licence may be resumed on receipt of the outstanding amounts.

6 TITLE

- 6.1 Calabrian shall transfer only such title or rights in respect of the Documents as it has, and if any part is purchased from a third-party Calabrian shall transfer only such title or rights as that party had and has transferred to Calabrian.
- 6.2 Title in the Documents shall remain with and shall not pass to the Client until the amount due under the invoice(s) (including interest and costs) has been paid in full.
- 6.3 Until title passes, the Client shall hold the Documents as bailee for Calabrian and shall store or mark them so that they can at all times be identified as the property of Calabrian.
- 6.4 At any time before title passes (save and except where payment is not due), but only after prior consultation with the Client, Calabrian may without any liability to the Client repossess and use or sell all or any of part of the Documents and by doing so terminate the right of the Client to use, sell or otherwise deal in the Documents.
- 6.5 Calabrian may maintain an action for the price of the Documents notwithstanding that title in them has not passed to the Client.

7 CONFIDENTIALITY

7.1 Calabrian undertakes not to divulge or disclose to any third party without the written consent of the Client information which is designated confidential by the Client or which can reasonably be considered to be confidential and arises during the performance of the Services unless required to do so by law or necessary in the proper performance of its duties in relation to the Project, or in order to make full frank and proper disclosure to its insurers or intended insurers, or to obtain legal or accounting advice. 7.2 Subject to the above and to the advance prior written consent of the Client, Calabrian shall be permitted to use information related to the Services it provides in connection with the Project for the purposes of marketing its services and in proposals for work of a similar type.

THIRD PARTIES

- 8.1 The Agreement or any part thereof or any benefit or interest thereunder may not be assigned by the Client without the prior written consent of Calabrian. The giving of such consent shall be at the discretion of Calabrian and Calabrian will only agree to an assignment on its terms and in return for payment of a fee by the Client to Calabrian to cover Calabrian's legal and other costs associated with any assignment.
- 8.2 The Agreement shall not confer and shall not purport to confer on any third party any benefit or any right to enforce any term of this Agreement for the purposes of the Contracts (Rights of Third Parties) Act 1999 or otherwise.
- 8.3 Calabrian will consent to any reasonable request from the Client for Calabrian to enter a collateral warranty or provide a letter of reliance with/to a tenant, funder, or purchaser with regard to the Services provided under the Agreement. Calabrian will only enter a collateral warranty or provide a letter of reliance on its terms and in return for payment of a fee by the Client to Calabrian to cover Calabrian's legal and other costs associated with any collateral warranty or letter of reliance.

9 INSURANCE

- 9.1 Calabrian warrants to the Client that there is in force a policy of Professional Indemnity insurance covering its liabilities for negligence under this Agreement, with a limit of indemnity of £5,000,000 (FIVE MILLION POUNDS) any one Single Claim, Defence Costs in addition. This policy is annually renewable and whilst renewal is not automatic, Calabrian agrees to use reasonable endeavours to maintain such insurance at all times until six years from the date of the completion (or termination) of the Services under the Agreement, provided such insurance is available at commercially reasonable rates having regard, inter alia, to premiums required and policy terms obtainable.
- 9.2 If for any period such insurance is not available at commercially reasonable rates, Calabrian shall forthwith inform the Client and shall obtain in respect of such period such reduced level of Professional Indemnity insurance as is available and as would be fair and reasonable in the circumstances for Calabrian to obtain.

10 LIMITATIONS ON LIABILITY

- 10.1 Calabrian's liability under or in connection with the Agreement whether in contract, tort, negligence, breach of statutory duty or otherwise (other than in respect of personal injury or death) shall not exceed five million pounds in the aggregate.
- 10.2 No action or proceedings under or in respect of the Agreement whether in contract, tort, negligence, under statute or otherwise shall be commenced against Calabrian after the expiry of a period of six years from the date of the completion (or termination) of the Services under the Agreement.
- 10.3 Whilst Calabrian will scan all potential exploratory locations with a Cable Avoidance Tool, Calabrian shall not be liable for any damage to underground services, cables, pipes, drains or underground buildings, constructions and the like which were either not marked on site or for which accurate plans were not provided.
- 10.4 Calabrian shall not be liable for the cost of rectifying any defect, conflict or other fault in the information or designs provided by Calabrian or for the cost of designing a solution for and rectifying any subsequent works carried out by others pursuant to the conflicting, defective or in any other way faulty information or designs, unless Calabrian has been advised in writing of the same by the Client and has been given the opportunity to rectify the same or where necessary, to design the solution for rectification of any subsequent works carried out by others pursuant to the same. Calabrian shall indemnify the client against all costs claims demands and expenses arising as a result of any conflict, defect, or other fault in this respect.

11 PAYMENT

- 11.1 Invoices for services rendered will be submitted for payment in accordance with the Proposal
- 11.2 The due date for payment is the date of the invoice and the final date for payment is 28 days from the date of the
- 11.3 If the Client disputes the amount included for payment in an invoice a written notice must be served on Calabrian by the Client not later than 14 days before the final date for payment. If no notice is given the amount due shall be the amount stated in the invoice.
- 11.4 In the event of failure on the part of the Client to pay any monies in accordance with the foregoing payment provisions, Calabrian will be entitled to charge interest on any monies owed to it by the Client, such interest to be at a rate of 8% above the base rate of a clearing bank from time to time calculated from the final date for payment to the date of actual payment on a compound basis.

12 DELAY

12.1 Calabrian will comply with any timescale agreed for completion of the Services unless delayed or prevented by circumstances beyond its reasonable control and in the event of any such circumstances arising Calabrian undertakes to complete the Services within a reasonable period but will not be liable to the Client for any delay as a result.

13 TERMINATION

- 13.1 The Agreement may be determined by either party in the event of the other making a composition or arrangement with its creditors, becoming bankrupt, or being a company, making a proposal for a voluntary arrangement for a composition of dets, or has a provisional liquidator appointed, or has a winding-up order made, or passes a resolution for voluntary winding-up (except for the purposes of a bona fide scheme of amalgamation or reconstruction), or has an administrative receiver appointed to the whole or any part of its assets. Notice of determination must be given to the party which is insolvent by the other party.
- 13.2 If for any reason the performance of the Services by Calabrian is suspended for a period in excess of three calendar months then Calabrian shall be entitled to determine its appointment in respect of the Services by seven days written notice to the Client.
- 13.3 If the Client shall fail to pay in full any sum due under the terms of the Agreement by the final date for payment for that sum and no effective notice of intention to withhold payment has been issued, Calabrian may serve written notice on the Client demanding payment within 14 days of such notice. If the Client shall fail to comply with such notice, Calabrian shall be entitled to terminate its employment under the Agreement forthwith.
- 13.4 Any determination of the appointment of Calabrian howsoever caused shall be without prejudice to the right of Calabrian to require payment for all services performed up to the date of such determination including but not limited to payment of a fair and reasonable proportion of any figure identified in the Proposal or otherwise for fees in respect of a particular service which Calabrian has started, but not completed.

14 NOTICES

- 14.1 Any notice provided for in the Agreement shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post to the address of the relevant party as may have been notified by each party to the other or, in the absence of notification, to the address of Calabrian set out above or to the registered address of the Client.
- 14.2 Such notice shall be deemed to have been received on the day of delivery if delivered by hand or on the second working day after the day of posting if sent by first class post.

15 ENTIRE AGREEMENT

- 15.1 The Agreement constitutes the complete and entire agreement between the Client and Calabrian with respect to the Services and supersedes any prior oral and/or written warranties, terms, conditions, communications, and representations, whether express or implied and any claim against Calabrian in respect of the Services can only be made in contract under the provisions of the Agreement and not otherwise under the law or tort or otherwise.
- 15.2 No amendments, modifications or variation of the Agreement shall be valid unless made in writing and agreed to by both the Client and Calabrian; such agreement must be recorded in writing by at least one of the Parties.
- 15.3 Calabrian will not be bound by any standard or printed terms or conditions furnished by the Client in any of its documents unless Calabrian specifically states in writing separately from such documents that it intends such terms and conditions to apply.

16 DISPUTES AND GOVERNING LAW

- 16.1 The Agreement shall be governed by and construed in accordance with English law and the Parties irrevocably and unconditionally submit to the jurisdiction of the English Courts.
- 16.2 Where the Housing Grants, Construction and Regeneration Act 1996 applies, any dispute between the Parties may be referred to adjudication in accordance with The Scheme for Construction Contracts Regulations 1998 or any amendment or modification thereof being in force at the time of the dispute, as applicable to England, Wales, Scotland, and Northern Ireland.



APPENDIX B HISTORICAL OS PLANS









Ordnance Survey Plan Published 1967 - 1968 Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	349929055 1 1
Customer Ref:	7218
National Grid Reference:	458890, 221250
Slice:	A
Site Area (Ha):	1.06
Search Buffer (m):	100

Site Details Site at 458887,221245





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Additional SIMs Published 1986 - 1992 Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

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1	SPS	6820	1	SP5	920	- 1
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Historical Map - Segment A13



Order Details

Order Number:	349929055 1 1
Customer Ref:	7218
National Grid Reference:	458890, 221250
Slice:	A
Site Area (Ha):	1.06
Search Buffer (m):	100

Site Details





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Additional SIMs Published 1992

Source map scale - 1:2,500

The SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

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Historical Map - Segment A13



Order Details

Order Number:	349929055 1 1
Customer Ref:	7218
National Grid Reference:	458890, 221250
Slice:	A
Site Area (Ha):	1.06
Search Buffer (m):	100

Site Details Site at 458887,221245



Landmark

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A Landmark Information Group Service v50.0 12-Jun-2024 Page 7 of 18



Large-Scale National Grid Data Published 1994

Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

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Historical Map - Segment A13



Order Details

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Site Details Site at 458887,221245



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A Landmark Information Group Service v50.0 12-Jun-2024 Page 8 of 18



Large-Scale National Grid Data Published 1995

Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

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Historical Map - Segment A13



Order Details

Order Number:	349929055 1 1
Customer Ref:	7218
National Grid Reference:	458890, 221250
Slice:	A
Site Area (Ha):	1.06
Search Buffer (m):	100

Site Details Site at 458887,221245



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A Landmark Information Group Service v50.0 12-Jun-2024 Page 9 of 18



Large-Scale National Grid Data Published 1996

Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	349929055 1 1
Customer Ref:	7218
National Grid Reference:	458890, 221250
Slice:	A
Site Area (Ha):	1.06
Search Buffer (m):	100

Site Details Site at 458887,221245



Tel: Fax: Web: 0844 844 9952 0844 844 9951 www.envirocheck.co.uk

A Landmark Information Group Service v50.0 12-Jun-2024 Page 12 of 18



Large-Scale National Grid Data Published 1996

Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	349929055 1 1
Customer Ref:	7218
National Grid Reference:	458890, 221250
Slice:	A
Site Area (Ha):	1.06
Search Buffer (m):	100

Site Details Site at 458887,221245



Tel: Fax: Web: 0844 844 9952 0844 844 9951 www.envirocheck.co.uk

A Landmark Information Group Service v50.0 12-Jun-2024 Page 13 of 18



Historical Aerial Photography Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13

A21	A22	A	23 11/10	A24	A25	
-A16	-A17	A	8	A19	A20-	
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- A11	-A12		3	A14	A15-	\rightarrow
- A6	- A7	A	8	A9	A10-	•
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Order Details

Order Number:349929055_1_1Customer Ref:7218National Grid Reference:458890, 221250Slice:ASite Area (Ha):1.06Search Buffer (m):100

Site Details Site at 458887,221245



Tel: 084 Fax: 084 Web: www

0844 844 9952 0844 844 9951 www.envirocheck.co.uk

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APPENDIX C	SEARCHES
Landmark	Envirocheck Report
BGS	Archive Exploratory Hole Record
ZeticaUXO	UXO Risk Map



Envirocheck[®] Report:

Datasheet

Order Details:

Order Number: 349929055_1_1

Customer Reference: 7218

National Grid Reference: 458890, 221250

Slice:

Site Area (Ha): 1.06

Search Buffer (m): 1000

Site Details: Site at 458887,221245

Client Details:

Mr R Hey Calabrian Limited 9 Millwood Ingleton LA6 3HY

Prepared For:

LNT Care Developments



Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1		Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		1	3	25
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 8				4
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 9		Yes		
Pollution Incidents to Controlled Waters	pg 9	1	2	2	6
Prosecutions Relating to Authorised Processes					
Registered Radioactive Substances					
River Quality	pg 11				2
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points	pg 11			1	
Substantiated Pollution Incident Register					
Water Abstractions	pg 12				(*8)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 14	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk	pg 14	1	n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 14	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 14		Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 14		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 14		12	47	64

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites	pg 29				1
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 29				1
Local Authority Landfill Coverage	pg 29	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites	pg 29				1
Potentially Infilled Land (Non-Water)	pg 29				1
Potentially Infilled Land (Water)	pg 29			3	5
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 30				1
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 31	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 31	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 32				1
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 32	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 32		Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 32	Yes		n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 32		Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 32	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 34		1	2	46
Fuel Station Entries	pg 38				1
Points of Interest - Commercial Services	pg 38		2		13
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 39	2	1	2	6
Points of Interest - Public Infrastructure	pg 40		1		12
Points of Interest - Recreational and Environmental	pg 41		3	3	20
Gas Pipelines					
Underground Electrical Cables					

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland	pg 44				1
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 44	1			1
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					



General





Order Details

Order Number:	349929055 1 1		
Customer Ref:	7218		
National Grid Reference:	458890, 221250		
Slice:	A		
Site Area (Ha):	1.06		
Search Buffer (m):	1000		
Site Area (Ha): Search Buffer (m):	1.06		

Site Details Site at 458887,221245



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A Landmark Information Group Service v50.0 12-Jun-2024 Page 1 of 6





General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Agency and Hydrological (Flood)

Extreme Flooding from Rivers or Sea without Defences (Zone 2)

Flooding from Rivers or Sea without Defences (Zone 3)

Area Benefiting from Flood Defence



Flood Water Storage Areas

--- Flood Defence

Flood Map - Slice A



Order Details

 Order Number:
 349929055_1_1

 Customer Ref:
 7218

 National Grid Reference:
 458890, 221250
 Slice: A Site Area (Ha): Search Buffer (m): 1.06 1000

Site Details Site at 458887,221245



Tel: Fax: Web:

0844 844 9952 0844 844 9951 www.envirocheck.co.uk


Calabrian

General	
Specified Site	
Specified Buffer(s)	
X Bearing Reference Point	
8 Map ID	
Several of Type at Location	
Agency and Hydrolo	gical (Boreholes)

BGS Borehole Depth 0 - 10m

- BGS Borehole Depth 10 30m
- 🔴 BGS Borehole Depth 30m +
- Confidential

◯ Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



Order Details

349929055 1 1
7218
458890, 221250
A
1.06
1000

Site Details Site at 458887.22124





Tel: Fax: Web:

0844 844 9952 0844 844 9951 www.envirocheck.co.uk





UNEXPLODED BOMB RISK MAP



SITE LOCATION

Map Centre: 458974,221221



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

High: Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
Moderate: Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.

Low: Areas indicated as having 15 bombs per 1000acre or less.



How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.

Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then <u>additional detailed research</u> is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our <u>pre-desk study assessments (PDSA)</u> by emailing a site boundary and location to <u>pdsa@zetica.com</u>.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 email: uxo@zetica.com web: www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

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ľ	Water Levels	In-situ Tests	Sam- ples	Depth (m)	Reduced Level (m.O.D.)	Thickness (m)	Des	scription of Strata	Log	
						0.40	Firm brown fria occasional lime numerous roots	Firm brown friable silty CLAY with occasional limestone gravel and numerous roots (Topsoil)		
				0.40	66.690					
1 Geolo	ical Survey		B 0.50 5712		British Ge	0.55	Firm to stiff b occasional smal silty sand, occ carbonaceous tr (Glacial Till)	rown silty CLAY, l pockets of orange asional black aces)		
				0.95	66.140					
			B 1.00 5713			0.55	Stiff to very s mottled fissure occasional calc (Weathered Oxfo	tiff grey and brown d silty CLAY with areous nodules ord Clay)		
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Calabrian

APPENDIX D	EXPLORATORY HOLE RECORDS
Trial Pits	TP101 to TP106

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	cala	abrian					Tri	al Pit Log	TP10)1
Droine					Projec	t No		Co-ords: 458003.48 - 221202.40	Sheet 1 c	of 1
Name) 	Graven H	Hill		7218	ino.		Level: 67.05	04/07/20)24
Locati	ion [.]	Bicester	OX25.2	PBF				Dimensions	Scale	
			0/1201					(m):	1:25	
Client	:	LNT Car	e Devel	opments (3) Limited			_	2.50	RJH	-
ke r		Sample	s and I	n Situ Testing	Depth	Level	Legend	Stratum Description		
Wai Stri	I	Depth	Туре	Results	(m)	(m)	Legene			
		0.10	J,K&T J.K&T					Firm grey and orange brown extremely closely to CLAY with some randomly orientated gravel size lithorelicts and some fine selenite crystals. WEATHERED PETERBOROUGH MEMBER	ssurea ed	
			-,				E			
								-		-
							<u> </u>	-		
										
		1.00								
		1.00								
				HVP=56			F	-		
							E			
							L	-		-
								-		-
							E	7		
					1.90	65.15		Very weak very thinly bedded extremely closely	fractured	
								grey MUDSTONE with occasional fine selenite of Discontinuities stained orange brown. Locally with vellow brown partially decomposed shalls and si	rystals. th many	2 -
								fragments. PETERBOROUGH MEMBER	lelly	
					2.50	64.55		End of pit at 2.50 m		
										-
										3 -
										-
										-
										-
										-
										- -
										-
										-
										-
										-
		4 5.1		avertion a Cable Avertia						5 -
кета	Irks:	excava comple	ation. 3. etion.	The sides of the trial pit	remaine	d stable o	ey was c during exe	carried out. 2. Groundwater was not apparent durin cavation. 4. Backfilled with materials arising upon	y AC	1
Stabili	ity:									

Calabrian Trial Pit Log The 102 Project Graven Hill Project No. Counter 468842.32.221250.38 Output 0.007/202 Location: Bloester, 0X252.28F Omersions Output 0.007/202 Output 0.007/202 Citer: LNT Care Developments (3) Limited Depth Leading Depth Output 0.007/202 250 Samples and In Situ Testing Depth Leading Depth Output 0.007/202 38 Generations Internations Depth Leading Depth Output 0.007/202 38 Generations Internations Depth Leading Depth Samples and In Situ Testing 38 Generations Internations Triangle output of the same back of the content										Trialpit	No
Project Name: Or-ordit: 458842.32 - 221256.33 Date 0407/202 Location: Bioseler, 0X25.28F Dimensions 5.00 Limit: LNT Care Dovelopments (3) Limited Depth Setting Stratum Description 8 B Depth Type Results (m) Level: 0.10 J.KAT 9 B Dipth Type Results (m) Level: 0.10 J.KAT 0.50 J.KAT Image: Setting Seting Setting Setting Setting Seting Setting Setting S		cala	abrian					Tri	al Pit Log	TP10)2
Project Graven Hill Project N0 Dordinal 4004/2.52 / 2120-30 Dordinal 4007/20 Location: Bioster, 0X25 2BF Dimensions Image: 100 mm since Same Client: LAT Care Developments (3) Limited Depth Lorged Peph 2.50 Samples and In Situ Testing Depth Depth Lorged CLAY with some actempty closely floatered 8 Samples and In Situ Testing Depth Level 6 / 10 Stratum Description 0.10 J.K&T Results Image: Intrace Test Stratum Description CLAY with some actempty closely floatered 1.00 D HVP=58 Image: Intrace Test Stratum Description Image: I						Draia	+ N -		On andre 450040.20 204050.20	Sheet 1	of 1
Location: Bicester, OX25 2BF Dimension: (m): Depth Dimension: (m): Depth Dimension: (m): Depth Discrete Client: LNT Care Developments (3) Limited 2,50 Statum Description 8: Samples and in Situ Testing (n): Depth Location: Biph 2,50 Statum Description 9: Site Depth Type Results If we we may an advert and only orientates gravel taxed biochication and come fine adverts for explanation or we were more adverted to take of the taxed biochication and come fine adverts for explanation or we were more adverted to take of the taxed biochication and come fine adverts for explanation or we were more adverted to take of the taxed biochication and the statured or we were more take of the taxed or taxed the statured of the taxed or taxed to take of taxet or taxed biochication or match and the statured of the taxet or t	Projec	ct e:	Graven H	Hill		7218	SUNO.		Co-ords: 458842.32 - 221258.38	04/07/20	024
Client: LNT Care Developments (3) Limited Income the second of the	Looot	ioni	Piecetor	0225.2		1210			Dimensions	Scale	<u>}</u>
Client: LNT Care Developments (3) Limited Depth Lovel Legend 2.50 Limited 2.50 Limited RUH 2.50 Limited 100 Lingend 100 Lingen	LUCAL		Dicester,	07252	.DF				(m):	1:25	
Samples and In Situ Testing Depth Type Results I avail (m) Legend Stratum Description 0.10 J.K&T 0.10 J.K&T CLAV with some randomly orientate grave lised Interaction of the standard original stand Interaction original standard original standard orientate grave lised 0.50 J.K&T 0.50 J.K&T Interaction original standard orinal sta	Client	t:	LNT Car	e Develo	opments (3) Limited				2.50	Logged RJH	
Straum Description Type Results (m) (m) Legend Straum Description actionally disable feasured 0.10 JK&T	re e		Sample	s and li	n Situ Testing	Depth	Level				
0.10 J,K&T 0.50 J,K&T 0.50 J,K&T 1.00 D 1.00 D 1.00 D 1.00 CLM with some nationary interacting gravel tacked thermality decay fissued thermality decay fissu	Wat Strij	[Depth	Туре	Results	(m)	(m)	Legend	Stratum Description		
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. Remarks: 1. Prior to excavation. 3. The sides of the trial pit remained stable during excavation. 4. Backfilled with materials arising upon completion.	Wa		Depth 0.10 0.50 1.00	Type J,K&T J,K&T	Results HVP=58	(m) 1.50 2.50	(m) 65.60 64.60		Firm grey and orange brown extremely closely CLAY with some randomly orientated gravel siz lithorelicts and some fine selenite crystals. WEATHERED PETERBOROUGH MEMBER Very weak very thinly bedded extremely closely grey MUDSTONE with occasional fine selenite Discontinuities stained orange brown. Locally yellow brown partially decomposed shells and s fragments. PETERBOROUGH MEMBER End of pit at 2.50 m	fissured red	
Stability:	Rema	arks:	1. Pric excava comple	or to exca ation. 3. etion.	avation a Cable Avoidar The sides of the trial pi	nce Tool ((t remaine	CAT) surv d stable o	/ey was c during exe	arried out. 2. Groundwater was not apparent durin cavation. 4. Backfilled with materials arising upon	ng AC	5

								Trialpit I	No
	calabrian)				Tri	al Pit Log	TP103	
Drojoc				Proiec	ct No		Co-ords: 458875.05 - 221245.61	Sheet 1 o	of 1
Name	Graver	n Hill		7218			Level: 67.15	04/07/2024	
Locati	ion: Biceste	er. OX25 2	BF	I			Dimensions	Scale	1
							(m): Depth	1:25	d
Client	: LNT C	are Develo	opments (3) Limited			_	2.50	RJH	u
ike ike	Samp	oles and Ir	n Situ Testing	Depth	Level	Legend	Stratum Description		
Wa Stri	Depth	Туре	Results	(m)	(m)			<u> </u>	1
	0.10 0.40 1.30	J,K&T J,K&T	HVP=64	1.70	65.45		Firm grey and orange brown extremely closely CLAY with some randomly orientated gravel siz lithorelicts and some fine selenite crystals. WEATHERED PETERBOROUGH MEMBER	fissured red	
									5 -
Rema Stabili	irks: 1. F exca com	Prior to exca avation. 3. pletion.	vation a Cable Avoid The sides of the trial	ance Tool ((pit remaine	CAT) surv d stable o	/ey was c during exe	arried out. 2. Groundwater was not apparent durin cavation. 4. Backfilled with materials arising upon		I IS

									Trialpit No	
	calabı	rian					Tri	al Pit Log	TP104	
Droiog	-+				Projec	t No		Co-ords: 458914 10 - 221244 22	Sheet 1 of 1	
Name	Gi	raven F	Hill		7218			Level: 67.35	04/07/2024	
Locati	ion: Bi	cester.	OX25 2	2BF				Dimensions	Scale	_
								(m): Depth	1:25	
Client	:: LN	VT Care	e Devel	opments (3) Limited		1	1	2.50	RJH	
Nater Strike	S Dep	ample	s and I Type	n Situ Testing Results	Depth (m)	Level (m)	Legend	Stratum Description		
	0.1 0.5 1.2	0	J,K&T J,K&T D	HVP=54	1.70	65.65		Firm grey and orange brown extremely closely f CLAY with some randomly orientated gravel siz lithorelicts and some fine selenite crystals. WEATHERED PETERBOROUGH MEMBER grey MUDSTONE with occasional fine selenite of Discontinuities stained orange brown. Locally w yellow brown partially decomposed shells and s fragments. PETERBOROUGH MEMBER End of pit at 2.50 m	issured ed 1 1 fractured crystals. th many helly 2 3 3	
Rema Stabili	irks: ity:	1. Pric excava comple	or to exc ation. 3. etion.	avation a Cable Avoidand The sides of the trial pit	ce tool (C remained	JAT) surv d stable o	ey was c during ex	arried out. 2. Groundwater was not apparent durin cavation. 4. Backfilled with materials arising upon	⁹ AGS	

								Trialpit I	No
	alabriar	J				Tri	al Pit Log	TP10)5
Ductors				Projoc	st No		Co. orde: 458851.86 221214.33	Sheet 1 o	of 1
Name:	Graver	n Hill		7218	JUNO.		Level: 67.40	04/07/20)24
Locatio	n: Biceste	er 0X25.2	PRF				Dimensions	Scale	,
							(m): Depth	1:25	
Client:	LNT C	are Develo	opments (3) Limited				2.50	RJH	u
ke fe	Samp	oles and li	n Situ Testing	Depth	Level	Legenc	Stratum Description		
Va Stri	Depth	Туре	Results	(m)	(m)	Legene			
Stri	Depth 0.10 0.40	Type J,K&T J,K&T	Results HVP=68	(m) 1.60 2.50	(m) 65.80 64.90		Firm grey and orange brown extremely closely CLAY with some randomly orientated gravel siz lithorelicts and some fine selenite crystals. WEATHERED PETERBOROUGH MEMBER Very weak very thinly bedded extremely closely grey MUDSTONE with occasional fine selenite Discontinuities stained orange brown. Rare she shelly fragments. PETERBOROUGH MEMBER End of pit at 2.50 m	fissured zed	
Remark	ks: 1. F exca com	Prior to exca avation. 3. ipletion.	avation a Cable Avoida The sides of the trial	ance Tool ((pit remaine	CAT) surv d stable o	vey was c during exc	arried out. 2. Groundwater was not apparent duri cavation. 4. Backfilled with materials arising upon	ng AC	5
Stability	y.								

									Trialpit N	٩٥
	cala	brian					Tri	al Pit Log	TP10	6
					Droioo	t No		Co. ordo: 458006.20 221214.75	Sheet 1 c	of 1
Projec	CT 1:	Graven I	Hill		7218	LINU.		Level: 67.50	04/07/20)24
Locati	ion:	Ricester	OX25 (DRE				Dimensions	Scale	
		Dicester,	0/202					(m):	1:25	
Client	:	LNT Car	e Devel	opments (3) Limited				2.50	Logged RJH	נ
ater Tike		Sample	es and I	n Situ Testing	Depth	Level	Legend	Stratum Description		
ŝţ	D	epth	Туре	Results	(11)	(11)		Firm grey and grange brown extremely closely f	iccured	
		0.10 0.50	J,K&T J,K&T					CLAY. WEATHERED PETERBOROUGH MEMBER		
		1.00	D							
				HVP=90						
				HVP=72	1.60	65.90		Stiff orange brown and blue grey CLAY with mar randomly orientated gravel sized lithorelicts and fine selenite crystals.	וץ some	
					1.90	65.60		WEATHERED PETERBOROUGH MEMBER Very weak very thinly bedded extremely closely grey MUDSTONE with occasional fine selenite of Discontinuities stained orange brown. Rare shell shelly fragments. PETERBOROUGH MEMBER	fractured rrystals. Is and	2
					2.50	65.00		End of pit at 2.50 m		3
Stabili	ity:	excava comple	ation. 3. etion.	The sides of the trial pit r	emained	d stable o	luring exc	cavation. 4. Backfilled with materials arising upon	AG	I S

Calabrian

APPENDIX E CHEMICAL TEST RESULTS



Issued:

12-Jul-24

Certificate Number 24-13955

Client Calabrian Ltd 8 l'Anson Close Leyburn DL8 5LF

- Our Reference 24-13955
- Client Reference ~ 7218
 - Order No ~ PO-3614
 - Contract Title ~ GRAVEN HILL , BICESTER , OX25 2BF
 - Description 12 Soil samples, 3 Leachate prepared by DETS samples.
 - Date Received 08-Jul-24
 - Date Started 08-Jul-24
 - Date Completed 12-Jul-24
 - Test Procedures Identified by prefix DETSn (details on request).
 - *Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

lymood

Kirk Bridgewood General Manager





			Lab No	2361124	2361125	2361126	2361127	2361128	2361129
		San	nple ID ~	TP101	TP101	TP102	TP102	TP103	TP103
			Depth ~	0.10	0.30	0.10	0.50	0.10	0.40
		0	ther ID ~						
		Sampl	e Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Samplin	g Date ~	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024
		Samplin	g Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	10	9.0	9.0	8.8	7.9	8.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.1	0.7	1.1	4.0	0.9	1.9
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.2	0.3	0.2	1.2
Chromium	DETSC 2301#	0.15	mg/kg	28	37	23	31	26	34
Chromium III	DETSC 2301*	0.15	mg/kg	28	37	23	31	26	34
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	16	39	15	24	13	35
Lead	DETSC 2301#	0.3	mg/kg	14	13	19	15	13	16
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l		< 10				< 10
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	20	49	17	27	25	130
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	81	140	63	65	72	200
Inorganics	l.		<u> </u>		I				
pH	DETSC 2008#		рH	5.5	7.2	7.2	7.6	7.7	7.8
Total Organic Carbon	DETSC 2084#	0.5	%	0.7	< 0.5	0.9	< 0.5	0.6	< 0.5
Ammonia Aqueous Extract as N	DETSC 2119*	10	mg/l		< 10				< 10
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l		8.3				3.5
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l		< 1.0				< 1.0
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		120				180
Sulphur as S, Total	DETSC 2320	0.01	%		0.02				0.03
Sulphate as SO4, Total	DETSC 2321#	0.01	%		0.06				0.10
Petroleum Hydrocarbons	·								
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5			< 1.5	
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg	< 1.2	3.9			< 1.2	
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg	< 1.5	31			< 1.5	
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg	< 3.4	220			< 3.4	
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg	< 10	260			< 10	
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9			< 0.9	
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg	< 0.5	2.3			< 0.5	
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg	< 0.6	26			< 0.6	
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg	< 1.4	160			< 1.4	
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg	< 10	190			< 10	
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg	< 10	450			< 10	



			Lab No	2361124	2361125	2361126	2361127	2361128	2361129
		San	nple ID ~	TP101	TP101	TP102	TP102	TP103	TP103
			Depth ~	0.10	0.30	0.10	0.50	0.10	0.40
		0	ther ID ~						
		Sampl	e Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Samplin	g Date ~	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024
		Samplin	g Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units						
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
MTBE	DETSC 3321	0.01	mg/kg	< 0.01	< 0.01			< 0.01	
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10



			Lab No	2361130	2361131	2361132	2361133	2361134	2361135
		San	nple ID ~	TP104	TP104	TP105	TP105	TP106	TP106
			Depth ~	0.10	0.50	0.10	0.40	0.10	0.50
		0	ther ID ~						
		Sampl	e Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Samplin	g Date ~	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024
		Samplin	g Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	7.9	11	13	11	8.8	8.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.4	0.8	1.0	0.7	2.1	1.6
Cadmium	DETSC 2301#	0.1	mg/kg	0.1	0.2	0.3	0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	22	27	29	34	28	30
Chromium III	DETSC 2301*	0.15	mg/kg	22	27	29	34	28	30
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	14	14	18	22	24	20
Lead	DETSC 2301#	0.3	mg/kg	15	14	13	12	14	12
Magnesium Aqueous Extract (2:1)	DETSC 2076*	10	mg/l						
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	16	23	42	53	18	29
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	67	69	64	120	66	120
Inorganics	•	· · ·			· · · ·				
рН	DETSC 2008#		pН	5.7	7.4	7.9	7.6	4.9	6.5
Total Organic Carbon	DETSC 2084#	0.5	%	0.7	0.7	< 0.5	0.6	0.6	< 0.5
Ammonia Aqueous Extract as N	DETSC 2119*	10	mg/l						
Chloride Aqueous Extract (2:1)	DETSC 2055	1	mg/l						
Nitrate Aqueous Extract as NO3 (2:1)	DETSC 2055	1	mg/l						
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l						
Sulphur as S, Total	DETSC 2320	0.01	%						
Sulphate as SO4, Total	DETSC 2321#	0.01	%						
Petroleum Hydrocarbons	•	· · · ·			· · · ·				
Aliphatic C5-C6: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C6-C8: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C8-C10: HS_1D_AL	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aliphatic C10-C12: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5		< 1.5	< 1.5
Aliphatic C12-C16: EH_CU_1D_AL	DETSC 3072#	1.2	mg/kg		< 1.2	< 1.2		< 1.2	< 1.2
Aliphatic C16-C21: EH_CU_1D_AL	DETSC 3072#	1.5	mg/kg		< 1.5	< 1.5		< 1.5	< 1.5
Aliphatic C21-C35: EH_CU_1D_AL	DETSC 3072#	3.4	mg/kg		< 3.4	< 3.4		< 3.4	< 3.4
Aliphatic C5-C35: EH_CU+HS_1D_AL	DETSC 3072*	10	mg/kg		< 10	< 10		< 10	< 10
Aromatic C5-C7: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C7-C8: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C8-C10: HS_1D_AR	DETSC 3321*	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Aromatic C10-C12: EH_CU_1D_AR	DETSC 3072#	0.9	mg/kg		< 0.9	< 0.9		< 0.9	< 0.9
Aromatic C12-C16: EH_CU_1D_AR	DETSC 3072#	0.5	mg/kg		< 0.5	< 0.5		< 0.5	< 0.5
Aromatic C16-C21: EH_CU_1D_AR	DETSC 3072#	0.6	mg/kg		< 0.6	< 0.6		< 0.6	< 0.6
Aromatic C21-C35: EH_CU_1D_AR	DETSC 3072#	1.4	mg/kg		< 1.4	< 1.4		< 1.4	< 1.4
Aromatic C5-C35: EH_CU+HS_1D_AR	DETSC 3072*	10	mg/kg		< 10	< 10		< 10	< 10
			- •						
TPH Ali/Aro Total C5-C35: EH_CU+HS_1D_Total	DETSC 3072*	10	mg/kg		< 10	< 10		< 10	< 10



