Geo-Environmental

**GROUND APPRAISAL REPORT**

**for the site at**

**PROPOSED COMMUNITY CENTRE,**

**NORTH HORSHAM**

**on behalf of**

**LEGAL AND GENERAL (STRATEGIC LAND NORTH HORSHAM) LIMITED**



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| Report: | **GROUND APPRAISAL REPORT** |
| Site: | **PROPOSED COMMUNITY CENTRE, NORTH HORSHAM.** |
| Client: | **LEGAL AND GENERAL (STRATEGIC LAND NORTH HORSHAM) LIMITED** |
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| EXECUTIVE SUMMARY | | |
|---|---|---|
| | Site Address | Proposed Community Centre, North Horsham |
| | Form of Development | Construction of a Community Centre with associated infra-structure. |
| Encountered Conditions | Scope of works | An intrusive investigation to confirm the ground and groundwater conditions to support the development of geotechnical and geo-environmental assessments of the site in relation to the proposed development. |
| | Ground Conditions | The ground conditions comprised a limited thickness of Topsoil and Made Ground overlying Weald Clay. |
| | Groundwater | Groundwater was not encountered during the intrusive investigation. Perched water at a depth of 0.5mbgl was recorded on one occasion within one of the installed monitoring wells, though it is considered that this does not represent the groundwater level. |
| Geotechnical Considerations | Foundations | Based on the ground and groundwater conditions encountered within the intrusive locations it is considered that traditional foundations would likely be suitable for the proposed development on site.<br><br>Based on the typical settlement parameters for the types of soil encountered, a maximum net allowable bearing capacity of 150kPa is applicable for trench, strip or isolated pad foundations up to 1.50m in width taken through any Topsoil, Made Ground, soft or loose zones, desiccated or disturbed soils and placed wholly into or onto the Stiff silty clays or cemented siltstones of the Weald Clay. |
| | Excavations | Shallow excavations within the Weald Clay Formation across the site are likely to remain relatively stable in the short term. However, longer deeper excavations any granular horizons within the Weald Clay Formation may be prone to instability and some form of temporary support or battering back to a safe angle may be required.<br><br>In addition, the clays of the Weald Clay Formation will soften rapidly when exposed to water. Therefore, foundation trenches should be concreted or blinded immediately upon excavation |
| | Pavements | Based on the laboratory testing and TRRL report, a CBR value of 4% is recommended. Based on the geotechnical results, the near surface Weald Clay should be considered as being non-frost susceptible for pavement design purposes. |
| | Floor Slabs | Based on the laboratory testing results and shrinkable soils, it is recommended that suspended ground floor slabs be adopted within the zone of influence of trees or bushes. Remote from the influence of trees and bushes, ground bearing slabs may be adopted. |
| | Drainage | Based on the ground conditions encountered there is negligible potential for the use of shallow soakaways on the site. Alternative methods for storm water disposal should be sought. |
| | Buried Concrete | It is recommended that a design class of DS-1 and an ACEC class of AC-1 be applied to all sub-surface concrete within the Weald Clay Formation. |

| | | |
|---|---|---|
| Considerations | Human Health | Based on the results remedial measures for the protection of the end user from contaminated soils or groundwater are not required. |
| | Ground gas | Based on the results of the monitoring and the subsequent risk assessment, it is not considered necessary to install gas protection measures within the proposed buildings across the site. |
| | Built Environment | Based on the findings, protection measures for water supply pipes are not considered warranted. |
| | Waste Disposal | The HazWaste Online toolkit was used to undertake the initial hazard assessment on the sample results. The soil sample was assessed based on it belonging to European Waste Catalogue (EWC) 17 05 code group in the List of Waste Regulation 2005. This is defined as soil (including excavated soil from contaminated sites), stones and dredging spoil.<br><br>The assessed samples were given the waste classification non-hazardous based on the chemical properties of the sample and therefore the appropriate indicative List of Waste code is '17 05 04 Soil and stones other those mentioned in 17 05 03*'.<br><br>Furthermore, no asbestos was identified in the sample by the testing.<br><br>Should it be proposed to dispose of any of the material the results should be forwarded to the proposed receiving landfill for confirmation of this assessment as it is their decision on whether they will accept the waste material.<br><br>Natural soils (Weald Clay) are likely be suitable for disposal at an Inert landfill (under the respective EWC codes for naturally occurring soils). |

Further Actions:

**Pre Construction**

- The results of the chemical testing be passed onto the receiving landfill for final classification.

**During Construction**

- A discovery strategy should be maintained during development such that any abnormal conditions (geotechnical or potential contamination) are identified and their potential impact on the proposed development assessed prior to determining any potential mitigation measures.

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## 1.0 INTRODUCTION

Geo-Environmental Services Limited was instructed by Legal and General (Strategic Land North Horsham) Limited to undertake an investigation of the geotechnical and geo-environmental factors pertaining to Land at the proposed community centre at north Horsham. The site's location is presented in Figure 1.

### 1.1 Development Proposals

It is understood the development comprises a community centre, with car parking, soft landscaping and associated infrastructure. The proposed development plan can be found within Figure 3.

### 1.2 Site Description

At the time of the intrusive investigation the site comprised a generally flat and level triangular shaped piece of land that was previously occupied by a small office and farm buildings.

On the southern and western portion an access road was in the process of being constructed. Significant depths of Topsoil and/or Made Ground was noted to absent over the surface. It is understood the existing office and farm buildings were removed in 2021 including a site strip of near surface materials and ground. It is further understood all material was removed from site.

A shallow ditch was noted to be present just within the northern boundary.

The site was bounded to the south and west by a ditch lined with trees and hedges, to the north by open ground, and to the east by a fence with a road and further open ground beyond.

### 1.3 Objectives

The data from the geotechnical investigation was to form the basis of an interpretation with respect to foundation design, pavement construction, infiltration, concrete specification, excavation stability and other pertinent construction issues.

The data was used to evaluate the risks posed to the proposed redevelopment, adjacent land uses and the wider environment, in the context of likely planning requirements, immediate liabilities under the Environmental Protection Act 1990 and risks posed to Controlled Waters under the Water Resources Act from the current status of the site and in line with the proposed redevelopment.

### 1.4 Standards

Where practicable, the ground investigation and subsequent geotechnical and environmental assessments were undertaken in accordance with the following documents and guidance:

- British Standards Institute - Code of Practice for Earth Retaining Structures (BS8002:2015).
- British Standards Institute - Code of Practice for Site Investigations (BS5930:2015+A1:2020).
- British Standards Institute - Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings (BS8485:2015+A1:2019).
- British Standards Institute - Eurocode 7 - Geotechnical Design - Parts 1 & 2 (BS EN1997-1:2004 & BS EN1997-2:2007).

- British Standards Institute - Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs) (BS8576:2013).
- British Standards Institute - Investigation of Potentially Contaminated Sites - Code of Practice (BS10175:2011+A2:2017).
- British Standards Institute - Soils for Civil Engineering Purposes (BS1377:1990).
- British Standards Institute - Specification for Topsoil and Requirements for Use (BS3882:2015).
- Building Research Establishment - Soakaway Design - DG 365 (2016).
- Building Research Establishment - The Performance of Building Materials in Contaminated Land (BRE255) (1994).
- Construction Industry Research and Information Association - Assessing risks posed by hazardous ground gases to buildings (C665) (2007).
- Department for Environment Food and Rural Affairs and CL:AIRE - Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination (SP1010) (2014).
- Department of Environment - Industry Profiles (1995 - 1996).
- Environment Agency - Guidance for waste destined for disposal in landfills (2006).
- Environment Agency - Guidance on Requirements for Land Contamination Reports (2005).
- Environment Agency - Land Contamination: Risk Management (LCRM) (2019 + Update 2021).
- Ministry of Housing, Communities and Local Government - National Planning Policy Framework (2019).
- National House Building Council, Environment Agency & Chartered Institute of Environmental Health - Guidance for the Safe Development of Housing on Land Affected by Contamination (R&D Publication 66) (2008).
- National House Building Council - Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present (10627-R01[04]) (2007).
- National House Building Council - Standards, Chapter 4.1 Land Quality - Managing Ground Conditions (2020).
- CD225 (Design for New Pavement Foundations, Rev 0, Design Manual for Roads and Bridges, March 2020)
- West Sussex County Council Standard Detail S278/38/21
- TRRL LR1132 (The Structural Design of Bituminous Roads – Powell, Potter, Mayhew, and Nunn, 1984)

### 1.5 Conditions

This report does not purport to be a “Geotechnical Design Report” as defined in Clause 2.8 of Eurocode 7 (Geotechnical Design BS EN 1997-1:2004) and some of the data used to support the geotechnical assessment may not be fully compliant with that design code, due to the access restrictions at the time of the fieldworks and methods of investigation adopted. It is considered possible that further detailed ground investigations could be required to facilitate the detailed geotechnical design process and should be carried out on a structure specific basis if necessary.

The data collected from the investigations have been used to provide an interpretation of the environmental conditions pertaining to the site. The recommendations and opinions expressed in this report are based on the data obtained. Geo-Environmental takes no responsibility for conditions that either have not been revealed in the available records, or that occurs between or under points of physical investigation. Whilst every effort has been made to interpret the conditions, such information is only indicative and liability cannot be accepted for its accuracy.

It should be noted that in particular the concentrations and levels of mobile liquid and gaseous materials are likely to vary with time. The results obtained may therefore only be representative of the conditions at the time

of sampling. This report should not be taken as any guarantee that a site is free of hazardous or potentially contaminative materials.

No third party may rely upon this document without the prior and express written agreement of Geo-Environmental and Geo-Environmental does not indemnify the Client or any third parties against any dispute or claim arising from any finding or other result of this investigation report or any consequential losses, resulting from unauthorised use of this report.

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Assessment criteria or other parameters developed for the evaluation of contamination on this site are based on a number of assumptions regarding exposure and toxicology, and exposure to contaminants and levels of adverse effects may therefore vary. Whilst every care and expertise has been employed in the development of such criteria, no liability is accepted in this respect. Other criteria or guidance on the development of assessment criteria may be published in the future, and no liability is accepted in this respect.

## 2.0 DESK STUDY & GROUND INVESTIGATION REVIEW

The subject site was located within the wider Phase I area. Previous reports, including a desk study and intrusive investigations, to which reference should be made, include the following:-

*Stantec Ground Investigation Report 25216/3503/R003/Rev1 Oct 21*

*Endeavour Drilling Report No: END20-007 March 22*

*Hydrock Report C-11746-C-HYD-XX-XX-RP-GE-1000 AUG 2019*

The subject site, prior to demolition and clearance, comprised a farmyard with a large steel framed barn type structure with a portacabin and offices located centrally. Single storey garages were located on the western boundary and a further smaller barn structure on the western boundary. It is understood that subsequent to demolition of the buildings and a site surface strip, parts of the site were used for the storage of stockpiles of Topsoil, sub-soil and Made Ground which were sourced from the site. All stockpiles were removed off site by licenced hauliers and waste transfer notes provided to the Local Authority. A topographical survey of the former farm yard and immediate environs is presented in Appendix E. In addition, a drawing indicating the proposed site layout overlaying the survey of the former farmyard is presented in Appendix F. A photograph showing the central large barn structure is presented in Figure 4.

Based on the previous former uses and making reference to the previous investigations and desk study, possible sources of contamination have been identified, and are summarised in Table 2.0.

| Source | Description | Contaminants |
|---|---|---|
| Made Ground, shallow soils | The general quality of Made Ground and shallow soils could be impacted by the presence of contamination from former uses as a farmyard and commercial space. | Possible elevated concentrations of metals, metalloids, TPH and PAH compounds, ACMs and pesticides. |
| Naturally Occurring Ground Conditions | Naturally occurring compounds in the Weald Clay Formation which could damage buried concrete. | Possible elevated sulphate, pyrite and gypsum concentrations. |
| Ground Gases/Vapours | Deeper areas of Made Ground may be present in some locations at the site. A risk is only considered to be present if highly organic or volatile contaminants within Made Ground of fill materials are present. | Possible presence of ground gases such as methane and carbon dioxide together with depleted oxygen, trace gases and elevated volatile organic compounds. |

**Table 1.0 Possible Sources of Contamination on Site.**

The neighbouring area was noted to be mainly agricultural or residential land uses.

A conceptual site model was developed for the site and the wider site within the previous investigations as referenced above.

Table 2.1 summarises the identified plausible pollution linkages and a qualitative assessment of the risks based on the desk study research.

| Potential Source/media | Potential Receptors | Potential Pathways | Likelihood | Severity | Risk and Justification |
|---|---|---|---|---|---|
| **Made Ground and Shallow Soils** | End users | Direct Contact, Inhalation | Unlikely | Minor | **Very Low** Future users are unlikely to come into significant contact with soils via direct contact within the proposed soft landscape areas. Soils must be of suitable chemical and physical quality for the proposed end use. |
| | Soft Landscaping | Root Uptake | Likely | Mild | **Moderate to Low** Soft landscaping is included within the proposed development. Any imported soils must be of suitable chemical and physical quality for the proposed end use. |
| | Adjacent land users | Direct Contact, Inhalation | Unlikely | Minor | **Very Low** Adjacent site users are unlikely to come into contact with and affected soils on site. Additionally, natural soils are not anticipated to represent a risk of harm to human health. |
| | Water supply pipes | Chemical Attack | Likely | Mild | **Moderate to Low** Water supply pipes are likely to be placed in natural soils however, locally deeper areas of Made Ground may be present. |
| | Buildings and infrastructure | Chemical Attack | Likely | Minor | **Low** Foundations and utilities will be placed within natural soils. however, locally deeper areas of Made Ground may be present. |
| | Groundwater | Vertical & Lateral Migration | Unlikely | Minor | **Very Low** The Weald Clay beneath the site is classified as unproductive strata. |
| **Naturally Occurring Chemical Ground Conditions That Could Affect End Users or Construction Materials** | End users | Direct Contact | Unlikely | Minor | **Very Low** Future users are unlikely to come into contact with natural soils beneath the site. No naturally occurring chemical conditions are likely to present harm to end users |
| | Water supply pipes | Chemical Attack | Unlikely | Minor | **Very Low** Water supply pipes are likely to be placed in natural soils and |

| Potential Source/media | Potential Receptors | Potential Pathways | Likelihood | Severity | Risk and Justification |
|---|---|---|---|---|---|
| | | | | | are unlikely to be affected by any natural ground conditions that could affect water pipe materials. |
| | Buildings and infra- structure | Chemical Attack | Likely | Mild | **Moderate to Low** The Weald Clay Formation may contain elevated concentrations of sulphate, pyrite and gypsum. The concrete design may need to be sulphate resisting. |
| **Ground Gases/Vapours** | End Users | Inhalation | Unlikely | Medium | **Low** Significant volumes of putrescible material or high concentrations of VOCs from hydrocarbon contamination would be necessary in any Made Ground for significant ground gas production, and this is not anticipated. |
| | Adjacent land users | Inhalation | Unlikely | Minor | **Very Low** Adjacent site users are unlikely to be adversely affected by ground gases originating on the site. |
| | Soft Landscaping | Root Uptake | Unlikely | Minor | **Very Low** Soft landscaping is not expected to be adversely affected by any ground gases. |
| | Buildings and infrastructure | Gas Accumulation and Potential Explosion of Flammable Gases | Unlikely | Minor | **Very Low** Extensive putrescible material would be necessary in any Made Ground for significant ground gas production, and this is not anticipated. Ground gases are unlikely to affect integrity of building materials. |

**Table 2.1 Plausible Pollutant Linkages & Qualitative Risk Assessment for Site.**

## 3.0 GROUND INVESTIGATION SCOPE & RATIONALE

The following sections detail the scope and rationale for the investigation undertaken in August 2023.

### 3.1 Investigation Scope

The scope of works for the investigation included:

- Attendance of a specialist surveyor to undertake a detectable buried utilities clearance scan of the proposed exploratory hole locations using electromagnetic detection and ground penetrating radar techniques. Where possible, the survey included capture of co-ordinates and levels of exploratory holes using GPS surveying.
- Attendance of a Geo-Environmental Engineer to set out and supervise the intrusive investigation, undertake sampling, in-situ testing and logging of recovered soils from exploratory holes.
- Construction of 5No. dynamic sampler boreholes to depths of up to 4.0m bgl, depending on drilling conditions, using a self-propelled track mounted rig.
- Excavation of 3No. hand pits to obtain samples of near surface soils.
- Installation of 2No. groundwater monitoring wells to a depth of 4.0m to facilitate return groundwater monitoring on three occasions fortnightly between Sept and October 2023.
- Ground gas monitoring on three occasions (as part of groundwater monitoring). Wherever possible, the monitoring would target periods of low or rapidly falling atmospheric pressure.
- Geotechnical laboratory testing to support the geotechnical assessment for foundations, ground floor construction and buried concrete design.
- Geochemical laboratory testing of samples for a suite of commonly occurring brownfield contaminants, including those identified by the desk study.

### 3.2 Investigation Rationale

The exploratory holes were located to provide broad coverage across the proposed development area. The following tables summarise the strategy of the environmental (Table 3.1) and geotechnical (Table 3.2) investigations.

| Environmental Area of Concern | Investigation | Positions |
|---|---|---|
| Near Surface Soils and Made Ground | Window Sampler boreholes and hand pits situated across the site with regular sampling and laboratory analysis | All Locations |
| Ground Gas and Vapours | Ground gas monitoring standpipe installed within selected window sampler boreholes. | WS01 and WS04 |

**Table 3.1 Summary of Environmental Investigation Strategy**

| Geotechnical Area of Concern | Investigation | Positions |
|---|---|---|
| Lateral changes in ground conditions | Trial pits and window sampler boreholes undertaken with regular in-situ testing and sampling. | ALL |
| Shrinkable soils | Trial pits and window sampler boreholes undertaken with regular in-situ testing and sampling. | ALL |

| | | |
|---|---|---|
| Shallow Groundwater | Standpipe installed within boreholes and groundwater observations made within all holes during drilling. | WS01 and WS04 |
| Significant depths of Made Ground | Trial pits and window sampler boreholes undertaken with regular in-situ testing and sampling. | ALL |
| Aggressive chemical ground conditions (sulphates) | Trial pits and window sampler boreholes undertaken with regular in-situ testing and sampling. | ALL |

**Table 3.2 Summary of Geotechnical Investigation Strategy**

## 4.0 ENCOUNTERED CONDITIONS

A factual record of the conditions encountered during the physical investigations of the site is presented in the following section.

For further details of the encountered ground conditions, reference should be made to the engineer's logs presented in Appendix A, the preliminary groundwater/gas monitoring assessment presented in Appendix B, the geotechnical testing results in Appendix C, and the chemical testing results in Appendix D.

### 4.1 Anticipated Ground Conditions

Published geological records indicate that the ground conditions are likely to comprise the Weald Clay Formation.

Weald Clay consists of shales and mudstones with occasional thin beds of siltstones, sandstone, shelly limestone and clay ironstone. When fresh, the beds are normally dark grey weathering to mottled yellow and brown near the surface or at outcrop. Bands of red clay occur within the bed, usually in association with the sandstone.

### 4.2 Ground Conditions

The ground conditions encountered comprised a mantle of Topsoil overlying Weald Clay.

A generalised summary of the encountered conditions is presented in Table 4.0.

| Top (m bgl) | Base (m bgl) | Geology | Locations |
|---|---|---|---|
| 0.00 | 0.10 | **TOPSOIL:** Greyish brown silty SAND with matted rootlets. | HP01, WS01, WS04 |
| 0.00-0.10 | > 2.00 | **Weald Clay Formation:** Firm to very stiff light brown becoming grey mottled orangish and reddish brown slightly sandy slightly gravelly friable sandy CLAY. Gravel is weak mudstone. *Note that all window sample boreholes refused on cemented mudstone at depths between 1.20mbgl and 2.0mbgl.* | All |

**Table 4.0 Summary of Ground Conditions**

For more detailed descriptions of the ground conditions at specific locations, reference should be made to the exploratory hole logs and sections presented in Appendix B.

### 4.3 Groundwater

No groundwater was recorded within any of the investigation locations during the investigation. Monitoring wells were installed within WS01 and WS04 and were monitored on three occasions between September 2023 and October 2022. All three visits have been undertaken. All monitoring wells were recorded as having water at the base of the borehole, with the exception of one isolated visit which recorded water at a depth of 0.5m bgl in WS04. It is considered that this does not represent the actual ground water table, but localised trapped perched run-off.

It should be noted that changes in groundwater and perched water levels do occur for a number of reasons including seasonal effects and variations in drainage. Such fluctuations may only be recorded by the measurement of the groundwater level within a series of standpipes or piezometers installed within appropriate response zones.

### 4.4 Ground Gases

Dual purpose gas and water monitoring standpipes were installed within WS01 and WS04 to depths of between 1.50m and 2.00m bgl. All visits have been undertaken, methane was recorded within the range of 0.0% v/v to 0.3% v/v, whilst carbon dioxide and oxygen have been recorded within the range of 0.1% v/v to 10.4% v/v and 0.6% v/v to 21.1% v/v respectively. A maximum VOC concentration of 107.1ppm has been recorded, whilst atmospheric pressure has been recorded between 1013mb and 1022mb. A steady flow of 0.2l/hr was recorded. On occasion in WS04 a steady flow of 1.9l/hr was recorded however; this was believed to be caused by hydraulic pressure caused by rising perched water.

For further details, reference should be made to the preliminary ground gas assessment sheet in Appendix B.

### 4.5 Obstructions

All dynamic sampling locations refused in the Weald Clay between 1.20m and 2.00m bgl. The presence of other natural or artificial obstructions across the site cannot be discounted.

Whilst we understand existing foundations were removed during the demolition process, there remains a possibility that existing concrete foundations, or voids subsequently filled with hardcore/Made Ground following the removal of old foundations, may be encountered in isolated areas.

### 4.6 Geochemical Analysis

In order to assess the general chemical quality of the strata encountered, samples of soils recovered from the exploratory holes were submitted for analysis for a range of potential contaminants selected on the basis of the findings of the desk study and supported by the joint National House Building Council (NHBC), Environment Agency (EA) and Chartered Institute of Environmental Health (CIEH) publication, '*Guidance for the Safe Development of Housing on Land Affected by Contamination*' (2008).

Soil samples were placed into plastic containers for general inorganic analysis and into amber jars for organic analysis. Samples were stored in temperature-controlled conditions from sampling until receipt at the laboratory from which time sample preparation and storage was determined by testing requirements and in line with the laboratory's protocols.

Six soil samples were submitted for analysis for a comprehensive suite of common zootoxic and phytotoxic elements based upon determinants listed within the above guidance. In addition, one sample was submitted for waste acceptance and waste categorisation testing.

### 4.7 Geotechnical Analysis

The results of geotechnical testing undertaken as part of the ground investigation are summarised in Tables 4.1 with test results presented in Appendix D.

| Parameter | Weald Clay |
|---|---|
| pH | 5.2-8.7 |
| Water soluble sulphate (g/l) | <0.02-0.27 |
| Natural Moisture Content (%) | 12-35 |
| Liquid Limit (%) | 37-85 |
| Plastic Limit (%) | 21-36 |
| Plasticity Indices (%) | 14-54 |
| Modified Plasticity Indices (%) | 5.6-54 |

**Table 4.1: Summary of Geotechnical Laboratory Test Results**

## 5.0 ENGINEERING CONSIDERATIONS

Subsequent to intrusive investigation of the site and receipt of the laboratory results, the following interpretative assessments have been made with respect to engineering considerations.

### 5.1 Foundations

Based on the ground and groundwater conditions encountered in the boreholes conventional foundations are considered suitable for the proposed development remote from trees. Foundations should be taken through any Made Ground, weak or desiccated soils and bear wholly into or onto the firm to stiff clays or cemented siltstones of the Weald Clay Formation.

The results of the Atterberg Limit tests classified the soils of the Weald Clay Formation as ranging between low and high volume change in accordance with the NHBC Standards, Chapter 4.2. The majority of results were classified as medium volume change potential although in the central and eastern parts of the site there was an area where the soils were found to be low volume potential. It is recommended that in lieu of any further investigation the Weald Clay be classified *en masse* as Medium Volume Change Potential in accordance with the NHBC Standards, Chapter 4.2. A minimum founding depth within the Weald Clay of 0.90m is therefore applicable remote from trees. Foundations should not be less than 600mm in width.

Whilst not strictly applicable to the type of proposed structure, it is recommended that within the zone of moisture demand of any existing, proposed or recently felled trees, foundation depths should be calculated in accordance with the NHBC Standards, Chapter 4.2. Foundations should also be taken through any major root zone and desiccated clay soils should this be found at greater depth. It should be noted that the NHBC stipulate that foundations cast at depths greater than 2.5m should be “engineer designed”.

Where calculated foundation depths are in excess of 1.50m on account of trees, heave protection measures should be detailed in accordance with the NHBC Standards, Chapter 4.2.

Foundations may terminate on the non-shrinkable cemented siltstones encountered between 1.30mbgl and 2.0mbgl, should this be found at a more shallow depth. We would recommend that should this scenario arise, the casting of the foundations should be overseen by qualified geotechnical engineer.

Based on the typical settlement parameters for the types of soil encountered, a maximum allowable bearing capacity of 150kPa is applicable for trench, strip or isolated pad foundations up to 1.50m in width taken through any Made Ground, soft or loose zones, desiccated or disturbed soils and placed wholly into or onto the stiff silty clays or cemented siltstones of the Weald Clay. Under this loading settlements should remain within tolerable limits for the proposed construction.

Given the cohesive nature of the Weald Clay, these materials will soften rapidly when exposed to free water, and foundations should be concreted, blinded, or otherwise protected, immediately after excavation.

### 5.2 Excavations

Shallow excavations within the Weald Clay Formation across the site are likely to remain relatively stable in the short term. However, longer deeper excavations any granular horizons within the Weald Clay Formation may be prone to instability and some form of temporary support or battering back to a safe angle may be required.

All excavations intercepting the groundwater table, should it be encountered, will become highly unstable and some form of temporary support and dewatering may be required.

Ground works should always be designed in such a manner to avoid man entry into excavations. However, in the event that such works cannot be avoided or designed out, they should only be undertaken in accordance with a safe system of work, following an appropriate risk assessment and in accordance with any legislative requirements, e.g. Confined Spaces Regulations.

### 5.3 Floor Slabs

Based on the laboratory testing results and the presence of trees and shrinkable soils, suspended ground floor slabs should be utilised where there is a potential for desiccation (i.e within the zone of influence of trees). Ground bearing slabs may be adopted in areas remote from the influence of trees. Where ground bearing slabs are adopted, the formation should be appropriately treated, and any exposed soft spots or organic material should be removed and replaced with suitably compacted granular fill.

### 5.4 Pavements

A single laboratory CBR test was undertaken on a bulk sample obtained from HP03 at an anticipated formation level of 0.5mbgl. The result indicated an average CBR value of 4.8%.

Based on the Transport and Road Research Laboratory Report (LR1132) entitled '*The Structural Design of Bituminous Roads*' (1984), an estimated equilibrium suction index of 3.5% for clay soils is recommended for a Plasticity Index of 35 (average PI for shallow soils) for a thin pavement, under average construction conditions and a low groundwater level.

Based on the laboratory results, a CBR value of 4.0% is recommended. However, the design CBR should also take account of any Local Authority Highway Design Standard specifications where it is proposed for the roads to be adopted.

Based on the geotechnical results, the near surface Weald Clay Formation should be considered as being *non-frost* susceptible for pavement design purposes. It is recommended that the sub-grade be proof rolled and any soft spots removed and replaced with a suitable compacted granular fill.

### 5.5 Soakaways

Based on the relative impermeable nature of the Weald Clay encountered on site it is considered very unlikely that soakaways will perform satisfactorily. An alternative method of storm water disposal should be considered.

### 5.6 Sulphates

Three pH and Sulphate tests were undertaken on the Weald Clay. The results corresponded to design class DS-1 as defined within the BRE Special Digest 1 (2005). The pH analyses indicate the ACEC class to be AC-1. It is recommended that a design class of DS-1 and an ACEC class of AC-1 be applied to all sub-surface concrete.

## 6.0 ENVIRONMENTAL CONSIDERATIONS

A Generic Quantitative Risk Assessment (GQRA) was undertaken on the results of the chemical testing on the soil samples, the findings of which are presented in the following sections.

### 6.1 Environmental Risk Assessment

Based on a visual assessment of the soils encountered, in conjunction with the proposed end use, six soil samples were submitted for a suite of commonly occurring contaminants including metals, metalloids, inorganic compounds, TPH, PAH and asbestos.

### 6.2 Soil Contamination vs. End Users

The presence of a possible contaminant does not necessarily imply that a site or area is contaminated or that there is any unacceptable risk to human health. A Preliminary Quantitative Risk Assessment has been undertaken in order to evaluate any unacceptable risks posed to human health with respect to the proposed redevelopment. It should be noted that this assessment is protective of the chronic long-term effects of contaminants, which is also likely to be protective of any possible immediate acute effects.

A quantitative risk assessment has been undertaken initially by comparing the results of the laboratory chemical testing of non-targeted shallow soils in each area against Soil Guideline Values (SGVs), DEFRA Category 4 Screening Levels (C4SLs) or Atkins' ATRISK$^{soil}$ Site Specific Screening Values (SSSVs) for a commercial end use. Any results that may have been greater than the guideline values or where there are no comparable values, the results have subsequently been compared against Land Quality Management Suitable 4 Use Levels (Subscription No. S4UL3453) (LQM S4UL) and Category 4 Screening Levels (C4SL). If any screening values are exceeded, further statistical assessment is required.

Benzo(a)pyrene has been used in the assessment as a surrogate marker for PAH contamination.

The results of the chemical testing have been compared directly with the generic assessment criteria for an end use of residential public open space.

All of the results were below the relevant thresholds.

No asbestos was identified, and pesticide concentrations were below laboratory detection limits.

Based on the test results, remedial measures for the protection of end users against contaminated soils or groundwater are not required for the development.

### 6.3 Soil Contamination vs. Adjacent land Users

Surrounding land uses were identified to mostly comprise residential properties and agricultural fields. No mobile contamination was found during the investigation and therefore, no significant risks to adjacent land users are considered to exist.

However, it is recommended that dust suppression techniques, e.g. damping down exposed soils, are employed during the demolition and construction phases on site in order to minimise the potential for airborne migration of specific hazards and to manage potential nuisance issues for adjacent land users.