			Lab No	2361130	2361131	2361132	2361133	2361134	2361135
		San	nple ID ~	TP104	TP104	TP105	TP105	TP106	TP106
			Depth ~	0.10	0.50	0.10	0.40	0.10	0.50
		0	ther ID ~						
		Sampl	le Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Samplin	ng Date ~	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024
		Samplin	g Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	Method	LOD	Units	-					
Benzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Toluene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
MTBE	DETSC 3321	0.01	mg/kg		< 0.01	< 0.01		< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	0.04	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.03	< 0.03	< 0.03	< 0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	0.27	< 0.10	< 0.10	< 0.10	< 0.10



WASTE ACCEPTANCE CRITERIA TESTING **ANALYTICAL REPORT**

Our Ref 24-13955 Client Ref 7218 Contract Title GRAVEN HILL , BICESTER , OX25 2BF Sample Id TP101 0.30

Sample Numbers 2361125 2361136 Date Analysed 12/07/2024

Test Posults On Wasta				VAC Limit Va	alues
Test Results On Waste			Inert		Hazardous
Determinand and Method Reference	Units	Result	Waste	SINKITIV	Waste
DETSC 2084# Total Organic Carbon	%	< 0.5	3	5	6
DETSC 2003# Loss On Ignition	%	3.2	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	7.2	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE
Test Desults On Lesshats			1	VAC Limit Va	lues

Test Results On Leachate

Test Results On Leachate			Limit v	alues for LS1	0 Leachate
	Conc in Eluate ug/l	Amount Leached* mg/kg	Inert	CNIDLINA	Hazardous
Determinand and Method Reference	10:1	LS10	Waste	SNRHW	Waste
DETSC 2306 Arsenic as As	1.4	0.014	0.5	2	25
DETSC 2306 Barium as Ba	29	0.29	20	100	300
DETSC 2306 Cadmium as Cd	0.48	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	6.6	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	6.1	0.061	2	50	100
DETSC 2306 Mercury as Hg	0.049	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	11	0.11	0.5	10	30
DETSC 2306 Nickel as Ni	7	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	5.3	0.05	0.5	10	50
DETSC 2306 Antimony as Sb	1.2	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	2.3	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	13	0.13	4	50	200
DETSC 2055 Chloride as Cl	1100	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	320	3.2	10	150	500
DETSC 2055 Sulphate as SO4	8500	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	31000	310	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000
Additional Information			TBE	- To Be Evalu	ated
DETSC 2008 pH	5.8	1	SNRHW	- Stable Non-	Reactive
DETSC 2009 Conductivity uS/cm	43.7			Hazardous	Naste
* Temperature*	19.0				
Mass of Sample Kg*	0.120				
Mass of dry Sample Kg*	0.098				
Stage 1					
Volume of Leachant L2*	0.962				
Volume of Fluate VF1*	0.908				

The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Disclaimer: Values are correct at time of issue.

V.2.06

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-13955 Client Ref 7218 Contract Title GRAVEN HILL, BICESTER, OX25 2BF Sample Id TP103 0.40

Sample Numbers 2361129 2361137 Date Analysed 12/07/2024

Tast Pasults On Wasta				W	AC Limit Va	lues
Test Results Off Waste						Hazardous
Determinand and Method Reference Units Result				te	SINKHW	Waste
DETSC 2084# Total Organic Carbon	%	< 0.5	3		5	6
DETSC 2003# Loss On Ignition	%	4.5	n/a	a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6		n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1		n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500)	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100)	n/a	n/a
DETSC 2008# pH	pH Units	7.8	n/a	a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	a	TBE	TBE
Test Results On Leachate			Limi	W/	AC Limit Va	lues

				Limit Val	ues for LST	JLeachate
Determinand and Mathed Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	[Inert		Hazardous
	10:1	LS10		Waste	SINKIIW	Waste
DETSC 2306 Arsenic as As	0.19	< 0.01		0.5	2	25
DETSC 2306 Barium as Ba	14	0.14		20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02		0.04	1	5
DETSC 2306 Chromium as Cr	< 0.25	< 0.1		0.5	10	70
DETSC 2306 Copper as Cu	0.88	< 0.02		2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002		0.01	0.2	2
DETSC 2306 Molybdenum as Mo	2	< 0.1		0.5	10	30
DETSC 2306 Nickel as Ni	0.63	< 0.1		0.4	10	40
DETSC 2306 Lead as Pb	0.24	< 0.05		0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05		0.06	0.7	5
DETSC 2306 Selenium as Se	0.62	< 0.03		0.1	0.5	7
DETSC 2306 Zinc as Zn	5.3	0.053		4	50	200
DETSC 2055 Chloride as Cl	720	< 100		800	15,000	25,000
DETSC 2055* Fluoride as F	600	6		10	150	500
DETSC 2055 Sulphate as SO4	15000	150		1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	60000	600		4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1		1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50		500	800	1000
Additional Information		_		TBE -	To Be Evalua	ated
DETSC 2008 pH	6.1			SNRHW -	Stable Non-	Reactive
DETSC 2009 Conductivity uS/cm	85.0				Hazardous V	Vaste
* Temperature*	19.0					
Mass of Sample Kg*	0.120					
Mass of dry Sample Kg*	0.096					
Stage 1						
Volume of Leachant L2*	0.934					
Volume of Eluate VE1*	0.89					

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WASTE ACCEPTANCE CRITERIA TESTING **ANALYTICAL REPORT**

Our Ref 24-13955 Client Ref 7218 Contract Title GRAVEN HILL , BICESTER , OX25 2BF Sample Id TP106 0.50

Sample Numbers 2361135 2361138 Date Analysed 12/07/2024

Tast Posults On Wasta				VAC Limit Va	lues
Test Results On Waste			Inert		Hazardous
Determinand and Method Reference	Units	Result	Waste	SINKITIV	Waste
DETSC 2084# Total Organic Carbon	%	< 0.5	3	5	6
DETSC 2003# Loss On Ignition	%	3.8	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311# EPH (C10 - C40): EH_1D_Total	mg/kg	< 10	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	< 1.6	100	n/a	n/a
DETSC 2008# pH	pH Units	6.5	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE
Test Desults On Lesshats			V	VAC Limit Va	lues

Test Results On Leachate

Test Results On Leachate	- V	wac Limit values			
	Limit va	Limit values for LS10 Leachate			
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg	Inert	SNRHW	Hazardous
	10:1	LS10	Waste	511111	Waste
DETSC 2306 Arsenic as As	0.79	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	6.5	< 0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.58	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	1.7	< 0.02	2	50	100
DETSC 2306 Mercury as Hg	< 0.010	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	1.9	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	0.65	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	< 0.17	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.73	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	11	0.11	4	50	200
DETSC 2055 Chloride as Cl	890	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	410	4.1	10	150	500
DETSC 2055 Sulphate as SO4	13000	130	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	22000	220	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000
Additional Information			TBE -	To Be Evalu	ated
DETSC 2008 pH	5.8	1	SNRHW -	Stable Non-	Reactive
DETSC 2009 Conductivity uS/cm	31.8			Hazardous	Waste
* Temperature*	19.0				
Mass of Sample Kg*	0.120				
Mass of dry Sample Kg*	0.099				
Stage 1					
Volume of Leachant L2*	0.971				
Volume of Eluate VE1*	0.916				

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Summary of Asbestos Analysis Soil Samples

Our Ref 24-13955 Client Ref ~ 7218 Contract Title ~ GRAVEN HILL , BICESTER , OX25 2BF

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2361124	TP101 0.10	SOIL	NAD	none	Darryl Fletcher
2361125	TP101 0.30	SOIL	NAD	none	Darryl Fletcher
2361126	TP102 0.10	SOIL	NAD	none	Darryl Fletcher
2361127	TP102 0.50	SOIL	NAD	none	Darryl Fletcher
2361128	TP103 0.10	SOIL	NAD	none	Darryl Fletcher
2361129	TP103 0.40	SOIL	NAD	none	Darryl Fletcher
2361130	TP104 0.10	SOIL	NAD	none	Darryl Fletcher
2361131	TP104 0.50	SOIL	NAD	none	Darryl Fletcher
2361132	TP105 0.10	SOIL	NAD	none	Darryl Fletcher
2361133	TP105 0.40	SOIL	NAD	none	Darryl Fletcher
2361134	TP106 0.10	SOIL	NAD	none	Darryl Fletcher
2361135	TP106 0.50	SOIL	NAD	none	Darryl Fletcher

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.



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Information in Support of the Analytical Results

Our Ref 24-13955 Client Ref ~ 7218 Contract ~ GRAVEN HILL , BICESTER , OX25 2BF

Containers Received & Deviating Samples

					mappropriat
		Date			e container
Lab No	Sample ID ~	Sampled ~	Containers Received	Holding time exceeded for tests	for tests
2361124	TP101 0.10 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361125	TP101 0.30 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days)	
2361126	TP102 0.10 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361127	TP102 0.50 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361128	TP103 0.10 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361129	TP103 0.40 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L	Ammonia Aqueous Extract (3 days)	
2361130	TP104 0.10 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361131	TP104 0.50 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361132	TP105 0.10 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361133	TP105 0.40 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361134	TP106 0.10 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361135	TP106 0.50 SOIL	04/07/24	GJ 250ml, GJ 60ml, PT 1L		
2361136	TP101 0.30 LEACHATE	04/07/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2361137	TP103 0.40 LEACHATE	04/07/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2361138	TP106 0.50 LEACHATE	04/07/24	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425μm sieve, in accordance with BS1377. Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis. The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Information in Support of the Analytical Results

List of HWOL Acronyms and Operators

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

Acronym

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	•
Aliphatic C5-C6	HS_1D_AL
Aliphatic C6-C8	HS_1D_AL
Aliphatic C8-C10	HS_1D_AL
Aliphatic C10-C12	EH_CU_1D_AL
Aliphatic C12-C16	EH_CU_1D_AL
Aliphatic C16-C21	EH_CU_1D_AL
Aliphatic C21-C35	EH_CU_1D_AL
Aliphatic C5-C35	EH_CU+HS_1D_AL
Aromatic C5-C7	HS_1D_AR
Aromatic C7-C8	HS_1D_AR
Aromatic C8-C10	HS_1D_AR
Aromatic C10-C12	EH_CU_1D_AR
Aromatic C12-C16	EH_CU_1D_AR
Aromatic C16-C21	EH_CU_1D_AR
Aromatic C21-C35	EH_CU_1D_AR
Aromatic C5-C35	EH_CU+HS_1D_AR
TPH Ali/Aro Total C5-C35	EH_CU+HS_1D_Total
TPH (C10-C40)	EH_1D_Total

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

- **\$**-subcontracted.
- n/s -not supplied.
- I/S -insufficient sample.
- U/S -unsuitable sample.



t/f -to follow. **nd** -not detected.

End of Report

Calabrian

APPENDIX F GEOTECHNICAL TEST RESULTS







Contract Number: PSL24/4897

Report Date: 26 July 2024

Client's Reference: 7218

Client Name: Calabrian 8 l'Anson Close Leyburn Yorkshire DL8 5LF

For the attention of: Richard Hey

Contract Title: Graven Hill, Bicester, OX25 2BF

 Date Received:
 9/7/2024

 Date Commenced:
 9/7/2024

 Date Completed:
 26/7/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

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

Checked and Approved Signatories:

A Watkins (Managing Director) R Berriman (Associate Director) S Royle (Laboratory Manager)

L Knight (Assistant Laboratory Manager) S Neylan (Technical Administrator)

A Fry (Section Manager)

5 – 7 Hexthorpe Road, Hexthorpe, Doncaster, DN4 0AR Tel: 01302 768098 Email: rberriman@prosoils.co.uk awatkins@prosoils.co.uk Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
TP101	3	D	1.00		Brown slightly gravelly slightly sandy silty CLAY.
TP102	3	D	1.00		Brown mottled grey slightly sandy silty CLAY.
TP103	3	D	1.30		Brown mottled grey slightly gravelly slightly sandy silty CLAY.
TP104	3	D	1.20		Brown mottled grey slightly gravelly slightly sandy silty CLAY.
TP105	3	D	1.20		Brown mottled grey slightly gravelly slightly sandy silty CLAY.
TP106	3	D	1.00		Reddish brown slightly gravelly slightly sandy silty CLAY.

Ē Ē					Contract No:
UKAS TESTING 4043			Crovon Hill Biggstor	OV 25 2 DE	PSL24/4897
			Graven IIII, Dicester,	Client Ref:	
	PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY			7218	
	PSLRF011	Issue No.1	Approved by: L Pavey	03/01/2022	

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

					Moisture	Linear	Particle	Liquid	Plastic	Plasticity	Passing	
Hole	Sample	Sample	Тор	Base	Content	Shrinkage	Density	Limit	Limit	Index	.425mm	Remarks
Number	Number	Туре	Depth	Depth	%	%	Mg/m ³	%	%	%	%	
			m	m	Clause 3.2	Clause 6.5	Clause 8.2	Clause 4.3/4	Clause 5.3	Clause 5.4		
TP101	3	D	1.00		24			58	21	37	98	High Plasticity CH
TP102	3	D	1.00		31			62	23	39	100	High Plasticity CH
TP103	3	D	1.30		33			64	26	38	98	High Plasticity CH
TP104	3	D	1.20		25			67	24	43	98	High Plasticity CH
TP105	3	D	1.20		29			63	26	37	97	High Plasticity CH
TP106	3	D	1.00		30			70	25	45	96	Very High Plasticity CV

SYMBOLS : NP : Non Plastic

*: Liquid Limit and Plastic Limit Wet Sieved.

	PSI		Creation Hill Dissorts	Contract No: PSL24/4897	
UKAS			Graven Hill, Biceste	Client Ref:	
4043	PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY			7218	
	PSLRF006	Issue No.1	Approved By: L Pavey	03/01/2023	







Professional Soils Laboratory 5/7 Hexthorpe Road Hexthorpe Doncaster DN4 0AR

Analytical Test Report: L24/06719/PSL - 24-47819

Your Project Reference:

PSL24/4897 Graven Hill, Bicester, OX25 6BF

 Your Order Number:
 PSL24/4897

 Report Issue Number:
 1

 Samples Analysed:
 6 soil samples

Samples Received / Instructed:	25/07/2024 / 25/07/2024
Sample Tested:	25/07 to 31/07/2024
Report issued:	31/07/2024

Signed

James Gane Analytical Services Manager CTS Group

Notes: General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited, subUKAS - Subcontracted to a laboratory UKAS accredited for this test, subMCERTS - Subcontracted to a laboratory MCERTS accredited for this test

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Date of Issue: 29.05.2024

Issued by: J. Gane

Issue No: 4

Rev No: 10





Project Reference - PSL24/4897 Graven Hill, Bicester, OX25 6BF

Analytical Test Results - Chemical Analysis

Lab Reference			384504	384505	384506	384507	384508	384509
Client Sample ID			3	3	3	3	3	3
Client Sample Location			TP101	TP102	TP103	TP104	TP105	TP106
Client Sample Type			D	D	D	D	D	D
Client Sample Number			-	-	-	-	-	-
Depth - Top (m)			1.00	1.00	1.30	1.20	1.20	1.00
Depth - Bottom (m)			1.00	1.00	1.30	1.20	1.20	1.00
Date of Sampling			04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024	04/07/2024
Time of Sampling			-	-	-	-	-	-
Sample Matrix			Clay	Clay	Clay	Clay	Clay	Clay
Determinant	Units	Accreditation						
Water soluble sulphate (as SO ₄)	(mg/l)	u	400	1900	1700	320	2000	430
pH Value	pH Units	MCERTS	8.1	7.3	7.0	8.4	7.4	5.8
Water Soluble Chloride	(mg/l)	u	3.9	5.0	3.3	2.3	29	9.3
Water Soluble Nitrate (As NO ₃)	(mg/l)	u	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble Magnesium	(mg/l)	u	8.9	80	30	22	72	11





Project Reference - PSL24/4897 Graven Hill, Bicester, OX25 6BF

Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Description	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
384504	3	TP101	D	-	Brown slightly gravelly slightly sandy silty clay	-	-	100
384505	3	TP102	D	-	Mottled grey brown slightly gravelly slightly sandy silty clay	-	-	100
384506	3	TP103	D	-	Mottled grey brown slightly gravelly slightly sandy silty clay	-	-	100
384507	3	TP104	D	-	Greyish brown slightly gravelly slightly sandy silty clay	-	-	100
384508	3	TP105	D	-	Mottled grey brown slightly gravelly slightly sandy silty clay	-	-	100
384509	3	TP106	D	-	Mottled grey brown slightly gravelly slightly sandy silty clay	-	-	100





Project Reference - PSL24/4897 Graven Hill, Bicester, OX25 6BF

Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
384504	3	TP101	D	-	
384505	3	TP102	D	-	
384506	3	TP103	D	-	
384507	3	TP104	D	-	
384508	3	TP105	D	-	
384509	3	TP106	D	-	





Project Reference - PSL24/4897 Graven Hill, Bicester, OX25 6BF

Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preperation	Test Details
ANIONSS	MS - CL - Anions by Aquakem (2:1Extract)	Oven dried	Passing 2mm test sieve	Determination of Anions (inc Sulphate, chloride etc.) in soils by Aquakem. Analysis is based on a 2:1 water to soil extraction ratio
PHS	MS - CL - pH in Soils	As received	Passing 10mm test sieve	Determination of pH in soils using a pH probe (using a 1:3 soil to water extraction)
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis
1377MGICP	BS1377 WS Magnesium (ICP)	Oven dried	Passing 2mm test sieve	Water Soluble Magnesium testing of Soil in accordance with BS 1377 : Part 3 : 2018 + A1 : 2021 Clause 10.





Project Reference - PSL24/4897 Graven Hill, Bicester, OX25 6BF

Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided

C - Received in inappropriate container

H - Contains headspace

T - Temperature on receipt exceeds storage temperature

R - Sample(s) received with less than 96 hours for testing to commence/complete, any result formally classed as deviating will be marked with an X against the applicable test (i.e. RX)

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
384504	3	TP101	D	-	MS - CL - pH in Soils	RX
384505	3	TP102	D	-	MS - CL - pH in Soils	RX
384506	3	TP103	D	-	MS - CL - pH in Soils	RX
384507	3	TP104	D	-	MS - CL - pH in Soils	RX
384508	3	TP105	D	-	MS - CL - pH in Soils	RX
384509	3	TP106	D	-	MS - CL - pH in Soils	RX
Calabrian

APPENDIX G HazWasteOnline[™] CLASSIFICATION

Q-U27PI -1KI8U

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:

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

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

Job name 7218 HWOL **Description/Comments** Site Project 7218 Graven Hill, Bicester, OX25 2BF **Classified by** 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 Name: Company: **Richard Hey** Calabrian Limited has to be renewed every 3 years. Date: 8 l'Anson Close HazWasteOnline[™] Certification: 18 Jul 2024 16:39 GMT Leyburn Telephone: Course Date 01969 623803 Hazardous Waste Classification **Purpose of classification** 2 - Material Characterisation Address of the waste Graven Hill, Bicester Post Code OX25 2BF SIC for the process giving rise to the waste 41202 Construction of domestic buildings Description of industry/producer giving rise to the waste Redevelopment of brownfield site. Description of the specific process, sub-process and/or activity that created the waste Natural soils from foundation and infrastructure arisings. Description of the waste

Natural soil.

Job summary

#	lample nome	Dopth [m]	Classification Result	Hazard properties		Page		
#	Sample hame	Depth [m] Classification Result		Hazard properties	Inert	SNRHW	Hazardous	Fage
1	TP101/0.10/2024-07-04		Non Hazardous		-	-	N/A	4
2	TP101/0.30/2024-07-04		Non Hazardous		Pass	Pass	N/A	7
3	TP102/0.10/2024-07-04		Non Hazardous		-	-	N/A	10
4	TP102/0.50/2024-07-04		Non Hazardous		-	-	N/A	13
5	TP103/0.10/2024-07-04		Non Hazardous		-	-	N/A	16
6	TP103/0.40/2024-07-04		Non Hazardous		Pass	Pass	N/A	19
7	TP104/0.10/2024-07-04		Non Hazardous		-	-	N/A	22
8	TP104/0.50/2024-07-04		Non Hazardous		-	-	N/A	25
9	TP105/0.10/2024-07-04		Non Hazardous		-	-	N/A	28
10	TP105/0.40/2024-07-04		Non Hazardous		-	-	N/A	31
11	TP106/0.10/2024-07-04		Non Hazardous		-	-	N/A	34
12	TP106/0.50/2024-07-04		Non Hazardous		Pass	Pass	N/A	37

Related documents

#	Name	Description
1	7218 HWOL.hwol	DETS North .hwol file used to populate the Job
2	Example waste stream template for contaminated soils	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job constitute a single population.

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

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

Report

Created by: Richard Hey	Created date: 18 Jul 2024 16:39 GMT				
Appendices	Page				
Appendix A: Classifier defined and non GB MCL determinands	40				
Appendix B: Rationale for selection of metal species	41				
Appendix C: Version	41				

PAH Double Ratio Plot

Disclaimer

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

Credits

The domains and the horizontal and vertical lines are derived from Yunker et al. 2002 (Organic Geochemistry 33, 489-515)



TP104/0.50/2024-...

Credits for the oval areas and labels HazWasteOnline, 2023; Jones Environmental Forensics, 2014

Classification of sample: TP101/0.10/2024-07-04

Non Hazardous Waste Classified as 17 05 04

.

03)

in the List of Waste

. . .

Sample details

Sample name:	LoW Code:	
TP101/0.10/2024-07-04 Chapter:		17: Construction and Demolition Wastes (including excavated soil
		from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05

Hazard properties

None identified

Determinands

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

#			Determinand			User entered data	a	Conv. Factor	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP			1 actor			Value	MC	USEU
1	4	arsenic { arsenic tr	<mark>ioxide</mark> }	1		10 mg/	kg	1.32	13.203	mg/kg	0.00132 %		
		033-003-00-0	215-481-4	1327-53-3			_						
2	4	boron { diboron tric	<pre>Dxide }</pre>	4000 00 0		1.1 mg/	kg	3.22	3.542	mg/kg	0.000354 %		
<u> </u>		005-008-00-8	215-125-8	1303-86-2									
3	4	cadmium { cadmiu	m oxide }	1206 10 0		0.1 mg/	kg	1.142	0.114	mg/kg	0.0000114 %		
	-	048-002-00-0	210-140-2	1306-19-0	\vdash								
4	4	chromium in chrom chromium(III) oxide	nium(III) compound: <mark>e (worst case)</mark> }	s {		28 mg/	kg	1.462	40.924	mg/kg	0.00409 %		
			215-160-9	1308-38-9									
5	*	chromium in chrom compounds, with the of compounds spe	hium(VI) compound he exception of bari cified elsewhere in	s { chromium (VI) ium chromate and this Annex }		<1 mg/	kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< td=""></lod<>
		024-017-00-8											
6	4	copper { dicopper of	oxide; copper (I) ox	<mark>ide</mark> }	ļ	16 mg/	kg	1.126	18.014	mg/kg	0.0018 %		
		029-002-00-X	215-270-7	1317-39-1			Ŭ						
7	4	lead { lead chroma	te }	7750 07 0	1	14 mg/	kg	1.56	21.837	mg/kg	0.0014 %		
		082-004-00-2	231-846-0	//58-9/-6	-					_			
8	4	mercury { mercury	dichioride }	7497 04 7		<0.05 mg/	kg	1.353	<0.0677	mg/kg	<0.00000677 %		<lod< td=""></lod<>
		nickel { nickel chro	mate \	1401-34-1									
9	•••	028-035-00-7 238-766-5 14721-18-7				20 mg/	кg	2.976	59.525	mg/kg	0.00595 %		
		selenium { nickel s	elenate }										
10	•	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/	kg	2.554	<1.277	mg/kg	<0.000128 %		<lod< td=""></lod<>
44	æ	zinc { zinc chromat	te }			Q1 ma/		0 774	224 706	ma/ka	0.0005.0/		
' '	-	024-007-00-3	236-878-9	13530-65-9		oi mg/i	kg	2.774	224.700	mg/kg	0.0225 %		
		tert-butyl methyl et	her; MTBE;										
12		2-methoxy-2-methy	ylpropane			<0.01 mg/	٨g		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		р03-181-00-Х	216-653-1	1634-04-4	-							\square	
13		benzene	200 752 7	71 42 2		<0.01 mg/	kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		toluono	200-753-7	/ 1-43-2	-							\vdash	
14		601-021-00-3	203-625-0	108-88-3		<0.01 mg/	kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		ethylbenzene	200 020 0	100 00 0	\vdash								
15	9	601-023-00-4	202-849-4	100-41-4		<0.01 mg/	кg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		xylene											
16		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	-	<0.01 mg/l	kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
17		рН	,			55 54			5.5	n ⊔	55.04		
				PH		5.5 PH			5.5	рп	5.5 hu		

Page 4 of 42

#			Determinand		Note	User entered data	Conv.	Conv. Compound conc.		Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP		Factor			value	MC /	Usea
18		naphthalene				<0.03 mg/kg		<0.03 mg	ı∕kg	<0.000003 %		<lod< td=""></lod<>
		601-052-00-2	202-049-5	91-20-3								
19	۲	acenaphthylene	205-917-1	208-96-8	-	<0.03 mg/kg		<0.03 mg	g/kg	<0.000003 %		<lod< td=""></lod<>
20	0	acenaphthene				<0.03 ma/ka		<0.03 m	ı/ka	<0.000003 %		
20			201-469-6	83-32-9				<0.00 mg	y ng	<0.000000 /0		
21	8	fluorene	201-695-5	86-73-7	_	<0.03 mg/kg		<0.03 mg	g/kg	<0.000003 %		<lod< td=""></lod<>
	0	phenanthrene							,			
22	-		201-581-5	85-01-8		<0.03 mg/kg		<0.03 mg	mg/kg	<0.000003 %		<lod< td=""></lod<>
23	8	anthracene	204-371-1	120-12-7		<0.03 mg/kg		<0.03 mg	g/kg	<0.000003 %		<lod< td=""></lod<>
		fluoranthene		120 12 1								
24	0		205-912-4	206-44-0		<0.03 mg/kg		<0.03 mg	g/kg	<0.000003 %		<lod< td=""></lod<>
0.5		pyrene			+	0.00 //		0.00		0.00000.0/		1.05
25	-		204-927-3	129-00-0		<0.03 mg/kg		<0.03 mg	g/kg	<0.000003 %		<lod< td=""></lod<>
26		benzo[a]anthracer	ne			.0.02 ma/ka		.0.02 mg	-//	.0.000002.0/		
20		601-033-00-9	200-280-6	56-55-3		<0.03 mg/kg		<0.03 mg	ј/ку	<0.000003 %		<lod< td=""></lod<>
27		chrysene				<0.03 mg/kg		<0.03 mg	n/ka	<0.00003.94		
21		601-048-00-0	205-923-4	218-01-9		<0.03 mg/kg		<0.05 mg	mg/kg	<0.000003 /8		LOD
28		benzo[b]fluoranthe	ene			<0.03 ma/ka		<0.03 mg	ı/ka	<0.000003 %		
20		601-034-00-4	205-911-9	205-99-2		<0.00 mg/kg		<0.00 mg	y ng	<0.000000 /0		LOD
29		benzo[k]fluoranthe	ene			<0.03 mg/kg		<0.03 mg	ı/ka	~0.000003 %		
20		601-036-00-5	205-916-6	207-08-9		10.00 mg/ng			, ng			
30		benzo[a]pyrene; b	enzo[def]chrysene			<0.03 ma/ka		<0.03 mc	ı/ka	<0.000003 %		<lod< td=""></lod<>
		601-032-00-3	200-028-5	50-32-8					<i>"</i>			
31	0	indeno[123-cd]pyr	ene			<0.03 ma/ka		<0.03 mg	ı/ka	<0.000003 %		<lod< td=""></lod<>
-			205-893-2	193-39-5								
32		dibenz[a,h]anthrac	cene			<0.03 mg/kg		<0.03 mc	ı/kg	<0.000003 %		<lod< td=""></lod<>
		601-041-00-2	200-181-8	53-70-3								
33	0	benzo[ghi]perylen	penzo[ghi]perylene		<0.03	<0.03 mg/kg		<0.03 mg	mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-883-8	191-24-2						0.0070.0/	μ	
									otal:	0.0378 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration Below limit of detection

CLP: Note 1

< ≺LOD

Only the metal concentration has been used for classification

WAC results for sample: TP101/0.10/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

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

Key

Classification of sample: TP101/0.30/2024-07-04

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

Sample details

Sample name:	LoW Code:	
TP101/0.30/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated s

Entry:

soil from contaminated sites) 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

2

Hazard properties

None identified

Determinands

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

#		Determinand		Note	User entere	d data	Conv.	Compound	conc.	Classification	Applied	Conc. Not	
		EU CLP index number	EC Number	CAS Number	CLP						value	MC /	USed
1	e	arsenic { arsenic tri	ioxide }			9	mg/kg	1.32	11.883	mg/kg	0.00119 %		
		033-003-00-0	215-481-4	1327-53-3									
2	4	boron { diboron tric	<mark>xide</mark> }			0.7	mg/kg	3.22	2.254	mg/kg	0.000225 %		
		005-008-00-8	215-125-8	1303-86-2									
3	4	cadmium { cadmiui	m oxide }	4000 40 0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
		048-002-00-0	215-146-2	1306-19-0									
4	4	chromium in chrom <mark>chromium(III) oxide</mark>	nium(III) compound <mark>e (worst case)</mark> }	s {		37	mg/kg	1.462	54.078	mg/kg	0.00541 %		
			215-160-9	1308-38-9									
5	4	chromium in chrom compounds, with th of compounds spec	nium(VI) compound the exception of bar cified elsewhere in	ls { chromium (VI) ium chromate and this Annex }		<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< td=""></lod<>
		024-017-00-8											
6	4	copper {	oxide; copper (I) ox	<mark>ide</mark> }		39	ma/ka	1.126	43.91	ma/ka	0.00439 %		
_		029-002-00-X	215-270-7	1317-39-1									
7	4	lead { lead chroma	te }		1	13	mg/kg	1.56	20.278	mg/kg	0.0013 %		
		082-004-00-2	231-846-0	7758-97-6									
8	4	mercury { mercury	dichloride }			<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<lod< td=""></lod<>
<u> </u>		080-010-00-X	231-299-8	/48/-94-/	\vdash								
9	4	nickei { nickei chror	mate }	44704 40 7		49	mg/kg	2.976	145.837	mg/kg	0.0146 %		
<u> </u>		olonium (nickol c	236-700-3	14721-10-7	\vdash								
10	4	028-031-00-5	b30-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<lod< td=""></lod<>
-		028-031-00-5 239-125-2 [15060-62-5			\vdash			1					
11	*	024-007-00-3	236-878-9	13530-65-9	140	140	mg/kg	2.774	4 388.381	mg/kg	0.0388 %		
-	\vdash	tert-butvl methvl et	her: MTBE:		\vdash								
12		2-methoxy-2-methy	/lpropane			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		603-181-00-X	216-653-1	1634-04-4									
13		benzene				<0.01	ma/ka		<0.01	ma/ka	<0.000001 %		<lod< td=""></lod<>
		601-020-00-8	200-753-7	71-43-2									
14		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		601-021-00-3	203-625-9	108-88-3									
15	۲	ethylbenzene		100 11 1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		601-023-00-4	202-849-4	100-41-4	\vdash								
16		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
17	۲	рН		PH		7.2	рН		7.2	pН	7.2 pH		

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#		Determinand		User enter	ed data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index EC Number CAS Numb number	er JJ						value	MC	USEU
18		naphthalene		<0.03	ma/ka		<0.03	ma/ka	<0 000003 %		<lod< td=""></lod<>
		601-052-00-2 202-049-5 91-20-3		10100							
19	8	acenaphthylene		< 0.03	ma/ka		< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		205-917-1 208-96-8									
20	Θ	acenaphthene		< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		201-469-6 83-32-9									
21	8	fluorene		< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		201-695-5 86-73-7						5.5			
22	0	phenanthrene		< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		201-581-5 85-01-8									
23	۲	anthracene		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		fluoranthene									
24	-	205-912-4 206-44-0		< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		pyrene									
25	-	204-927-3 129-00-0		< 0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
00		benzo[a]anthracene		0.00			0.00		0.000000.0/	i –	1.00
26		601-033-00-9 200-280-6 56-55-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
07		chrysene		0.00			0.00		0.000000.00	t	
21		601-048-00-0 205-923-4 218-01-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
20		benzo[b]fluoranthene		-0.02	<0.03 mg/kg		-0.02	ma/ka	-0.00003.9/		
20		601-034-00-4 205-911-9 205-99-2		<0.03			<0.03	тід/кд	<0.000003 /8		LOD
20		benzo[k]fluoranthene		~0.03	ma/ka		~0.03	malka	<0.000003 %		
25		601-036-00-5 205-916-6 207-08-9		<0.00	ing/kg		<0.00	iiig/itg	<0.000000 //		LOD
30		benzo[a]pyrene; benzo[def]chrysene		<0.03	ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-032-00-3 200-028-5 50-32-8		10100							
31	Θ	indeno[123-cd]pyrene		< 0.03	ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		205-893-2 193-39-5									
32		dibenz[a,h]anthracene		< 0.03	ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-041-00-2 200-181-8 53-70-3						5.5			_
33	Θ	benzo[ghi]perylene		< 0.03	mg/kg		< 0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		205-883-8 191-24-2								<u> </u>	
34	Θ	polychlorobiphenyls; PCB		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		602-039-00-4 215-648-1 1336-36-3						ing/kg		<u> </u>	
35	4	sulfur { sulphur dioxide }		200	mg/kg	1.998	399.587	mg/kg	0.04 %		
<u> </u>		016-011-00-9 231-195-2 7446-09-5						T-1-1	0.106.0/	-	
								iotal:	0.106 %		

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

<LODCLP: Note 1

Below limit of detection te 1 Only the metal concentration has been used for classification

WAC results for sample: TP101/0.30/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

	Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits				
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill		
1	TOC (total organic carbon)	%	<0.5	3	5	6		
2	LOI (loss on ignition)	%	3.2	-	-	10		
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-		
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-		
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-		
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-		
7	рН	рН	7.2	-	>6	-		
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-		
	Eluate Analysis 10:1							
9	arsenic	mg/kg	0.014	0.5	2	25		
10	barium	mg/kg	0.29	20	100	300		
11	cadmium	mg/kg	<0.02	0.04	1	5		
12	chromium	mg/kg	<0.1	0.5	10	70		
13	copper	mg/kg	0.061	2	50	100		
14	mercury	mg/kg	<0.002	0.01	0.2	2		
15	molybdenum	mg/kg	0.11	0.5	10	30		
16	nickel	mg/kg	<0.1	0.4	10	40		
17	lead	mg/kg	0.05	0.5	10	50		
18	antimony	mg/kg	<0.05	0.06	0.7	5		
19	selenium	mg/kg	<0.03	0.1	0.5	7		
20	zinc	mg/kg	0.13	4	50	200		
21	chloride	mg/kg	<100	800	15,000	25,000		
22	fluoride	mg/kg	3.2	10	150	500		
23	sulphate	mg/kg	<100	1,000	20,000	50,000		
24	phenol index	mg/kg	<1	1	-	-		
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000		
26	TDS (total dissolved solids)	mg/kg	310	4,000	60,000	100,000		

Key

User supplied data

Not applicable

Classification of sample: TP102/0.10/2024-07-04 Non Hazardous Waste

Classified as 17 05 04

in the List of Waste

.