### 6.4 Soil Contamination vs. Soft Landscaping

British Standard BS3882:2015 *Specification for topsoil and requirements for use* provides assessment criteria for a number of potentially phytotoxic contaminants in terms of new planting.

The results of the chemical analysis for determinants known to pose a potential phytotoxic risk to plant growth are summarised in Table 6.0 together with the respective adopted Generic Assessment Criteria (GAC) for plant growth. The compliance criteria set out in BS3882:2015 are pH dependent and thus the GAC used relate to the pH range measured on samples recovered from the site.

| Determinant | Phytotoxicity GAC (mg/kg) | | | GAC Exceedances |
|---|---|---|---|---|
| | pH <6.0 | pH 6.0-7.0 | pH >7.0 | |
| Zinc | 200 | 200 | 300 | No |
| Copper | 100 | 135 | 200 | No |
| Nickel | 60 | 75 | 110 | No |

**Table 6.0: Summary of Plant Phytotoxicity Assessment**

No exceedances for the above listed metals were identified and therefore, no remedial measures are considered necessary for the protection of plants.

### 6.5 Soil Contamination vs. Building Materials

The current guidance on selection of materials for water supply pipes to be laid in contaminated land is contained in UK Water Industry Research's (UKWIR) report reference 10/WM/03/21 (re-issued 2010). However, the guidance is not mandatory and there have been concerns raised by various industry technical associations regarding the document and the methodologies proposed. Although there are concerns regarding the document, in lieu of any further guidance in the first instance the results of this investigation have been compared with the proposed thresholds published in UKWIR Table 3.1. The results of the relevant chemical analyses did not indicate any elevated concentrations and therefore barrier pipe is not required.

As a matter of good practice, and to maximise the protection to utilities, it is recommended that clean, granular backfill is used in service runs and that marker tapes are used for all buried services.

### 6.6 Ground Gases

Dual purpose gas and water monitoring standpipes were installed within WS01 and WS04 to depths of between 1.50m and 2.00m bgl. All visits have been undertaken, methane was recorded within the range of 0.0% v/v to 0.3% v/v, whilst carbon dioxide and oxygen have been recorded within the range of 0.1% v/v to 10.4% v/v and 0.6% v/v to 21.1% v/v respectively. A maximum VOC concentration of 107.1ppm has been recorded, whilst atmospheric pressure has been recorded between 1013mb and 1022mb.

Mildly elevated levels of carbon dioxide were identified during in the three monitoring visits. Elevated concentrations have not been found on the wider site and ground gas protection measures have not been recommended for the surrounding housing development. No plausible significant on-site source of carbon dioxide has been established, therefore it is considered that carbon dioxide is being produced mainly via biological respiration within the soils beneath the site and as such is from low risk sources.

With the exception of one isolated recording, no elevated flow rates were recorded within any of the monitoring wells throughout the duration of the gas monitoring. The lack of flow indicates that the detected carbon dioxide are migrating by diffusive flow only.

Gas primarily migrates via either pressure driven (advective) flow or via diffusive flow. As such, gas present beneath the site will diffuse through the soils forming a continuum between the source and a 'zero concentration boundary' such as ground level, with only minor concentrations of gas reaching ground level, and no perceivable flow. The majority of gas will remain trapped in the soil pores or sorbed to soil particles.

Assessment of the construction of the wells and the underlying ground conditions has shown that all of the response zones of the installed wells were solely within the natural soils beneath the site. Description of these natural materials has not noted the presence of organic materials or other materials that may give rise to the generation of ground gas. Assessment of likely sources of ground gas has not identified any on-site sources for the significant generation of bulk gases. As such it is considered that the mildly elevated concentrations of carbon dioxide recorded are being produced via biological respiration within the soils beneath the site and as such are from low-risk sources.

Based on the above assessment it is not considered necessary to install gas protection measures within the proposed building.

The results of the ground gas monitoring are presented in Appendix B.

### 6.7 Waste Disposal

The following information is provided for preliminary guidance purposes, as different facilities or operators may have differing acceptance criteria and Waste Acceptance Criteria (WAC) analysis may be required to confirm the exact classification. In addition, if the intention is to retain excess spoil/arisings on site for specific purposes, then these soils would not comprise waste, although this is subject to confirmation and relevant declaration under the Definition of Waste Code of Practice.

Where waste soil is being disposed to landfill it must first be classified as either Hazardous or Non-Hazardous. The classification is carried out in accordance with the Environment Agency's publication WM3 'Waste Classification-Guidance on the classification and assessment of waste'. Waste that is classified as Non-Hazardous in accordance with WM3 may be disposed without further testing to a Non-Hazardous landfill. Alternatively, once the waste soils have been identified, Waste Acceptance Criteria (WAC) testing can be undertaken to establish whether the material can be disposed to an Inert landfill, a subgroup of Non-Hazardous landfill. It should be noted that inert wastes are typically from a consistent source that meet a number of qualifying criteria, and thus Made Ground commonly will not meet the requirements to be disposed as Inert.

The HazWaste Online toolkit was used to undertake the initial hazard assessment on the sample results. The soil samples were assessed based on it belonging to European Waste Catalogue (EWC) 17 05 code group in the List of Waste Regulation 2005. This is defined as soil (including excavated soil from contaminated sites), stones and dredging spoil.

The assessed samples were given the waste classification **non-hazardous** based on the chemical properties of the sample and therefore the appropriate indicative List of Waste code is '17 05 04 Soil and stones other those mentioned in 17 05 03*'.

Furthermore, no asbestos was identified in the sample by the testing.

Should it be proposed to dispose of any of the material the results should be forwarded to the proposed receiving landfill for confirmation of this assessment as it is their decision on whether they will accept the waste material.

Natural soils (Weald Clay) are likely be suitable for disposal at an Inert landfill (under the respective EWC codes for naturally occurring soils).

## 7.0 Discovery Strategy

Whilst an intrusive investigation has been undertaken on the site, it remains possible that unexpected ground and/or groundwater conditions may be encountered during the process of construction.

Should previously undiscovered contamination or unforeseen ground conditions be encountered during construction by the ground workers, this must be reported to the Site Manager immediately in order that the Consultant is notified. Where deemed necessary, the Consultant shall attend the site to inspect the discovery and provide recommendations on the further actions required, if any. Where necessary the regulatory authority shall be informed. Post any additional investigation or laboratory testing the results and any proposed remedial measures shall be reported to the regulatory authority or other appropriate organisation for consent, before proceeding or implementing the remedial measures.

A copy of the discovery strategy must be lodged on site, and provisions made to ensure that all workers are made aware of their responsibility to observe, report, and act on any potentially suspicious, abnormal, unforeseen or contaminated ground and/or groundwater conditions they may encounter.

Depending on the type, nature and extent of any such 'discovery', it may be necessary to halt works in that location until such time as the assessment has been completed. This shall be reviewed on a 'discovery' specific basis and in conjunction with consultation with the client, other technical personnel and/or regulatory/approval organisations.

As a general guide, where such unexpected conditions are encountered the following approach is required as a minimum:

- All discoveries are to be reported to the Site Manager immediately and works at that location are to halt until further notice;
- The Site Manager is to report any such discoveries to the Client and the Consultant;
- Following notification from the Site Manager, the Consultant shall discuss the discovery with the Local Authority and/or other relevant parties and if considered necessary, arrange to meet on site to view the discovery;
- The Consultant shall attend the site to record the location, extent and nature of the discovery and implement an appropriate sampling and analysis regime, taking due account of the type and nature of the discovery, known and probable land uses in that area of the site;
- Where remedial action is required, regulatory consultation and approval will be sought;
- A record will be produced by the Consultant and held on site (with copies held by the Consultant, Client and Local Authority/other relevant organisation), detailing the discovery, assessment works undertaken, findings thereof, confirmation either of no action required or detailing the remedial action taken and validation thereof.

The process is shown below.

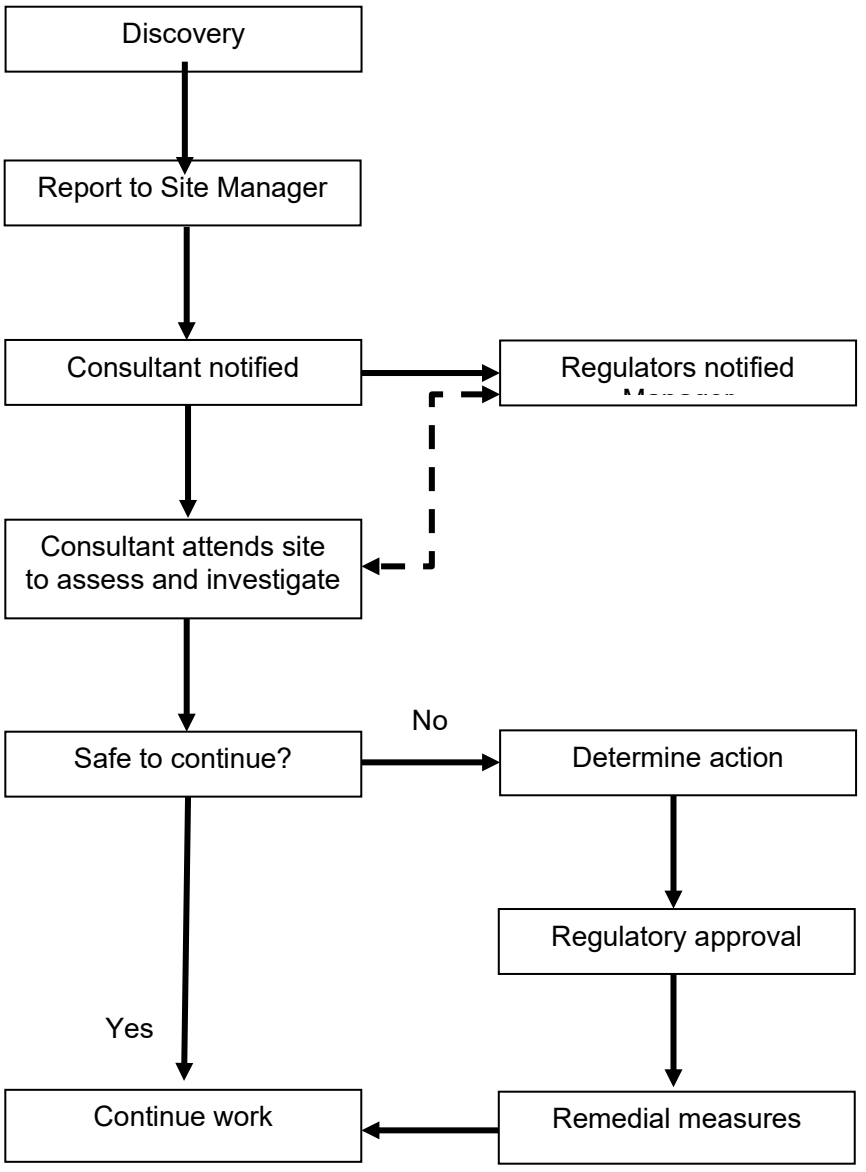



Chart 1 Discovery Strategy Process

***Caveat***

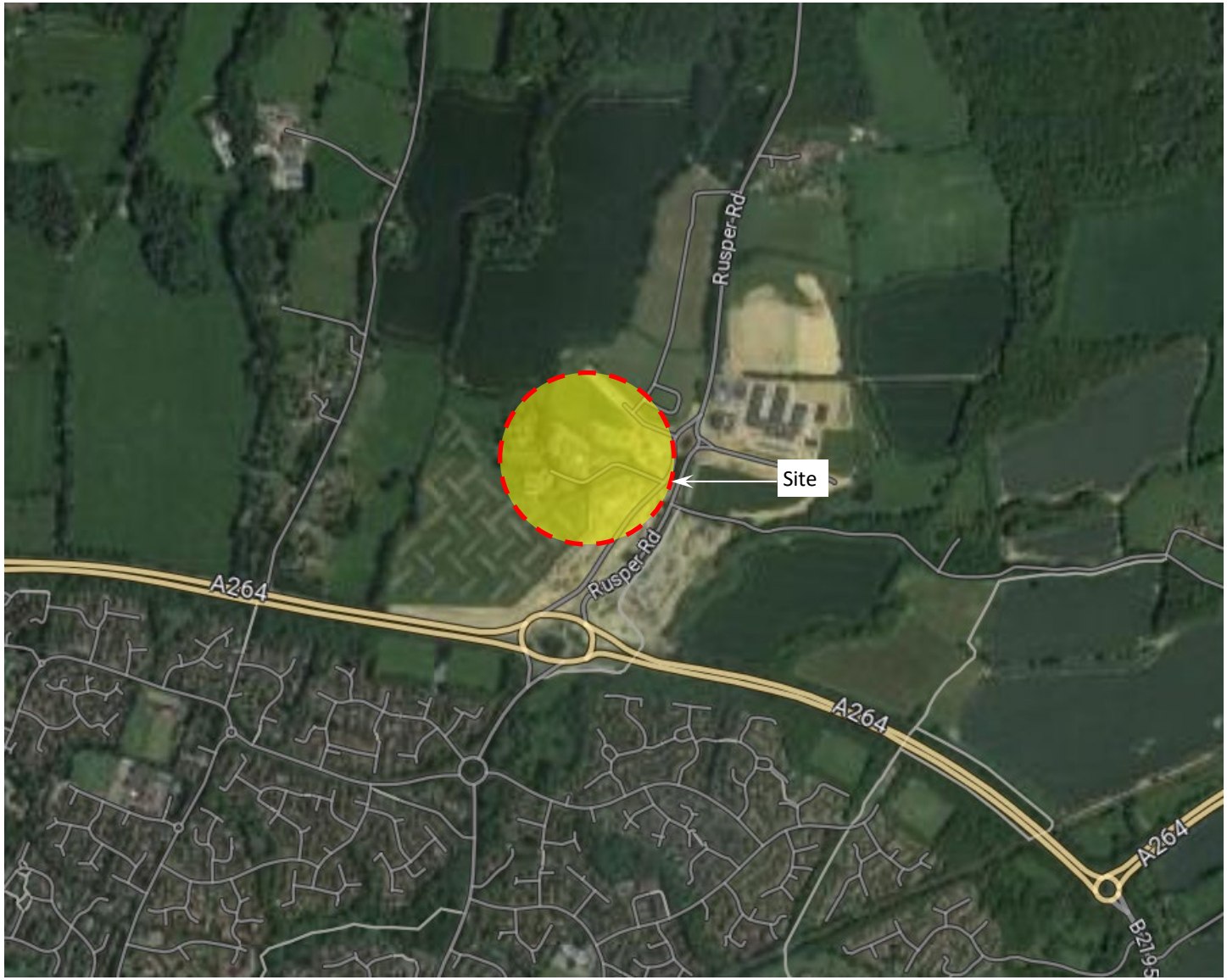
*The data collected from the investigations have been used to provide an interpretation of the geo-environmental conditions pertaining to the site. The recommendations and opinions expressed in this report are based on the data obtained.*

*Geo-Environmental Service Limited takes no responsibility for conditions that either have not been revealed in the available records, or that occurs between or under points of physical investigation. Whilst every effort has been made to interpret the conditions, such information is only indicative and liability cannot be accepted for its accuracy.*

*Information contained in this report is intended for the use of the client and their agents, and Geo-Environmental Services Limited can take no responsibility for the use of this information by any third party for uses other than that described in this report.*

*It should be noted that in particular the concentrations and levels of mobile liquid and gaseous materials are likely to vary with time. The results obtained may therefore only be representative of the conditions at the time of sampling. Such reservations have been indicated in the text where such conditions are considered to apply.*

*Geo-Environmental Services Limited does not indemnify any third parties such as the vendor against any dispute or claim arising from any finding or result of this investigation or any claim or dispute arising as a result of any decisions made thereof.*




| | | | | | |
|---|---|---|---|---|---|
| **Project:** | Proposed Community Centre, North Horsham | | | **Title** | Site Location Plan |
| **Client:** | Legal and General (Strategic Land North Horsham) Ltd | | | **Geo-Environmental Services Ltd**<br>**Unit 7 Danworth Farm, Cuckfield Road**<br>**Hurstpierpoint, West Sussex BN6 9GL**<br>**+44(0)1273 832972 www.gesl.net** | Geo-Environmental |
| **Ref No:** | GE21959 | **Revision:** | 1 | | |
| **Drawn:** | GE21959 | **Date:** | 07/09/2023 | | |
| **Figure:** | 1 | **Scale:** | | | |

| | | | |
|---|---|---|---|
| **Project Title:** | **North Horsham Community Centre** | **Title :** | **Figure 2 - Exploratory Hole Location Plan** |
| **Location :** | **Horsham** | **Scale:** | **1:500** |
| **Project No. :** | **GE21959** | **Engineer:** | |
| **Client :** | **Legal and General Strategic Land** | | |

Geo-Environmental

Legend Key

- Locations By Type - Empty
- Locations By Type - TP
- Locations By Type - WLS



Moat House

Refer to David Jarvis Associates drawings for detailed landscape proposals

East - West Green Space

N
W E
S
0 5m 10m

| REV. | DATE | REVISIONS: | BY | REV. | DATE | REVISIONS: | BY | REV. | DATE | REVISIONS: | BY |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |

STATUS:

# Planning

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| | | | |
|---|---|---|---|
| CLIENT: | Legal & General | PROJECT: | Community Centre at Mowbray, North Horsham |
| SCALE: | 1:250 (A1 ORIGINAL) | DRAWING: | Proposed Site Plan |
| DRAWN: JF<br>DATE: 09/11/21 | 21194 | P101 | – |

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| | | | | | |
|---|---|---|---|---|---|
| **Project:** | Proposed Community Centre, North Horsham | | | **Title** | Photograph of former central barn |
| **Client:** | Legal and General Strategic | | | **Geo-Environmental Services Ltd**<br>**Unit 7 Danworth Farm, Cuckfield Road**<br>**Hurstpierpoint, West Sussex BN6 9GL**<br>**+44(0)1273 832972 www.gesl.net** | Geo-Environmental |
| **Ref No:** | GE21959 | **Revision:** | 1 | | |
| **Drawn:** | GE21959 | **Date:** | 07/09/2023 | | |
| **Figure:** | 4 | **Scale:** | | | |

# APPENDIX A

# TRIAL HOLE LOGS

Geo-Environmental

| Contract Name: | | Client: | | | Trial Pit ID: |
|---|---|---|---|---|---|
| North Horsham Community Centre | | Legal and General Strategic Land | | | HP01 |
| Contract Number: | Date Started: | Logged By: | Checked By: | Status: | Sheet 1 of 1 |
| GE21959 | 11/09/2023 | JG | | PRELIM | |
| Trial Pit Log | Easting: 518895.4 | Northing: 133818.1 | Ground Level: 59.03mOD | Plant Used: | Date Printed: 12/09/2023 | Scale: 1:25 |

Weather: Sunny | Hole Termination: | Stability: Sides stable

| Samples & In Situ Testing | | | Strata Details | | | | Water | Backfill |
|---|---|---|---|---|---|---|---|---|
| Depths | Sample ID | Test Result | Reduced Level | Depth (m) (Thickness) | Legend | Strata Description | | |
| | | | 58.93 | 0.10 | | Greyish brown silty SAND. TOPSOIL | | |
| | | | | (0.40) | | Light brown sandy friable sandy CLAY. WEALD CLAY | | |
| 0.50 | B1 | | 58.53 | 0.50 | | End of Trial Pit at 0.50m | | |

0.5 1.0 1.5 2.0 2.5 3.0 3.5

Dimensions:

| | |
|---|---|
| Final Depth: | 0.50m |
| Final Width: | |
| Final Length: | |

Photo:

Remarks

Water Strikes (mbgl)

| Depth Strike | Rose to | Time Elapsed (mins) |
|---|---|---|
| | | |

Geo-Environmental

Trial Pit Log

| Contract Name: | | | Client: | | Trial Pit ID: |
|---|---|---|---|---|---|
| North Horsham Community Centre | | | Legal and General Strategic Land | | HP02 |
| Contract Number: | Date Started: | Logged By: | Checked By: | Status: | Sheet 1 of 1 |
| GE21959 | 11/09/2023 | JG | | PRELIM | |
| Easting: | Northing: | Ground Level: | Plant Used: | Date Printed: | Scale: |
| 518849.7 | 133815.0 | 58.66mOD | | 12/09/2023 | 1:25 |

Weather: Suuny | Hole Termination: | Stability: Sides stable

| Samples & In Situ Testing | | | Strata Details | | | | Water | Backfill |
|---|---|---|---|---|---|---|---|---|
| Depths | Sample ID | Test Result | Reduced Level | Depth (m) (Thickness) | Legend | Strata Description | | |
| 0.50 | B1 | | 58.16 | (0.50)<br>0.50 | | Light brown gravelly sandy friable CLAY. Gravel is weak mudstone rare high density mudstone cobbles<br>WEALD CLAY<br>End of Trial Pit at 0.50m | | |

0.5 1.0 1.5 2.0 2.5 3.0 3.5

Dimensions:

| | |
|---|---|
| Final Depth: | 0.50m |
| Final Width: | |
| Final Length: | |

Photo:

Remarks

Water Strikes (mbgl)

| Depth Strike | Rose to | Time Elapsed (mins) |
|---|---|---|
| | | |

Geo-Environmental

Trial Pit Log

| Contract Name: | | Client: | | | Trial Pit ID: |
|---|---|---|---|---|---|
| North Horsham Community Centre | | Legal and General Strategic Land | | | HP03 |
| Contract Number: | Date Started: | Logged By: | Checked By: | Status: | Sheet 1 of 1 |
| GE21959 | 11/09/2023 | JG | | PRELIM | |
| Easting: | Northing: | Ground Level: | Plant Used: | Date Printed: | Scale: |
| 518841.6 | 133795.6 | 58.90mOD | | 12/09/2023 | 1:25 |

Weather:

Hole Termination:

Stability: Sides stable

| Samples & In Situ Testing | | | Strata Details | | | | Water | Backfill |
|---|---|---|---|---|---|---|---|---|
| Depths | Sample ID | Test Result | Reduced Level | Depth (m) (Thickness) | Legend | Strata Description | | |
| 0.50 | B1 | | 58.47 | (0.43) | | Light with reddish brown mottling friable sandy gravelly CLAY. Gravel is weak mudstone. WEALD CLAY | | |
| | | | 58.30 | 0.43 | | Grey with orangish and reddish brown mottling CLAY with weak mudstone laminations. WEALD CLAY | | |
| | | | | 0.60 | | End of Trial Pit at 0.60m | | |

0.5 1.0 1.5 2.0 2.5 3.0 3.5

Dimensions:

| | |
|---|---|
| Final Depth: | 0.60m |
| Final Width: | |
| Final Length: | |

Photo:

Remarks

Water Strikes (mbgl)

| Depth Strike | Rose to | Time Elapsed (mins) |
|---|---|---|
| | | |

| Geo-Environmental | Unit 7, Danworth Farm<br>Hurstpierpoint<br>BN6 9GL<br>www.gesl.net | **Borehole Log** | Borehole No.<br>**WS01**<br>Sheet 1 of 1 |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | North Horsham Community Centre | Project No.<br>GE21959 | Co-ords: | 518887E - 133798N | Hole Type<br>WLS |
| Location: | Horsham | | Level: | 59.23 | Scale<br>1:25 |
| Client: | Legal and General Strategic Land | | Dates: | 11/09/2023 | Logged By<br>JG |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.10 | 59.13 | | Greyish brown silty SAND. Matted rootlets at surface. TOPSOIL |
| | | 0.30 | ES | | | | | Very stiff light grey mottled orange with red discolouration sandy gravelly friable CLAY. Gravel is weak mudstone. WEALD CLAY |
| | | 0.50 | D | | | | | |
| | | | | | 0.90 | 58.33 | | |
| | | 1.00 | D | | | | | Very stiff red with orange and grey discolouration friable finely laminated CLAY with weak mudstone laminations. WEALD CLAY |
| | | 1.00 | PP | 4.2kg/cm2 | | | | |
| | | 1.50 | D | | | | | |
| | | 1.50 | PP | 4.5kg/cm2 | | | | |
| | | 1.90 | ES | | | | | |
| | | 2.00 | D | | 2.00 | 57.23 | | End of Borehole at 2.00m |
| | | 2.00 | PP | 4.5kg/cm2 | | | | |
| | | 2.00 | SPT | Refusal (11,30/0 for 0mm) | | | | |

1 2 3 4 5

| Dynamic Sampling Run Details | | | Water Strike Details (mbgl) | | **Remarks** |
|---|---|---|---|---|---|
| Depth Top | Depth Base | Diameter | Depth Strike | Rose To | |
| | | | | | |

AGS

Status
PRELIM

| Geo-Environmental | Unit 7, Danworth Farm<br>Hurstpierpoint<br>BN6 9GL<br>www.gesl.net | **Borehole Log** | Borehole No.<br>**WS02**<br>Sheet 1 of 1 |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | North Horsham Community Centre | Project No.<br>GE21959 | Co-ords: | 518878E - 133775N | Hole Type<br>WLS |
| Location: | Horsham | | Level: | 59.59 | Scale<br>1:25 |
| Client: | Legal and General Strategic Land | | Dates: | 11/09/2023 | Logged By<br>JG |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | | | | Very stiff light brown sandy gravelly CLAY. Gravel is weak mudstone.<br>WEALD CLAY |
| | | 0.50 | D | | | | | |
| | | 0.50 | ES | | | | | |
| | | 1.00 | D | | | | | |
| | | 1.00 | PP | 3.8kg/cm2 | | | | |
| | | 1.20 | ES | | 1.20 | 58.39 | | End of Borehole at 1.20m |
| | | 1.20 | SPT | 54 (10,15/54 for 150mm) | | | | |

| Dynamic Sampling Run Details | | | Water Strike Details (mbgl) | | Remarks |
|---|---|---|---|---|---|
| Depth Top | Depth Base | Diameter | Depth Strike | Rose To | |
| | | | | | |

AGS

Status
PRELIM

| Geo-Environmental | Unit 7, Danworth Farm<br>Hurstpierpoint<br>BN6 9GL<br>www.gesl.net | Borehole Log | Borehole No.<br>**WS03**<br>Sheet 1 of 1 |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | North Horsham Community Centre | Project No.<br>GE21959 | Co-ords: | 518846E - 133785N | Hole Type<br>WLS |
| Location: | Horsham | | Level: | 59.12 | Scale<br>1:25 |
| Client: | Legal and General Strategic Land | | Dates: | 11/09/2023 | Logged By<br>JG |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | | | | Firm dark grey with reddish brown mottling sandy CLAY.<br>WEALD CLAY |
| | | 0.30 | ES | | | | | |
| | | 0.50 | D | | | | | |
| | | 0.75 | PP | 2.0kg/cm2 | | | | |
| | | 1.00 | D | | 0.95 | 58.17 | | Very stiff light grey mottled orange brown mottled red friable finely laminated sandy gravelly CLAY. Gravel is weak mudstone.<br>WEALD CLAY |
| | | 1.30 | ES | | | | | |
| | | 1.30 | PP | 4.0kg/cm2 | | | | |
| | | 1.50 | D | | 1.50 | 57.62 | | End of Borehole at 1.50m |
| | | 1.50 | SPT | Refusal (15,31/0 for 0mm) | | | | |

1
2
3
4
5

| Dynamic Sampling Run Details | | | Water Strike Details (mbgl) | | Remarks |
|---|---|---|---|---|---|
| Depth Top | Depth Base | Diameter | Depth Strike | Rose To | |
| | | | | | |

AGS

Status
PRELIM

Geo-Environmental
Unit 7, Danworth Farm
Hurstpierpoint
BN6 9GL
www.gesl.net

# Borehole Log

Borehole No. **WS04**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | North Horsham Community Centre | Project No. GE21959 | Co-ords: | 518851E - 133802N | Hole Type WLS |
| Location: | Horsham | | Level: | 58.75 | Scale 1:25 |
| Client: | Legal and General Strategic Land | | Dates: | 11/09/2023 | Logged By JG |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.10 | 58.65 | | Greyish brown silty SAND. Matted rootlets at surface. TOPSOIL |
| | | 0.40 | ES | | | | | Stiff light grey with orange discolouration CLAY. WEALD CLAY |
| | | 0.50 | D | | | | | |
| | | 0.75 | PP | 4.0kg/cm2 | | | | |
| | | 1.00 | D | | 1.00 | 57.75 | | |
| | | 1.00 | PP | 3.0kg/cm2 | | | | Firm becoming stiff reddish brown friable finely laminated CLAY weak mudstone laminations. WEALD CLAY |
| | | 1.20 | ES | | | | | |
| | | 1.25 | PP | 4.0kg/cm2 | | | | |
| | | 1.50 | D | | 1.50 | 57.25 | | |
| | | 1.50 | SPT | Refusal (19,38/0 for 0mm) | | | | End of Borehole at 1.50m |

1 2 3 4 5

| Dynamic Sampling Run Details | | | Water Strike Details (mbgl) | | Remarks |
|---|---|---|---|---|---|
| Depth Top | Depth Base | Diameter | Depth Strike | Rose To | |
| | | | | | |

AGS

Status PRELIM

| Geo-Environmental | Unit 7, Danworth Farm<br>Hurstpierpoint<br>BN6 9GL<br>www.gesl.net | **Borehole Log** | Borehole No.<br>**WS05**<br>Sheet 1 of 1 |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | North Horsham Community Centre | Project No.<br>GE21959 | Co-ords: | 518862E - 133789N | Hole Type<br>WLS |
| Location: | Horsham | | Level: | 59.20 | Scale<br>1:25 |
| Client: | Legal and General Strategic Land | | Dates: | 11/09/2023 | Logged By<br>JG |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | | | | Light with reddish brown mottling friable sandy gravelly CLAY. Gravel is weak mudstone.<br>WEALD CLAY |
| | | 0.30 | ES | | | | | |
| | | 0.50 | D | | | | | |
| | | 0.70 | PP | 3.0kg/cm2 | 0.70 | 58.50 | | Firm light grey with orangish and reddish brown mottling CLAY with weak mudstone laminations.<br>WEALD CLAY |
| | | 1.00 | D | | | | | |
| | | 1.00 | PP | 2.5kg/cm2 | 1.10 | 58.10 | | Reddish brown with light grey mottling friable laminated CLAY with weak mudstone laminations.<br>WEALD CLAY |
| | | 1.40 | ES | | | | | |
| | | 1.50 | D | | 1.50 | 57.70 | | *SPT spoon sample recovered as light greyish brown weak mudstone.* |
| | | 1.50 | SPT | Refusal (20,42/0 for 0mm) | | | | End of Borehole at 1.50m |

| Dynamic Sampling Run Details | | | Water Strike Details (mbgl) | | **Remarks** |
|---|---|---|---|---|---|
| Depth Top | Depth Base | Diameter | Depth Strike | Rose To | |
| | | | | | |