03)

Sample details

Sample name:	LoW Code:	
TP102/0.10/2024-07-04 Chapter:		17: Construction and Demolition Wastes (including excavated soil
		from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05

. . .

Hazard properties

None identified

Determinands

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

#		Determinand	Note	User entered data	Conv.	Compound conc.	Classification	Applied	Conc. Not
		EU CLP index EC Number CAS Number number	CLP		1 dotor		Value	MC	0000
1	4	arsenic { arsenic trioxide }		9 ma/ka	1.32	11.883 ma/ka	0.00119 %		
		033-003-00-0 215-481-4 1327-53-3							
2	4	boron { diboron trioxide }		1.1 mg/kg	3.22	3.542 mg/kg	0.000354 %		
		005-008-00-8 215-125-8 1303-86-2	_						
3	4	cadmium { cadmium oxide }		0.2 mg/kg	1.142	0.228 mg/kg	0.0000228 %		
		048-002-00-0 215-146-2 1306-19-0	_					\square	
4	4	chromium in chromium(III) compounds { <pre> chromium(III) oxide (worst case) }</pre>		23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
		215-160-9 1308-38-9							
5	4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }		<1 mg/kg	2.27	<2.27 mg/kg	<0.000227 %		<lod< td=""></lod<>
		copper { dicopper ovide: copper (I) ovide }	-					\square	
6		029-002-00-X 215-270-7 1317-39-1	-	15 mg/kg	1.126	16.888 mg/kg	0.00169 %		
	A	lead { lead chromate }						\square	
7	•••	082-004-00-2 231-846-0 7758-97-6	1	19 mg/kg	1.56	29.636 mg/kg	0.0019 %		
	æ	mercury { mercury dichloride }	1					\square	
8	~	080-010-00-X 231-299-8 7487-94-7	-	<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<lod< td=""></lod<>
	æ	nickel { nickel chromate }		47 0	0.070	50 507 //	0.00500.0/	\square	
9		028-035-00-7 238-766-5 14721-18-7	-	17 mg/kg	2.976	50.597 mg/kg	0.00506 %		
10	æ	selenium { nickel selenate }		o E malka	2 554	-1 077 mg/kg	-0.000128.9/		
10		028-031-00-5 239-125-2 15060-62-5		<0.5 mg/kg	2.554	<1.277 Hig/kg	<0.000120 /8		LOD
11	4	zinc { zinc chromate }		63 ma/ka	2 774	174 771 ma/ka	0.0175 %		
		024-007-00-3 236-878-9 13530-65-9			2.114		0.0170 %		
12	۲	рН		7.2 pH		7.2 pH	7.2 pH		
		PH		F		··- F··			
13		naphthalene		<0.03 ma/ka		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-052-00-2 202-049-5 91-20-3	-					\square	
14	۲	acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.00003 %		<lod< td=""></lod<>
		205-917-1 208-96-8	_					\vdash	
15	۲	acenaphthene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		201-469-6 83-32-9	-					\vdash	
16	8	201-695-5 86-73-7	-	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
17		phenanthrene		<0.03 ma/ka		<0.03 mg/kg	<0.00003.94		
		201-581-5 85-01-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		
18		anthracene		<0.03 ma/ka		<0.03 ma/ka	<0.000003 %		
		204-371-1 120-12-7		<0.00 mg/kg		<0.00 mg/kg			LOD

#		EU CLP index	Determinand EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	AC Applied	Conc. Not Used
		number			μ					2	
19	۲	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-912-4	206-44-0						-	
20	۲	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
			204-927-3	129-00-0						_	
21		benzo[a]anthracen	e			<0.03 ma/ka		<0.03 ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-033-00-9	200-280-6	56-55-3							_
22		chrysene				<0.03 ma/ka		<0.03 ma/ka	<0.000003 %		
~~		601-048-00-0	205-923-4	218-01-9	1	<0.00 mg/kg		<0.00 mg/k	<0.000000 /0		LOD
23		benzo[b]fluoranthe	ne			<0.03 ma/ka		<0.03 mg/kg	<0.000003.%		
23		601-034-00-4	205-911-9	205-99-2	1	<0.03 mg/kg		<0.03 mg/kg	<0.000003 /8		
24		benzo[k]fluoranthe	ne			-0.02 ma/ka		-0.02 mg///	-0.00002.9/		
24		601-036-00-5	205-916-6	207-08-9	1	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		
05		benzo[a]pyrene; be	enzo[def]chrysene			0.00		0.00	0.00000.0/		
25		601-032-00-3	200-028-5	50-32-8	1	<0.03 mg/кg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		indeno[123-cd]pyre	ene	1							
26			205-893-2	193-39-5	1	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		dibenz[a.h]anthrac	ene	1							
27		601-041-00-2	200-181-8	53-70-3	1	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		benzolahilpervlene	j							t-	
28			205-883-8	191-24-2	-	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		<u> </u>				<u> </u>	I	Tota	1: 0.0315 %		
L										1	

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 Deteminand - 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

WAC results for sample: TP102/0.10/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

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

Key

Classification of sample: TP102/0.50/2024-07-04

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

Sample details

Sample name:	LoW Code:	
TP102/0.50/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil

Entry:

from contaminated sites) 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

2

Hazard properties

None identified

Determinands

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

#			Determinand		Note	User entere	ed data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP			1 dotor			Value	MC	0300
1	e	arsenic { arsenic tri	<mark>ioxide</mark> }			8.8	mg/kg	1.32	11.619	mg/kg	0.00116 %		
		033-003-00-0	215-481-4	1327-53-3									
2	4	boron { diboron tric	xide }			4	mg/kg	3.22	12.88	mg/kg	0.00129 %		
		005-008-00-8	215-125-8	1303-86-2	-								
3	4	cadmium { cadmiur	m oxide }	4000 40 0		0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %		
<u> </u>		048-002-00-0	215-146-2	1306-19-0								-	
4	4	chromium in chrom <mark>chromium(III) oxide</mark>	nium(III) compound <mark>e (worst case)</mark> }	s {		31	mg/kg	1.462	45.308	mg/kg	0.00453 %		
			215-160-9	1308-38-9	1								
5	4	chromium in chrom compounds, with th of compounds spec 024-017-00-8	nium(VI) compound the exception of bar cified elsewhere in	s { <mark>chromium (VI)</mark> ium chromate and this Annex }	-	<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< th=""></lod<>
	æ	copper { dicopper (xide: copper (I) ox	ide }									
6	*	029-002-00-X	215-270-7	1317-39-1		24	mg/kg	1.126	27.021	mg/kg	0.0027 %		
7	8	lead { lead chroma	te }	1	1	15	malka	1 56	22 207	malka	0.0015.9/		
'		082-004-00-2	231-846-0	7758-97-6	1	15	тід/кд	1.30	23.397	тід/кд	0.0015 %		
8	2	mercury { mercury	dichloride }			<0.05	ma/ka	1 353	<0.0677	ma/ka	<0.0000677 %		
		080-010-00-X	231-299-8	7487-94-7		<0.05	шу/ку	1.555	<0.0077	шу/ку	<0.00000077 /8		LOD
a	Å	nickel { nickel chror	mate }			27	ma/ka	2 976	80 359	ma/ka	0.00804 %		
		028-035-00-7	238-766-5	14721-18-7		21	iiig/kg	2.370	00.009	iiig/kg	0.00004 78		
10	4	selenium { nickel se	elenate }			<0.5	ma/ka	2 554	-1 277	ma/ka	~0 000128 %		
		028-031-00-5	239-125-2	15060-62-5		<0.0	ing/kg	2.004	\$1.211	iiig/kg	<0.000120 /0		
11	4	zinc { zinc chromat	e}			65	ma/ka	2 774	180 32	ma/ka	0.018 %		
<u> </u>		024-007-00-3	236-878-9	13530-65-9			ing/kg	2.114	100.02	iiig/kg	0.010 /0		
12		рН				7.6	рН		7.6	рΗ	7.6 pH		
Ľ				PH						P			
13		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-052-00-2	202-049-5	91-20-3									
14	۲	acenaphthylene	b05 017 1			<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
<u> </u>		aganaphthana	K02-817-1	K00-90-9	-							-	
15	8	acenaphinene	201-169-6	83-32-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
<u> </u>		fluorene	201-403-0	00-02-0	-								
16			201-695-5	86-73-7	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
47		phenanthrene	1	1		0.00			0.00		0.000000.00		
11/		-	201-581-5	85-01-8	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
19		anthracene				~0.03	ma/ka		<0.02	mg/kg	<0.000003.9/		
10			204-371-1	120-12-7		<0.03	mg/kg		<0.03	ing/kg	<0.000003 %		<lod< td=""></lod<>

#		EU CLP index	Determinand EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
19	0	fluoranthene			╞	<0.03 mg/kg		<0.03 mg/	<pre><g %<="" <0.000003="" pre=""></g></pre>	t	<lod< td=""></lod<>
			205-912-4	206-44-0						_	
20	۲	pyrene				<0.03 mg/kg		<0.03 mg/	kg <0.000003 %		<lod< td=""></lod<>
			204-927-3	129-00-0	-					_	
21		benzo[a]anthracen	e	1		<0.03 mg/kg		<0.03 mg/	kg <0.000003 %		<lod< td=""></lod<>
		601-033-00-9	200-280-6	56-55-3						_	
22		chrysene	005 000 4	242.04.0		<0.03 mg/kg		<0.03 mg/	kg <0.000003 %		<lod< td=""></lod<>
		601-048-00-0	205-923-4	218-01-9						-	
23		benzo[b]fluoranthe	ne			<0.03 mg/kg		<0.03 mg/	kg <0.000003 %		<lod< td=""></lod<>
		601-034-00-4	205-911-9	205-99-2			-			_	
24		benzo[k]fluoranthe	ne			<0.03 mg/kg		<0.03 mg/	(q <0.000003 %		<lod< td=""></lod<>
		601-036-00-5	205-916-6	207-08-9					<u> </u>		
25		benzo[a]pyrene; be	enzo[def]chrysene			<0.03 ma/ka		<0.03 mg/	α <0.000003 %		<1 OD
		601-032-00-3	200-028-5	50-32-8	1	10.00 mg/ng		<0.00 mg/			~LOD
26	0	indeno[123-cd]pyre	ene			<0.03 ma/ka		<0.03 mg/	(a <0.000003 %		<lod< td=""></lod<>
			205-893-2	193-39-5		3.3		3	3		_
27		dibenz[a,h]anthrac	ene			<0.03 ma/ka		<0.03 mg/	(a <0.000003 %		
21		601-041-00-2	200-181-8	53-70-3		<0.00 mg/ng		<0.00 mg/	(g <0.000000 /0		LOD
28	8	benzo[ghi]perylene	e			<0.03 ma/ka		<0.03 mg/	(n <0.000003 %)		
		205-883-8 191-24-2			1	ing/ig		10100 mg/			
								To	tal: 0.0377 %		

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

WAC results for sample: TP102/0.50/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

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

Key

Classification of sample: TP103/0.10/2024-07-04

Non Hazardous Waste Classified as 17 05 04

in the List of Waste

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03)

Sample details

Sample name:	LoW Code:	
P103/0.10/2024-07-04 Chapter:		17: Construction and Demolition Wastes (including excavated soil
		from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05

. . .

Hazard properties

None identified

Determinands

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

#			Determinand		Note	User entere	d data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP			lation			Value	MC	0000
1	4	arsenic { arsenic tr	<mark>ioxide</mark> }			7.9	mg/kg	1.32	10.431	mg/kg	0.00104 %		
		033-003-00-0	215-481-4	1327-53-3									
2	4	boron { diboron tric	DXIDE }			0.9	mg/kg	3.22	2.898	mg/kg	0.00029 %		
		005-008-00-8	215-125-8	1303-86-2									
3	4			1206 10 0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
	•	046-002-00-0	215-140-2	1300-19-0									
4	4	chromium in chrom chromium(III) oxide	nium(III) compound: <mark>e (worst case)</mark> }	s {		26	mg/kg	1.462	38	mg/kg	0.0038 %		
			215-160-9	1308-38-9									
5	4	chromium in chrom compounds, with the of compounds spe	nium(VI) compound he exception of bari cified elsewhere in	s { chromium (VI) ium chromate and this Annex }		<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< td=""></lod<>
		024-017-00-8											
6	4	copper { dicopper of	oxide; copper (I) ox	ide }		13	mg/kg	1.126	14.637	mg/kg	0.00146 %		
		029-002-00-X	215-270-7	1317-39-1									
7	44	lead { lead chroma		7759 07 6	1	13	mg/kg	1.56	20.278	mg/kg	0.0013 %		
	•	moreury (moreury	dichlorido	1150-91-0									
8	4	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.0000677 %		<lod< td=""></lod<>
		nickel { nickel chro	mate }	1401-34-1						-			
9	•••	028-035-00-7	238-766-5	14721-18-7		25	mg/kg	2.976	74.407	mg/kg	0.00744 %		
	æ	selenium { nickel s	elenate }										
10	~	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<lod< td=""></lod<>
11	æ	zinc { zinc chromat	te }			70	malka	0 774	100 720	ma/ka	0.02.9/		
		024-007-00-3	236-878-9	13530-65-9		12	mg/kg	2.114	199.739	шу/ку	0.02 %		
12		tert-butyl methyl et 2-methoxy-2-methy	her; MTBE; ylpropane			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		603-181-00-X	216-653-1	1634-04-4									
13		benzene				< 0.01	ma/ka		< 0.01	ma/ka	<0.000001 %		<lod< td=""></lod<>
Ľ		601-020-00-8	200-753-7	71-43-2									
14		toluene				<0.01	ma/ka		<0.01	mg/ka	<0.000001 %		<lod< td=""></lod<>
		601-021-00-3	203-625-9	108-88-3									
15	8	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		601-023-00-4	202-849-4	100-41-4									
16		xyiene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
17		рН	*			77	nН		77	nH	7.7 pH		
				PH		1.1	μп		1.1	μп	<i>י.י</i> אם		

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#			Determinand		Note	User entered data	Conv. Factor		Classification	Applied	Conc. Not	
		EU CLP index number	EC Number	CAS Number	CLP		Factor			value	MC /	Used
18		naphthalene				<0.03 ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-052-00-2	202-049-5	91-20-3								_
19	Θ	acenaphthylene	205-917-1	208-96-8		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
20		acenaphthene				<0.03 mg/kg		<0.03	ma/ka	<0.000003 %		
20			201-469-6	83-32-9	1	<0.03 mg/kg		<0.05	iiig/kg	<0.000000 78		LOD
21	0	fluorene	201-695-5	86-73-7		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		phenanthrene										
22			201-581-5	85-01-8		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
23	۵	anthracene	004 271 1	120 12 7		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		fluoranthono	204-371-1	120-12-7	-							
24		liuorantinene	205-012-4	b06-44-0		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		nyrene	200-312-4	200-44-0	+							
25		pyrene	204-927-3	129-00-0		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		benzo[a]anthracer	ne		1							
26		601-033-00-9	200-280-6	56-55-3		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
07		chrysene	1	1		.0.02		.0.02		-0.000002.0/		
21		601-048-00-0	205-923-4	218-01-9	-	<0.03 mg/kg		<0.03	тід/кд	<0.000003 %		<lod< td=""></lod<>
20		benzo[b]fluoranthe	ene			<0.02 mg/kg		<0.03	ma/ka	<0.00003.94		
20		601-034-00-4	205-911-9	205-99-2		<0.03 mg/kg		<0.03	шу/ку	<0.000003 /8		<lod< td=""></lod<>
20		benzo[k]fluoranthe	ene			<0.03 mg/kg		<0.03	ma/ka	<0.000003 %		
23		601-036-00-5	205-916-6	207-08-9		<0.03 mg/kg		<0.00	iiig/kg	<0.000003 78		LOD
30		benzo[a]pyrene; b	enzo[def]chrysene			<0.03 ma/ka		<0.03	ma/ka	<0 000003 %		<lod< td=""></lod<>
		601-032-00-3	200-028-5	50-32-8								
31	۰	indeno[123-cd]pyr	ene			<0.03 ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
			205-893-2	193-39-5								
32		dibenz[a,h]anthrac	cene			<0.03 mg/kg		< 0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-041-00-2	200-181-8	53-70-3								
33	۲	benzo[ghi]perylen	e			<0.03 mg/kg		< 0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-883-8	191-24-2		0.0			T			
									Total:	0.0357 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration Below limit of detection

CLP: Note 1

< ≺LOD

Only the metal concentration has been used for classification

WAC results for sample: TP103/0.10/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

	Solid Waste Analysis			Landfill Wa	iteria Limits	
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.6	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	рН	pН		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
	Eluate Analysis 10:1					· · · ·
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

Classification of sample: TP103/0.40/2024-07-04 -----

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

Sample details

Sample name:	LoW Code:	
TP103/0.40/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil

Entry:

from contaminated sites) 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

2

Hazard properties

None identified

Determinands

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

#			Determinand		Note	User entere	ed data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP			1 dotor			Value	MC	0300
1	e	arsenic { arsenic trie	<mark>oxide</mark> }			8.2	mg/kg	1.32	10.827	mg/kg	0.00108 %		
		033-003-00-0	215-481-4	1327-53-3				-					
2	4	boron { diboron triox	xide } 215-125-8	1303-86-2		1.9	mg/kg	3.22	6.118	mg/kg	0.000612 %		
		cadmium { cadmiun	n ovide \	1000 00 2									
3	~	048-002-00-0	215-146-2	1306-19-0		1.2	mg/kg	1.142	1.371	mg/kg	0.000137 %		
4	\$	chromium in chromi chromium(III) oxide	ium(III) compound: (worst case) }	S {		34	mg/kg	1.462	49.693	mg/kg	0.00497 %		
		-	215-160-9	1308-38-9									
5	\$	chromium in chromi compounds, with th of compounds spec 024-017-00-8	ium(VI) compound e exception of bari ified elsewhere in	s { <mark>chromium (VI)</mark> um chromate and this Annex }		<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< th=""></lod<>
	æ	copper { dicopper o	xide: copper (I) oxi	de }	\vdash								
6	*	029-002-00-X	215-270-7	1317-39-1		35	mg/kg	1.126	39.406	mg/kg	0.00394 %		
7	8	lead { lead chromat	<mark>e</mark> }		1	16	ma/ka	1 56	24 057	ma/ka	0.0016.%	Г	
'		082-004-00-2	231-846-0	7758-97-6	1'	10	шу/ку	1.50	24.937	шу/ку	0.0010 /8		
8	Å	mercury { mercury o	dichloride }			<0.05	ma/ka	1 353	<0.0677	ma/ka	<0.0000677 %		
		080-010-00-X	231-299-8	7487-94-7	ĺ	<0.00	iiig/kg	1.555	<0.0077	iiig/kg	<0.00000077 /0		LOD
a	8	nickel { nickel chromate }				130	ma/ka	2 976	386 914	ma/ka	0.0387 %		
Ľ		028-035-00-7	238-766-5	14721-18-7			ing/kg	2.070					
10	4	selenium {	elenate }			<0.5 mg/kg	ma/ka	2 554	<1 277	ma/ka	<0.000128 %		<1 OD
		028-031-00-5	239-125-2	15060-62-5			ing/kg	2.001	S1.217	iiig/kg			
11	4	zinc { zinc chromate	e }			200	ma/ka	2 774	774 554 829	ma/ka	0.0555 %		
		024-007-00-3	236-878-9	13530-65-9		200							
12	۲	pH				7.8	pН		7.8	pН	7.8 pH		
<u> </u>	\vdash	nonhtholong		ГП	\vdash							\vdash	
13		601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		acenaphthylene		01 20 0		0.00			0.00		0.000000.0/	H	1.00
14			205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
15		acenaphthene	201-469-6	83-32-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< th=""></lod<>
<u> </u>		fluorene	201-103-0	00.02-0	\vdash								
16	6		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
17		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.00003 %		<lod< td=""></lod<>
<u> </u>		4	201-581-5	85-01-8								\vdash	
18	۲	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
			204-371-1	120-12-7									

HazWasteOnline[™] created by Richard Hey on 18 Jul 2024 Report

#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered	data	Conv. Factor	Compound	conc.	Classification value	MC Applied	Conc. Not Used
19	8	fluoranthene	205-912-4	206-44-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
20	8	pyrene	204-927-3	129-00-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
21		benzo[a]anthracen 601-033-00-9	e 200-280-6	56-55-3	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
22		chrysene 601-048-00-0	205-923-4	218-01-9	-	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
23		benzo[b]fluoranthe 601-034-00-4	ne 205-911-9	205-99-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
24		benzo[k]fluoranthe 601-036-00-5	ne 205-916-6	207-08-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
25		benzo[a]pyrene; be 601-032-00-3	enzo[def]chrysene 200-028-5	50-32-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
26	8	indeno[123-cd]pyre	ene 205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
27		dibenz[a,h]anthrac 601-041-00-2	ene 200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
28	8	benzo[ghi]perylene	9 205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
29	8	polychlorobiphenyl 602-039-00-4	s; PCB 215-648-1	1336-36-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
30	4	sulfur { <mark>sulphur dio</mark> 016-011-00-9	<mark>xide</mark> } 231-195-2	7446-09-5	5	300	mg/kg	1.998	599.381	mg/kg	0.0599 %		
		х.								Total:	0.167 %		

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) ₄ ≺LOD Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration Below limit of detection CLP: Note 1

Only the metal concentration has been used for classification

WAC results for sample: TP103/0.40/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

	Solid Waste Analysis	Landfill Waste Acceptance Criteria Limits				
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	<0.5	3	5	6
2	LOI (loss on ignition)	%	4.5	-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	рН	рН	7.8	-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-
	Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.01	0.5	2	25
10	barium	mg/kg	0.14	20	100	300
11	cadmium	mg/kg	<0.02	0.04	1	5
12	chromium	mg/kg	<0.1	0.5	10	70
13	copper	mg/kg	<0.02	2	50	100
14	mercury	mg/kg	<0.002	0.01	0.2	2
15	molybdenum	mg/kg	<0.1	0.5	10	30
16	nickel	mg/kg	<0.1	0.4	10	40
17	lead	mg/kg	<0.05	0.5	10	50
18	antimony	mg/kg	<0.05	0.06	0.7	5
19	selenium	mg/kg	<0.03	0.1	0.5	7
20	zinc	mg/kg	0.053	4	50	200
21	chloride	mg/kg	<100	800	15,000	25,000
22	fluoride	mg/kg	6	10	150	500
23	sulphate	mg/kg	150	1,000	20,000	50,000
24	phenol index	mg/kg	<1	1	-	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000
26	TDS (total dissolved solids)	mg/kg	600	4,000	60,000	100,000

Key

User supplied data

Not applicable

Classification of sample: TP104/0.10/2024-07-04

Non Hazardous Waste Classified as 17 05 04

in the List of Waste

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03)

Sample details

Sample name:	LoW Code:	
TP104/0.10/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil
		from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05

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Hazard properties

None identified

Determinands

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

#		Determinand	Note	User entered data	Conv. Factor Compound conc.		Classification value	Applied	Conc. Not Used
		EU CLP index EC Number CAS Number	CLF					MC	
1	4	arsenic { arsenic trioxide }		7.9 mg/kg	1.32	10.431 mg/kg	0.00104 %		
		033-003-00-0 215-481-4 1327-53-3							
2	4	boron { diboron trioxide }		1.4 mg/kg	3.22	4.508 mg/kg	0.000451 %		
		005-008-00-8 215-125-8 1303-86-2							
3	4	cadmium { cadmium oxide }		0.1 mg/kg	1.142	0.114 mg/kg	0.0000114 %		
		048-002-00-0 215-146-2 1306-19-0	-					-	
4	4	chromium in chromium(III) compounds { <pre> chromium(III) oxide (worst case) }</pre>		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		
		215-160-9 1308-38-9	1						
5	4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and		<1 ma/ka	2 27	<2.27 ma/ka	<0.000227 %		<i od<="" td=""></i>
		of compounds specified elsewhere in this Annex } 024-017-00-8			2.21	~2.27 mg/kg	<0.000221 /0		
	æ	copper { dicopper oxide; copper (I) oxide }		4.4	4 4 0 0	45 700	0.00450.0/		
0	-	029-002-00-X 215-270-7 1317-39-1	1	14 mg/kg	1.120	15.762 тту/ку	0.00158 %		
7	*	lead { lead chromate }	1	15 ma/ka	1 56	23.397 ma/ka	0.0015 %		
Ľ		082-004-00-2 231-846-0 7758-97-6	1.	i i i i i i i i i i i i i i i i i i i	1.00	20.001 mg/kg	0.0010 /0		
8	4	mercury { mercury dichloride }		<0.05 mg/kg	1 353	<0.0677 ma/ka	<0.00000677 %		<lod< td=""></lod<>
Ľ		080-010-00-X 231-299-8 7487-94-7							
9	4	nickel { nickel chromate }		16 ma/ka	2.976	47.62 ma/ka	0.00476 %		
		028-035-00-7 238-766-5 14721-18-7							
10	4	selenium { nickel selenate }		<0.5 ma/ka	2.554	<1.277 ma/ka	<0.000128 %		<lod< td=""></lod<>
		028-031-00-5 239-125-2 15060-62-5							
11	4	zinc { zinc chromate }		67 mg/kg	2.774	185.868 mg/kg	0.0186 %		
		024-007-00-3 236-878-9 13530-65-9							
12	۵	PH PH		5.7 pH		5.7 pH	5.7 pH		
12		naphthalene		<0.03 malka		<0.03 mg/kg			
13		601-052-00-2 202-049-5 91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 /8		LOD
14		acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		205-917-1 208-96-8						┝	
15	۲	201-469-6 83-32-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
	_	fluorene	+					-	
16		201-695-5 86-73-7		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
17		phenanthrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
	_	anthracene	+					-	
18	۵	204-371-1 120-12-7	<0.03 mg/kg	kg <0.03 mg/kg		<0.000003 %		<lod< td=""></lod<>	
			1		1				1

-	-									-	
#		EU CLP index number	Determinand EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
10		fluoranthene	1			<0.03 mg/kg		<0.03 ma/ka	<0.00003.%		
15			205-912-4	206-44-0		<0.00 mg/kg		<0.00 mg/ng	<0.000000 /0		LOD
20	8	pyrene				<0.03 mg/kg		<0.03 ma/ka	<0.00003.%		
20			204-927-3	129-00-0		<0.03 mg/kg		<0.03 mg/kg	<0.000003 /8		
21		benzo[a]anthracen	e			<0.03 mg/kg		<0.03 ma/ka	<0.00003.%		
21		601-033-00-9	200-280-6	56-55-3	-	<0.03 mg/kg		<0.03 mg/kg	<0.000003 /8		
22		chrysene				-0.02 ma/ka		-0.02 ma/ka	-0.00002.9/		
22		601-048-00-0	205-923-4	218-01-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
23		benzo[b]fluoranthe	ene			<0.03 mg/kg		<0.03 ma/ka	<0.00003.94		
23		601-034-00-4	205-911-9	205-99-2	1	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
24		penzo[k]fluoranthene			-0.02 ma/ka		-0.02 ma/ka	-0.00002.9/			
24		601-036-00-5	205-916-6	207-08-9	1	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
25		benzo[a]pyrene; be	enzo[def]chrysene			<0.03 mg/kg		<0.03 ma/ka	<0.00003.94		
25		601-032-00-3	200-028-5	50-32-8	1	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
26		indeno[123-cd]pyre	ene			<0.03 mg/kg		-0.02 ma/ka -0.000002.0/			
20			205-893-2	193-39-5	1	<0.03 mg/kg		<0.05 mg/kg	<0.000003 /8		
27		dibenz[a,h]anthrac	ene			-0.02 ma/ka		-0.02 ma/ka	-0.00002.9/		
21		601-041-00-2	200-181-8	53-70-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
28		benzo[ghi]perylene	9			-0.02 ma/ka		-0.02 ma/ka	-0.00002.9/		
			205-883-8	191-24-2		<0.03 mg/kg		<0.05 mg/kg	<0.000003 %		
						· · · · · ·		Total	: 0.0316 %		

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 Deteminand - 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

WAC results for sample: TP104/0.10/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

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

Key

Classification of sample: TP104/0.50/2024-07-04

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

Sample details

Sample name:	LoW Code:	
TP104/0.50/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil

Entry:

from contaminated sites) 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

-

Hazard properties

None identified

Determinands

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

#	#		Determinand		Note	User entere	ed data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP			T actor			Value		USEU
1	4	arsenic { arsenic tr	<mark>ioxide</mark> }			11	mg/kg	1.32	14.524	mg/kg	0.00145 %		
		033-003-00-0	215-481-4	1327-53-3						5 5			
2	4	boron { diboron tric	<mark>xide</mark> }	1		0.8	mg/kg	3.22	2.576	mg/kg	0.000258 %		
		005-008-00-8	215-125-8	1303-86-2									
3	4	cadmium { cadmiu	m oxide }	1000 10 0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %		
		048-002-00-0	215-146-2	1306-19-0									
4	4	chromium in chrom chromium(III) oxide	nium(III) compound <mark>e (worst case)</mark> }	s { 🔍		27	mg/kg	1.462	39.462	mg/kg	0.00395 %		
			215-160-9	1308-38-9	Ĺ								
5	4	chromium in chrom compounds, with th of compounds spe	nium(VI) compound the exception of bar cified elsewhere in	ls { chromium (VI) ium chromate and this Annex }		<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< td=""></lod<>
		024-017-00-8			ĺ								
6	4	copper { dicopper d	oxide; copper (I) ox	<mark>ide</mark> }		14	ma/ka	1 1 2 6	15 762	ma/ka	0 00158 %		
Ľ		029-002-00-X	215-270-7	1317-39-1			ing/kg	1.120	10.7.02	iiig/kg			
7	4	lead { <mark>lead chroma</mark>	te }		1	14	ma/ka	1.56	21.837	ma/ka	0.0014 %		
		082-004-00-2	231-846-0	7758-97-6									
8	4	mercury { mercury	dichloride }			<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<lod< td=""></lod<>
		080-010-00-X	231-299-8	7487-94-7									
9	4	nickel { nickel chromate }				23	mg/kg	2.976	68.454	mg/kg	0.00685 %		
<u> </u>		028-035-00-7	238-766-5	14721-18-7									
10	4	selenium { nickel s	elenate }	45000 00 5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<lod< td=""></lod<>
<u> </u>		028-031-00-5	239-125-2	15060-62-5	-								
11	4	zinc { zinc chromat	e }	40500 05 0		69	mg/kg	2.774	191.416	mg/kg	0.0191 %		
		024-007-00-3	236-878-9	13530-65-9	-								
12		2-methoxy-2-methy	ner; MIBE; /lpropane			<0.01	ma/ka		<0.01	ma/ka	<0.000001 %		<lod< td=""></lod<>
		603-181-00-X	216-653-1	1634-04-4									
12		benzene				-0.01	mc/kc		-0.01	malka	<0.00001.9/		
13		601-020-00-8	200-753-7	71-43-2		<0.01	тід/кд		<0.01	тід/кд	<0.000001 %		<lod< td=""></lod<>
14		toluene				<0.01	ma/ka		<0.01	ma/ka	<0.000001.9/		
14		601-021-00-3	203-625-9	108-88-3	ĺ	<0.01	iiig/kg		<0.01	iiig/kg	<0.000001 /8		LOD
15	0	ethylbenzene				<0.01	ma/ka		<0.01	ma/ka	<0.000001 %		<lod< td=""></lod<>
		601-023-00-4	202-849-4	100-41-4									
		xylene											
16		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
17		pН				7.4			7 /	n U	74.04		
				PH		7.4	рп		7.4	рп	7.4 pH		

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#		ELL CL B index	Determinand	CAS Number	P Note	User entered data Conv. Factor Compound conc. Classification value		C Applied	Conc. Not Used			
		number	EC Number	CAS Number	С						M	
18		naphthalene				0.04	ma/ka	0.04	ma/ka	0.000004 %		
		601-052-00-2	202-049-5	91-20-3			5.5		5.5			
19	Θ	acenaphthylene	205-917-1	208-96-8		0.04	mg/kg	0.04	mg/kg	0.000004 %		
20	8	acenaphthene				0.04 ma/ka		0.04	ma/ka	0 000004 %		
20			201-469-6	83-32-9		0.01	ing/kg	0.01	ing/ng			
21	8	fluorene	201-695-5	86-73-7	_	0.04	mg/kg	0.04	mg/kg	0.000004 %		
		phenanthrene				0.04		0.04		0.000001.0/		
22		·	201-581-5	85-01-8		0.04	mg/kg	0.04	mg/kg	0.000004 %		
23	8	anthracene	204-371-1	120-12-7		<0.03	mg/kg	<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
0.4		fluoranthene	1			0.00		0.00		0.000000.00		
24			205-912-4	206-44-0		0.03	mg/kg	0.03	mg/kg	0.000003 %		
25	8	pyrene				0.03	ma/ka	0.03	ma/ka	0 000003 %		
25			204-927-3	129-00-0		0.03		0.05	iiig/kg	0.000003 /8		
26		benzo[a]anthracen	ie			0.04	ma/ka	0.04	ma/ka	0 000004 %		
20		601-033-00-9	200-280-6	56-55-3		0.04	ing/kg	0.04	iiig/itg	0.000004 /0		
27		chrysene				0.04	ma/ka	0.04	ma/ka	0 000004 %		
		601-048-00-0	205-923-4	218-01-9	1							
28		benzo[b]fluoranthe	ene			< 0.03	ma/ka	< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-034-00-4	205-911-9	205-99-2								
29		benzo[k]fluoranthe	ene			0.03	ma/ka	0.03	ma/ka	0 000003 %		
		601-036-00-5	205-916-6	207-08-9								
30		benzo[a]pyrene; be	enzo[def]chrysene			<0.03	ma/ka	<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-032-00-3	200-028-5	50-32-8								
31	Θ	indeno[123-cd]pyre	ene			<0.03	mg/kg	< 0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-893-2	193-39-5							Ц	
32		dibenz[a,h]anthrac	ene			<0.03	mg/kg	<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-041-00-2	200-181-8	53-70-3							Ц	
33	Θ	benzo[ghi]perylene	9	101.01.0		0.03	mg/kg	0.03	mg/kg	0.000003 %		
		205-883-8 191-24-2						.	0.0051.0/	\square		
									Iotal:	0.0351 %		

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

WAC results for sample: TP104/0.50/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

	Solid Waste Analysis	Landfill Waste Acceptance Criteria Limits				
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill
1	TOC (total organic carbon)	%	0.7	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	0.27	100	-	-
7	рН	pН		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
	Eluate Analysis 10:1					
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

Classification of sample: TP105/0.10/2024-07-04

Non Hazardous Waste Classified as 17 05 04

in the List of Waste

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03)

Sample details

Sample name:	LoW Code:	
TP105/0.10/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil
		from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05

. . .