AGS

Status
PRELIM

# APPENDIX B

# GROUNDGAS & GROUNDWATER MONITORING

Geo-Environmental

## Project Details

| | |
|---|---|
| AGS Attachment Field | No data |
| Project Name | North Horsham Community Centre |
| Location | Horsham |
| Project No. | GE21959 |
| Client | Legal and General Strategic Land |
| Date | 04/10/2023 |
| Weather | Overcast/Sunny |
| Monitoring Visit No. | 2 |
| Engineer | |
| James Gooding | james.gooding@gesl.net |
| Equipment Used | [ ] GFM 430<br>[ ] GA2000<br>[X] GA5000<br>[ ] Tiger 1<br>[X] Tiger 2<br>[ ] Tiger 3<br>[ ] Tiger 4<br>[X] Dipmeter |
| Stability Parameters for Water Sampling Required (DO, pH, Temp, Cond) | [ ] Yes<br>[ ] No |
| Thames Water Project | No |

**Monitoring Results**

Results

| | |
|---|---|
| Exploratory Hole | WS01 |
| Date & Time | 04/10/2023, 11:57:48 |
| Atmospheric Pressure (mb) | 1022 |

| | |
|---|---|
| Steady Flow (l/hr) | 0 |
| VOC (ppm) | 107.1 |
| CO (ppm) | |
| | If the period of gas monitoring is extended beyond 180 seconds please record gas concentrations at 30 second intervals. |

Gas Concentrations

| *Time (s)* | *Methane (%)* | *Carbon dioxide (%)* | *Oxygen (%)* | *Carbon Monoxide (ppm)* | *Hydrogen Sulphide (ppm)* | *CH4 GSV/Qhgs* | *CO2 GSV/Qhgs* | *CH4 (BS8485 & C665)* | *CO2 (BS8485 & C665)* | *CS Lim. Value Check* | *CS Conc. Check* | *CH4 GSV (NHBC)* | *CH4 Conc. (NHBC)* | *CO2 GSV (NHBC)* | *CO2 Conc. (NHBC)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.1 | 0.1 | 20.9 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 10 | 0.1 | 5.2 | 20.0 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 20 | 0.1 | 6.4 | 17.3 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 30 | 0.1 | 7.6 | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 60 | 0.1 | 8.1 | 10.9 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 90 | 0.1 | 7.3 | 11.6 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 120 | 0.1 | 6.6 | 12.1 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 180 | 0.1 | 6.1 | 12.7 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |

| | |
|---|---|
| Water Level (mbgl) | 1.97 |

Geo-Environmental

## Project Details

| | |
|---|---|
| AGS Attachment Field | No data |
| Project Name | North Horsham Community Centre |
| Location | Horsham |
| Project No. | GE21959 |
| Client | Legal and General Strategic Land |
| Date | 04/10/2023 |
| Weather | Overcast Sunny |
| Monitoring Visit No. | 2 |
| Engineer | |
| James Gooding | james.gooding@gesl.net |
| Equipment Used | [ ] GFM 430<br>[ ] GA2000<br>[X] GA5000<br>[ ] Tiger 1<br>[X] Tiger 2<br>[ ] Tiger 3<br>[ ] Tiger 4<br>[X] Dipmeter |
| Stability Parameters for Water Sampling Required (DO, pH, Temp, Cond) | [ ] Yes<br>[ ] No |
| Thames Water Project | No |

**Monitoring Results**

Results

| | |
|---|---|
| Exploratory Hole | WS04 |
| Date & Time | 04/10/2023, 12:21:44 |
| Atmospheric Pressure (mb) | 1016 |

| | |
|---|---|
| Steady Flow (l/hr) | 0 |
| VOC (ppm) | 10.5 |
| CO (ppm) | |
| | If the period of gas monitoring is extended beyond 180 seconds please record gas concentrations at 30 second intervals. |

Gas Concentrations

| *Time (s)* | *Methane (%)* | *Carbon dioxide (%)* | *Oxygen (%)* | *Carbon Monoxide (ppm)* | *Hydrogen Sulphide (ppm)* | *CH4 GSV/Qhgs* | *CO2 GSV/Qhgs* | *CH4 (BS8485 & C665)* | *CO2 (BS8485 & C665)* | *CS Lim. Value Check* | *CS Conc. Check* | *CH4 GSV (NHBC)* | *CH4 Conc. (NHBC)* | *CO2 GSV (NHBC)* | *CO2 Conc. (NHBC)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.0 | 0.1 | 20.4 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 10 | 0.1 | 7.2 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 20 | 0.1 | 7.3 | 2.0 | 0.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 30 | 0.1 | 7.4 | 1.3 | 1.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 60 | 0.1 | 7.4 | 0.7 | 1.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 90 | 0.1 | 7.4 | 0.6 | 1.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 120 | 0.1 | 7.4 | 0.6 | 1.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 180 | 0.1 | 7.4 | 0.6 | 1.0 | 0.0 | 0.0 | 0.0 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |

| | |
|---|---|
| Water Level (mbgl) | 1.52 |

Geo-Environmental

## Project Details

| | |
|---|---|
| AGS Attachment Field | No data |
| Project Name | North Horsham Community Centre |
| Location | Horsham |
| Project No. | GE21959 |
| Client | Legal and General Strategic Land |
| Date | 10/10/2023 |
| Weather | Sunny |
| Monitoring Visit No. | 2 |
| Engineer | |
| James Gooding | james.gooding@gesl.net |
| Equipment Used | [ ] GFM 430<br>[ ] GA2000<br>[X] GA5000<br>[ ] Tiger 1<br>[ ] Tiger 2<br>[ ] Tiger 3<br>[ ] Tiger 4<br>[X] Dipmeter |
| Stability Parameters for Water Sampling Required (DO, pH, Temp, Cond) | [ ] Yes<br>[X] No |
| Thames Water Project | No |

**Monitoring Results**

Results

| | |
|---|---|
| Exploratory Hole | WS01 |
| Date & Time | 10/10/2023, 09:24:28 |
| Atmospheric Pressure (mb) | 1013 |

| | |
|---|---|
| Steady Flow (l/hr) | 0.2 |
| | If the period of gas monitoring is extended beyond 180 seconds please record gas concentrations at 30 second intervals. |

Gas Concentrations

| *Time (s)* | *Methane (%)* | *Carbon dioxide (%)* | *Oxygen (%)* | *CH4 GSV/Qhgs* | *CO2 GSV/Qhgs* | *CH4 (BS8485 & C665)* | *CO2 (BS8485 & C665)* | *CS Lim. Value Check* | *CS Conc. Check* | *CH4 GSV (NHBC)* | *CH4 Conc. (NHBC)* | *CO2 GSV (NHBC)* | *CO2 Conc. (NHBC)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.1 | 0.1 | 21.1 | 0.0002 | 0.0002 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 10 | 0.1 | 8.8 | 13.2 | 0.0002 | 0.0176 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 20 | 0.1 | 9.0 | 10.3 | 0.0002 | 0.018 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 30 | 0.1 | 9.2 | 10.1 | 0.0002 | 0.0184 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 60 | 0.1 | 9.2 | 10.0 | 0.0002 | 0.0184 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 90 | 0.1 | 8.8 | 10.4 | 0.0002 | 0.0176 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 120 | 0.1 | 8.3 | 11.0 | 0.0002 | 0.0166 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 180 | 0.1 | 7.2 | 12.1 | 0.0002 | 0.0144 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 210 | 0.1 | 6.6 | 12.7 | 0.0002 | 0.0132 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 240 | 0.1 | 5.5 | 14.1 | 0.0002 | 0.011 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 270 | 0.0 | 3.5 | 16.9 | 0.0 | 0.007 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 300 | 0.0 | 2.8 | 18.1 | 0.0 | 0.0056 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 330 | 0.0 | 2.5 | 18.8 | 0.0 | 0.005 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 360 | 0.0 | 2.0 | 19.4 | 0.0 | 0.004 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 420 | 0.0 | 1.7 | 19.8 | 0.0 | 0.0034 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |

| | |
|---|---|
| Water Level (mbgl) | 1.97 |

| | |
|---|---|
| Exploratory Hole | WS04 |
| Date & Time | 10/10/2023, 09:46:44 |
| Atmospheric Pressure (mb) | 1013 |
| Steady Flow (l/hr) | 0.1 |
| | If the period of gas monitoring is extended beyond 180 seconds please record gas concentrations at 30 second intervals. |

Gas Concentrations

| *Time (s)* | *Methane (%)* | *Carbon dioxide (%)* | *Oxygen (%)* | *CH4 GSV/Qhgs* | *CO2 GSV/Qhgs* | *CH4 (BS8485 & C665)* | *CO2 (BS8485 & C665)* | *CS Lim. Value Check* | *CS Conc. Check* | *CH4 GSV (NHBC)* | *CH4 Conc. (NHBC)* | *CO2 GSV (NHBC)* | *CO2 Conc. (NHBC)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.0 | 0.0 | 20.1 | 0.0 | 0.0 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 10 | 0.0 | 5.5 | 12.3 | 0.0 | 0.0055 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 20 | 0.0 | 6.2 | 6.9 | 0.0 | 0.0062 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 30 | 0.0 | 6.8 | 4.5 | 0.0 | 0.0068 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 60 | 0.0 | 7.6 | 2.8 | 0.0 | 0.0076 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 90 | 0.0 | 7.6 | 2.7 | 0.0 | 0.0076 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 120 | 0.0 | 7.6 | 2.6 | 0.0 | 0.0076 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 180 | 0.0 | 7.6 | 2.7 | 0.0 | 0.0076 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |

| | |
|---|---|
| Water Level (mbgl) | 1.53 |

Geo-Environmental

## Project Details

| | |
|---|---|
| AGS Attachment Field | No data |
| Project Name | North Horsham Community Centre |
| Location | Horsham |
| Project No. | GE21959 |
| Client | Legal and General Strategic Land |
| Date | 16/10/2023 |
| Weather | Sunny |
| Monitoring Visit No. | 3 |
| Engineer | |
| James Gooding | james.gooding@gesl.net |
| Equipment Used | [ ] GFM 430<br>[ ] GA2000<br>[X] GA5000<br>[ ] Tiger 1<br>[ ] Tiger 2<br>[ ] Tiger 3<br>[ ] Tiger 4<br>[X] Dipmeter |
| Stability Parameters for Water Sampling Required (DO, pH, Temp, Cond) | [ ] Yes<br>[X] No |
| Thames Water Project | No |

**Monitoring Results**

Results

| | |
|---|---|
| Exploratory Hole | WS04 |
| Date & Time | 16/10/2023, 10:46:14 |
| Atmospheric Pressure (mb) | 1015 |

| | |
|---|---|
| Steady Flow (l/hr) | 1.9 |
| | If the period of gas monitoring is extended beyond 180 seconds please record gas concentrations at 30 second intervals. |

Gas Concentrations

| *Time (s)* | *Methane (%)* | *Carbon dioxide (%)* | *Oxygen (%)* | *CH4 GSV/Qhgs* | *CO2 GSV/Qhgs* | *CH4 (BS8485 & C665)* | *CO2 (BS8485 & C665)* | *CS Lim. Value Check* | *CS Conc. Check* | *CH4 GSV (NHBC)* | *CH4 Conc. (NHBC)* | *CO2 GSV (NHBC)* | *CO2 Conc. (NHBC)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.3 | 0.1 | 20.9 | 0.0057 | 0.0019 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 10 | 0.3 | 2.9 | 19.8 | 0.0057 | 0.0551 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 20 | 0.3 | 2.6 | 17.3 | 0.0057 | 0.0494 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 30 | 0.3 | 2.2 | 17.0 | 0.0057 | 0.0418 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 60 | 0.2 | 1.3 | 18.2 | 0.0038 | 0.0247 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 90 | 0.0 | 0.7 | 19.5 | 0.0 | 0.0133 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 120 | 0.0 | 0.3 | 20.1 | 0.0 | 0.0057 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 180 | 0.0 | 0.2 | 20.4 | 0.0 | 0.0038 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |

| | |
|---|---|
| Water Level (mbgl) | 0.5 |
| Exploratory Hole | WS01 |
| Date & Time | 16/10/2023, 10:57:13 |
| Atmospheric Pressure (mb) | 1016 |
| Steady Flow (l/hr) | 0.2 |
| | If the period of gas monitoring is extended beyond 180 seconds please record gas concentrations at 30 second intervals. |

Gas Concentrations

| *Time (s)* | *Methane (%)* | *Carbon dioxide (%)* | *Oxygen (%)* | *CH4 GSV/Qhgs* | *CO2 GSV/Qhgs* | *CH4 (BS8485 & C665)* | *CO2 (BS8485 & C665)* | *CS Lim. Value Check* | *CS Conc. Check* | *CH4 GSV (NHBC)* | *CH4 Conc. (NHBC)* | *CO2 GSV (NHBC)* | *CO2 Conc. (NHBC)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0.0 | 0.1 | 20.2 | 0.0 | 0.0002 | CS1 | CS1 | Pass | Pass | Green | Green | Green | Green |
| 10 | 0.0 | 8.7 | 16.3 | 0.0 | 0.0174 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| | | | | | | | | | CO2>CS1 | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 0.0 | 8.9 | 10.9 | 0.0 | 0.0178 | CS1 | CS1 | Pass | Limit | Green | Green | Green | Amber 1 |
| 30 | 0.0 | 9.2 | 8.1 | 0.0 | 0.0184 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 60 | 0.0 | 10.2 | 6.4 | 0.0 | 0.0204 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 2 |
| 90 | 0.1 | 10.4 | 6.2 | 0.0002 | 0.0208 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 2 |
| 120 | 0.2 | 10.1 | 6.3 | 0.0004 | 0.0202 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 2 |
| 180 | 0.1 | 9.5 | 6.6 | 0.0002 | 0.019 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |
| 210 | 0.1 | 8.8 | 7.0 | 0.0002 | 0.0176 | CS1 | CS1 | Pass | CO2>CS1 Limit | Green | Green | Green | Amber 1 |

Water Level (mbgl) 1.98

# APPENDIX C

# GEOTECHNICAL LABORATORY TESTING

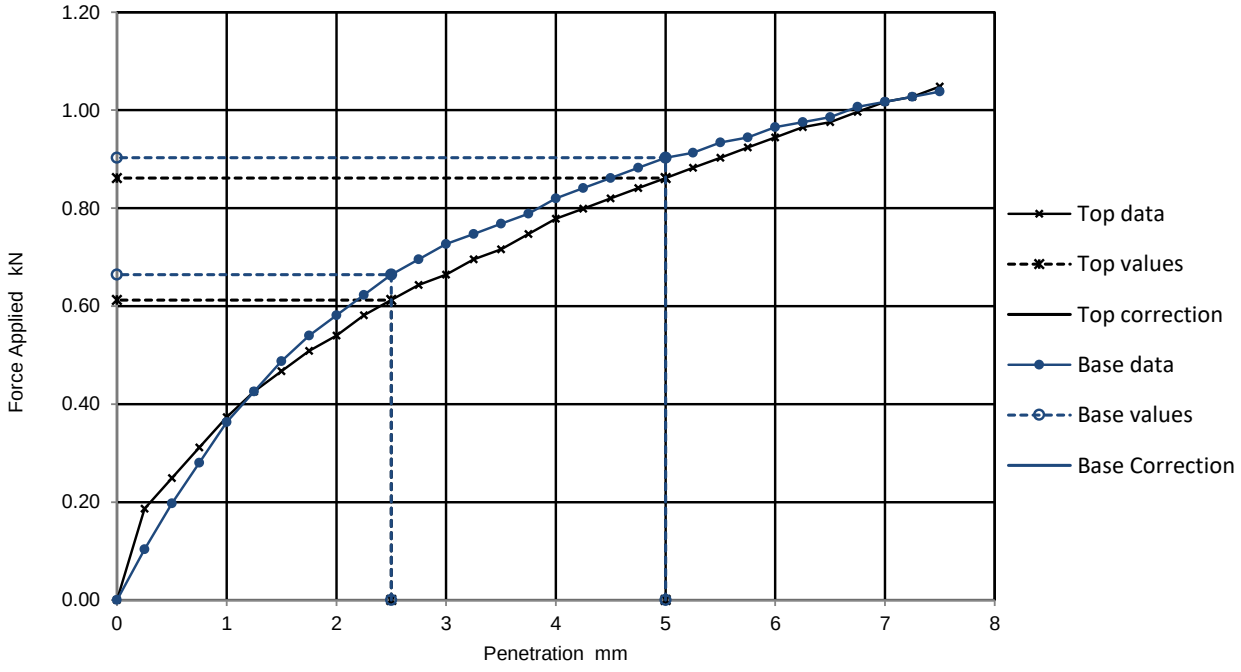
# California Bearing Ratio ( CBR )

| | | | | | |
|---|---|---|---|---|---|
| Job Ref | 34061 | | | | |
| Borehole/Pit No. | HP03 | | | | |
| Site Name | North Horsham Community Centre | | | Sample No. | 1 |
| Project No. | GE21959 | Client | GESL | Depth Top | 0.50 m |
| Soil Description | Light orangish brown slightly mottled grey and occasional light reddish brown silty CLAY | | | Depth Base | - m |
| | | | | Sample Type | B |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| Test Method | BS1377 : Part 4 : 1990, clause 7 | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 21/09/2023 |

**Specimen Preparation**

| | | | | | |
|---|---|---|---|---|---|
| Condition | REMOULDED | | | Soaking details | Not soaked |
| Details | Recompacted with specified standard effort using 2.5kg rammer | | | Period of soaking | - days |
| | | | | Time to surface | - days |
| | | | | Amount of swell recorded | - mm |
| Material retained on 20mm sieve removed | | 0 | % | | |
| Initial Specimen details | Bulk density | 1.87 | Mg/m3 | Surcharge applied | 6 kg |
| | Dry density | 1.41 | Mg/m3 | | 4 kPa |
| | Moisture content | 32 | % | | |

**Force v Penetration Plots**




Results

| | Curve correction applied | CBR Values, % 2.5mm | 5mm | Highest | Average | Moisture Content % |
|---|---|---|---|---|---|---|
| TOP | No | 4.6 | 4.3 | 4.6 | 4.8 | 32 |
| BASE | No | 5.0 | 4.5 | 5.0 | | 32 |

Remarks



**Test Report by K4 SOILS LABORATORY**
**Unit 8 Olds Close Olds Approach**
**Watford Herts WD18 9RU**

**Tel: 01923 711 288**
**Email: James@k4soils.com**

**Checked and Approved**

**Initials:** **J.P**

**Date:** 04/10/2023

# Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results

| Job No. | Project Name | Programme | |
|---|---|---|---|
| 34061 | North Horsham Community Centre | Samples received | 14/09/2023 |
| | | Schedule received | 14/09/2023 |
| Project No. | Client | Project started | 15/09/2023 |
| GE21959 | GESL | Testing Started | 27/09/2023 |

| Hole No. | Sample | | | | Soil Description | NMC | Passing 425µm | LL | PL | PI | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ref | Top m | Base m | Type | | % | % | % | % | % | |
| HP03 | 1 | 0.50 | - | B | Light orangish brown slightly mottled grey and occasional light reddish brown silty CLAY | 35 | 100 | 85 | 36 | 49 | |
| WS01 | 1 | 0.50 | - | D | Orangish brown slightly mottled light grey silty CLAY | 24 | 100 | 61 | 28 | 33 | |
| WS01 | 2 | 1.00 | - | D | Dark orangish brown slightly mottled light grey silty CLAY | 21 | 100 | 64 | 31 | 33 | |
| WS01 | 3 | 1.50 | - | D | Grey weathered brown silty CLAY | 22 | 100 | 76 | 22 | 54 | |
| WS01 | 4 | 2.00 | - | D | Grey and brown laminated silty CLAY | 13 | 100 | 45 | 21 | 24 | |
| WS02 | 1 | 0.50 | - | D | Light orangish brown slightly mottled bluish grey silty CLAY with occasional black flecks | 30 | 100 | 74 | 33 | 41 | |
| WS02 | 2 | 1.00 | - | D | Greyish brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | 12 | 57 | 40 | 21 | 19 | Sample washed to obtain test fraction |
| WS03 | 1 | 0.50 | - | D | Bluish grey mottled orangish brown sitly CLAY | 30 | 100 | 68 | 32 | 36 | |
| WS03 | 2 | 1.00 | - | D | Greyish brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | 12 | 40 | 37 | 23 | 14 | Sample washed to obtain test fraction |
| WS03 | 3 | 1.50 | - | D | Greyish brown slightly sandy slightly gravelly silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | 14 | 78 | 42 | 22 | 20 | |
| WS04 | 1 | 0.50 | - | D | Orangish brown slightly mottled light grey slightly sandy silty CLAY | 19 | 100 | 39 | 23 | 16 | |
| WS04 | 2 | 1.00 | - | D | Brown laminated slightly sandy very silty CLAY | 13 | 100 | 63 | 23 | 40 | |

**Test Methods: BS1377: Part 2: 1990:**
Natural Moisture Content : clause 3.2
Atterberg Limits: clause 4.3 and 5.0
*These results only apply to the items tested*

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**Test Report by K4 SOILS LABORATORY**
**Unit 8 Olds Close Olds Approach**
**Watford Herts WD18 9RU**

**Tel: 01923 711 288**
**Email: James@k4soils.com**

**Checked and Approved**
**Initials** J.P
**Date:** 04/10/2023

2519

Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

# Summary of Natural Moisture Content, Liquid Limit and Plastic Limit Results

| Job No. | Project Name | Programme | |
|---|---|---|---|
| 34061 | North Horsham Community Centre | Samples received | 14/09/2023 |
| | | Schedule received | 14/09/2023 |
| Project No. | Client | Project started | 15/09/2023 |
| GE21959 | GESL | Testing Started | 27/09/2023 |

| Hole No. | Sample | | | | Soil Description | NMC | Passing 425µm | LL | PL | PI | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ref | Top m | Base m | Type | | % | % | % | % | % | |
| WS04 | 3 | 1.50 | - | D | Reddish brown slightly mottled bluish grey silty CLAY | 32 | 100 | 78 | 31 | 47 | |
| WS05 | 1 | 0.50 | - | D | Greyish brown slightly sandy slightly gravelly very silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | 16 | 77 | 46 | 24 | 22 | |
| WS05 | 2 | 1.00 | - | D | Orangish brown slightly mottled light grey silty CLAY | 33 | 100 | 81 | 33 | 48 | |
| WS05 | 3 | 1.50 | - | D | Greyish brown slightly sandy slightly gravelly very silty CLAY (gravel is fmc and angular to sub-angular and tabular weakly to strongly cemented claystone fragments) | 15 | 75 | 39 | 22 | 17 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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**Test Methods: BS1377: Part 2: 1990:**
Natural Moisture Content : clause 3.2
Atterberg Limits: clause 4.3 and 5.0
*These results only apply to the items tested*

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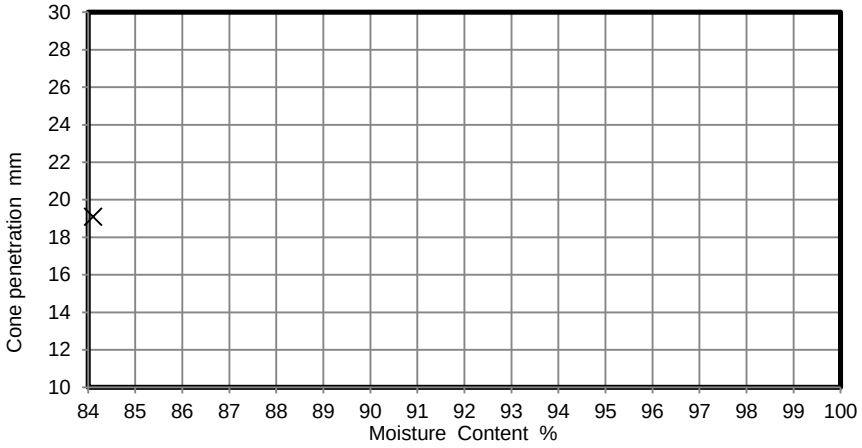
**Date:** 04/10/2023

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Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | HP03 |
| Site Name | North Horsham Community Centre | | | Sample No. | 1 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 0.50 |
| Soil Description | Light orangish brown slightly mottled grey and occasional light reddish brown silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | B |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

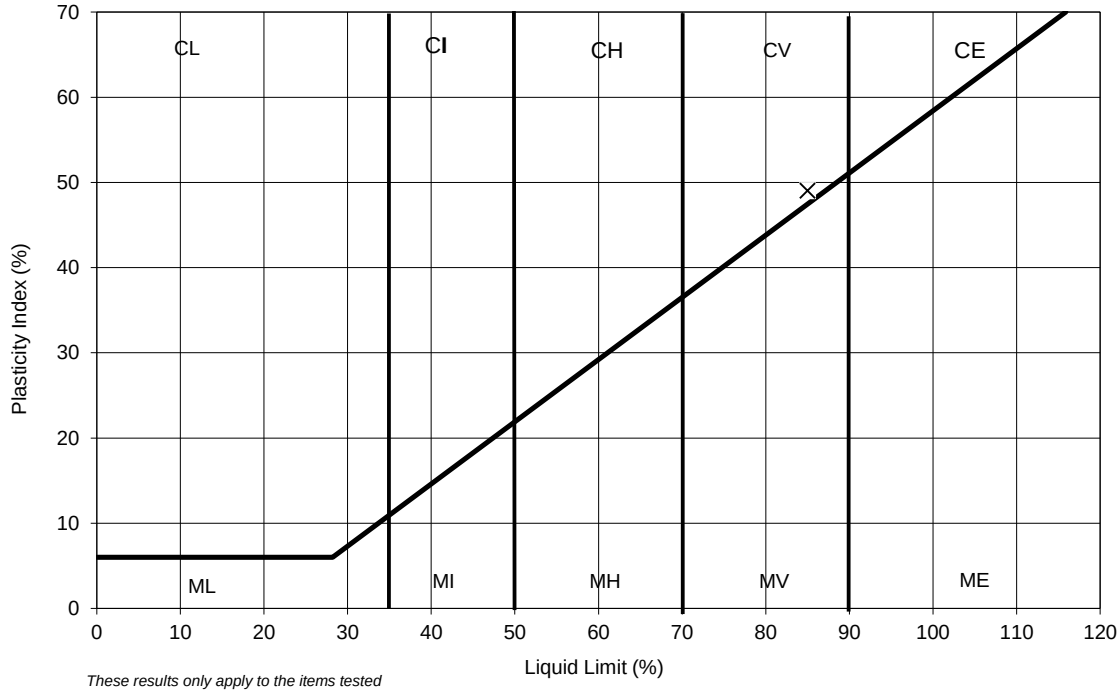



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **35** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **85** | **%** |
| **PLASTIC LIMIT** | **36** | **%** |
| **PLASTICITY INDEX** | **49** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




*These results only apply to the items tested*

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**TEST METHOD**

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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Date: 04/10/2023

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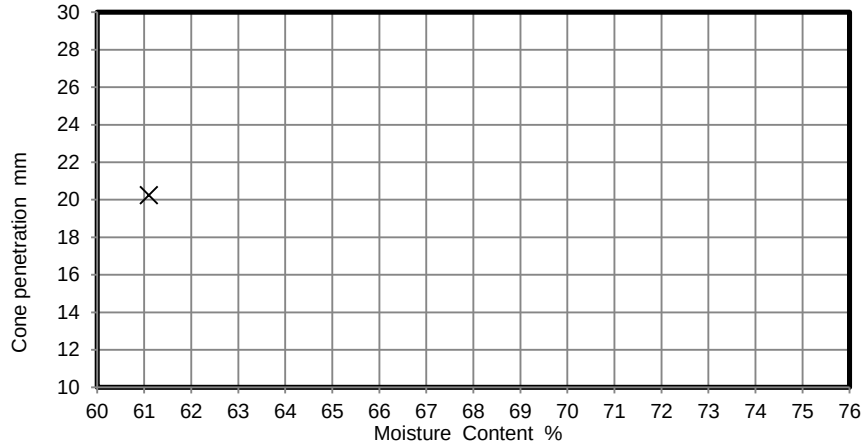
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS01 |
| Site Name | North Horsham Community Centre | | | Sample No. | 1 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 0.50 |
| Soil Description | Orangish brown slightly mottled light grey silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

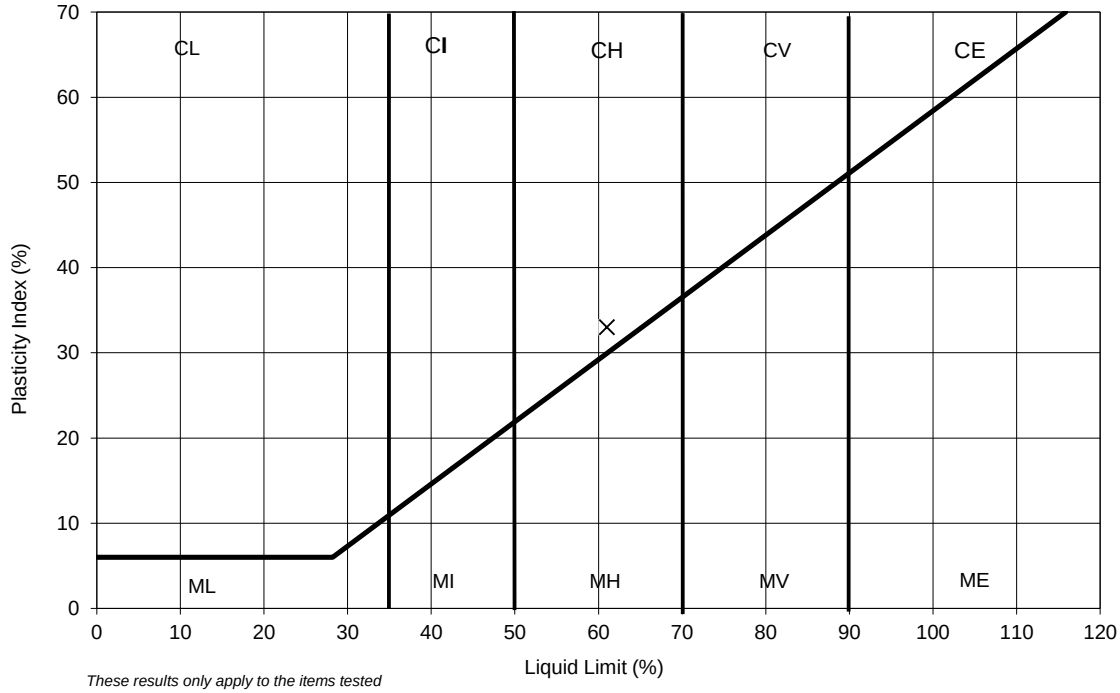



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **24** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **61** | **%** |
| **PLASTIC LIMIT** | **28** | **%** |
| **PLASTICITY INDEX** | **33** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