Hazard properties

None identified

Determinands

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

#			Determinand		Note	User entered data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP		1 doior			Value	MC	0300
1	4	arsenic { arsenic tr	ioxide }		ļ	13 mg/kg	1.32	17.164	mg/kg	0.00172 %		
		033-003-00-0	215-481-4	1327-53-3								
2	4	boron { diboron tric	<pre>Dxide }</pre>		ļ	1 mg/kg	3.22	3.22	mg/kg	0.000322 %		
		005-008-00-8	215-125-8	1303-86-2								
3	4	cadmium { cadmiu	m oxide }	1206 10 0	ļ	0.3 mg/kg	1.142	0.343	mg/kg	0.0000343 %		
	•											
4	•	<pre> chromium in chromium(III) compounds { chromium(III) oxide (worst case) } 215-160-9 1308-38-9 </pre>			29 ma/ka	1.462	42.385	ma/ka	0.00424 %			
					20							
	æ	chromium in chrom	nium(VI) compound	s { chromium (VI)								
5	~	compounds, with the	he exception of bar	um chromate and		<1 ma/ka	2 27	<2.27	ma/ka	<0.000227 %		<1.0D
		of compounds specified elsewhere in this Annex }			ļ		2.21	SE.21	iiig/itg	(0.000221),0		
		024-017-00-8										
6	44		215-270-7	1317-30-1	ł	18 mg/kg	1.126	20.266	mg/kg	0.00203 %		
		lead { lead chroma	te }	1017 00 1								
7	••	082-004-00-2	231-846-0	7758-97-6	1	13 mg/kg	1.56	20.278	mg/kg	0.0013 %		
	æ	mercury { mercury	dichloride }			-0.05 ma/ka	1 252	-0.0677	ma/ka	-0.0000677.%		
0	-	080-010-00-X 231-299-8 7487-94-7				<0.05 mg/kg	1.555	<0.0077	mg/kg	<0.00000077 %		<lod< td=""></lod<>
9	4	nickel { nickel chro	mate }			42 ma/ka	2 976	125 003	ma/ka	0 0125 %		
Ŭ		028-035-00-7	238-766-5	14721-18-7		12 mg/kg	2.070	120.000				
10	4	selenium { nickel s	elenate }			<0.5 mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<lod< td=""></lod<>
		028-031-00-5	239-125-2	15060-62-5								
11	4	zinc { zinc chromat	te }			64 mg/kg	2.774	177.545	mg/kg	0.0178 %		
		024-007-00-3	236-878-9	13530-65-9								
12		2-methoxy-2-methyl	her; MIBE; vlpropane			<0.01 ma/ka		<0.01	ma/ka	<0 000001 %		<lod< td=""></lod<>
		603-181-00-X	216-653-1	1634-04-4		, sere i ingring		10101				
13		benzene				<0.01 ma/ka		<0.01	ma/ka	<0.000001.9/		
13		601-020-00-8	200-753-7	71-43-2		<0.01 Ilig/kg		<0.01	iiig/kg	<0.000001 /8		LOD
14		toluene				<0.01 ma/ka		<0.01	ma/ka	<0.000001 %		<lod< td=""></lod<>
· · ·		601-021-00-3	203-625-9	108-88-3								
15	Θ	ethylbenzene	1		ļ	<0.01 mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		601-023-00-4 202-849-4 100-41-4										
		xylene	000 400 0 [4]	05 47 0 [4]								
16		601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]		<0.01 mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
			203-576-3 [3]	108-38-3 [3]								
			215-535-7 [4]	1330-20-7 [4]	-							
17	8	рн	1	рц		7.9 pH		7.9	pН	7.9 pH		
			1	гп								

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#			Determinand		Note	User entered data	Conv.	Compound	l conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP		Factor			value	MC /	Used
18		naphthalene				<0.03 ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-052-00-2	202-049-5	91-20-3								_
19	Θ	acenaphthylene	205-917-1	208-96-8		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
20		acenaphthene				<0.03 mg/kg		<0.03	ma/ka	<0.000003 %		
20			201-469-6	83-32-9	1	<0.03 mg/kg		<0.05	iiig/kg	<0.000000 78		LOD
21	8	fluorene	201-695-5	86-73-7		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		phenanthrene										
22			201-581-5	85-01-8		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
23	۵	anthracene	004 271 1	120 12 7		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		fluoranthono	204-371-1	120-12-7	-							
24	۲	Indorariarierie	205-012-4	b06-44-0	-	<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		nvrene	200 012 4	200 44 0	-							
25		pyrono	204-927-3	129-00-0		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		benzo[a]anthracer	ne		1							
26		601-033-00-9	200-280-6	56-55-3		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
07		chrysene	1	1		.0.02		.0.02		-0.000002.0/		
21		601-048-00-0	205-923-4	218-01-9	-	<0.03 mg/kg		<0.03	тід/кд	<0.000003 %		<lod< td=""></lod<>
20		benzo[b]fluoranthe	ene			<0.02 mg/kg		<0.03	ma/ka	<0.00003.94		
20		601-034-00-4	205-911-9	205-99-2		<0.03 mg/kg		<0.03	шу/ку	<0.000003 /8		<lod< td=""></lod<>
20		benzo[k]fluoranthe	ene			<0.03 mg/kg		<0.03	ma/ka	<0.000003 %		
23		601-036-00-5	205-916-6	207-08-9		<0.03 mg/kg		<0.00	iiig/kg	<0.000003 78		LOD
30		benzo[a]pyrene; b	enzo[def]chrysene			<0.03 ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-032-00-3	200-028-5	50-32-8								
31	۲	indeno[123-cd]pyr	ene			<0.03 ma/ka		<0.03	mg/ka	<0.000003 %		<lod< td=""></lod<>
	205-893-2 193-39-5		193-39-5									
32		dibenz[a,h]anthrac	cene			<0.03 mg/kg		< 0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-041-00-2	200-181-8	53-70-3								
33	۲	benzo[ghi]perylen	e			<0.03 mg/kg		< 0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-883-8	191-24-2		0.0			T			
									Total:	0.0403 %		

Key

User supplied data

Determinand values ignored for classification, see column 'Conc. Not Used' for reason

Determinand defined or amended by HazWasteOnline (see Appendix A)

Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration Below limit of detection

CLP: Note 1

< ≺LOD

Only the metal concentration has been used for classification

WAC results for sample: TP105/0.10/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

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

Key

Classification of sample: TP105/0.40/2024-07-04

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

Sample details

Sample name:	LoW Code:	
TP105/0.40/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil

Entry:

from contaminated sites) 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

-

Hazard properties

None identified

Determinands

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

#		Deter	minand		Note	User entere	ed data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index EC N number	lumber	CAS Number	CLP			lucion			Value	MC	0000
1	4	arsenic { arsenic trioxide } 033-003-00-0 215-481-4 1327-53-3			11	ma/ka	1.32	14.524	ma/ka	0.00145 %			
		033-003-00-0 215-481	-4	1327-53-3									
2	4	boron { diboron trioxide }				0.7	mg/kg	3.22	2.254	mg/kg	0.000225 %		
		005-008-00-8 215-125	i-8	1303-86-2								\square	
3	4	cadmium { cadmium oxide	}			0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %		
		048-002-00-0 215-146	i-2	1306-19-0								\square	
4	4	chromium in chromium(III) chromium(III) oxide (worst o	compound: <mark>case)</mark> }	s { 🔍		34	mg/kg	1.462	49.693	mg/kg	0.00497 %		
		215-160)-9	1308-38-9								\square	
5	4	chromium in chromium(VI) compounds, with the excep of compounds specified els	compound tion of bari ewhere in	s { chromium (VI) ium chromate and this Annex }		<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< th=""></lod<>
		copper { dicopper oxide: co	nner (I) oxi	ide }						-		\vdash	
6	**	029-002-00-X 215-270)-7	1317-39-1		22	mg/kg	1.126	24.77	mg/kg	0.00248 %		
_	lead { lead chromate }									\square			
1	~	082-004-00-2 231-846-0 7758-97-6		1	12	mg/kg	1.56	18.718	mg/kg	0.0012 %			
	a mercury { mercury dichloride }			-0.0F	malka	1 252	-0.0677	malka	-0.0000677.9/				
°		080-010-00-X 231-299	-8	7487-94-7		<0.05	тід/кд	1.353	<0.0677	тід/кд	<0.00000677 %		<lod< td=""></lod<>
a	4	nickel { nickel chromate }				53	ma/ka	2 976	157 742	ma/ka	0.0158 %		
Ľ		028-035-00-7 238-766	6-5	14721-18-7			ing/kg	2.570	107.742	iiig/kg	0.0100 //		
10	4	selenium {				<0.5	ma/ka	2.554	<1.277	ma/ka	<0.000128 %		<lod< td=""></lod<>
		028-031-00-5 239-125	-2	15060-62-5								\square	
11	4	zinc { zinc chromate }				120	mg/kg	2.774	332.898	mg/kg	0.0333 %		
		024-007-00-3 236-878	-9	13530-65-9								\square	
12	0	рН				7.6	pН		7.6	рН	7.6 pH		
				PH	-							\square	
13		naphthalene		b4 00 0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		001-052-00-2 202-049	1-0	91-20-3	-							⊢	
14		205-917	-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		acenaphthene		200 00 0									
15	ľ	acenaphthene		83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
40		fluorene		l		0.00			0.00		0.000000.0%		
10		201-695	-5	86-73-7		<0.03	тід/кд		<0.03	тід/кд	<0.000003 %		<lod< td=""></lod<>
17		phenanthrene				<0.03	ma/ka		<0.03	ma/ka	<0.000003.%	\square	
		201-581	-5	85-01-8			mg/kg		<0.03	iiig/kg			~LOD
18	8	anthracene				< 0.03	ma/ka		< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
Ľ		204-371	-1	120-12-7									

#		EU CLP index	Determinand EC Number	CAS Number	P Note	User entered data	Conv. Factor	Compound	conc.	Classification value	C Applied	Conc. Not Used
		number			õ						Σ	
19	0	fluoranthene				<0.03 ma/ka		<0.03	ma/ka	<0 000003 %		<lod< th=""></lod<>
			205-912-4	206-44-0	1	toroo mgrig						
20	8	pyrene				<0.03 ma/ka		< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
			204-927-3	129-00-0	1							
21		benzo[a]anthracen	e			<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-033-00-9	200-280-6	56-55-3								
22		chrysene	205 022 4	040.04.0		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-048-00-0	205-923-4	218-01-9								
23		benzolojfiluorantnene				<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-034-00-4	205-911-9	205-99-2	_							
24		benzo[k]fluoranthe	ne			<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-036-00-5	205-916-6	207-08-9								
25		benzo[a]pyrene; be	enzo[def]chrysene			<0.03 ma/ka		< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-032-00-3	200-028-5	50-32-8								_
26	0	indeno[123-cd]pyre	ene			<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-893-2	193-39-5								
27		dibenz[a,h]anthrac	ene			<0.03 ma/ka		< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-041-00-2	200-181-8	53-70-3	1							
28	8	benzo[ghi]perylene	e			<0.03 ma/ka		< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
Ľ			205-883-8	191-24-2								
									Total:	0.0598 %		

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

WAC results for sample: TP105/0.40/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

	Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits					
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill			
1	TOC (total organic carbon)	%	0.6	3	5	6			
2	LOI (loss on ignition)	%		-	-	10			
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg		6	-	-			
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-			
5	Mineral oil (C10 to C40)	mg/kg		500	-	-			
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-			
7	рН	pН		-	>6	-			
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-			
	Eluate Analysis 10:1								
9	arsenic	mg/kg		0.5	2	25			
10	barium	mg/kg		20	100	300			
11	cadmium	mg/kg		0.04	1	5			
12	chromium	mg/kg		0.5	10	70			
13	copper	mg/kg		2	50	100			
14	mercury	mg/kg		0.01	0.2	2			
15	molybdenum	mg/kg		0.5	10	30			
16	nickel	mg/kg		0.4	10	40			
17	lead	mg/kg		0.5	10	50			
18	antimony	mg/kg		0.06	0.7	5			
19	selenium	mg/kg		0.1	0.5	7			
20	zinc	mg/kg		4	50	200			
21	chloride	mg/kg		800	15,000	25,000			
22	fluoride	mg/kg		10	150	500			
23	sulphate	mg/kg		1,000	20,000	50,000			
24	phenol index	mg/kg		1	-	-			
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000			
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000			

Key

Classification of sample: TP106/0.10/2024-07-04

Non Hazardous Waste Classified as 17 05 04

in the List of Waste

. . . .

Sample details

Sample name:	LoW Code:	
TP106/0.10/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil
		from contaminated sites)
	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05

03)

Hazard properties

None identified

Determinands

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

#			Determinand		Note	User entere	d data	Conv.	Compound	conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP			T actor			value	MC /	USEU
1	4	arsenic { arsenic tr	ioxide }	4007 50 0		8.8	mg/kg	1.32	11.619	mg/kg	0.00116 %		
	•	033-003-00-0	215-481-4	1327-53-3								$\left \right $	
2	44		D15 105 9	1202 96 2		2.1	mg/kg	3.22	6.762	mg/kg	0.000676 %		
		cadmium { cadmiu	213-123-0	1303-00-2								H	
3	~	048-002-00-0 215-146-2 1306-19-0				<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<lod< td=""></lod<>
	-9		210 140 2	1000 10 0								\square	
4	•••	chromium in chromium(III) compounds {				28	mg/kg	1.462	40.924	mg/kg	0.00409 %		
			215-160-9	1308-38-9			00			0 0			
	æ	chromium in chrom	nium(VI) compound	ls { chromium (VI)								H	
5	~	compounds, with the	he exception of bar	ium chromate and		-1	ma/ka	2 27	-2.27	ma/ka	~0 000227 %		
		of compounds specified elsewhere in this Annex }					iiig/kg	2.21	\ <u>2.</u> <u>2</u> 1	iiig/kg	<0.000227 /0		LOD
		024-017-00-8											
6	4	copper { dicopper (oxide; copper (I) ox	ide }		24	mg/kg	1.126	27.021	mg/kg	0.0027 %		
<u> </u>		029-002-00-X	215-270-7	1317-39-1								$\left - \right $	
7	44			7759 07 6	1	14	mg/kg	1.56	21.837	mg/kg	0.0014 %		
	•		dichlorido	1150-91-0								\vdash	
8	44	nercury { mercury	231_200_8	7/87-0/-7	-	<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.0000677 %		<lod< td=""></lod<>
	-	nickel { nickel chro	mate \	1401-94-1								\vdash	
9		028-035-00-7	238-766-5	14721-18-7		18	mg/kg	2.976	53.573	mg/kg	0.00536 %		
	A	selenium { nickel s	elenate }									\square	
10	•••	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<lod< td=""></lod<>
	æ	zinc { zinc chromat	te }			00		0 774	400.004		0.0100.0/		
11	~	024-007-00-3	236-878-9	13530-65-9		66	mg/kg	2.774	183.094	mg/ĸg	0.0183 %		
		tert-butyl methyl et	her; MTBE;										
12		2-methoxy-2-methy	ylpropane			<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		603-181-00-X	216-653-1	1634-04-4									
13		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
<u> </u>		601-020-00-8	200-753-7	71-43-2								\square	
14		toluene	000 005 0	4.00.00.0		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
<u> </u>		601-021-00-3	203-625-9	108-88-3								\square	
15	8		202 840 4	100 41 4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
		vulene	202-043-4	100-41-4	-							H	
		601-022-00-9	202-422-2 [1]	95-47-6 [1]									
16		001 022 00 3	203-396-5 [2]	106-42-3 [2]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
			203-576-3 [3]	108-38-3 [3]									
<u> </u>			215-535-7 [4]	1330-20-7 [4]	-							\square	
17	8	рн	1	DU		4.9	pН		4.9	pН	4.9 pH		
				гп									

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#			Determinand		Note	User entered data	Conv.	Compound	l conc.	Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP		Factor			value	MC /	Used
18		naphthalene				<0.03 ma/ka		<0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-052-00-2	202-049-5	91-20-3								_
19	Θ	acenaphthylene	205-917-1	208-96-8		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
20		acenaphthene				<0.03 mg/kg		<0.03	ma/ka	<0.000003 %		
20			201-469-6	83-32-9	1	<0.03 mg/kg		<0.05	iiig/kg	<0.000003 /8		LOD
21	0	fluorene	201-695-5	86-73-7	_	<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		phenanthrene										
22			201-581-5	85-01-8		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
23	۵	anthracene	004 271 1	120 12 7		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		fluoranthono	204-371-1	120-12-7	-							
24	۲	Indorariarierie	205-012-4	b06-44-0	-	<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
		nvrene	200 012 4	200 44 0	-							
25		pyrono	204-927-3	129-00-0		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
00		benzo[a]anthracer	ne			0.00 //		0.00		0.00000.0/		1.00
26		601-033-00-9	200-280-6	56-55-3		<0.03 mg/kg		<0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
27		chrysene	1	1		-0.02 mg/kg		-0.02	malka	-0.00003.8/		
21		601-048-00-0	205-923-4	218-01-9		<0.03 mg/kg		<0.03	шу/ку	<0.000003 %		<lod< td=""></lod<>
20		benzo[b]fluoranthe	ene			<0.02 mg/kg		<0.03	ma/ka	<0.00003.94		
20		601-034-00-4	205-911-9	205-99-2		<0.03 mg/kg		<0.03	шу/ку	<0.000003 /8		<lod< td=""></lod<>
20		benzo[k]fluoranthe	ene			<0.03 mg/kg		<0.03	ma/ka	<0.000003 %		
23		601-036-00-5	205-916-6	207-08-9		<0.03 mg/kg		<0.00	iiig/kg	<0.000003 78		LOD
30		benzo[a]pyrene; b	enzo[def]chrysene			<0.03 ma/ka		<0.03	ma/ka	<0.000003 %		<1 OD
		601-032-00-3	200-028-5	50-32-8		(0.00 mg/kg						.205
31	۰	indeno[123-cd]pyrene			<0.03 ma/ka		< 0.03	ma/ka	<0.000003 %		<lod< td=""></lod<>	
	205-893-2 193-39-5		193-39-5					5.5			_	
32		dibenz[a,h]anthrac	cene			<0.03 ma/ka		< 0.03	mg/ka	<0.000003 %		<lod< td=""></lod<>
		601-041-00-2	200-181-8	53-70-3								
33	۲	benzo[ghi]perylen	e			<0.03 mg/kg		< 0.03	mg/kg	<0.000003 %		<lod< td=""></lod<>
			205-883-8	191-24-2		0.0			T			
									Total:	0.0341 %		

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 Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration Below limit of detection

CLP: Note 1

< ≺LOD

Only the metal concentration has been used for classification
WAC results for sample: TP106/0.10/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

The sample cannot be evaluated against the Inert (Inert waste landfill) criteria because of missing determinand values.