## PLASTICITY INDEX




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BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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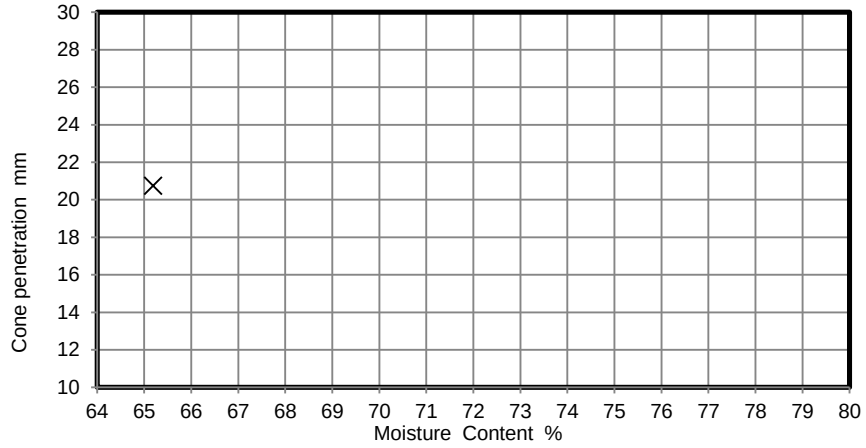
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS01 |
| Site Name | North Horsham Community Centre | | | Sample No. | 2 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.00 |
| Soil Description | Dark orangish brown slightly mottled light grey silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

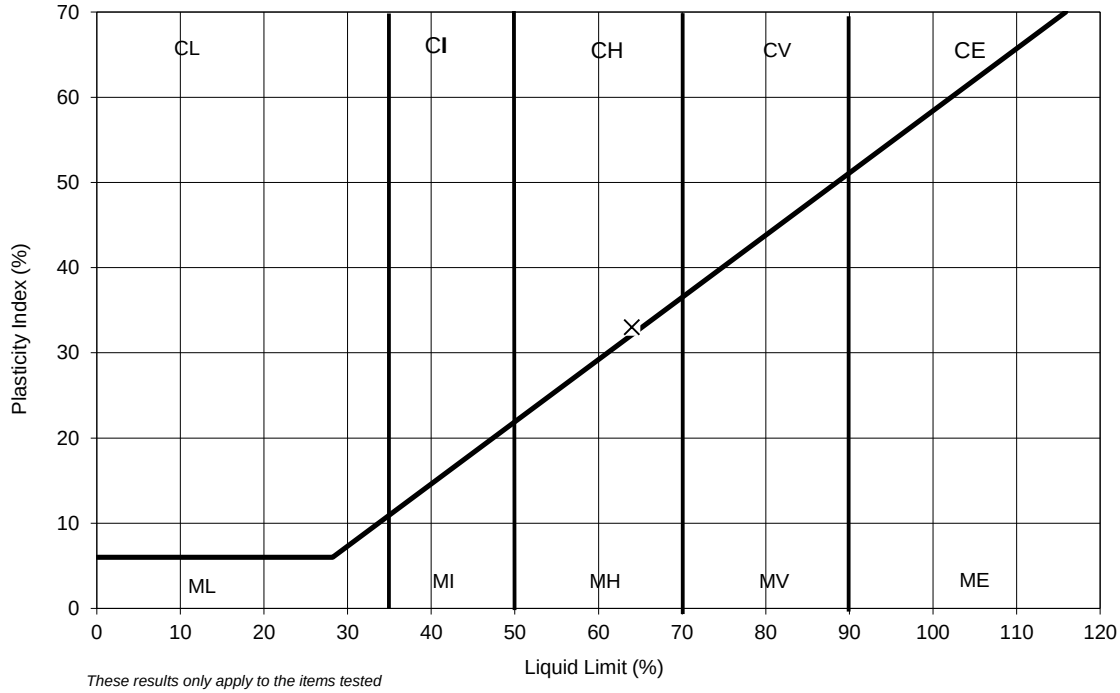



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **21** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **64** | **%** |
| **PLASTIC LIMIT** | **31** | **%** |
| **PLASTICITY INDEX** | **33** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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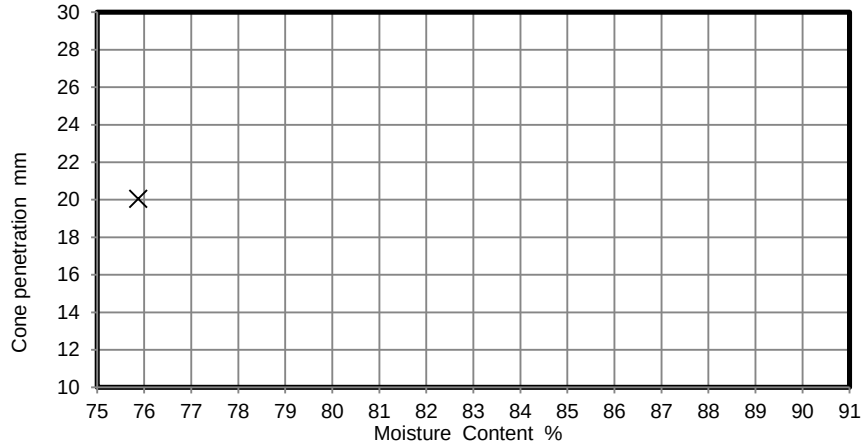
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS01 |
| Site Name | North Horsham Community Centre | | | Sample No. | 3 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.50 |
| Soil Description | Grey weathered brown silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 02/10/2023 |

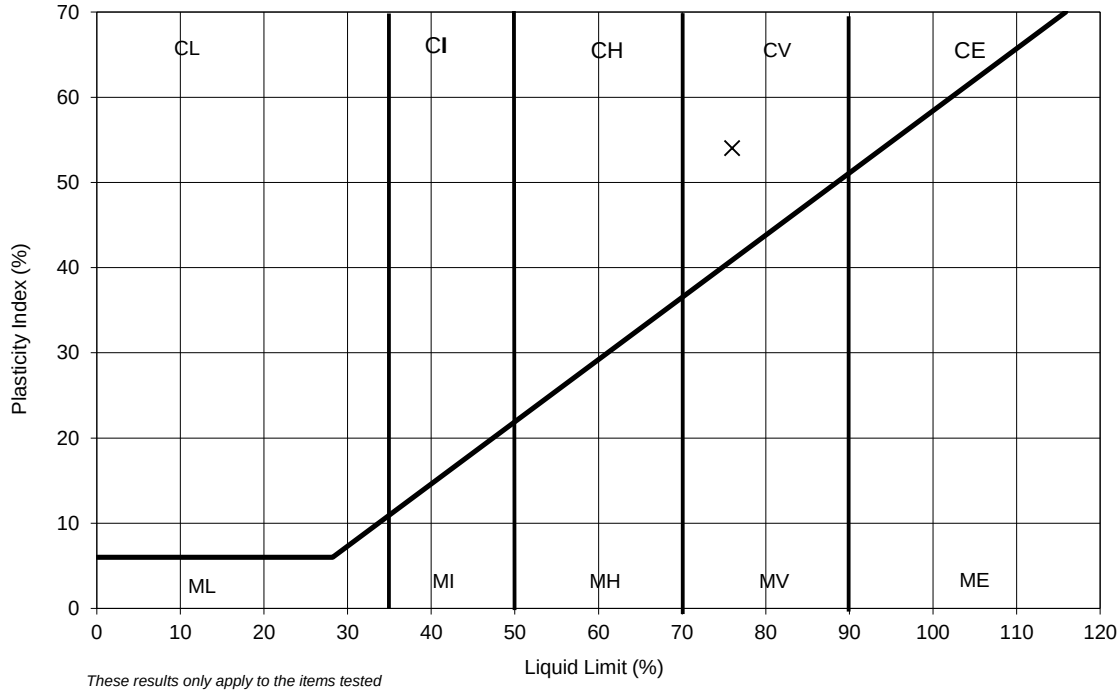



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **22** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **76** | **%** |
| **PLASTIC LIMIT** | **22** | **%** |
| **PLASTICITY INDEX** | **54** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
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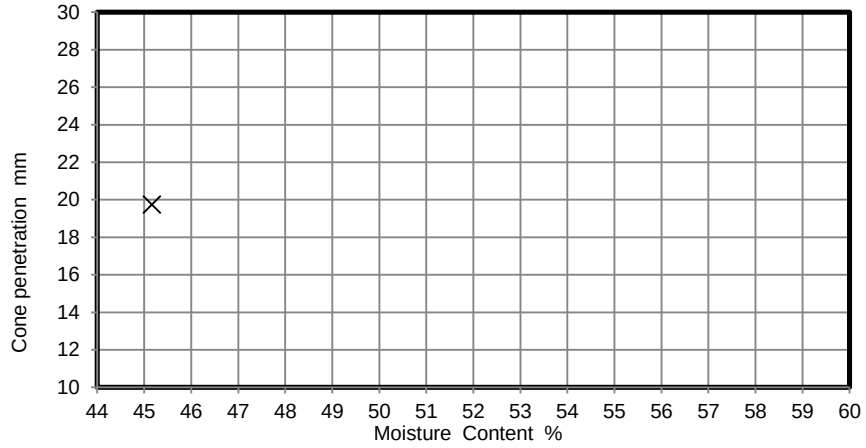
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS01 |
| Site Name | North Horsham Community Centre | | | Sample No. | 4 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 2.00 |
| Soil Description | Grey and brown laminated silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 28/09/2023 |

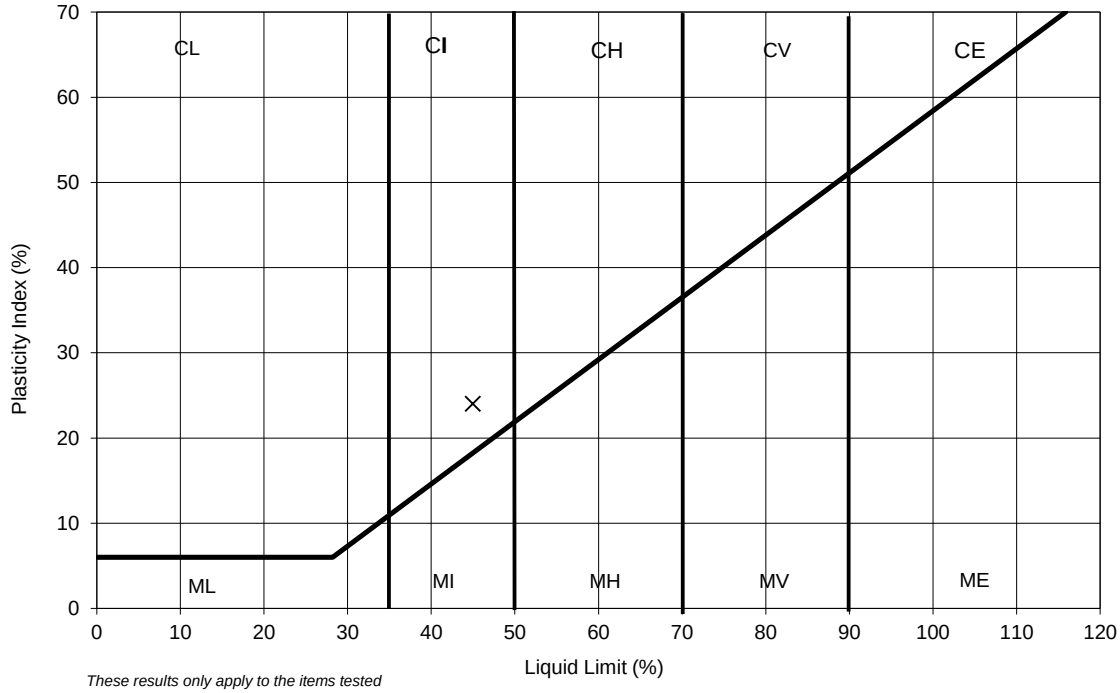



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **13** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **45** | **%** |
| **PLASTIC LIMIT** | **21** | **%** |
| **PLASTICITY INDEX** | **24** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

## PLASTICITY INDEX




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BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
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BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

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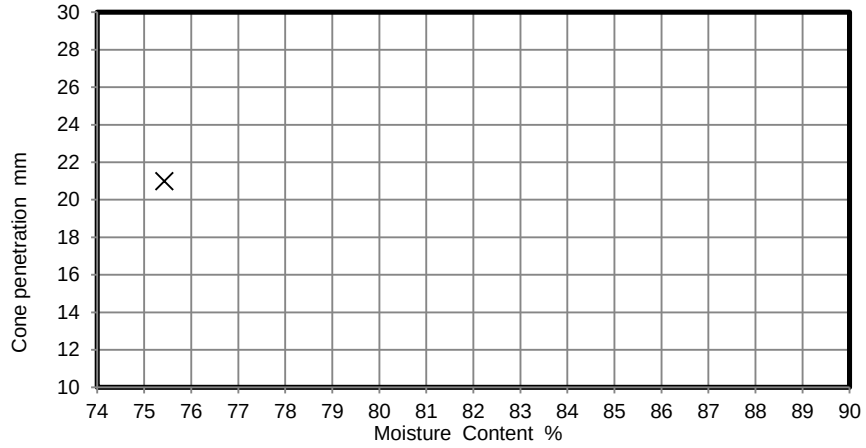
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS02 |
| Site Name | North Horsham Community Centre | | | Sample No. | 1 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 0.50 |
| Soil Description | Light orangish brown slightly mottled bluish grey silty CLAY with occasional black flecks | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

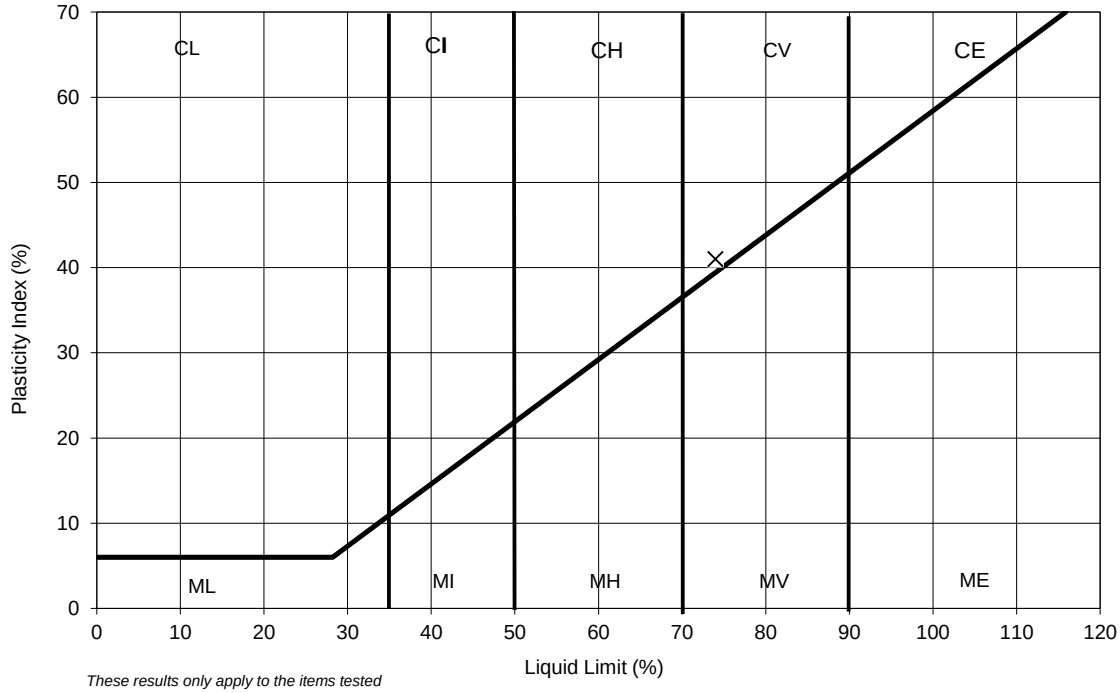



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **30** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **74** | **%** |
| **PLASTIC LIMIT** | **33** | **%** |
| **PLASTICITY INDEX** | **41** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

## PLASTICITY INDEX




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BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
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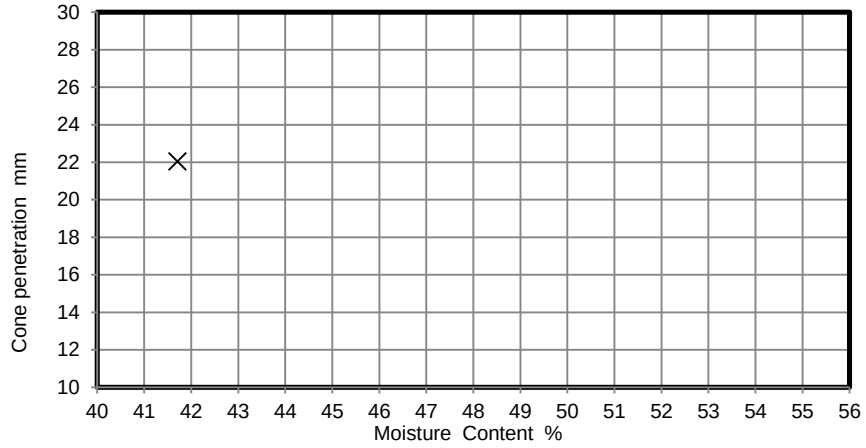
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS02 |
| Site Name | North Horsham Community Centre | | | Sample No. | 2 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.00 |
| Soil Description | Greyish brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 29/09/2023 |



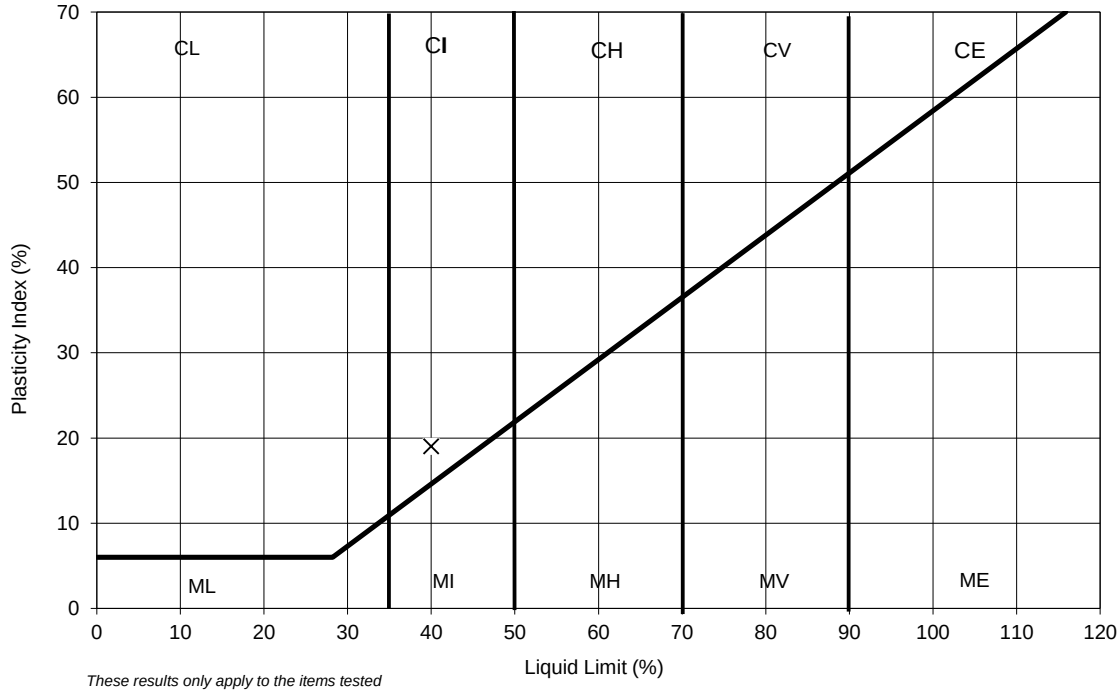

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **12** | **%** |
| **% PASSING 425µm SIEVE** | **57** | **%** |
| **LIQUID LIMIT** | **40** | **%** |
| **PLASTIC LIMIT** | **21** | **%** |
| **PLASTICITY INDEX** | **19** | **%** |

**Remarks**

Sample washed to obtain test fraction

## PLASTICITY INDEX




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**TEST METHOD**

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
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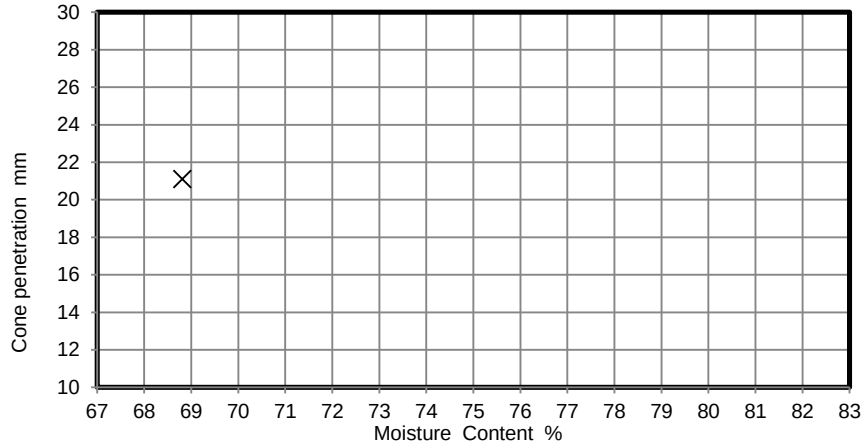
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS03 |
| Site Name | North Horsham Community Centre | | | Sample No. | 1 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 0.50 |
| Soil Description | Bluish grey mottled orangish brown sitly CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

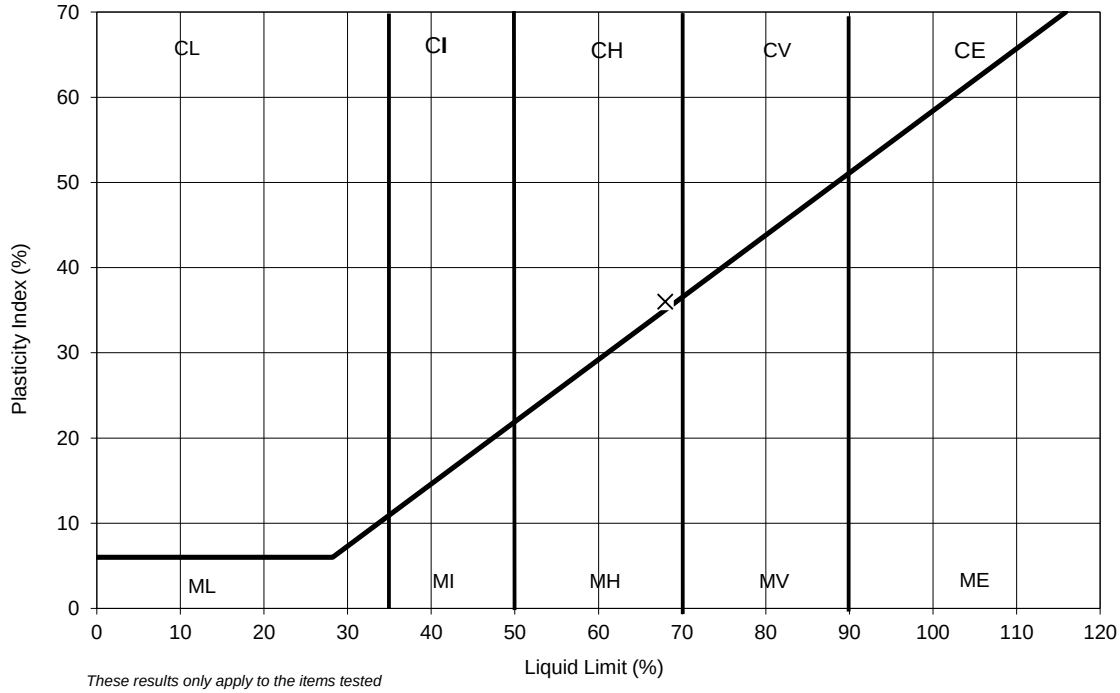



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **30** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **68** | **%** |
| **PLASTIC LIMIT** | **32** | **%** |
| **PLASTICITY INDEX** | **36** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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Initials: J.P
Date: 04/10/2023

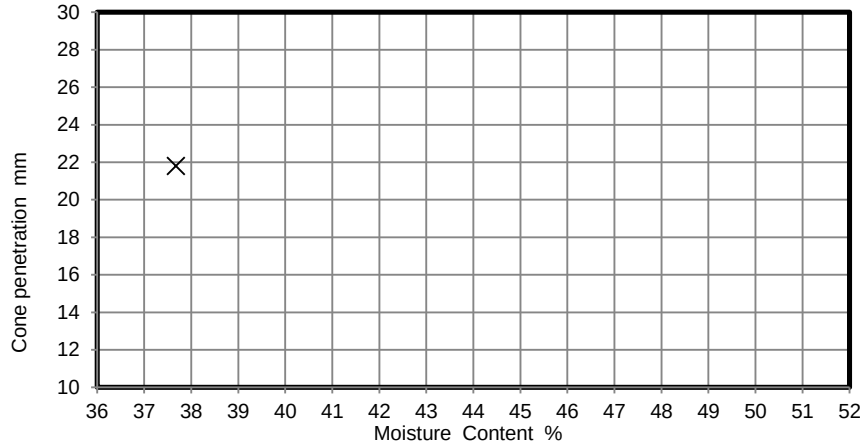
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

2519

*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS03 |
| Site Name | North Horsham Community Centre | | | Sample No. | 2 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.00 |
| Soil Description | Greyish brown slightly sandy gravelly silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 29/09/2023 |



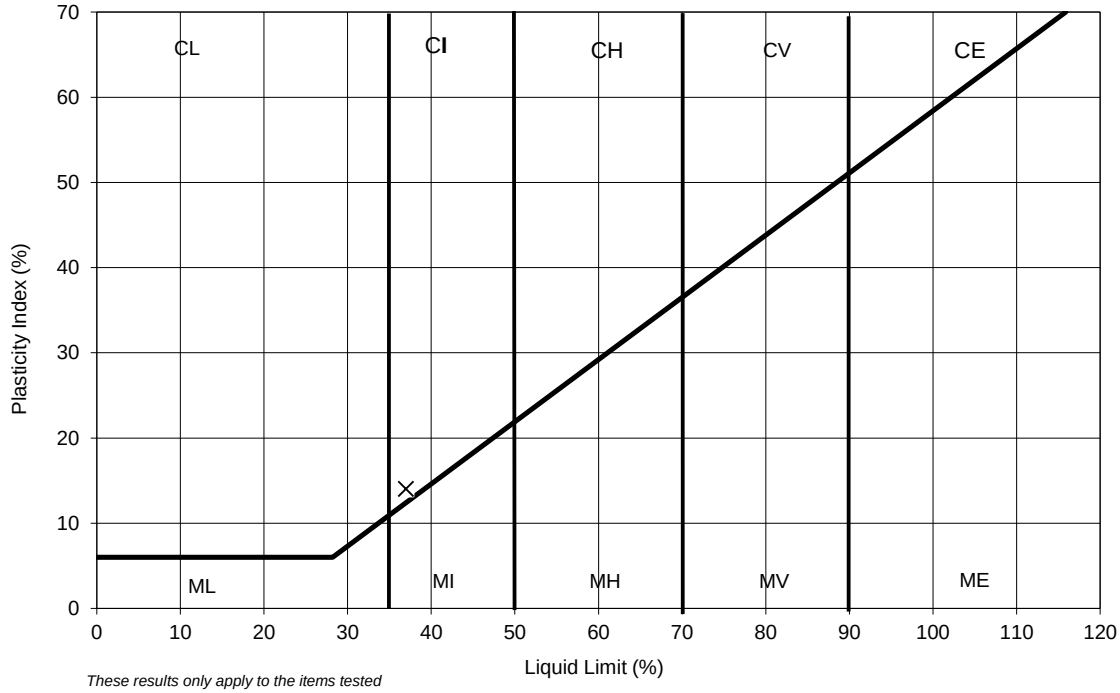

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **12** | **%** |
| **% PASSING 425µm SIEVE** | **40** | **%** |
| **LIQUID LIMIT** | **37** | **%** |
| **PLASTIC LIMIT** | **23** | **%** |
| **PLASTICITY INDEX** | **14** | **%** |

**Remarks**

Sample washed to obtain test fraction

## PLASTICITY INDEX




*These results only apply to the items tested*

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**TEST METHOD**

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

**Checked and Approved**

Initials: J.P
Date: 04/10/2023

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Tel: 01923 711 288 Email: James@k4soils.com

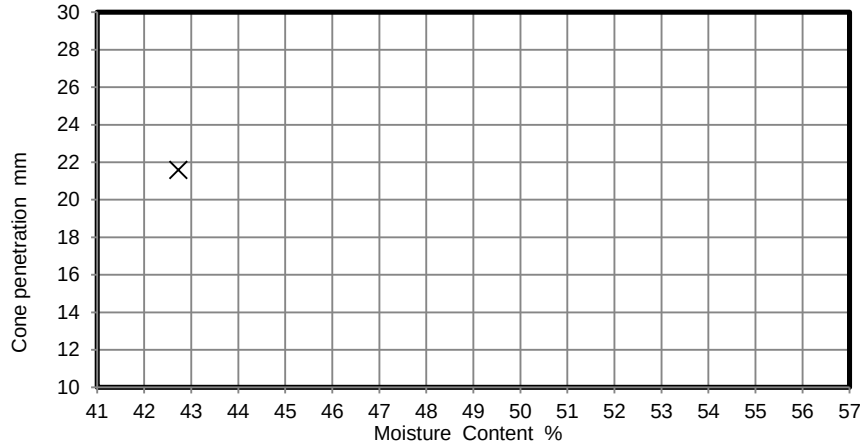
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*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS03 |
| Site Name | North Horsham Community Centre | | | Sample No. | 3 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.50 |
| Soil Description | Greyish brown slightly sandy slightly gravelly silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 29/09/2023 |