The sample cannot be evaluated against the SNRHW (Stable non-reactive hazardous waste in non-hazardous landfill) criteria because of missing determinand values.

WAC Determinands

	Solid Waste Analysis		Landfill Waste Acceptance Criteria Limits			
#	Determinand	User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill	
1	TOC (total organic carbon)	%	0.6	3	5	6
2	LOI (loss on ignition)	%		-	-	10
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg		1	-	-
5	Mineral oil (C10 to C40)	mg/kg		500	-	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-
7	рН	pН		-	>6	-
8	ANC (acid neutralisation capacity)	mol/kg		-	-	-
	Eluate Analysis 10:1					
9	arsenic	mg/kg		0.5	2	25
10	barium	mg/kg		20	100	300
11	cadmium	mg/kg		0.04	1	5
12	chromium	mg/kg		0.5	10	70
13	copper	mg/kg		2	50	100
14	mercury	mg/kg		0.01	0.2	2
15	molybdenum	mg/kg		0.5	10	30
16	nickel	mg/kg		0.4	10	40
17	lead	mg/kg		0.5	10	50
18	antimony	mg/kg		0.06	0.7	5
19	selenium	mg/kg		0.1	0.5	7
20	zinc	mg/kg		4	50	200
21	chloride	mg/kg		800	15,000	25,000
22	fluoride	mg/kg		10	150	500
23	sulphate	mg/kg		1,000	20,000	50,000
24	phenol index	mg/kg		1	-	-
25	DOC (dissolved organic carbon)	mg/kg		500	800	1,000
26	TDS (total dissolved solids)	mg/kg		4,000	60,000	100,000

Key

User supplied data Not applicable Missing WAC determinand value Classification of sample: TP106/0.50/2024-07-04

- - - - - - - - - - - -

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

Sample details

Sample name:	LoW Code:	
TP106/0.50/2024-07-04	Chapter:	17: Construction and Demolition Wastes (including excavated soil

Entry:

from contaminated sites) 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

-

Hazard properties

None identified

Determinands

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

#			Determinand		Note	User entered data		Conv.	Compound conc.		Classification	Applied	Conc. Not
		EU CLP index number	EC Number	CAS Number	CLP			T actor			value		Used
1	4	arsenic { arsenic tr	ioxide }			8.3	mg/kg	1.32	10.959	mg/kg	0.0011 %		
		033-003-00-0	215-481-4	1327-53-3									
2	4	<pre>g boron { diboron trioxide }</pre>				1.6	mg/kg	3.22	5.152	mg/kg	0.000515 %		
		005-008-00-8	215-125-8	1303-86-2									
3	4	cadmium { cadmiui	m oxide }	1000 10 0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<lod< td=""></lod<>
		048-002-00-0	215-146-2	1306-19-0									
4	4	chromium in chrom <mark>chromium(III) oxide</mark>	nium(III) compound <mark>e (worst case)</mark> }	s {		30	mg/kg	1.462	43.847	mg/kg	0.00438 %		
			215-160-9	1308-38-9									
5	4	chromium in chrom compounds, with th of compounds spec	nium(VI) compound ne exception of bar cified elsewhere in	Is { chromium (VI) ium chromate and this Annex }		<1	mg/kg	2.27	<2.27	mg/kg	<0.000227 %		<lod< td=""></lod<>
		024-017-00-8											
6	4	copper {	oxide; copper (I) ox	<mark>ide</mark> }		20	ma/ka	1 1 2 6	22 518	ma/ka	0 00225 %		
Ľ		029-002-00-X	215-270-7	1317-39-1			ing/kg	1.120	22.010	iiig/kg	0.00220 /0		
7	4	lead { <mark>lead chroma</mark>	te }		1	12	ma/ka	1 56	18 718	ma/ka	0 0012 %		
<u> </u>		082-004-00-2	231-846-0	7758-97-6									
8	4	mercury { mercury	dichloride }			<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<lod< td=""></lod<>
		080-010-00-X	231-299-8	7487-94-7									
9	4	a nickel { nickel chromate }			29	mg/kg	2.976	86.312	mg/kg	0.00863 %			
		028-035-00-7	238-766-5	14721-18-7									
10	4	selenium { nickel s	elenate }	45000 00 5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<lod< td=""></lod<>
<u> </u>		028-031-00-5	239-125-2	15060-62-5	-								
11	4	zinc { zinc chromat	ie }	40500 05 0		120	mg/kg	2.774	4 332.898	mg/kg	0.0333 %		
		024-007-00-3	236-878-9	13530-65-9									
12		2-methoxy-2-methylpropane			<0.01	ma/ka		<0.01	ma/ka	<0.000001 %		<lod< td=""></lod<>	
		603-181-00-X	216-653-1	1634-04-4			33			00			
12		benzene	1	,		<0.01	ma/ka		<0.01	ma/ka	<0.00001.9/		
13		601-020-00-8	200-753-7	71-43-2		<0.01	шу/ку		<0.01	тід/кд	<0.000001 %		<lod< td=""></lod<>
14		toluene				<0.01	ma/ka		<0.01	ma/ka	<0.000001 %		
		601-021-00-3	203-625-9	108-88-3			ing/kg		<0.01	iiig/itg	<0.000001 /0		
15		ethylbenzene				<0.01	mg/ka		<0.01	mg/ka	<0.000001 %		<lod< td=""></lod<>
		601-023-00-4	202-849-4	100-41-4									
16		xylene 601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<lod< td=""></lod<>
17		рН		PH		6.5	pН		6.5	рН	6.5 pH		

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#		Determinand		User entered data	Conv.	Compound conc.	Classification	Applied	Conc. Not Used
		EU CLP index EC Number CAS Number number	CLP		T ACIOI		value		
18		naphthalene	<0.03	<0.03 ma/ka		<0.03 ma/ka	<0.000003 %		<lod< td=""></lod<>
		601-052-00-2 202-049-5 91-20-3							
19	8	acenaphthylene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		205-917-1 208-96-8							
20		201-469-6 83-32-9		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
21	8	fluorene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		201-695-5 86-73-7							
22	۲	phenanthrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		201-581-5 85-01-8							
23	8	204-371-1 120-12-7		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
24	8	fluoranthene		<0.03 ma/ka		<0.03 mg/kg	<0.000003 %		
24		205-912-4 206-44-0		<0.03 mg/kg		<0.03 mg/kg			LOD
25	8	pyrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		204-927-3 129-00-0	_						
26				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
	chrysene								
27		601-048-00-0 205-023-4 218-01-9	<0.03	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		benzo[b]fluoranthene					<0.000003 %		
28		601-034-00-4 205-911-9 205-99-2		<0.03 mg/kg		<0.03 mg/kg			<lod< td=""></lod<>
		benzo[k]fluoranthene							
29		601-036-00-5 205-916-6 207-08-9		<0.03 mg/kg	ng/kg	<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
30		benzo[a]pyrene; benzo[def]chrysene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		601-032-00-3 200-028-5 <u>5</u> 0-32-8							
31	8	Indeno[123-cd]pyrene		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
		205-893-2 193-39-5							
32				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
	_								
33	۳	205-883-8 191-24-2		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<lod< td=""></lod<>
24		polychlorobiphenyls; PCB		.0.01		.0.01	-0.000001.0/		
34		602-039-00-4 215-648-1 1336-36-3	1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<lod< td=""></lod<>
		· · · · · · · · · · · · · · · · · · ·				Total:	0.0518 %		

Key

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

WAC results for sample: TP106/0.50/2024-07-04

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "UK"

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

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

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

WAC Determinands

	Solid Waste Analysis	Landfill Waste Acceptance Criteria Limits					
#	Determinand		User entered data	Inert waste landfill	Stable non-reactive hazardous waste in non-hazardous landfill	Hazardous waste landfill	
1	TOC (total organic carbon)	%	<0.5	3	5	6	
2	LOI (loss on ignition)	%	3.8	-	-	10	
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.04	6	-	-	
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.01	1	-	-	
5	Mineral oil (C10 to C40)	mg/kg	<10	500	500 -		
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<0.1	100	-	-	
7	рН	рН	6.5	-	>6	-	
8	ANC (acid neutralisation capacity)	mol/kg	<1	-	-	-	
	Eluate Analysis 10:1						
9	arsenic	mg/kg	<0.01	0.5	2	25	
10	barium	mg/kg	<0.1	20	100	300	
11	cadmium	mg/kg	<0.02	0.04	1	5	
12	chromium	mg/kg	<0.1	0.5	10	70	
13	copper	mg/kg	<0.02	2	50	100	
14	mercury	mg/kg	<0.002	0.01	0.2	2	
15	molybdenum	mg/kg	<0.1	0.5	10	30	
16	nickel	mg/kg	<0.1	0.4	10	40	
17	lead	mg/kg	<0.05	0.5	10	50	
18	antimony	mg/kg	<0.05	0.06	0.7	5	
19	selenium	mg/kg	<0.03	0.1	0.5	7	
20	zinc	mg/kg	0.11	4	50	200	
21	chloride	mg/kg	<100	800	15,000	25,000	
22	fluoride	mg/kg	4.1	10	150	500	
23	sulphate	mg/kg	130	1,000	20,000	50,000	
24	phenol index	mg/kg	<1	1	-	-	
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800	1,000	
26	TDS (total dissolved solids)	mg/kg	220	4,000	60,000	100,000	

Key

User supplied data

Not applicable

Appendix A: Classifier defined and non GB MCL determinands

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

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

• 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

• pH (CAS Number: PH)

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

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

Description/Comments: Data from C&L Inventory Database Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database Data source date: 17 Jul 2015 Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

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

Description/Comments: Data from C&L Inventory Database Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database Data source date: 17 Jul 2015 Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

^{**•**} fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

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

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

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

^a anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database Data source date: 17 Jul 2015 Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

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

[®] pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

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

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

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

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

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015 Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database Data source date: 23 Jul 2015 Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

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

GB MCL index number: 602-039-00-4

Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans;

POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied. Additional Hazard Statement(s): Carc. 1A; H350 Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

boron {diboron trioxide}

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

cadmium {cadmium oxide}

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

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

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

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

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

copper {dicopper oxide; copper (I) oxide}

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

lead {lead chromate}

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

mercury {mercury dichloride}

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

nickel {nickel chromate}

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

selenium {nickel selenate}

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

zinc {zinc chromate}

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

sulfur {sulphur dioxide}

х

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021 HazWasteOnline Classification Engine Version: 2024.158.6092.11254 (06 Jun 2024) HazWasteOnline Database: 2024.158.6092.11254 (06 Jun 2024) This classification utilises the following guidance and legislation: WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021 CLP Regulation - Regulation 1272/2008/EC of 16 December 2008 1st ATP - Regulation 790/2009/EC of 10 August 2009 2nd ATP - Regulation 286/2011/EC of 10 March 2011 3rd ATP - Regulation 618/2012/EU of 10 July 2012 4th ATP - Regulation 487/2013/EU of 8 May 2013 Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013 5th ATP - Regulation 944/2013/EU of 2 October 2013 6th ATP - Regulation 605/2014/EU of 5 June 2014 WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014 Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014 7th ATP - Regulation 2015/1221/EU of 24 July 2015 8th ATP - Regulation (EU) 2016/918 of 19 May 2016 9th ATP - Regulation (EU) 2016/1179 of 19 July 2016 10th ATP - Regulation (EU) 2017/776 of 4 May 2017 HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017 13th ATP - Regulation (EU) 2018/1480 of 4 October 2018 14th ATP - Regulation (EU) 2020/217 of 4 October 2019 15th ATP - Regulation (EU) 2020/1182 of 19 May 2020 The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020 The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020 GB MCL List - version 1.1 of 09 June 2021 GB MCL List v2.0 - version 2.0 of 20th October 2023 GB MCL List v3.0 - version 3.0 of 11th January 2024

GB MCL List v4.0 - version 4.0 of 2nd March 2024

Is Soil Waste?

Any soils intended for disposal off-site at a landfill are waste.

Some excess arisings (topsoil & subsoil) may be generated by excavations for foundations, sewers etc. If these are intended for retention and reuse on the site, they would be classed as clean naturally occurring soils and would not be considered waste, under the Waste Framework Directive.

In accordance with the CL:AIRE Code of Practice¹ any excess natural soil arisings should be suitable for Direct Transfer to another development site, for use either as clean cover material, or bulk fill for use, without the need for waste legislation to be applied.

Basic Waste Characterisation

Government's aim of reducing reliance on landfill as a disposal option and minimising the impacts of landfills on the environment and human health has meant the introduction of more stringent regulatory procedures. In accordance with the Landfill Regulations² and Waste Framework Directive (WFD) (2008/98/EC), it is a statutory requirement that a waste is characterised and also meets specific Waste Acceptance Criteria (WAC) prior to disposal at a landfill site. The waste producer has a Duty of Care³ to ensure that the waste is characterised, and the landfill operator must also be satisfied that a Basic Characterisation, is properly completed before the waste is accepted.

If arisings from construction works are intended for disposal, then there is a requirement to determine prior to disposal whether these would classify as **Hazardous** or **Non-Hazardous** (this is not the same as 'risk' posed to remaining on-site).

The Environment Agency's technical guidance 'Waste Classification (WM3, 1st edition 2015)' which came into force on 1st July 2015, sets out the requirement for the classification. It also provides the basis for the methodology to employ in order to ensure compliance with the regulations.

The classification assesses the composition of the material and determines the concentrations of the hazardous substances in the material. The assessment of contaminated soil (excavated soil) to determine whether it is hazardous waste is dependent on the presence of "hazardous substances" exceeding particular thresholds.

In the case of contaminated soil, the basic characterisation requires testing for potential contaminants, derived from the knowledge of the site history (see sections above).

¹ The Definition of Waste: Development Industry Code of Practice. CL:AIRE, 2011.

² The Landfill (England and Wales) Regulations 2005

³ Duty of Care requirements contained in Section 34 of the Environmental Protection Act 1990 and The Waste (England and Wales) Regulations 2011.

Waste Acceptance Criteria

Landfills are classified according to whether they can accept hazardous, non-hazardous, or inert wastes. Wastes can only be accepted at a landfill if they meet the waste acceptance criteria (WAC) for that class of landfill.

The WAC laboratory analysis includes solids and leachate testing to assess which class of landfill the waste can be accepted at.

Currently there are only acceptance criteria for inert, stable-non-reactive hazardous and hazardous landfills. This means that WAC testing is only required for wastes destined for Inert, Stable Non-Reactive Hazardous (SNRH) and Hazardous landfills.

If material is classified as non-hazardous, there is a choice of sending the material to a nonhazardous or an inert landfill (subject to meeting inert waste acceptance levels). Where the material is classified as hazardous, WAC analysis will be required to demonstrate that it meets the acceptance levels for hazardous landfill or SNRH landfill.

<u>Asbestos</u>

With respect to asbestos, waste soils will be classed hazardous if the soil mass contains more than 0.1% asbestos fibres that are free and dispersed. However, where the waste contains identifiable pieces of asbestos (i.e., any particle of a size that can be identified as potentially being asbestos by a competent person if examined by the naked eye), then the waste is hazardous if the concentration of asbestos in the pieces alone is 0.1%. If a stockpile of soil contained rare fragments of broken asbestos-cement sheeting, the whole stockpile would be classed as hazardous unless all the fragments could be picked-out (even though the concentration of asbestos in the soil mass might be an orders of magnitude less than 0.1%).

Tarmac/Road Asphalt

Older tarmac typically comprised coal tar which is potentially a hazardous substances. Benzo[a]pyrene (BaP) is typically used as a marker compound for the presence of coal tar. Where the concentration of benzo[a]pyrene is at or above 50mg/kg (within the binding material and excluding the aggregate) then the material would be classed hazardous.