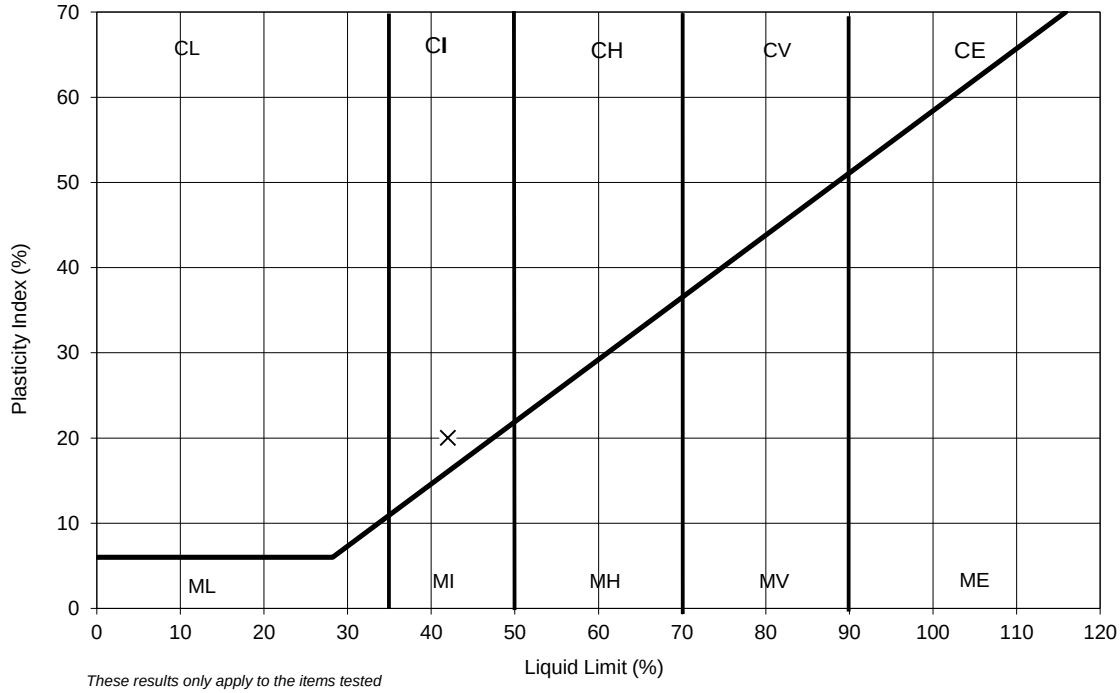



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **14** | **%** |
| **% PASSING 425µm SIEVE** | **78** | **%** |
| **LIQUID LIMIT** | **42** | **%** |
| **PLASTIC LIMIT** | **22** | **%** |
| **PLASTICITY INDEX** | **20** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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**TEST METHOD**

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

**Checked and Approved**

Initials: J.P
Date: 04/10/2023

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Tel: 01923 711 288 Email: James@k4soils.com

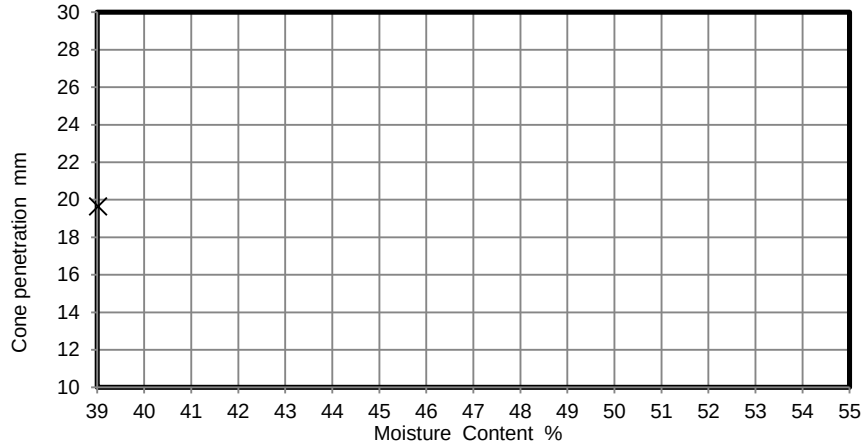
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*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS04 |
| Site Name | North Horsham Community Centre | | | Sample No. | 1 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 0.50 |
| Soil Description | Orangish brown slightly mottled light grey slightly sandy silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

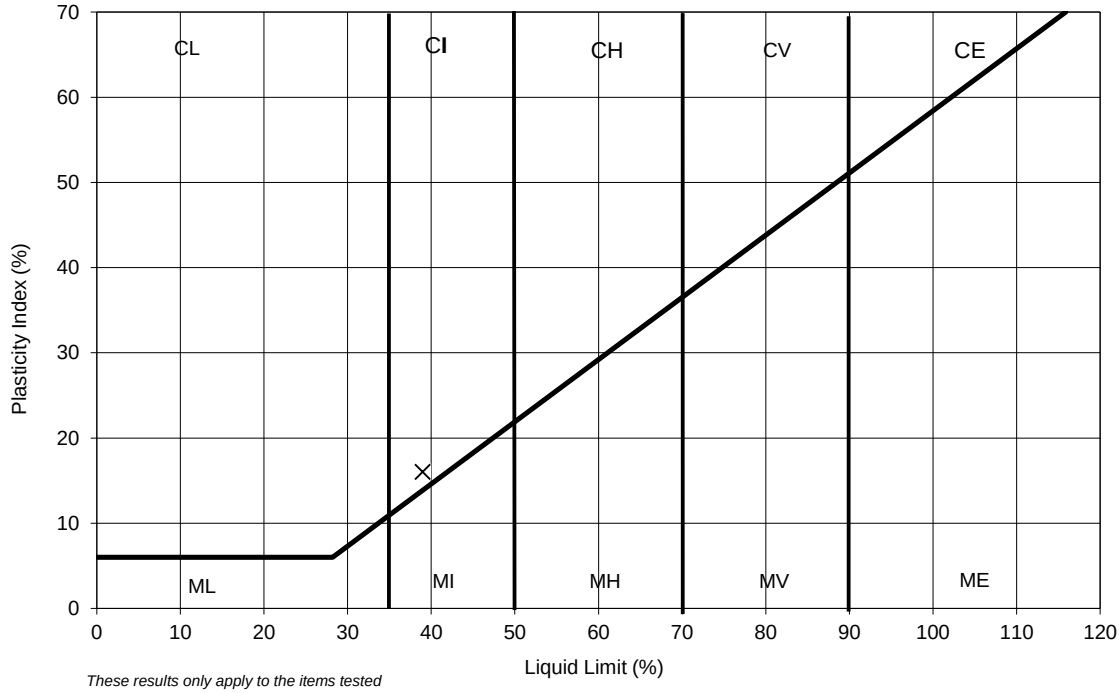



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **19** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **39** | **%** |
| **PLASTIC LIMIT** | **23** | **%** |
| **PLASTICITY INDEX** | **16** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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**TEST METHOD**

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

**Checked and Approved**

Initials: J.P
Date: 04/10/2023

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

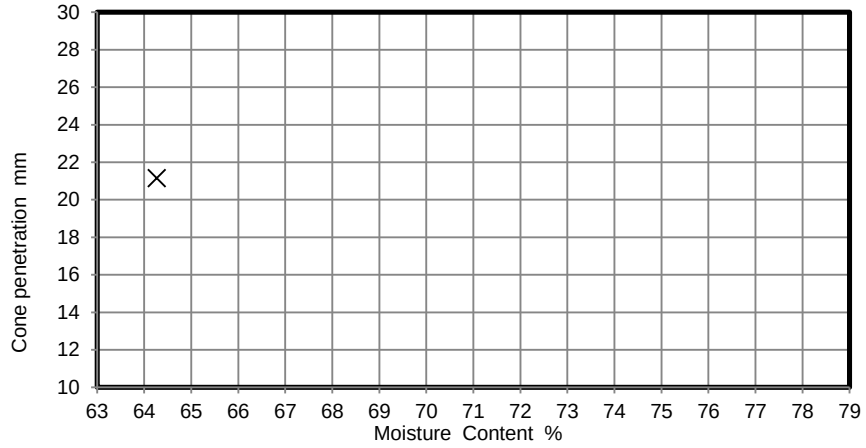
UKAS TESTING

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*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS04 |
| Site Name | North Horsham Community Centre | | | Sample No. | 2 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.00 |
| Soil Description | Brown laminated slightly sandy very silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 02/10/2023 |

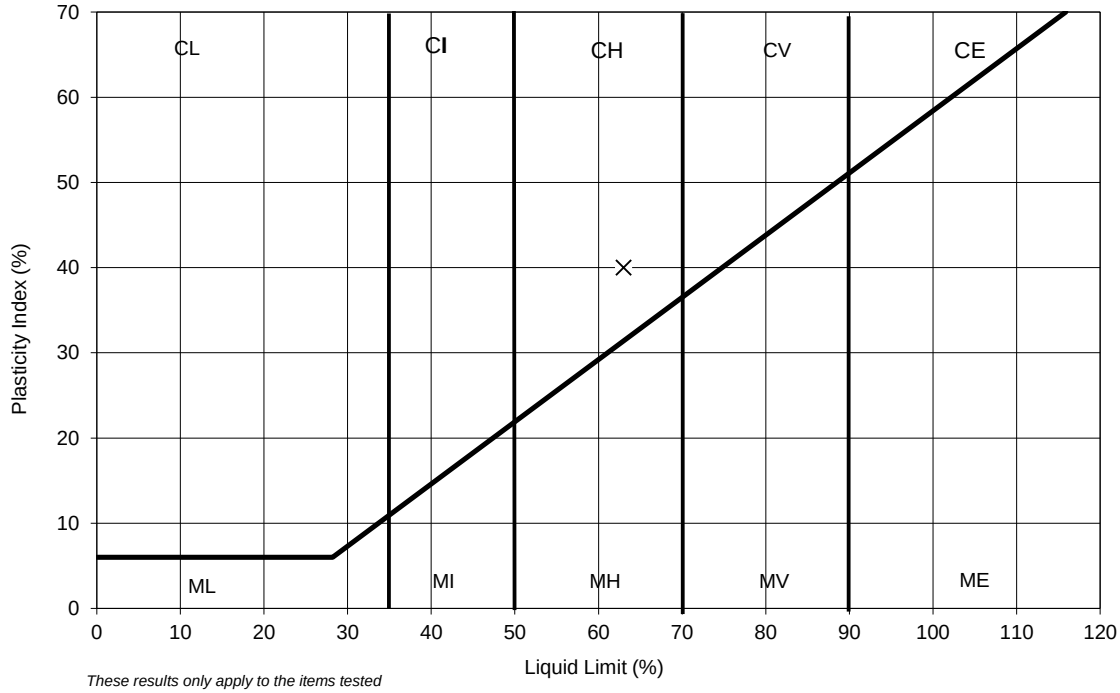



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **13** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **63** | **%** |
| **PLASTIC LIMIT** | **23** | **%** |
| **PLASTICITY INDEX** | **40** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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**TEST METHOD**

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BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

**Checked and Approved**

Initials: J.P
Date: 04/10/2023

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

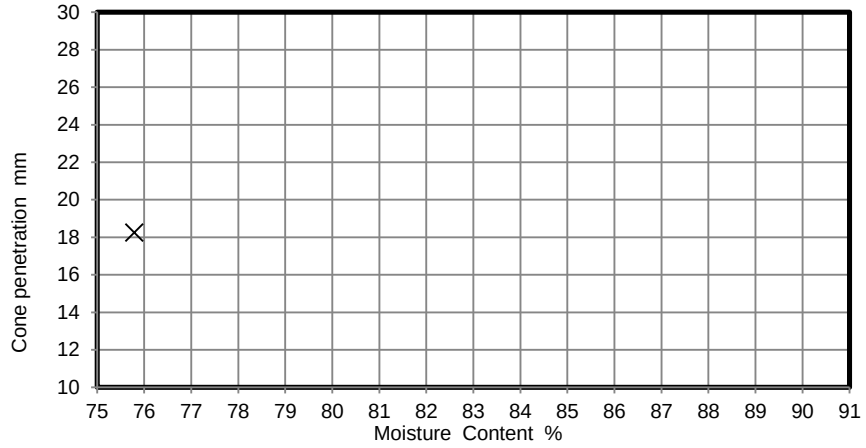
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*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS04 |
| Site Name | North Horsham Community Centre | | | Sample No. | 3 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.50 |
| Soil Description | Reddish brown slightly mottled bluish grey silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

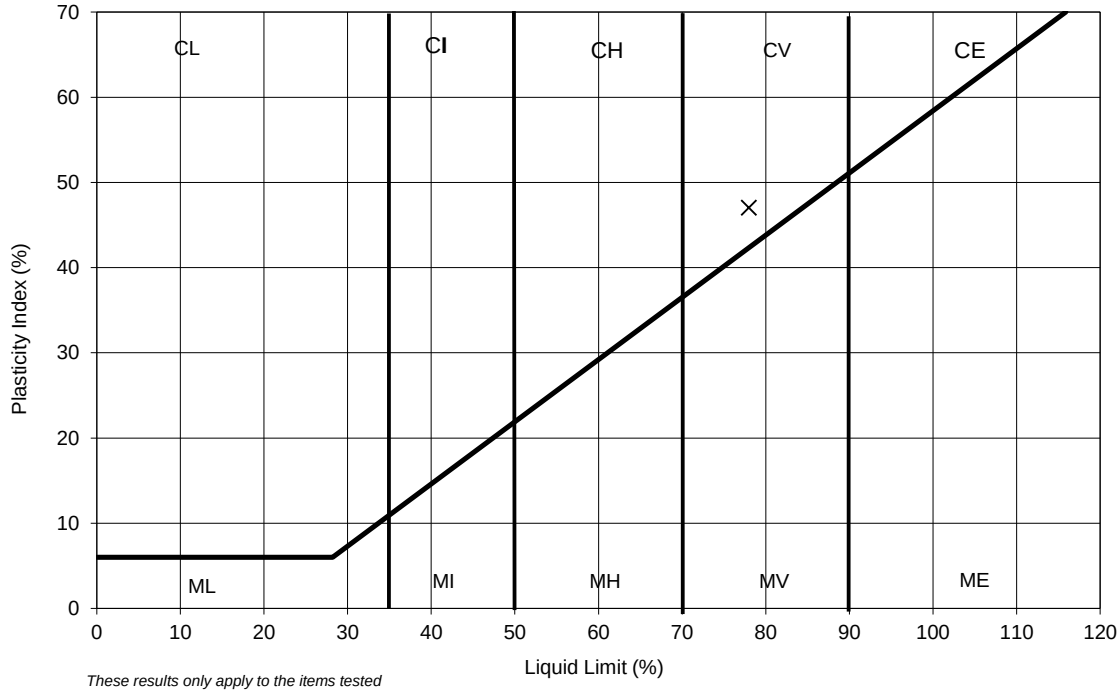



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **32** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **78** | **%** |
| **PLASTIC LIMIT** | **31** | **%** |
| **PLASTICITY INDEX** | **47** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




*These results only apply to the items tested*

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**TEST METHOD**

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
BS1377: Part 2 :Clause 3.2 : 1990:Determination of the moisture content by the oven drying

**Checked and Approved**

Initials: J.P
Date: 04/10/2023

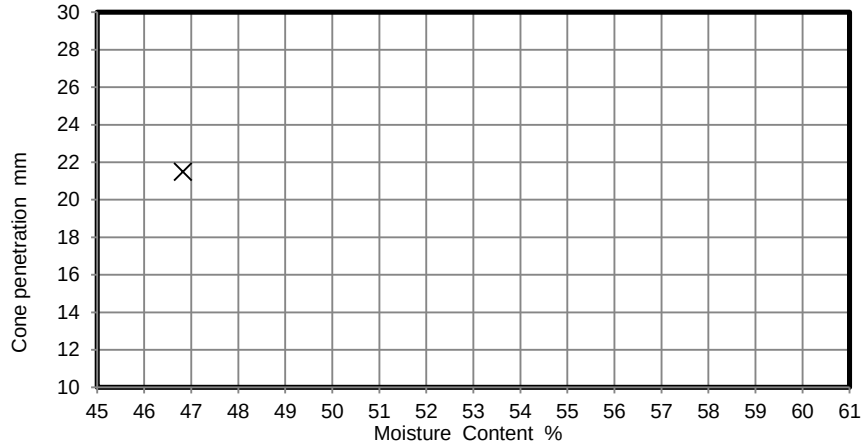
Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU
Tel: 01923 711 288 Email: James@k4soils.com

2519

*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS05 |
| Site Name | North Horsham Community Centre | | | Sample No. | 1 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 0.50 |
| Soil Description | Greyish brown slightly sandy slightly gravelly very silty CLAY (gravel is fmc and sub-angular and tabular weakly to strongly cemented claystone fragments) | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 29/09/2023 |

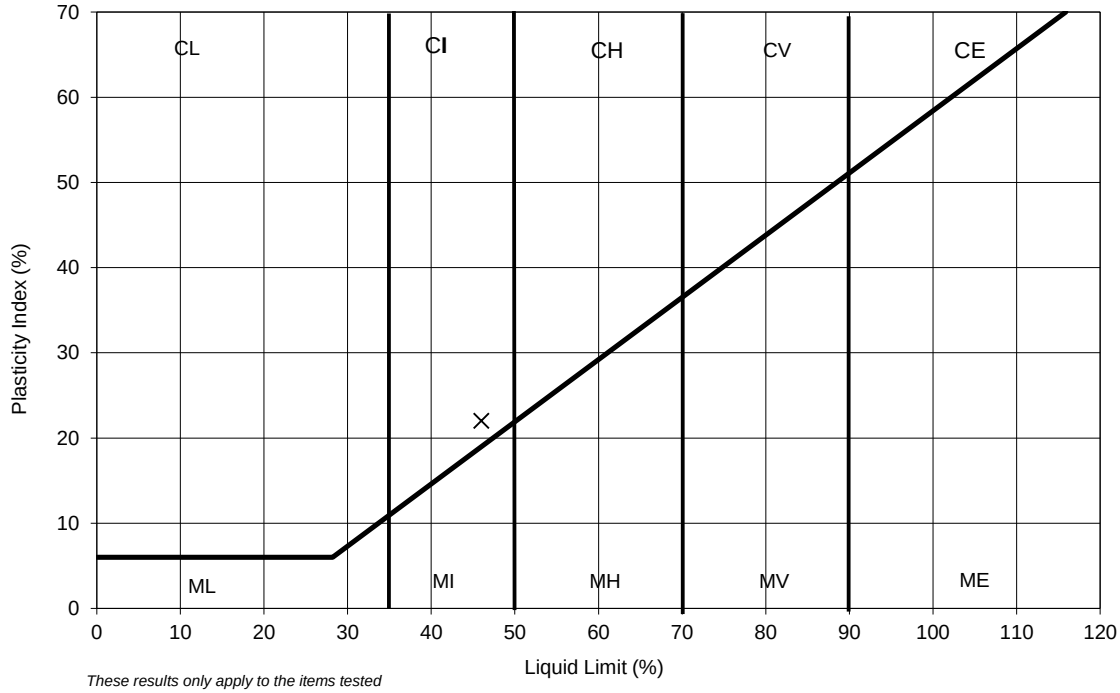



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **16** | **%** |
| **% PASSING 425µm SIEVE** | **77** | **%** |
| **LIQUID LIMIT** | **46** | **%** |
| **PLASTIC LIMIT** | **24** | **%** |
| **PLASTICITY INDEX** | **22** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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**TEST METHOD**

BS1377: Part 2 :Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method
BS1377: Part 2 :Clause 5.0 : 1990: Determination of the plastic limit and plasticity index
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**Checked and Approved**

Initials: J.P
Date: 04/10/2023

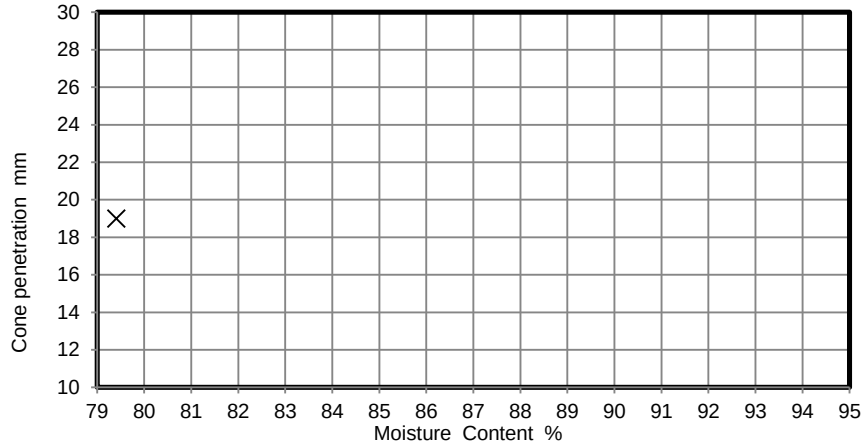
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# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS05 |
| Site Name | North Horsham Community Centre | | | Sample No. | 2 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.00 |
| Soil Description | Orangish brown slightly mottled light grey silty CLAY | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 27/09/2023 |

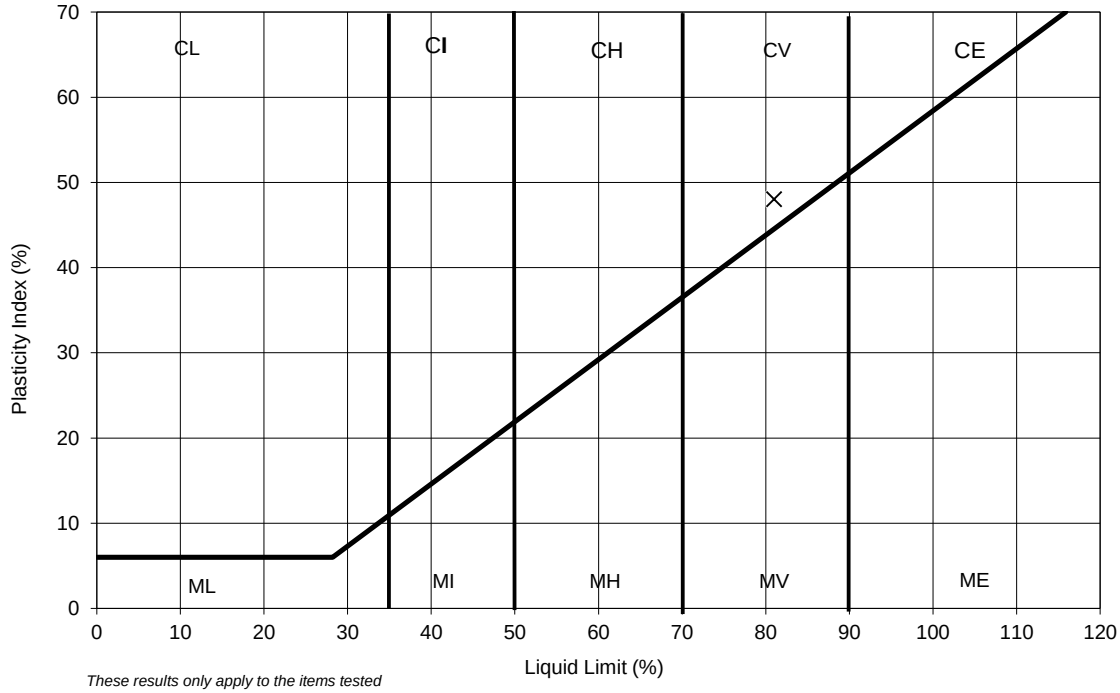



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **33** | **%** |
| **% PASSING 425µm SIEVE** | **100** | **%** |
| **LIQUID LIMIT** | **81** | **%** |
| **PLASTIC LIMIT** | **33** | **%** |
| **PLASTICITY INDEX** | **48** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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**Checked and Approved**

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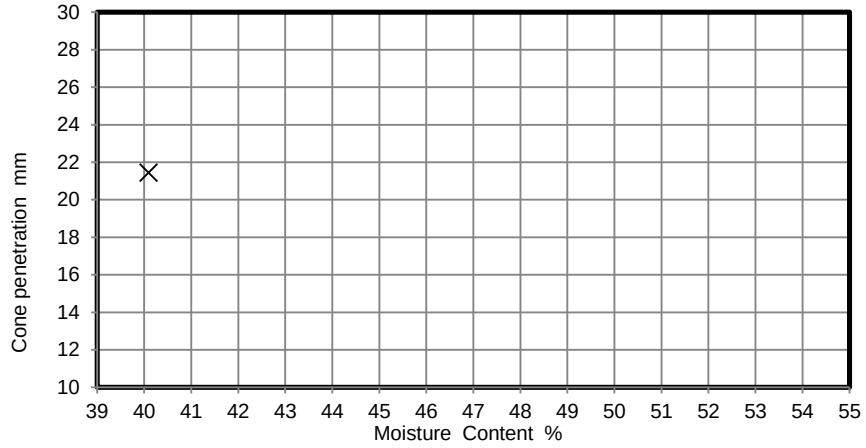
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*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX

| | | | | | |
|---|---|---|---|---|---|
| | | | | Job No. | 34061 |
| | | | | Borehole/Pit No. | WS05 |
| Site Name | North Horsham Community Centre | | | Sample No. | 3 |
| Project No. | GE21959 | Client | GESL | Depth Top m | 1.50 |
| Soil Description | Greyish brown slightly sandy slightly gravelly very silty CLAY (gravel is fmc and angular to sub-angular and tabular weakly to strongly cemented claystone fragments) | | | Depth Base m | - |
| | | | | Sample Type | D |
| | | | | Samples received | 14/09/2023 |
| | | | | Schedules received | 14/09/2023 |
| | | | | Project Started | 15/09/2023 |
| | | | | Date Tested | 29/09/2023 |

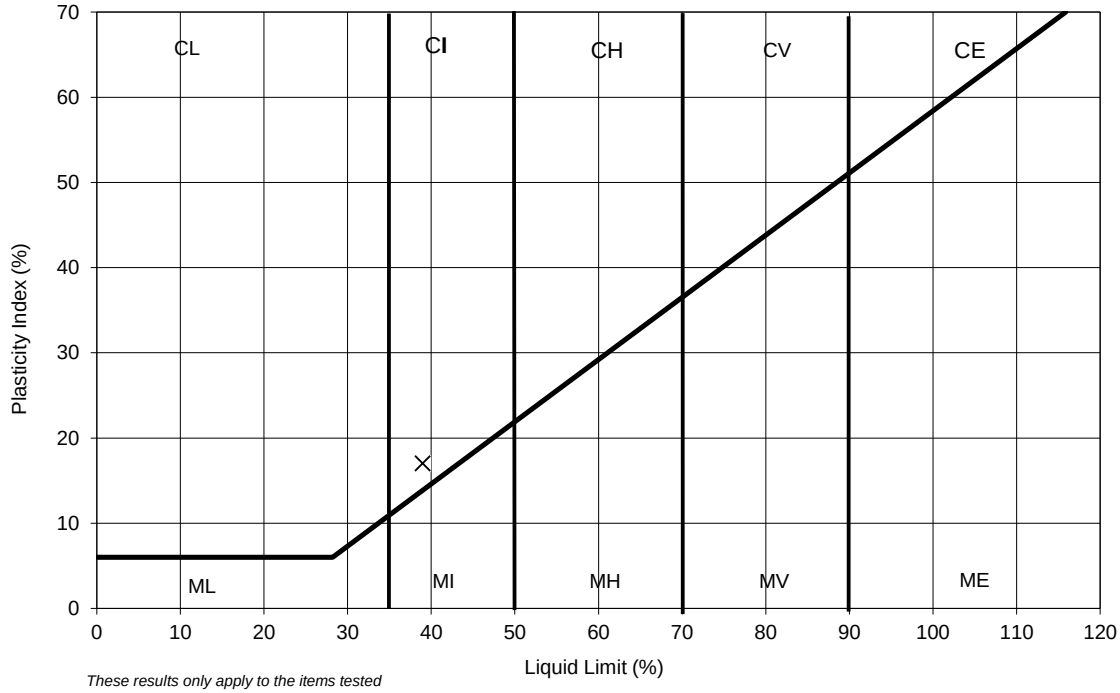



| | | |
|---|---|---|
| **NATURAL MOISTURE CONTENT** | **15** | **%** |
| **% PASSING 425µm SIEVE** | **75** | **%** |
| **LIQUID LIMIT** | **39** | **%** |
| **PLASTIC LIMIT** | **22** | **%** |
| **PLASTICITY INDEX** | **17** | **%** |

**Remarks**

*Factors corresponding to the cone penetration and moisture content range in Table 1 (BS1377:1990 ; Part 2)*

**PLASTICITY INDEX**




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**Checked and Approved**

Initials: J.P
Date: 04/10/2023

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Tel: 01923 711 288 Email: James@k4soils.com

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*Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)*

# APPENDIX D

# CHEMICAL TEST RESULTS

**Unit A2**
**Windmill Road**
**Ponswood Industrial Estate**
**St Leonards on Sea**
**East Sussex**
**TN38 9BY**
Telephone: (01424) 718618

cs@elab-uk.co.uk
info@elab-uk.co.uk

**THE ENVIRONMENTAL LABORATORY LTD**

| | |
|---|---|
| **Analytical Report Number:** | 23-50105 |
| **Issue:** | 1 |
| **Date of Issue:** | 25/09/2023 |
| **Contact:** | James Gooding |
| **Customer Details:** | GESL<br>Unit 7<br>Danworth Farm<br>Hurstpierpoint<br>West SussexBN6 9GL |
| **Quotation No:** | Q22-03510 |
| **Order No:** | Not Supplied |
| **Customer Reference:** | GE21959 |
| **Date Received:** | 14/09/2023 |
| **Date Approved:** | 25/09/2023 |
| **Details:** | North Horsham Community Centre |
| **Approved by:** | |

Tim Reeve, Quality Officer

Any comments, opinions or interpretations expressed herein are outside the scope of UKAS accreditation (Accreditation Number 2683

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# Sample Summary

**Report No.: 23-50105, issue number 1**

| Elab No. | Client's Ref. | Date Sampled | Date Scheduled | Description | Deviations |
|---|---|---|---|---|---|
| 339185 | HP01 0.40 | 11/09/2023 | 14/09/2023 | Silty loam | |
| 339186 | HP02 0.40 | 11/09/2023 | 14/09/2023 | Silty loam | |
| 339187 | HP03 0.40 | 11/09/2023 | 14/09/2023 | | |
| 339188 | WS01 0.10 | 11/09/2023 | 14/09/2023 | | |
| 339189 | WS01 0.30 | 11/09/2023 | 14/09/2023 | Silty loam | |
| 339190 | WS01 1.90 | 11/09/2023 | 14/09/2023 | Sandy clayey loam | |
| 339191 | WS02 0.10 | 11/09/2023 | 14/09/2023 | Silty clayey loam | |
| 339192 | WS02 0.50 | 11/09/2023 | 14/09/2023 | | |
| 339193 | WS02 1.20 | 11/09/2023 | 14/09/2023 | | |
| 339194 | WS03 0.10 | 11/09/2023 | 14/09/2023 | Clayey loam | |
| 339195 | WS03 0.30 | 11/09/2023 | 14/09/2023 | | |
| 339196 | WS03 1.30 | 11/09/2023 | 14/09/2023 | Sandy clayey loam | |
| 339197 | WS04 0.10 | 11/09/2023 | 14/09/2023 | Silty loam | |
| 339198 | WS04 0.40 | 11/09/2023 | 14/09/2023 | | |
| 339199 | WS04 1.20 | 11/09/2023 | 14/09/2023 | | |
| 339200 | WS05 0.10 | 11/09/2023 | 14/09/2023 | Silty loam | |
| 339201 | WS05 0.30 | 11/09/2023 | 14/09/2023 | | |
| 339202 | WS05 1.40 | 11/09/2023 | 14/09/2023 | Clayey loam | |

# Results Summary

**Report No.: 23-50105, issue number 1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | ELAB Reference | 339185 | 339186 | 339189 | 339190 | 339191 |
| | | | | Customer Reference | | | | | |
| | | | | Sample ID | | | | | |
| | | | | Sample Type | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | | Sample Location | HP01 | HP02 | WS01 | WS01 | WS02 |
| | | | | Sample Depth (m) | 0.40 | 0.40 | 0.30 | 1.90 | 0.10 |
| | | | | Sampling Date | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| **Determinand** | **Codes** | **Units** | **LOD** | | | | | | |
| **Soil sample preparation parameters** | | | | | | | | | |
| Moisture Content | N | % | 0.1 | | 12.1 | 12.4 | 12.2 | 12.1 | 17.0 |
| Material removed | N | % | 0.1 | | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Description of Inert material removed | N | | 0 | | None | None | None | None | None |
| **Metals** | | | | | | | | | |
| Antimony | N | mg/kg | 0.5 | | n/t | n/t | 1.4 | n/t | n/t |
| Arsenic | M | mg/kg | 0.5 | | 14.4 | 12.0 | 12.6 | n/t | 26.8 |
| Barium | U | mg/kg | 1 | | n/t | n/t | 69.0 | n/t | n/t |
| Beryllium | M | mg/kg | 0.5 | | 0.9 | 0.9 | 0.7 | n/t | 0.9 |
| Cadmium | M | mg/kg | 0.2 | | < 0.2 | 0.3 | 0.3 | n/t | < 0.2 |
| Chromium | M | mg/kg | 1 | | 10.3 | 6.1 | 8.6 | n/t | 11.7 |
| Copper | M | mg/kg | 4 | | 25.1 | 21.4 | 27.8 | n/t | 19.4 |
| Lead | M | mg/kg | 1 | | 40.0 | 31.5 | 39.7 | n/t | 23.9 |
| Mercury | M | mg/kg | 0.1 | | < 0.1 | < 0.1 | < 0.1 | n/t | < 0.1 |
| Molybdenum | M | mg/kg | 1 | | n/t | n/t | 1.3 | n/t | n/t |
| Nickel | M | mg/kg | 1 | | 15.9 | 22.4 | 14.5 | n/t | 9.6 |
| Selenium | M | mg/kg | 1 | | < 1.0 | < 1.0 | < 1.0 | n/t | < 1.0 |
| Vanadium | M | mg/kg | 0.5 | | 33.0 | 29.3 | 31.7 | n/t | 38.2 |
| Zinc | M | mg/kg | 4.5 | | 73.6 | 71.7 | 110 | n/t | 47.2 |
| **Anions** | | | | | | | | | |
| Water Soluble Chloride | M | mg/kg | 40 | | 50 | 42 | n/t | n/t | 51 |
| Water Soluble Sulphate | M | g/l | 0.02 | | 0.27 | 0.05 | n/t | 0.03 | 0.09 |
| **Inorganics** | | | | | | | | | |
| Elemental Sulphur | M | mg/kg | 20 | | < 20 | < 20 | n/t | n/t | < 20 |
| Free Cyanide | N | mg/kg | 1 | | n/t | n/t | < 1.0 | n/t | n/t |
| Hexavalent Chromium | N | mg/kg | 0.8 | | < 0.8 | < 0.8 | < 0.8 | n/t | < 0.8 |
| Total Sulphide | N | mg/kg | 2 | | < 2 | < 2 | n/t | n/t | < 2 |
| Total Cyanide | M | mg/kg | 1 | | 1.2 | 1.2 | 1.2 | n/t | < 1.0 |
| Acid Soluble Sulphate (SO4) | U | % | 0.02 | | 0.12 | 0.06 | n/t | n/t | 0.09 |
| Water Soluble Boron | N | mg/kg | 0.5 | | 0.5 | < 0.5 | 0.7 | n/t | < 0.5 |
| **Miscellaneous** | | | | | | | | | |
| Acid Neutralisation Capacity | N | mol/kg | 0.1 | | n/t | n/t | < 0.1 | n/t | n/t |
| Loss on Ignition | M | % | 0.01 | | n/t | n/t | 6.80 | n/t | n/t |
| pH | M | pH units | 0.1 | | 8.7 | 8.5 | 8.1 | 5.5 | 6.2 |
| Total Organic Carbon | N | % | 0.01 | | 0.92 | 0.86 | 1.5 | n/t | 0.62 |
| **Organics** | | | | | | | | | |
| >C8-C10 BCB (EH_1D_Total) | N | mg/kg | 1 | | n/t | n/t | < 1.0 | n/t | n/t |
| Gas Range Organics (>C6-C10) (HS_1D_MS) | N | mg/kg | 0.01 | | n/t | n/t | 0.30 | n/t | n/t |
| **Phenols** | | | | | | | | | |
| Phenol | M | mg/kg | 1 | | n/t | n/t | < 1 | n/t | n/t |
| M,P-Cresol | N | mg/kg | 1 | | n/t | n/t | < 1 | n/t | n/t |
| O-Cresol | N | mg/kg | 1 | | n/t | n/t | < 1 | n/t | n/t |
| 3,4-Dimethylphenol | N | mg/kg | 1 | | n/t | n/t | < 1 | n/t | n/t |
| 2,3-Dimethylphenol | M | mg/kg | 1 | | n/t | n/t | < 1 | n/t | n/t |
| 1-Naphthol | N | mg/kg | 1 | | n/t | n/t | < 1 | n/t | n/t |
| 2,3,5-trimethylphenol | M | mg/kg | 1 | | n/t | n/t | < 1 | n/t | n/t |
| Total Phenols | N | mg/kg | 6 | | < 6 | < 6 | < 6 | n/t | < 6 |

Tests marked N are not UKAS accredited.

# Results Summary

**Report No.: 23-50105, issue number 1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ELAB Reference | | | | 339185 | 339186 | 339189 | 339190 | 339191 |
| Customer Reference | | | | | | | | |
| Sample ID | | | | | | | | |
| Sample Type | | | | SOIL | SOIL | SOIL | SOIL | SOIL |
| Sample Location | | | | HP01 | HP02 | WS01 | WS01 | WS02 |
| Sample Depth (m) | | | | 0.40 | 0.40 | 0.30 | 1.90 | 0.10 |
| Sampling Date | | | | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| **Determinand** | **Codes** | **Units** | **LOD** | | | | | |
| **Polyaromatic hydrocarbons** | | | | | | | | |
| Naphthalene | SM | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 | n/t | < 0.02 |
| Acenaphthylene | SM | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 | n/t | < 0.02 |
| Acenaphthene | SM | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 | n/t | < 0.02 |
| Fluorene | S | mg/kg | 0.02 | < 0.02 | < 0.02 | < 0.02 | n/t | < 0.02 |
| Phenanthrene | SM | mg/kg | 0.02 | 0.02 | 0.11 | 0.03 | n/t | < 0.02 |
| Anthracene | S | mg/kg | 0.02 | < 0.02 | 0.04 | < 0.02 | n/t | < 0.02 |
| Fluoranthene | SM | mg/kg | 0.02 | 0.06 | 0.34 | 0.08 | n/t | < 0.02 |
| Pyrene | SM | mg/kg | 0.02 | 0.06 | 0.31 | 0.07 | n/t | < 0.02 |
| Benzo(a)anthracene | S | mg/kg | 0.02 | 0.04 | 0.19 | 0.05 | n/t | < 0.02 |
| Chrysene | SM | mg/kg | 0.02 | 0.04 | 0.20 | 0.06 | n/t | < 0.03 |
| Benzo(b)fluoranthene | SM | mg/kg | 0.02 | 0.04 | 0.25 | 0.07 | n/t | < 0.02 |
| Benzo(k)fluoranthene | SM | mg/kg | 0.03 | < 0.03 | 0.09 | 0.03 | n/t | < 0.03 |
| Benzo(a)pyrene | S | mg/kg | 0.02 | 0.04 | 0.22 | 0.05 | n/t | < 0.02 |
| Indeno(1,2,3-cd)pyrene | SM | mg/kg | 0.02 | < 0.02 | 0.15 | 0.03 | n/t | < 0.02 |
| Dibenzo(a,h)anthracene | SM | mg/kg | 0.02 | < 0.02 | 0.04 | < 0.02 | n/t | < 0.02 |
| Benzo[g,h,i]perylene | SM | mg/kg | 0.02 | < 0.02 | 0.16 | 0.03 | n/t | < 0.02 |
| Coronene | NS | mg/kg | 0.02 | n/t | n/t | < 0.02 | n/t | n/t |
| Total PAH(16) | NS | mg/kg | 0.34 | < 0.34 | 2.10 | n/t | n/t | < 0.34 |
| Total PAH(16) + Coronene | NS | mg/kg | 0.34 | n/t | n/t | 0.49 | n/t | n/t |

# Results Summary

**Report No.: 23-50105, issue number 1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | ELAB Reference | 339185 | 339186 | 339189 | 339190 | 339191 |
| | | | | Customer Reference | | | | | |
| | | | | Sample ID | | | | | |
| | | | | Sample Type | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | | Sample Location | HP01 | HP02 | WS01 | WS01 | WS02 |
| | | | | Sample Depth (m) | 0.40 | 0.40 | 0.30 | 1.90 | 0.10 |
| | | | | Sampling Date | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| **Determinand** | **Codes** | **Units** | **LOD** | | | | | | |
| **BTEX** | | | | | | | | | |
| Benzene | M | ug/kg | 10 | | < 10.0 | < 10.0 | n/t | n/t | < 10.0 |
| Toluene | M | ug/kg | 10 | | < 10.0 | < 10.0 | n/t | n/t | < 10.0 |
| Ethylbenzene | M | ug/kg | 10 | | < 10.0 | < 10.0 | n/t | n/t | < 10.0 |
| Xylenes | M | ug/kg | 10 | | < 10.0 | < 10.0 | n/t | n/t | < 10.0 |
| MTBE | N | ug/kg | 10 | | < 10.0 | < 10.0 | n/t | n/t | < 10.0 |
| Total BTEX | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| **TPH CWG** | | | | | | | | | |
| >C5-C6 Aliphatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | < 0.01 | n/t | n/t | < 0.01 |
| >C6-C8 Aliphatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | < 0.01 | n/t | n/t | < 0.01 |
| >C8-C10 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| >C10-C12 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| >C12-C16 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | 1.1 | < 1.0 | n/t | n/t | 1.1 |
| >C16-C21 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| >C21-C35 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| >C35-C40 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| Total (>C5-C40) Aliphatic (HS_1D_MS+EH_CU_1D_AL) | N | mg/kg | 1 | | 1.1 | < 1.0 | n/t | n/t | 1.1 |
| >C5-C7 Aromatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | < 0.01 | n/t | n/t | < 0.01 |
| >C7-C8 Aromatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | < 0.01 | n/t | n/t | < 0.01 |
| >C8-C10 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| >C10-C12 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| >C12-C16 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | < 1.0 | n/t | n/t | < 1.0 |
| >C16-C21 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | 2.3 | n/t | n/t | < 1.0 |
| >C21-C35 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | 7.7 | 27.2 | n/t | n/t | 11.7 |
| >C35-C40 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | 6.4 | 24.4 | n/t | n/t | 12.2 |
| Total (>C5-C40) Aromatic (HS_1D_MS+EH_CU_1D_AR) | N | mg/kg | 1 | | 14.1 | 53.9 | n/t | n/t | 24.0 |
| Total (>C5-C40) Ali/Aro (HS_1D_MS+EH_CU_1D_Total) | N | mg/kg | 1 | | 15.2 | 53.9 | n/t | n/t | 25.1 |
| **Total Petroleum Hydrocarbons** | | | | | | | | | |
| Mineral Oil w Florisil (EH_CU_1D_Total) | N | mg/kg | 5 | | n/t | n/t | 9 | n/t | n/t |
| Total TPH w Silica (>C8-C40) (EH_CU_1D_Total) | N | mg/kg | 5 | | n/t | n/t | 6 | n/t | n/t |
| Total TPH (>C8-C40) (EH_1D_Total) | N | mg/kg | 5 | | n/t | n/t | 33 | n/t | n/t |
| Fuel type ID | N | | 0.001 | | n/t | n/t | n/a | n/t | n/t |
| **PCB (ICES 7 congeners)** | | | | | | | | | |
| PCB 28 | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| PCB 52 | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| PCB 101 | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| PCB 118 | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| PCB 153 | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| PCB 138 | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| PCB 180 | N | mg/kg | 0.01 | | n/t | n/t | < 0.01 | n/t | n/t |
| Total PCBs (7 congeners) | N | mg/kg | 0.03 | | n/t | n/t | < 0.03 | n/t | n/t |

# Results Summary

**Report No.: 23-50105, issue number 1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | ELAB Reference | 339194 | 339196 | 339197 | 339200 | 339202 |
| | | | | Customer Reference | | | | | |
| | | | | Sample ID | | | | | |
| | | | | Sample Type | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | | Sample Location | WS03 | WS03 | WS04 | WS05 | WS05 |
| | | | | Sample Depth (m) | 0.10 | 1.30 | 0.10 | 0.10 | 1.40 |
| | | | | Sampling Date | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| **Determinand** | **Codes** | **Units** | **LOD** | | | | | | |
| **Soil sample preparation parameters** | | | | | | | | | |
| Moisture Content | N | % | 0.1 | | 17.3 | 11.4 | 11.0 | 12.5 | 10.5 |
| Material removed | N | % | 0.1 | | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Description of Inert material removed | N | | 0 | | None | None | None | None | None |
| **Metals** | | | | | | | | | |
| Antimony | N | mg/kg | 0.5 | | n/t | n/t | n/t | n/t | n/t |
| Arsenic | M | mg/kg | 0.5 | | 26.3 | n/t | 10.7 | 11.8 | n/t |
| Barium | U | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| Beryllium | M | mg/kg | 0.5 | | 1.0 | n/t | 0.8 | 0.6 | n/t |
| Cadmium | M | mg/kg | 0.2 | | < 0.2 | n/t | 0.3 | < 0.2 | n/t |
| Chromium | M | mg/kg | 1 | | 15.5 | n/t | 6.6 | 6.5 | n/t |
| Copper | M | mg/kg | 4 | | 24.8 | n/t | 28.9 | 20.5 | n/t |
| Lead | M | mg/kg | 1 | | 28.5 | n/t | 56.5 | 22.0 | n/t |
| Mercury | M | mg/kg | 0.1 | | < 0.1 | n/t | < 0.1 | < 0.1 | n/t |
| Molybdenum | M | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| Nickel | M | mg/kg | 1 | | 14.5 | n/t | 16.6 | 11.4 | n/t |
| Selenium | M | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| Vanadium | M | mg/kg | 0.5 | | 42.0 | n/t | 29.8 | 30.5 | n/t |
| Zinc | M | mg/kg | 4.5 | | 62.9 | n/t | 110 | 100 | n/t |
| **Anions** | | | | | | | | | |
| Water Soluble Chloride | M | mg/kg | 40 | | 42 | n/t | 43 | 62 | n/t |
| Water Soluble Sulphate | M | g/l | 0.02 | | 0.07 | < 0.02 | 0.07 | 0.08 | 0.02 |
| **Inorganics** | | | | | | | | | |
| Elemental Sulphur | M | mg/kg | 20 | | 26 | n/t | < 20 | < 20 | n/t |
| Free Cyanide | N | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| Hexavalent Chromium | N | mg/kg | 0.8 | | < 0.8 | n/t | < 0.8 | < 0.8 | n/t |
| Total Sulphide | N | mg/kg | 2 | | < 2 | n/t | < 2 | < 2 | n/t |
| Total Cyanide | M | mg/kg | 1 | | 1.1 | n/t | < 1.0 | 1.1 | n/t |
| Acid Soluble Sulphate (SO4) | U | % | 0.02 | | 0.05 | n/t | 0.08 | 0.06 | n/t |
| Water Soluble Boron | N | mg/kg | 0.5 | | < 0.5 | n/t | 1.2 | < 0.5 | n/t |
| **Miscellaneous** | | | | | | | | | |
| Acid Neutralisation Capacity | N | mol/kg | 0.1 | | n/t | n/t | n/t | n/t | n/t |
| Loss on Ignition | M | % | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| pH | M | pH units | 0.1 | | 7.0 | 5.2 | 8.2 | 6.8 | 4.9 |
| Total Organic Carbon | N | % | 0.01 | | 0.70 | n/t | 1.6 | 1.0 | n/t |
| **Organics** | | | | | | | | | |
| >C8-C10 BCB (EH_1D_Total) | N | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| Gas Range Organics (>C6-C10) (HS_1D_MS) | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| **Phenols** | | | | | | | | | |
| Phenol | M | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| M,P-Cresol | N | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| O-Cresol | N | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| 3,4-Dimethylphenol | N | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| 2,3-Dimethylphenol | M | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| 1-Naphthol | N | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| 2,3,5-trimethylphenol | M | mg/kg | 1 | | n/t | n/t | n/t | n/t | n/t |
| Total Phenols | N | mg/kg | 6 | | < 6 | n/t | < 6 | < 6 | n/t |

# Results Summary

**Report No.: 23-50105, issue number 1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ELAB Reference | | | | 339194 | 339196 | 339197 | 339200 | 339202 |
| Customer Reference | | | | | | | | |
| Sample ID | | | | | | | | |
| Sample Type | | | | SOIL | SOIL | SOIL | SOIL | SOIL |
| Sample Location | | | | WS03 | WS03 | WS04 | WS05 | WS05 |
| Sample Depth (m) | | | | 0.10 | 1.30 | 0.10 | 0.10 | 1.40 |
| Sampling Date | | | | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| **Determinand** | **Codes** | **Units** | **LOD** | | | | | |
| **Polyaromatic hydrocarbons** | | | | | | | | |
| Naphthalene | SM | mg/kg | 0.02 | < 0.02 | n/t | 0.02 | < 0.02 | n/t |
| Acenaphthylene | SM | mg/kg | 0.02 | < 0.02 | n/t | 0.06 | < 0.02 | n/t |
| Acenaphthene | SM | mg/kg | 0.02 | < 0.02 | n/t | 0.03 | < 0.02 | n/t |
| Fluorene | S | mg/kg | 0.02 | < 0.02 | n/t | 0.04 | < 0.02 | n/t |
| Phenanthrene | SM | mg/kg | 0.02 | < 0.02 | n/t | 0.60 | < 0.02 | n/t |
| Anthracene | S | mg/kg | 0.02 | < 0.02 | n/t | 0.16 | < 0.02 | n/t |
| Fluoranthene | SM | mg/kg | 0.02 | 0.03 | n/t | 1.32 | < 0.02 | n/t |
| Pyrene | SM | mg/kg | 0.02 | 0.03 | n/t | 1.15 | < 0.02 | n/t |
| Benzo(a)anthracene | S | mg/kg | 0.02 | 0.02 | n/t | 0.69 | < 0.02 | n/t |
| Chrysene | SM | mg/kg | 0.02 | < 0.03 | n/t | 0.76 | < 0.03 | n/t |
| Benzo(b)fluoranthene | SM | mg/kg | 0.02 | 0.02 | n/t | 0.99 | < 0.02 | n/t |
| Benzo(k)fluoranthene | SM | mg/kg | 0.03 | < 0.03 | n/t | 0.38 | < 0.03 | n/t |
| Benzo(a)pyrene | S | mg/kg | 0.02 | < 0.02 | n/t | 0.93 | < 0.02 | n/t |
| Indeno(1,2,3-cd)pyrene | SM | mg/kg | 0.02 | < 0.02 | n/t | 0.71 | < 0.02 | n/t |
| Dibenzo(a,h)anthracene | SM | mg/kg | 0.02 | < 0.02 | n/t | 0.16 | < 0.02 | n/t |
| Benzo[g,h,i]perylene | SM | mg/kg | 0.02 | < 0.02 | n/t | 0.75 | < 0.02 | n/t |
| Coronene | NS | mg/kg | 0.02 | n/t | n/t | n/t | n/t | n/t |
| Total PAH(16) | NS | mg/kg | 0.34 | < 0.34 | n/t | 8.76 | < 0.34 | n/t |
| Total PAH(16) + Coronene | NS | mg/kg | 0.34 | n/t | n/t | n/t | n/t | n/t |

# Results Summary

**Report No.: 23-50105, issue number 1**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | ELAB Reference | 339194 | 339196 | 339197 | 339200 | 339202 |
| | | | | Customer Reference | | | | | |
| | | | | Sample ID | | | | | |
| | | | | Sample Type | SOIL | SOIL | SOIL | SOIL | SOIL |
| | | | | Sample Location | WS03 | WS03 | WS04 | WS05 | WS05 |
| | | | | Sample Depth (m) | 0.10 | 1.30 | 0.10 | 0.10 | 1.40 |
| | | | | Sampling Date | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 | 11/09/2023 |
| **Determinand** | **Codes** | **Units** | **LOD** | | | | | | |
| **BTEX** | | | | | | | | | |
| Benzene | M | ug/kg | 10 | | < 10.0 | n/t | < 10.0 | < 10.0 | n/t |
| Toluene | M | ug/kg | 10 | | < 10.0 | n/t | < 10.0 | < 10.0 | n/t |
| Ethylbenzene | M | ug/kg | 10 | | < 10.0 | n/t | < 10.0 | < 10.0 | n/t |
| Xylenes | M | ug/kg | 10 | | < 10.0 | n/t | < 10.0 | < 10.0 | n/t |
| MTBE | N | ug/kg | 10 | | < 10.0 | n/t | < 10.0 | < 10.0 | n/t |
| Total BTEX | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| **TPH CWG** | | | | | | | | | |
| >C5-C6 Aliphatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | n/t | < 0.01 | < 0.01 | n/t |
| >C6-C8 Aliphatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | n/t | < 0.01 | < 0.01 | n/t |
| >C8-C10 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C10-C12 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C12-C16 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | 1.4 | n/t | 1.4 | 1.1 | n/t |
| >C16-C21 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C21-C35 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C35-C40 Aliphatic (EH_CU_1D_AL) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| Total (>C5-C40) Aliphatic (HS_1D_MS+EH_CU_1D_AL) | N | mg/kg | 1 | | 1.4 | n/t | 1.4 | 1.1 | n/t |
| >C5-C7 Aromatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | n/t | < 0.01 | < 0.01 | n/t |
| >C7-C8 Aromatic (HS_1D_MS) | N | mg/kg | 0.01 | | < 0.01 | n/t | < 0.01 | < 0.01 | n/t |
| >C8-C10 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C10-C12 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C12-C16 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C16-C21 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | < 1.0 | n/t | < 1.0 | < 1.0 | n/t |
| >C21-C35 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | 5.6 | n/t | 18.1 | 6.3 | n/t |
| >C35-C40 Aromatic (EH_CU_1D_AR) | N | mg/kg | 1 | | 4.3 | n/t | 6.3 | 4.9 | n/t |
| Total (>C5-C40) Aromatic (HS_1D_MS+EH_CU_1D_AR) | N | mg/kg | 1 | | 9.9 | n/t | 24.3 | 11.2 | n/t |
| Total (>C5-C40) Ali/Aro (HS_1D_MS+EH_CU_1D_Total) | N | mg/kg | 1 | | 11.3 | n/t | 25.7 | 12.3 | n/t |
| **Total Petroleum Hydrocarbons** | | | | | | | | | |
| Mineral Oil w Florisil (EH_CU_1D_Total) | N | mg/kg | 5 | | n/t | n/t | n/t | n/t | n/t |
| Total TPH w Silica (>C8-C40) (EH_CU_1D_Total) | N | mg/kg | 5 | | n/t | n/t | n/t | n/t | n/t |
| Total TPH (>C8-C40) (EH_1D_Total) | N | mg/kg | 5 | | n/t | n/t | n/t | n/t | n/t |
| Fuel type ID | N | | 0.001 | | n/t | n/t | n/t | n/t | n/t |
| **PCB (ICES 7 congeners)** | | | | | | | | | |
| PCB 28 | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| PCB 52 | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| PCB 101 | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| PCB 118 | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| PCB 153 | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| PCB 138 | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| PCB 180 | N | mg/kg | 0.01 | | n/t | n/t | n/t | n/t | n/t |
| Total PCBs (7 congeners) | N | mg/kg | 0.03 | | n/t | n/t | n/t | n/t | n/t |

# Results Summary

**Report No.: 23-50105, issue number 1**

| WAC Analysis | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Elab Ref:** | 339189 | | | | | **Landfill Waste Acceptance Criteria Limits*** | | |
| **Sample Date:** | 11/09/2023 | | | | | **Inert Waste Landfill** | **Stable Non-reactive Hazardous waste in non-hazardous Landfill** | **Hazardous Waste Landfill** |
| **Sample ID:** | WS01 | | | | | | | |
| **Depth (m)** | 0.3 | | | | | | | |
| **Site:** | North Horsham Community Centre | | | | | | | |
| | | | | | | | | |
| **Determinand** | | **Code** | **Units** | | | | | |
| Total Organic Carbon | | N | % | | 1.50 | 3 | 5 | 6 |
| Loss on Ignition | | M | % | | 6.8 | -- | -- | 10 |
| Total BTEX | | M | mg/kg | | < 0.01 | 6 | -- | -- |
| Total PCBs (7 congeners) | | N | mg/kg | | < 0.03 | 1 | -- | -- |
| TPH Total WAC (EH_CU_1D_Total) | | N | mg/kg | | 9 | 500 | -- | -- |
| Total (of 17) PAHs | | N | mg/kg | | 0.49 | 100 | -- | -- |
| pH | | M | | | 8.1 | -- | >6 | -- |
| Acid Neutralisation Capacity | | N | mol/kg | | < 0.1 | -- | To evaluate | To evaluate |
| **Eluate Analysis** | | | **10:1** | | **10:1** | **Limit values for compliance leaching test using BS EN 12457-2 at L/S 10 l/kg** | | |
| | | | **mg/l** | | **mg/kg** | | | |
| Arsenic | | N | < 0.005 | | < 0.05 | 0.5 | 2 | 25 |
| Barium | | N | 0.024 | | 0.24 | 20 | 100 | 300 |
| Cadmium | | N | < 0.001 | | < 0.01 | 0.04 | 1 | 5 |
| Chromium | | N | < 0.005 | | < 0.05 | 0.5 | 10 | 70 |
| Copper | | N | < 0.005 | | < 0.05 | 2 | 50 | 100 |
| Mercury | | N | < 0.005 | | < 0.01 | 0.01 | 0.2 | 2 |
| Molybdenum | | N | < 0.005 | | < 0.05 | 0.5 | 10 | 30 |
| Nickel | | N | < 0.001 | | < 0.05 | 0.4 | 10 | 40 |
| Lead | | N | < 0.001 | | < 0.05 | 0.5 | 10 | 50 |
| Antimony | | N | < 0.005 | | < 0.05 | 0.06 | 0.7 | 5 |
| Selenium | | N | < 0.005 | | < 0.05 | 0.1 | 0.5 | 7 |
| Zinc | | N | < 0.005 | | < 0.05 | 4 | 50 | 200 |
| Chloride | | N | 7 | | 73.00 | 800 | 15000 | 25000 |
| Fluoride | | N | < 5 | | < 10 | 10 | 150 | 500 |
| Sulphate | | N | 11 | | 110.00 | 1000 | 20000 | 50000 |
| Total Dissolved Solids | | N | 134 | | 1340.00 | 4000 | 60000 | 100000 |
| Phenol Index | | N | < 0.01 | | < 0.10 | 1 | - | - |
| Dissolved Organic Carbon | | N | | | 83.00 | 500 | 800 | 1000 |
| **Leach Test Information** | | | | | | | | |
| pH | | N | 11.2 | | | | | |
| Conductivity (uS/cm) | | N | 200 | | | | | |
| Dry mass of test portion (g) | | | 102.000 | | | | | |
| Dry Matter (%) | | | 87 | | | | | |
| Moisture (%) | | | 15 | | | | | |
| Eluent Volume (ml) | | | 996 | | | | | |

Results are expressed on a dry weight basis, after correction for moisture content where applicable

* Stated limits are for guidance only, and not for conformity assessment.

Unit A2, Windmill Road, Ponswood Industrial Estate, St Leonards on Sea, East Sussex, TN38 9BY
Tel: +44 (0)1424 718618, Email: info@elab-uk.co.uk, Web: www.elab-uk.co.uk

# Results Summary

**Report No.: 23-50105, issue number 1**

## Asbestos Results

Analytical result only applies to the sample as submitted by the client. Any comments, opinions or interpretations (marked #) in this report are outside UKAS accreditation (Accreditation No2683). They are subjective comments only which must be verified by the client.

| Elab No | Depth (m) | Clients Reference | Description of Sample Matrix # | Asbestos Identification | Gravimetric Analysis Total (%) | Gravimetric Analysis by ACM Type (%) | Free Fibre Analysis (%) | Total Asbestos (%) |
|---|---|---|---|---|---|---|---|---|
| 339185 | 0.40 | HP01 | Brown Soil | No asbestos detected | n/t | n/t | n/t | n/t |
| 339186 | 0.40 | HP02 | Brown Soil, Stones | No asbestos detected | n/t | n/t | n/t | n/t |
| 339189 | 0.30 | WS01 | Brown Soil, Stones | No asbestos detected | n/t | n/t | n/t | n/t |
| 339191 | 0.10 | WS02 | Brown Sandy Soil | No asbestos detected | n/t | n/t | n/t | n/t |
| 339194 | 0.10 | WS03 | Brown Soil | No asbestos detected | n/t | n/t | n/t | n/t |
| 339197 | 0.10 | WS04 | Brown Soil | No asbestos detected | n/t | n/t | n/t | n/t |
| 339200 | 0.10 | WS05 | Brown Soil | No asbestos detected | n/t | n/t | n/t | n/t |

# Method Summary

**Report No.: 23-50105, issue number 1**

| Parameter | Codes | Analysis Undertaken On | Date Tested | Method Number | Technique |
|---|---|---|---|---|---|
| **Soil** | | | | | |
| Gas range organics in soil | N | As submitted sample | 20/09/2023 | | GC-MS |
| Free cyanide | N | As submitted sample | 22/09/2023 | 107 | Colorimetry |
| Sulphide | N | As submitted sample | 20/09/2023 | 109 | Colorimetry |
| Hexavalent chromium | N | As submitted sample | 19/09/2023 | 110 | Colorimetry |
| Acid Soluble Sulphate | U | Air dried sample | 21/09/2023 | 115 | Ion Chromatography |
| Total Petroleum Hydrocarbons in solids | N | As submitted sample | 18/09/2023 | 117 | GC-FID |
| Phenols in solids | M | As submitted sample | 19/09/2023 | 121 | HPLC |
| Elemental Sulphur | M | Air dried sample | 18/09/2023 | 122 | HPLC |
| PAH (GC-FID) | N | As submitted sample | 18/09/2023 | 133 | GC-FID |
| Water soluble anions | M | Air dried sample | 18/09/2023 | 172 | Ion Chromatography |
| Low range Aliphatic hydrocarbons soil | N | As submitted sample | 19/09/2023 | 181 | GC-MS |
| Low range Aromatic hydrocarbons soil | N | As submitted sample | 19/09/2023 | 181 | GC-MS |
| Water soluble boron | N | Air dried sample | 18/09/2023 | 202 | Colorimetry |
| Total cyanide | M | As submitted sample | 22/09/2023 | 204 | Colorimetry |
| Aliphatic hydrocarbons in soil | N | As submitted sample | 18/09/2023 | 214 | GC-FID |
| Aliphatic/Aromatic hydrocarbons in soil | N | As submitted sample | 20/09/2023 | 214 | GC-FID |
| Aromatic hydrocarbons in soil | N | As submitted sample | 20/09/2023 | 214 | GC-FID |
| Basic carbon banding in soil | N | As submitted sample | 18/09/2023 | 218 | GC-FID |
| Asbestos identification | U | Air dried sample | 21/09/2023 | 281 | Microscopy |
| Aqua regia extractable metals | M | Air dried sample | 18/09/2023 | 300 | ICPMS |
| TPH with Silica clean up solids | N | As submitted sample | 18/09/2023 | GCL117 | GC-FID |
| **Leachate** | | | | | |
| Arsenic | N | | 20/09/2023 | 301 | ICPMS |
| Cadmium | N | | 20/09/2023 | 301 | ICPMS |
| Chromium | N | | 20/09/2023 | 301 | ICPMS |
| Lead | N | | 20/09/2023 | 301 | ICPMS |
| Nickel | N | | 20/09/2023 | 301 | ICPMS |
| Copper | N | | 20/09/2023 | 301 | ICPMS |
| Zinc | N | | 20/09/2023 | 301 | ICPMS |
| Mercury | N | | 20/09/2023 | 301 | ICPMS |
| Selenium | N | | 20/09/2023 | 301 | ICPMS |
| Antimony | N | | 20/09/2023 | 301 | ICPMS |
| Barium | N | | 20/09/2023 | 301 | ICPMS |
| Molybdenum | N | | 20/09/2023 | 301 | ICPMS |
| pH Value | N | | 20/09/2023 | 113 | Electrometric |
| Electrical Conductivity | N | | 20/09/2023 | 136 | Probe |
| Dissolved Organic Carbon | N | | 20/09/2023 | 102 | TOC analyser |
| Chloride | N | | 20/09/2023 | 270 | Ion Chromatography |
| Fluoride | N | | 20/09/2023 | 270 | Ion Chromatography |
| Sulphate | N | | 20/09/2023 | 270 | Ion Chromatography |
| Total Dissolved Solids | N | | 20/09/2023 | 144 | Gravimetric |
| Phenol index | N | | 20/09/2023 | 121 | HPLC |
| **WAC Solids analysis** | N | | | | |
| pH | M | Air dried sample | 19/09/2023 | 113 | Electrometric |
| Total Organic Carbon | N | Air dried sample | 19/09/2023 | 210 | IR |
| Loss on Ignition | M | Air dried sample | 19/09/2023 | 129 | Gravimetric |
| Acid Neutralisation Capacity | N | Air dried sample | 19/09/2023 | NEN 737 | Electrometric |
| Total BTEX | M | As submitted sample | 19/09/2023 | 181 | GCMS |
| Mineral Oil (EH_CU_1D_Total) | N | As submitted sample | 18/09/2023 | 117 | GCFID |
| Total PCBs (7 congeners) | N | Air dried sample | 19/09/2023 | 120 | GCMS |
| Total (of 17) PAHs | N | As submitted sample | 20/09/2023 | 133 | GCFID |

Tests marked N are not UKAS accredited

## Report Information

**Report No.: 23-50105, issue number 1**

**Key**

| | |
|---|---|
| U | hold UKAS accreditation |
| M | hold MCERTS and UKAS accreditation |
| N | do not currently hold UKAS accreditation |
| ^ | MCERTS accreditation not applicable for sample matrix |
| * | UKAS accreditation not applicable for sample matrix |
| S | Subcontracted to approved laboratory UKAS Accredited for the test |
| SM | Subcontracted to approved laboratory MCERTS/UKAS Accredited for the test |
| NS | Subcontracted to approved laboratory. UKAS accreditation is not applicable. |
| I/S | Insufficient Sample |
| U/S | Unsuitable sample |
| n/t | Not tested |
| < | means "less than" |
| > | means "greater than" |
| LOD | LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination. |
| | Soil sample results are expressed on an air dried basis (dried at < 30°C), and are uncorrected for inert material removed. |
| | ELAB are unable to provide an interpretation or opinion on the content of this report. |
| | The results relate only to the sample received. |
| | PCB congener results may include any coeluting PCBs |
| | Uncertainty of measurement for the determinands tested are available upon request |
| | Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results. |

**Deviation Codes**

| | |
|---|---|
| a | No date of sampling supplied |
| b | No time of sampling supplied (Waters Only) |
| c | Sample not received in appropriate containers |
| d | Sample not received in cooled condition |
| e | The container has been incorrectly filled |
| f | Sample age exceeds stability time (sampling to receipt) |
| g | Sample age exceeds stability time (sampling to analysis) |

Where a sample has a deviation code, the applicable test result may be invalid.

**Sample Retention and Disposal**

All soil samples will be retained for a period of one month
All water samples will be retained for 7 days following the date of the test report
Charges may apply to extended sample storage

**TPH Classification - HWOL Acronym System**

| | |
|---|---|
| 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 |
| Total | Aliphatics & Aromatics |
| AL | Aliphatics only |
| AR | Aromatics only |
| 2D | GC-GC - Double coil gas chromatography |
| #1 | EH_Total but with humics mathematically subtracted |
| #2 | EH_Total but with fatty acids mathematically subtracted |
| _ | Operator - underscore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |
| MS | Mass Spectrometry |

# 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.

PSLWX-9P4XD-NK79F

## Job name

GE21959 - North Horsham Community Centre

## Description/Comments

HWOL_23-50105_20230926

## Project

GE21959

## Site

North Horsham Community Centre

## Classified by

Name:
**Anthony Potter**
Date:
**06 Oct 2023 10:15 GMT**
Telephone:
**01273832972**

Company:
**Geo-Environmental Services**
**Unit 7, Danworth Farm, Cuckfield Road**
**Hurstpierpoint**
**BN6 9GL**

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

**HazWasteOnline™ Certification:** **CERTIFIED**

| Course | Date |
|---|---|
| Hazardous Waste Classification | 06 Oct 2022 |

Next 3 year Refresher due by Oct 2025

## Purpose of classification

2 - Material Characterisation

## Address of the waste

Horsham **Post Code** RH12 6AT

## SIC for the process giving rise to the waste

42990 Construction of other civil engineering projects n.e.c.

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

Construction of a community centre

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

Waste created during the construction of the centre

## Description of the waste

Topsoil - silty sand, Weald Clay - sandy clay

## Job summary

| # | Sample name | Depth [m] | Classification Result | Hazard properties | WAC Results | | | Page |
|---|---|---|---|---|---|---|---|---|
| | | | | | Inert | SNRHW | Hazardous | |
| 1 | HP01-0.40--11/09/2023 | | Non Hazardous | | - | - | - | 3 |
| 2 | HP02-0.40--11/09/2023 | | Non Hazardous | | - | - | - | 6 |
| 3 | WS01-0.30--11/09/2023 | | Non Hazardous | | Pass | Pass | N/A | 9 |
| 4 | WS02-0.10--11/09/2023 | | Non Hazardous | | - | - | - | 13 |
| 5 | WS03-0.10--11/09/2023 | | Non Hazardous | | - | - | - | 16 |
| 6 | WS04-0.10--11/09/2023 | | Non Hazardous | | - | - | - | 19 |
| 7 | WS05-0.10--11/09/2023 | | Non Hazardous | | - | - | - | 22 |

## Related documents

| # | Name | Description |
|---|---|---|
| 1 | HWOL_23-50105_20230926.HWOL | ELAB .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: Anthony Potter

Created date: 06 Oct 2023 10:15 GMT


| Appendices | Page |
|---|---|
| Appendix A: Classifier defined and non GB MCL determinands | 25 |
| Appendix B: Rationale for selection of metal species | 27 |
| Appendix C: Version | 28 |

## Classification of sample: HP01-0.40--11/09/2023

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

## Sample details

Sample name:
**HP01-0.40--11/09/2023**
Moisture content:
**12.1%**
(wet weight correction)

LoW Code:
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: 12.1% Wet Weight Moisture Correction applied (MC)

| # | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | arsenic { arsenic trioxide } | 033-003-00-0 | 215-481-4 | 1327-53-3 | | 14.4 mg/kg | 1.32 | 16.712 mg/kg | 0.00167 % | ✓ | |
| 2 | beryllium { beryllium oxide } | 004-003-00-8 | 215-133-1 | 1304-56-9 | | 0.9 mg/kg | 2.775 | 2.196 mg/kg | 0.00022 % | ✓ | |
| 3 | boron { diboron trioxide; boric oxide } | 005-008-00-8 | 215-125-8 | 1303-86-2 | | 0.5 mg/kg | 3.22 | 1.415 mg/kg | 0.000142 % | ✓ | |
| 4 | cadmium { cadmium oxide } | 048-002-00-0 | 215-146-2 | 1306-19-0 | | <0.2 mg/kg | 1.142 | <0.228 mg/kg | <0.0000228 % | | <**LOD** |
| 5 | chromium in chromium(III) compounds { chromium(III) oxide (worst case) } | | 215-160-9 | 1308-38-9 | | 10.3 mg/kg | 1.462 | 13.232 mg/kg | 0.00132 % | ✓ | |
| 6 | chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } | 024-017-00-8 | | | | <0.8 mg/kg | 2.27 | <1.816 mg/kg | <0.000182 % | | <**LOD** |
| 7 | copper { dicopper oxide; copper (I) oxide } | 029-002-00-X | 215-270-7 | 1317-39-1 | | 25.1 mg/kg | 1.126 | 24.84 mg/kg | 0.00248 % | ✓ | |
| 8 | lead { lead chromate } | 082-004-00-2 | 231-846-0 | 7758-97-6 | 1 | 40 mg/kg | 1.56 | 54.843 mg/kg | 0.00352 % | ✓ | |
| 9 | mercury { mercury dichloride } | 080-010-00-X | 231-299-8 | 7487-94-7 | | <0.1 mg/kg | 1.353 | <0.135 mg/kg | <0.0000135 % | | <**LOD** |
| 10 | nickel { nickel chromate } | 028-035-00-7 | 238-766-5 | 14721-18-7 | | 15.9 mg/kg | 2.976 | 41.597 mg/kg | 0.00416 % | ✓ | |
| 11 | selenium { nickel selenate } | 028-031-00-5 | 239-125-2 | 15060-62-5 | | <1 mg/kg | 2.554 | <2.554 mg/kg | <0.000255 % | | <**LOD** |
| 12 | zinc { zinc chromate } | 024-007-00-3 | 236-878-9 | 13530-65-9 | | 73.6 mg/kg | 2.774 | 179.472 mg/kg | 0.0179 % | ✓ | |
| 13 | TPH (C6 to C40) petroleum group | | | TPH | | 15.2 mg/kg | | 13.361 mg/kg | 0.00134 % | ✓ | |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane | 603-181-00-X | 216-653-1 | 1634-04-4 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <**LOD** |
| 15 | benzene | 601-020-00-8 | 200-753-7 | 71-43-2 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <**LOD** |
| 16 | toluene | 601-021-00-3 | 203-625-9 | 108-88-3 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <**LOD** |

| # | | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | | ethylbenzene | 601-023-00-4 | 202-849-4 | 100-41-4 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 18 | | xylene | 601-022-00-9 | 202-422-2 [1]<br>203-396-5 [2]<br>203-576-3 [3]<br>215-535-7 [4] | 95-47-6 [1]<br>106-42-3 [2]<br>108-38-3 [3]<br>1330-20-7 [4] | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 19 | | cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } | 006-007-00-5 | | | | 1.2 | mg/kg | 1.884 | 1.987 | mg/kg | 0.000199 % | ✓ | |
| 20 | | pH | | | PH | | 8.7 | pH | | 8.7 | pH | 8.7 pH | | |
| 21 | | naphthalene | 601-052-00-2 | 202-049-5 | 91-20-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 22 | | acenaphthylene | | 205-917-1 | 208-96-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 23 | | acenaphthene | | 201-469-6 | 83-32-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 24 | | fluorene | | 201-695-5 | 86-73-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 25 | | phenanthrene | | 201-581-5 | 85-01-8 | | 0.02 | mg/kg | | 0.0176 | mg/kg | 0.00000176 % | ✓ | |
| 26 | | anthracene | | 204-371-1 | 120-12-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 27 | | fluoranthene | | 205-912-4 | 206-44-0 | | 0.06 | mg/kg | | 0.0527 | mg/kg | 0.00000527 % | ✓ | |
| 28 | | pyrene | | 204-927-3 | 129-00-0 | | 0.06 | mg/kg | | 0.0527 | mg/kg | 0.00000527 % | ✓ | |
| 29 | | benzo[a]anthracene | 601-033-00-9 | 200-280-6 | 56-55-3 | | 0.04 | mg/kg | | 0.0352 | mg/kg | 0.00000352 % | ✓ | |
| 30 | | chrysene | 601-048-00-0 | 205-923-4 | 218-01-9 | | 0.04 | mg/kg | | 0.0352 | mg/kg | 0.00000352 % | ✓ | |
| 31 | | benzo[b]fluoranthene | 601-034-00-4 | 205-911-9 | 205-99-2 | | 0.04 | mg/kg | | 0.0352 | mg/kg | 0.00000352 % | ✓ | |
| 32 | | benzo[k]fluoranthene | 601-036-00-5 | 205-916-6 | 207-08-9 | | <0.03 | mg/kg | | <0.03 | mg/kg | <0.000003 % | | <LOD |
| 33 | | benzo[a]pyrene; benzo[def]chrysene | 601-032-00-3 | 200-028-5 | 50-32-8 | | 0.04 | mg/kg | | 0.0352 | mg/kg | 0.00000352 % | ✓ | |
| 34 | | indeno[123-cd]pyrene | | 205-893-2 | 193-39-5 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 35 | | dibenz[a,h]anthracene | 601-041-00-2 | 200-181-8 | 53-70-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 36 | | benzo[ghi]perylene | | 205-883-8 | 191-24-2 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 37 | | vanadium { divanadium pentaoxide; vanadium pentoxide } | 023-001-00-8 | 215-239-8 | 1314-62-1 | | 33 | mg/kg | 1.785 | 51.783 | mg/kg | 0.00518 % | ✓ | |
| 38 | | sulfur { sulfur } | 016-094-00-1 | 231-722-6 | 7704-34-9 | | <20 | mg/kg | | <20 | mg/kg | <0.002 % | | <LOD |
| | | | | | | | | | | | Total: | 0.0407 % | | |

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 |

## Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No liquid phase, to lower concentration to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00134%)

## Classification of sample: HP02-0.40--11/09/2023

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

## Sample details

Sample name:
**HP02-0.40--11/09/2023**
Moisture content:
**12.4%**
(wet weight correction)

LoW Code:
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: 12.4% Wet Weight Moisture Correction applied (MC)

| # | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | arsenic { arsenic trioxide } | 033-003-00-0 | 215-481-4 | 1327-53-3 | | 12 mg/kg | 1.32 | 13.879 mg/kg | 0.00139 % | ✓ | |
| 2 | beryllium { beryllium oxide } | 004-003-00-8 | 215-133-1 | 1304-56-9 | | 0.9 mg/kg | 2.775 | 2.188 mg/kg | 0.000219 % | ✓ | |
| 3 | boron { diboron trioxide; boric oxide } | 005-008-00-8 | 215-125-8 | 1303-86-2 | | <0.5 mg/kg | 3.22 | <1.61 mg/kg | <0.000161 % | | <LOD |
| 4 | cadmium { cadmium oxide } | 048-002-00-0 | 215-146-2 | 1306-19-0 | | 0.3 mg/kg | 1.142 | 0.3 mg/kg | 0.00003 % | ✓ | |
| 5 | chromium in chromium(III) compounds { chromium(III) oxide (worst case) } | | 215-160-9 | 1308-38-9 | | 6.1 mg/kg | 1.462 | 7.81 mg/kg | 0.000781 % | ✓ | |
| 6 | chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } | 024-017-00-8 | | | | <0.8 mg/kg | 2.27 | <1.816 mg/kg | <0.000182 % | | <LOD |
| 7 | copper { dicopper oxide; copper (I) oxide } | 029-002-00-X | 215-270-7 | 1317-39-1 | | 21.4 mg/kg | 1.126 | 21.106 mg/kg | 0.00211 % | ✓ | |
| 8 | lead { lead chromate } | 082-004-00-2 | 231-846-0 | 7758-97-6 | 1 | 31.5 mg/kg | 1.56 | 43.042 mg/kg | 0.00276 % | ✓ | |
| 9 | mercury { mercury dichloride } | 080-010-00-X | 231-299-8 | 7487-94-7 | | <0.1 mg/kg | 1.353 | <0.135 mg/kg | <0.0000135 % | | <LOD |
| 10 | nickel { nickel chromate } | 028-035-00-7 | 238-766-5 | 14721-18-7 | | 22.4 mg/kg | 2.976 | 58.401 mg/kg | 0.00584 % | ✓ | |
| 11 | selenium { nickel selenate } | 028-031-00-5 | 239-125-2 | 15060-62-5 | | <1 mg/kg | 2.554 | <2.554 mg/kg | <0.000255 % | | <LOD |
| 12 | zinc { zinc chromate } | 024-007-00-3 | 236-878-9 | 13530-65-9 | | 71.7 mg/kg | 2.774 | 174.242 mg/kg | 0.0174 % | ✓ | |
| 13 | TPH (C6 to C40) petroleum group | | | TPH | | 53.9 mg/kg | | 47.216 mg/kg | 0.00472 % | ✓ | |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane | 603-181-00-X | 216-653-1 | 1634-04-4 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 15 | benzene | 601-020-00-8 | 200-753-7 | 71-43-2 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 16 | toluene | 601-021-00-3 | 203-625-9 | 108-88-3 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |

| # | | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | | ethylbenzene | 601-023-00-4 | 202-849-4 | 100-41-4 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <**LOD** |
| 18 | | xylene | 601-022-00-9 | 202-422-2 [1]<br>203-396-5 [2]<br>203-576-3 [3]<br>215-535-7 [4] | 95-47-6 [1]<br>106-42-3 [2]<br>108-38-3 [3]<br>1330-20-7 [4] | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <**LOD** |
| 19 | | cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } | 006-007-00-5 | | | | 1.2 | mg/kg | 1.884 | 1.98 | mg/kg | 0.000198 % | ✓ | |
| 20 | | pH | | | PH | | 8.5 | pH | | 8.5 | pH | 8.5 pH | | |
| 21 | | naphthalene | 601-052-00-2 | 202-049-5 | 91-20-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <**LOD** |
| 22 | | acenaphthylene | | 205-917-1 | 208-96-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <**LOD** |
| 23 | | acenaphthene | | 201-469-6 | 83-32-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <**LOD** |
| 24 | | fluorene | | 201-695-5 | 86-73-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <**LOD** |
| 25 | | phenanthrene | | 201-581-5 | 85-01-8 | | 0.11 | mg/kg | | 0.0964 | mg/kg | 0.00000964 % | ✓ | |
| 26 | | anthracene | | 204-371-1 | 120-12-7 | | 0.04 | mg/kg | | 0.035 | mg/kg | 0.0000035 % | ✓ | |
| 27 | | fluoranthene | | 205-912-4 | 206-44-0 | | 0.34 | mg/kg | | 0.298 | mg/kg | 0.0000298 % | ✓ | |
| 28 | | pyrene | | 204-927-3 | 129-00-0 | | 0.31 | mg/kg | | 0.272 | mg/kg | 0.0000272 % | ✓ | |
| 29 | | benzo[a]anthracene | 601-033-00-9 | 200-280-6 | 56-55-3 | | 0.19 | mg/kg | | 0.166 | mg/kg | 0.0000166 % | ✓ | |
| 30 | | chrysene | 601-048-00-0 | 205-923-4 | 218-01-9 | | 0.2 | mg/kg | | 0.175 | mg/kg | 0.0000175 % | ✓ | |
| 31 | | benzo[b]fluoranthene | 601-034-00-4 | 205-911-9 | 205-99-2 | | 0.25 | mg/kg | | 0.219 | mg/kg | 0.0000219 % | ✓ | |
| 32 | | benzo[k]fluoranthene | 601-036-00-5 | 205-916-6 | 207-08-9 | | 0.09 | mg/kg | | 0.0788 | mg/kg | 0.00000788 % | ✓ | |
| 33 | | benzo[a]pyrene; benzo[def]chrysene | 601-032-00-3 | 200-028-5 | 50-32-8 | | 0.22 | mg/kg | | 0.193 | mg/kg | 0.0000193 % | ✓ | |
| 34 | | indeno[123-cd]pyrene | | 205-893-2 | 193-39-5 | | 0.15 | mg/kg | | 0.131 | mg/kg | 0.0000131 % | ✓ | |
| 35 | | dibenz[a,h]anthracene | 601-041-00-2 | 200-181-8 | 53-70-3 | | 0.04 | mg/kg | | 0.035 | mg/kg | 0.0000035 % | ✓ | |
| 36 | | benzo[ghi]perylene | | 205-883-8 | 191-24-2 | | 0.16 | mg/kg | | 0.14 | mg/kg | 0.000014 % | ✓ | |
| 37 | | vanadium { divanadium pentaoxide; vanadium pentoxide } | 023-001-00-8 | 215-239-8 | 1314-62-1 | | 29.3 | mg/kg | 1.785 | 45.82 | mg/kg | 0.00458 % | ✓ | |
| 38 | | sulfur { sulfur } | 016-094-00-1 | 231-722-6 | 7704-34-9 | | <20 | mg/kg | | <20 | mg/kg | <0.002 % | | <**LOD** |
| | | | | | | | | | | | Total: | 0.0429 % | | |

Key

| | |
|---|---|
| | User supplied data |
| | Determinand values ignored for classification, see column 'Conc. Not Used' for reason |
| | Determinand defined or amended by HazWasteOnline (see Appendix A) |
| | Speciated 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 |

## Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No liquid phase, to lower concentration to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00472%)

## Classification of sample: WS01-0.30--11/09/2023

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

## Sample details

Sample name:
**WS01-0.30--11/09/2023**
Moisture content:
**12.2%**
(wet weight correction)

LoW Code:
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: 12.2% Wet Weight Moisture Correction applied (MC)

| # | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | antimony { antimony trioxide } | 051-005-00-X | 215-175-0 | 1309-64-4 | | 1.4 mg/kg | 1.197 | 1.471 mg/kg | 0.000147 % | ✓ | |
| 2 | arsenic { arsenic trioxide } | 033-003-00-0 | 215-481-4 | 1327-53-3 | | 12.6 mg/kg | 1.32 | 14.606 mg/kg | 0.00146 % | ✓ | |
| 3 | beryllium { beryllium oxide } | 004-003-00-8 | 215-133-1 | 1304-56-9 | | 0.7 mg/kg | 2.775 | 1.706 mg/kg | 0.000171 % | ✓ | |
| 4 | boron { diboron trioxide; boric oxide } | 005-008-00-8 | 215-125-8 | 1303-86-2 | | 0.7 mg/kg | 3.22 | 1.979 mg/kg | 0.000198 % | ✓ | |
| 5 | cadmium { cadmium oxide } | 048-002-00-0 | 215-146-2 | 1306-19-0 | | 0.3 mg/kg | 1.142 | 0.301 mg/kg | 0.0000301 % | ✓ | |
| 6 | chromium in chromium(III) compounds { chromium(III) oxide (worst case) } | | 215-160-9 | 1308-38-9 | | 8.6 mg/kg | 1.462 | 11.036 mg/kg | 0.0011 % | ✓ | |
| 7 | chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } | 024-017-00-8 | | | | <0.8 mg/kg | 2.27 | <1.816 mg/kg | <0.000182 % | | <**LOD** |
| 8 | copper { dicopper oxide; copper (I) oxide } | 029-002-00-X | 215-270-7 | 1317-39-1 | | 27.8 mg/kg | 1.126 | 27.481 mg/kg | 0.00275 % | ✓ | |
| 9 | lead { lead chromate } | 082-004-00-2 | 231-846-0 | 7758-97-6 | 1 | 39.7 mg/kg | 1.56 | 54.37 mg/kg | 0.00349 % | ✓ | |
| 10 | mercury { mercury dichloride } | 080-010-00-X | 231-299-8 | 7487-94-7 | | <0.1 mg/kg | 1.353 | <0.135 mg/kg | <0.0000135 % | | <**LOD** |
| 11 | molybdenum { molybdenum(VI) oxide } | 042-001-00-9 | 215-204-7 | 1313-27-5 | | 1.3 mg/kg | 1.5 | 1.712 mg/kg | 0.000171 % | ✓ | |
| 12 | nickel { nickel chromate } | 028-035-00-7 | 238-766-5 | 14721-18-7 | | 14.5 mg/kg | 2.976 | 37.891 mg/kg | 0.00379 % | ✓ | |
| 13 | selenium { nickel selenate } | 028-031-00-5 | 239-125-2 | 15060-62-5 | | <1 mg/kg | 2.554 | <2.554 mg/kg | <0.000255 % | | <**LOD** |
| 14 | zinc { zinc chromate } | 024-007-00-3 | 236-878-9 | 13530-65-9 | | 110 mg/kg | 2.774 | 267.927 mg/kg | 0.0268 % | ✓ | |
| 15 | TPH (C6 to C40) petroleum group | | | TPH | | 33 mg/kg | | 28.974 mg/kg | 0.0029 % | ✓ | |
| 16 | cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, | | | | | 1.2 mg/kg | 1.884 | 1.985 mg/kg | 0.000198 % | ✓ | |

| # | | Determinand | | | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EU CLP index number | EC Number | CAS Number | | | | | | | | | |
| | | ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } | | | | | | | | | | | |
| | | 006-007-00-5 | | | | | | | | | | | |
| 17 | | pH | | | | 8.1 | pH | | 8.1 | pH | 8.1 pH | | |
| | | | | PH | | | | | | | | | |
| 18 | | naphthalene | | | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| | | 601-052-00-2 | 202-049-5 | 91-20-3 | | | | | | | | | |
| 19 | | acenaphthylene | | | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| | | | 205-917-1 | 208-96-8 | | | | | | | | | |
| 20 | | acenaphthene | | | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| | | | 201-469-6 | 83-32-9 | | | | | | | | | |
| 21 | | fluorene | | | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| | | | 201-695-5 | 86-73-7 | | | | | | | | | |
| 22 | | phenanthrene | | | | 0.03 | mg/kg | | 0.0263 | mg/kg | 0.00000263 % | ✓ | |
| | | | 201-581-5 | 85-01-8 | | | | | | | | | |
| 23 | | anthracene | | | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| | | | 204-371-1 | 120-12-7 | | | | | | | | | |
| 24 | | fluoranthene | | | | 0.3 | mg/kg | | 0.263 | mg/kg | 0.0000263 % | ✓ | |
| | | | 205-912-4 | 206-44-0 | | | | | | | | | |
| 25 | | pyrene | | | | 0.3 | mg/kg | | 0.263 | mg/kg | 0.0000263 % | ✓ | |
| | | | 204-927-3 | 129-00-0 | | | | | | | | | |
| 26 | | benzo[a]anthracene | | | | 0.2 | mg/kg | | 0.176 | mg/kg | 0.0000176 % | ✓ | |
| | | 601-033-00-9 | 200-280-6 | 56-55-3 | | | | | | | | | |
| 27 | | chrysene | | | | 0.2 | mg/kg | | 0.176 | mg/kg | 0.0000176 % | ✓ | |
| | | 601-048-00-0 | 205-923-4 | 218-01-9 | | | | | | | | | |
| 28 | | benzo[b]fluoranthene | | | | 0.3 | mg/kg | | 0.263 | mg/kg | 0.0000263 % | ✓ | |
| | | 601-034-00-4 | 205-911-9 | 205-99-2 | | | | | | | | | |
| 29 | | benzo[k]fluoranthene | | | | 0.4 | mg/kg | | 0.351 | mg/kg | 0.0000351 % | ✓ | |
| | | 601-036-00-5 | 205-916-6 | 207-08-9 | | | | | | | | | |
| 30 | | benzo[a]pyrene; benzo[def]chrysene | | | | 0.3 | mg/kg | | 0.263 | mg/kg | 0.0000263 % | ✓ | |
| | | 601-032-00-3 | 200-028-5 | 50-32-8 | | | | | | | | | |
| 31 | | indeno[123-cd]pyrene | | | | 0.3 | mg/kg | | 0.263 | mg/kg | 0.0000263 % | ✓ | |
| | | | 205-893-2 | 193-39-5 | | | | | | | | | |
| 32 | | dibenz[a,h]anthracene | | | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| | | 601-041-00-2 | 200-181-8 | 53-70-3 | | | | | | | | | |
| 33 | | benzo[ghi]perylene | | | | 0.2 | mg/kg | | 0.176 | mg/kg | 0.0000176 % | ✓ | |
| | | | 205-883-8 | 191-24-2 | | | | | | | | | |
| 34 | | polychlorobiphenyls; PCB | | | | <0.03 | mg/kg | | <0.03 | mg/kg | <0.000003 % | | <LOD |
| | | 602-039-00-4 | 215-648-1 | 1336-36-3 | | | | | | | | | |
| 35 | | vanadium { divanadium pentaoxide; vanadium pentoxide } | | | | 31.7 | mg/kg | 1.785 | 49.686 | mg/kg | 0.00497 % | ✓ | |
| | | 023-001-00-8 | 215-239-8 | 1314-62-1 | | | | | | | | | |
| 36 | | barium { barium sulphide } | | | | 69 | mg/kg | 1.233 | 74.728 | mg/kg | 0.00747 % | ✓ | |
| | | 016-002-00-X | 244-214-4 | 21109-95-5 | | | | | | | | | |
| 37 | | 1-naphtol | | | | <1 | mg/kg | | <1 | mg/kg | <0.0001 % | | <LOD |
| | | 604-029-00-5 | 201-969-4 | 90-15-3 | | | | | | | | | |
| 38 | | coronene | | | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| | | | 205-881-7 | 191-07-1 | | | | | | | | | |
| 39 | | m-cresol; [1] o-cresol; [2] p-cresol; [3] mix-cresol [4] | | | | <2 | mg/kg | | <2 | mg/kg | <0.0002 % | | <LOD |
| | | 604-004-00-9 | 203-577-9 [1]<br>202-423-8 [2]<br>203-398-6 [3]<br>215-293-2 [4] | 108-39-4 [1]<br>95-48-7 [2]<br>106-44-5 [3]<br>1319-77-3 [4] | | | | | | | | | |
| 40 | | 3,4-xylenol; [1] 2,5-xylenol; [2] 2,4-xylenol; [3] 2,3-xylenol; [4] 2,6-xylenol; [5] xylenol; [6] 2,4(or 2,5)-xylenol [7] | | | | <2 | mg/kg | | <2 | mg/kg | <0.0002 % | | <LOD |
| | | 604-006-00-X | 202-439-5 [1]<br>202-461-5 [2]<br>203-321-6 [3]<br>208-395-3 [4]<br>209-400-1 [5] | 95-65-8 [1]<br>95-87-4 [2]<br>105-67-9 [3]<br>526-75-0 [4]<br>576-26-1 [5] | | | | | | | | | |

| # | | Determinand | | | CLP Note | User entered data | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | EU CLP index number | EC Number | CAS Number | | | | | | | |
| | | | 215-089-3 [6]<br>276-245-4 [7] | 1300-71-6 [6]<br>71975-58-1 [7] | | | | | | | |
| | | | | | | | | Total: | 0.0568 % | | |

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 |

## Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No liquid phase, to lower concentration to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0029%)

## WAC results for sample: WS01-0.30--11/09/2023

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) | % | 1.5 | 3 | 5 | 6 |
| 2 | LOI (loss on ignition) | % | 6.8 | - | - | 10 |
| 3 | BTEX (benzene, toluene, ethylbenzene and xylenes) | mg/kg | <0.01 | 6 | - | - |
| 4 | PCBs (polychlorinated biphenyls, 7 congeners) | mg/kg | <0.03 | 1 | - | - |
| 5 | Mineral oil (C10 to C40) | mg/kg | 9 | 500 | - | - |
| 6 | PAHs (polycyclic aromatic hydrocarbons) | mg/kg | 3 | 100 | - | - |
| 7 | pH | pH | 8.1 | - | >6 | - |
| 8 | ANC (acid neutralisation capacity) | mol/kg | <0.1 | - | - | - |
| Eluate Analysis 10:1 | | | | | | |
| 9 | arsenic | mg/kg | <0.05 | 0.5 | 2 | 25 |
| 10 | barium | mg/kg | 0.24 | 20 | 100 | 300 |
| 11 | cadmium | mg/kg | <0.01 | 0.04 | 1 | 5 |
| 12 | chromium | mg/kg | <0.05 | 0.5 | 10 | 70 |
| 13 | copper | mg/kg | <0.05 | 2 | 50 | 100 |
| 14 | mercury | mg/kg | <0.01 | 0.01 | 0.2 | 2 |
| 15 | molybdenum | mg/kg | <0.05 | 0.5 | 10 | 30 |
| 16 | nickel | mg/kg | <0.05 | 0.4 | 10 | 40 |
| 17 | lead | mg/kg | <0.05 | 0.5 | 10 | 50 |
| 18 | antimony | mg/kg | <0.05 | 0.06 | 0.7 | 5 |
| 19 | selenium | mg/kg | <0.05 | 0.1 | 0.5 | 7 |
| 20 | zinc | mg/kg | <0.05 | 4 | 50 | 200 |
| 21 | chloride | mg/kg | 73 | 800 | 15,000 | 25,000 |
| 22 | fluoride | mg/kg | <10 | 10 | 150 | 500 |
| 23 | sulphate | mg/kg | 110 | 1,000 | 20,000 | 50,000 |
| 24 | phenol index | mg/kg | <0.1 | 1 | - | - |
| 25 | DOC (dissolved organic carbon) | mg/kg | 83 | 500 | 800 | 1,000 |
| 26 | TDS (total dissolved solids) | mg/kg | 1340 | 4,000 | 60,000 | 100,000 |

Key

| | |
|---|---|
| | User supplied data |
| | Not applicable |

## Classification of sample: WS02-0.10--11/09/2023

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

## Sample details

Sample name:
**WS02-0.10--11/09/2023**
Moisture content:
**17%**
(wet weight correction)

LoW Code:
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: 17% Wet Weight Moisture Correction applied (MC)

| # | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | arsenic { arsenic trioxide } | 033-003-00-0 | 215-481-4 | 1327-53-3 | | 26.8 mg/kg | 1.32 | 29.369 mg/kg | 0.00294 % | ✓ | |
| 2 | beryllium { beryllium oxide } | 004-003-00-8 | 215-133-1 | 1304-56-9 | | 0.9 mg/kg | 2.775 | 2.073 mg/kg | 0.000207 % | ✓ | |
| 3 | boron { diboron trioxide; boric oxide } | 005-008-00-8 | 215-125-8 | 1303-86-2 | | <0.5 mg/kg | 3.22 | <1.61 mg/kg | <0.000161 % | | <LOD |
| 4 | cadmium { cadmium oxide } | 048-002-00-0 | 215-146-2 | 1306-19-0 | | <0.2 mg/kg | 1.142 | <0.228 mg/kg | <0.0000228 % | | <LOD |
| 5 | chromium in chromium(III) compounds { chromium(III) oxide (worst case) } | | 215-160-9 | 1308-38-9 | | 11.7 mg/kg | 1.462 | 14.193 mg/kg | 0.00142 % | ✓ | |
| 6 | chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } | 024-017-00-8 | | | | <0.8 mg/kg | 2.27 | <1.816 mg/kg | <0.000182 % | | <LOD |
| 7 | copper { dicopper oxide; copper (I) oxide } | 029-002-00-X | 215-270-7 | 1317-39-1 | | 19.4 mg/kg | 1.126 | 18.129 mg/kg | 0.00181 % | ✓ | |
| 8 | lead { lead chromate } | 082-004-00-2 | 231-846-0 | 7758-97-6 | 1 | 23.9 mg/kg | 1.56 | 30.942 mg/kg | 0.00198 % | ✓ | |
| 9 | mercury { mercury dichloride } | 080-010-00-X | 231-299-8 | 7487-94-7 | | <0.1 mg/kg | 1.353 | <0.135 mg/kg | <0.0000135 % | | <LOD |
| 10 | nickel { nickel chromate } | 028-035-00-7 | 238-766-5 | 14721-18-7 | | 9.6 mg/kg | 2.976 | 23.715 mg/kg | 0.00237 % | ✓ | |
| 11 | selenium { nickel selenate } | 028-031-00-5 | 239-125-2 | 15060-62-5 | | <1 mg/kg | 2.554 | <2.554 mg/kg | <0.000255 % | | <LOD |
| 12 | zinc { zinc chromate } | 024-007-00-3 | 236-878-9 | 13530-65-9 | | 47.2 mg/kg | 2.774 | 108.68 mg/kg | 0.0109 % | ✓ | |
| 13 | TPH (C6 to C40) petroleum group | | | TPH | | 25.1 mg/kg | | 20.833 mg/kg | 0.00208 % | ✓ | |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane | 603-181-00-X | 216-653-1 | 1634-04-4 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 15 | benzene | 601-020-00-8 | 200-753-7 | 71-43-2 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 16 | toluene | 601-021-00-3 | 203-625-9 | 108-88-3 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |

| # | | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | | ethylbenzene | 601-023-00-4 | 202-849-4 | 100-41-4 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 18 | | xylene | 601-022-00-9 | 202-422-2 [1]<br>203-396-5 [2]<br>203-576-3 [3]<br>215-535-7 [4] | 95-47-6 [1]<br>106-42-3 [2]<br>108-38-3 [3]<br>1330-20-7 [4] | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 19 | | cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } | 006-007-00-5 | | | | <1 | mg/kg | 1.884 | <1.884 | mg/kg | <0.000188 % | | <LOD |
| 20 | | pH | | | PH | | 6.2 | pH | | 6.2 | pH | 6.2 pH | | |
| 21 | | naphthalene | 601-052-00-2 | 202-049-5 | 91-20-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 22 | | acenaphthylene | | 205-917-1 | 208-96-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 23 | | acenaphthene | | 201-469-6 | 83-32-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 24 | | fluorene | | 201-695-5 | 86-73-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 25 | | phenanthrene | | 201-581-5 | 85-01-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 26 | | anthracene | | 204-371-1 | 120-12-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 27 | | fluoranthene | | 205-912-4 | 206-44-0 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 28 | | pyrene | | 204-927-3 | 129-00-0 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 29 | | benzo[a]anthracene | 601-033-00-9 | 200-280-6 | 56-55-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 30 | | chrysene | 601-048-00-0 | 205-923-4 | 218-01-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 31 | | benzo[b]fluoranthene | 601-034-00-4 | 205-911-9 | 205-99-2 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 32 | | benzo[k]fluoranthene | 601-036-00-5 | 205-916-6 | 207-08-9 | | <0.03 | mg/kg | | <0.03 | mg/kg | <0.000003 % | | <LOD |
| 33 | | benzo[a]pyrene; benzo[def]chrysene | 601-032-00-3 | 200-028-5 | 50-32-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 34 | | indeno[123-cd]pyrene | | 205-893-2 | 193-39-5 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 35 | | dibenz[a,h]anthracene | 601-041-00-2 | 200-181-8 | 53-70-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 36 | | benzo[ghi]perylene | | 205-883-8 | 191-24-2 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 37 | | vanadium { divanadium pentaoxide; vanadium pentoxide } | 023-001-00-8 | 215-239-8 | 1314-62-1 | | 38.2 | mg/kg | 1.785 | 56.601 | mg/kg | 0.00566 % | ✓ | |
| 38 | | sulfur { sulfur } | 016-094-00-1 | 231-722-6 | 7704-34-9 | | <20 | mg/kg | | <20 | mg/kg | <0.002 % | | <LOD |
| | | | | | | | | | | | Total: | 0.0322 % | | |

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 |

## Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No liquid phase, to lower concentration to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00208%)

## Classification of sample: WS03-0.10--11/09/2023

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

## Sample details

Sample name:
**WS03-0.10--11/09/2023**
Moisture content:
**17.3%**
(wet weight correction)

LoW Code:
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: 17.3% Wet Weight Moisture Correction applied (MC)

| # | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | arsenic { arsenic trioxide } | 033-003-00-0 | 215-481-4 | 1327-53-3 | | 26.3 mg/kg | 1.32 | 28.717 mg/kg | 0.00287 % | ✓ | |
| 2 | beryllium { beryllium oxide } | 004-003-00-8 | 215-133-1 | 1304-56-9 | | 1 mg/kg | 2.775 | 2.295 mg/kg | 0.00023 % | ✓ | |
| 3 | boron { diboron trioxide; boric oxide } | 005-008-00-8 | 215-125-8 | 1303-86-2 | | <0.5 mg/kg | 3.22 | <1.61 mg/kg | <0.000161 % | | <LOD |
| 4 | cadmium { cadmium oxide } | 048-002-00-0 | 215-146-2 | 1306-19-0 | | <0.2 mg/kg | 1.142 | <0.228 mg/kg | <0.0000228 % | | <LOD |
| 5 | chromium in chromium(III) compounds { chromium(III) oxide (worst case) } | | 215-160-9 | 1308-38-9 | | 15.5 mg/kg | 1.462 | 18.735 mg/kg | 0.00187 % | ✓ | |
| 6 | chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } | 024-017-00-8 | | | | <0.8 mg/kg | 2.27 | <1.816 mg/kg | <0.000182 % | | <LOD |
| 7 | copper { dicopper oxide; copper (I) oxide } | 029-002-00-X | 215-270-7 | 1317-39-1 | | 24.8 mg/kg | 1.126 | 23.092 mg/kg | 0.00231 % | ✓ | |
| 8 | lead { lead chromate } | 082-004-00-2 | 231-846-0 | 7758-97-6 | 1 | 28.5 mg/kg | 1.56 | 36.764 mg/kg | 0.00236 % | ✓ | |
| 9 | mercury { mercury dichloride } | 080-010-00-X | 231-299-8 | 7487-94-7 | | <0.1 mg/kg | 1.353 | <0.135 mg/kg | <0.0000135 % | | <LOD |
| 10 | nickel { nickel chromate } | 028-035-00-7 | 238-766-5 | 14721-18-7 | | 14.5 mg/kg | 2.976 | 35.69 mg/kg | 0.00357 % | ✓ | |
| 11 | selenium { nickel selenate } | 028-031-00-5 | 239-125-2 | 15060-62-5 | | <1 mg/kg | 2.554 | <2.554 mg/kg | <0.000255 % | | <LOD |
| 12 | zinc { zinc chromate } | 024-007-00-3 | 236-878-9 | 13530-65-9 | | 62.9 mg/kg | 2.774 | 144.306 mg/kg | 0.0144 % | ✓ | |
| 13 | TPH (C6 to C40) petroleum group | | | TPH | | 11.3 mg/kg | | 9.345 mg/kg | 0.000935 % | ✓ | |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane | 603-181-00-X | 216-653-1 | 1634-04-4 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 15 | benzene | 601-020-00-8 | 200-753-7 | 71-43-2 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 16 | toluene | 601-021-00-3 | 203-625-9 | 108-88-3 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |

| # | | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | | ethylbenzene | 601-023-00-4 | 202-849-4 | 100-41-4 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 18 | | xylene | 601-022-00-9 | 202-422-2 [1]<br>203-396-5 [2]<br>203-576-3 [3]<br>215-535-7 [4] | 95-47-6 [1]<br>106-42-3 [2]<br>108-38-3 [3]<br>1330-20-7 [4] | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 19 | | cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } | 006-007-00-5 | | | | 1.1 | mg/kg | 1.884 | 1.714 | mg/kg | 0.000171 % | ✓ | |
| 20 | | pH | | | PH | | 7 | pH | | 7 | pH | 7pH | | |
| 21 | | naphthalene | 601-052-00-2 | 202-049-5 | 91-20-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 22 | | acenaphthylene | | 205-917-1 | 208-96-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 23 | | acenaphthene | | 201-469-6 | 83-32-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 24 | | fluorene | | 201-695-5 | 86-73-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 25 | | phenanthrene | | 201-581-5 | 85-01-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 26 | | anthracene | | 204-371-1 | 120-12-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 27 | | fluoranthene | | 205-912-4 | 206-44-0 | | 0.03 | mg/kg | | 0.0248 | mg/kg | 0.00000248 % | ✓ | |
| 28 | | pyrene | | 204-927-3 | 129-00-0 | | 0.03 | mg/kg | | 0.0248 | mg/kg | 0.00000248 % | ✓ | |
| 29 | | benzo[a]anthracene | 601-033-00-9 | 200-280-6 | 56-55-3 | | 0.02 | mg/kg | | 0.0165 | mg/kg | 0.00000165 % | ✓ | |
| 30 | | chrysene | 601-048-00-0 | 205-923-4 | 218-01-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 31 | | benzo[b]fluoranthene | 601-034-00-4 | 205-911-9 | 205-99-2 | | 0.02 | mg/kg | | 0.0165 | mg/kg | 0.00000165 % | ✓ | |
| 32 | | benzo[k]fluoranthene | 601-036-00-5 | 205-916-6 | 207-08-9 | | <0.03 | mg/kg | | <0.03 | mg/kg | <0.000003 % | | <LOD |
| 33 | | benzo[a]pyrene; benzo[def]chrysene | 601-032-00-3 | 200-028-5 | 50-32-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 34 | | indeno[123-cd]pyrene | | 205-893-2 | 193-39-5 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 35 | | dibenz[a,h]anthracene | 601-041-00-2 | 200-181-8 | 53-70-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 36 | | benzo[ghi]perylene | | 205-883-8 | 191-24-2 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 37 | | vanadium { divanadium pentaoxide; vanadium pentoxide } | 023-001-00-8 | 215-239-8 | 1314-62-1 | | 42 | mg/kg | 1.785 | 62.007 | mg/kg | 0.0062 % | ✓ | |
| 38 | | sulfur { sulfur } | 016-094-00-1 | 231-722-6 | 7704-34-9 | | 26 | mg/kg | | 21.502 | mg/kg | 0.00215 % | ✓ | |
| | | | | | | | | | | | Total: | 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 |
| **<LOD** | Below limit of detection |
| CLP: Note 1 | Only the metal concentration has been used for classification |

## Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No liquid phase, to lower concentration to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00093%)

## Classification of sample: WS04-0.10--11/09/2023

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

## Sample details

Sample name:
**WS04-0.10--11/09/2023**
Moisture content:
**11%**
(wet weight correction)

LoW Code:
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: 11% Wet Weight Moisture Correction applied (MC)

| # | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | arsenic { arsenic trioxide } | 033-003-00-0 | 215-481-4 | 1327-53-3 | | 10.7 | mg/kg | 1.32 | 12.573 | mg/kg | 0.00126 % | ✓ | |
| 2 | beryllium { beryllium oxide } | 004-003-00-8 | 215-133-1 | 1304-56-9 | | 0.8 | mg/kg | 2.775 | 1.976 | mg/kg | 0.000198 % | ✓ | |
| 3 | boron { diboron trioxide; boric oxide } | 005-008-00-8 | 215-125-8 | 1303-86-2 | | 1.2 | mg/kg | 3.22 | 3.439 | mg/kg | 0.000344 % | ✓ | |
| 4 | cadmium { cadmium oxide } | 048-002-00-0 | 215-146-2 | 1306-19-0 | | 0.3 | mg/kg | 1.142 | 0.305 | mg/kg | 0.0000305 % | ✓ | |
| 5 | chromium in chromium(III) compounds { chromium(III) oxide (worst case) } | | 215-160-9 | 1308-38-9 | | 6.6 | mg/kg | 1.462 | 8.585 | mg/kg | 0.000859 % | ✓ | |
| 6 | chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } | 024-017-00-8 | | | | <0.8 | mg/kg | 2.27 | <1.816 | mg/kg | <0.000182 % | | <LOD |
| 7 | copper { dicopper oxide; copper (I) oxide } | 029-002-00-X | 215-270-7 | 1317-39-1 | | 28.9 | mg/kg | 1.126 | 28.959 | mg/kg | 0.0029 % | ✓ | |
| 8 | lead { lead chromate } | 082-004-00-2 | 231-846-0 | 7758-97-6 | 1 | 56.5 | mg/kg | 1.56 | 78.435 | mg/kg | 0.00503 % | ✓ | |
| 9 | mercury { mercury dichloride } | 080-010-00-X | 231-299-8 | 7487-94-7 | | <0.1 | mg/kg | 1.353 | <0.135 | mg/kg | <0.0000135 % | | <LOD |
| 10 | nickel { nickel chromate } | 028-035-00-7 | 238-766-5 | 14721-18-7 | | 16.6 | mg/kg | 2.976 | 43.971 | mg/kg | 0.0044 % | ✓ | |
| 11 | selenium { nickel selenate } | 028-031-00-5 | 239-125-2 | 15060-62-5 | | <1 | mg/kg | 2.554 | <2.554 | mg/kg | <0.000255 % | | <LOD |
| 12 | zinc { zinc chromate } | 024-007-00-3 | 236-878-9 | 13530-65-9 | | 110 | mg/kg | 2.774 | 271.589 | mg/kg | 0.0272 % | ✓ | |
| 13 | TPH (C6 to C40) petroleum group | | | TPH | | 25.7 | mg/kg | | 22.873 | mg/kg | 0.00229 % | ✓ | |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane | 603-181-00-X | 216-653-1 | 1634-04-4 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 15 | benzene | 601-020-00-8 | 200-753-7 | 71-43-2 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 16 | toluene | 601-021-00-3 | 203-625-9 | 108-88-3 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |

| # | | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | | ethylbenzene | 601-023-00-4 | 202-849-4 | 100-41-4 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 18 | | xylene | 601-022-00-9 | 202-422-2 [1]<br>203-396-5 [2]<br>203-576-3 [3]<br>215-535-7 [4] | 95-47-6 [1]<br>106-42-3 [2]<br>108-38-3 [3]<br>1330-20-7 [4] | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 19 | | cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } | 006-007-00-5 | | | | <1 | mg/kg | 1.884 | <1.884 | mg/kg | <0.000188 % | | <LOD |
| 20 | | pH | | | PH | | 8.2 | pH | | 8.2 | pH | 8.2 pH | | |
| 21 | | naphthalene | 601-052-00-2 | 202-049-5 | 91-20-3 | | 0.02 | mg/kg | | 0.0178 | mg/kg | 0.00000178 % | ✓ | |
| 22 | | acenaphthylene | | 205-917-1 | 208-96-8 | | 0.06 | mg/kg | | 0.0534 | mg/kg | 0.00000534 % | ✓ | |
| 23 | | acenaphthene | | 201-469-6 | 83-32-9 | | 0.03 | mg/kg | | 0.0267 | mg/kg | 0.00000267 % | ✓ | |
| 24 | | fluorene | | 201-695-5 | 86-73-7 | | 0.04 | mg/kg | | 0.0356 | mg/kg | 0.00000356 % | ✓ | |
| 25 | | phenanthrene | | 201-581-5 | 85-01-8 | | 0.6 | mg/kg | | 0.534 | mg/kg | 0.0000534 % | ✓ | |
| 26 | | anthracene | | 204-371-1 | 120-12-7 | | 0.16 | mg/kg | | 0.142 | mg/kg | 0.0000142 % | ✓ | |
| 27 | | fluoranthene | | 205-912-4 | 206-44-0 | | 1.32 | mg/kg | | 1.175 | mg/kg | 0.000117 % | ✓ | |
| 28 | | pyrene | | 204-927-3 | 129-00-0 | | 1.15 | mg/kg | | 1.023 | mg/kg | 0.000102 % | ✓ | |
| 29 | | benzo[a]anthracene | 601-033-00-9 | 200-280-6 | 56-55-3 | | 0.69 | mg/kg | | 0.614 | mg/kg | 0.0000614 % | ✓ | |
| 30 | | chrysene | 601-048-00-0 | 205-923-4 | 218-01-9 | | 0.76 | mg/kg | | 0.676 | mg/kg | 0.0000676 % | ✓ | |
| 31 | | benzo[b]fluoranthene | 601-034-00-4 | 205-911-9 | 205-99-2 | | 0.99 | mg/kg | | 0.881 | mg/kg | 0.0000881 % | ✓ | |
| 32 | | benzo[k]fluoranthene | 601-036-00-5 | 205-916-6 | 207-08-9 | | 0.38 | mg/kg | | 0.338 | mg/kg | 0.0000338 % | ✓ | |
| 33 | | benzo[a]pyrene; benzo[def]chrysene | 601-032-00-3 | 200-028-5 | 50-32-8 | | 0.93 | mg/kg | | 0.828 | mg/kg | 0.0000828 % | ✓ | |
| 34 | | indeno[123-cd]pyrene | | 205-893-2 | 193-39-5 | | 0.71 | mg/kg | | 0.632 | mg/kg | 0.0000632 % | ✓ | |
| 35 | | dibenz[a,h]anthracene | 601-041-00-2 | 200-181-8 | 53-70-3 | | 0.16 | mg/kg | | 0.142 | mg/kg | 0.0000142 % | ✓ | |
| 36 | | benzo[ghi]perylene | | 205-883-8 | 191-24-2 | | 0.75 | mg/kg | | 0.668 | mg/kg | 0.0000668 % | ✓ | |
| 37 | | vanadium { divanadium pentaoxide; vanadium pentoxide } | 023-001-00-8 | 215-239-8 | 1314-62-1 | | 29.8 | mg/kg | 1.785 | 47.347 | mg/kg | 0.00473 % | ✓ | |
| 38 | | sulfur { sulfur } | 016-094-00-1 | 231-722-6 | 7704-34-9 | | <20 | mg/kg | | <20 | mg/kg | <0.002 % | | <LOD |
| | | | | | | | | | | | Total: | 0.0526 % | | |

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 |

## Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No liquid phase, to lower concentration to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00229%)

## Classification of sample: WS05-0.10--11/09/2023

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

## Sample details

Sample name:
**WS05-0.10--11/09/2023**
Moisture content:
**12.5%**
(wet weight correction)

LoW Code:
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: 12.5% Wet Weight Moisture Correction applied (MC)

| # | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | arsenic { arsenic trioxide } | 033-003-00-0 | 215-481-4 | 1327-53-3 | | 11.8 mg/kg | 1.32 | 13.632 mg/kg | 0.00136 % | ✓ | |
| 2 | beryllium { beryllium oxide } | 004-003-00-8 | 215-133-1 | 1304-56-9 | | 0.6 mg/kg | 2.775 | 1.457 mg/kg | 0.000146 % | ✓ | |
| 3 | boron { diboron trioxide; boric oxide } | 005-008-00-8 | 215-125-8 | 1303-86-2 | | <0.5 mg/kg | 3.22 | <1.61 mg/kg | <0.000161 % | | <LOD |
| 4 | cadmium { cadmium oxide } | 048-002-00-0 | 215-146-2 | 1306-19-0 | | <0.2 mg/kg | 1.142 | <0.228 mg/kg | <0.0000228 % | | <LOD |
| 5 | chromium in chromium(III) compounds { chromium(III) oxide (worst case) } | | 215-160-9 | 1308-38-9 | | 6.5 mg/kg | 1.462 | 8.313 mg/kg | 0.000831 % | ✓ | |
| 6 | chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } | 024-017-00-8 | | | | <0.8 mg/kg | 2.27 | <1.816 mg/kg | <0.000182 % | | <LOD |
| 7 | copper { dicopper oxide; copper (I) oxide } | 029-002-00-X | 215-270-7 | 1317-39-1 | | 20.5 mg/kg | 1.126 | 20.196 mg/kg | 0.00202 % | ✓ | |
| 8 | lead { lead chromate } | 082-004-00-2 | 231-846-0 | 7758-97-6 | 1 | 22 mg/kg | 1.56 | 30.026 mg/kg | 0.00193 % | ✓ | |
| 9 | mercury { mercury dichloride } | 080-010-00-X | 231-299-8 | 7487-94-7 | | <0.1 mg/kg | 1.353 | <0.135 mg/kg | <0.0000135 % | | <LOD |
| 10 | nickel { nickel chromate } | 028-035-00-7 | 238-766-5 | 14721-18-7 | | 11.4 mg/kg | 2.976 | 29.688 mg/kg | 0.00297 % | ✓ | |
| 11 | selenium { nickel selenate } | 028-031-00-5 | 239-125-2 | 15060-62-5 | | <1 mg/kg | 2.554 | <2.554 mg/kg | <0.000255 % | | <LOD |
| 12 | zinc { zinc chromate } | 024-007-00-3 | 236-878-9 | 13530-65-9 | | 100 mg/kg | 2.774 | 242.738 mg/kg | 0.0243 % | ✓ | |
| 13 | TPH (C6 to C40) petroleum group | | | TPH | | 12.3 mg/kg | | 10.763 mg/kg | 0.00108 % | ✓ | |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane | 603-181-00-X | 216-653-1 | 1634-04-4 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 15 | benzene | 601-020-00-8 | 200-753-7 | 71-43-2 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |
| 16 | toluene | 601-021-00-3 | 203-625-9 | 108-88-3 | | <0.01 mg/kg | | <0.01 mg/kg | <0.000001 % | | <LOD |

| # | | Determinand | EU CLP index number | EC Number | CAS Number | CLP Note | User entered data | | Conv. Factor | Compound conc. | | Classification value | MC Applied | Conc. Not Used |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 17 | | ethylbenzene | 601-023-00-4 | 202-849-4 | 100-41-4 | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 18 | | xylene | 601-022-00-9 | 202-422-2 [1]<br>203-396-5 [2]<br>203-576-3 [3]<br>215-535-7 [4] | 95-47-6 [1]<br>106-42-3 [2]<br>108-38-3 [3]<br>1330-20-7 [4] | | <0.01 | mg/kg | | <0.01 | mg/kg | <0.000001 % | | <LOD |
| 19 | | cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } | 006-007-00-5 | | | | 1.1 | mg/kg | 1.884 | 1.813 | mg/kg | 0.000181 % | ✓ | |
| 20 | | pH | | | PH | | 6.8 | pH | | 6.8 | pH | 6.8 pH | | |
| 21 | | naphthalene | 601-052-00-2 | 202-049-5 | 91-20-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 22 | | acenaphthylene | | 205-917-1 | 208-96-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 23 | | acenaphthene | | 201-469-6 | 83-32-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 24 | | fluorene | | 201-695-5 | 86-73-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 25 | | phenanthrene | | 201-581-5 | 85-01-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 26 | | anthracene | | 204-371-1 | 120-12-7 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 27 | | fluoranthene | | 205-912-4 | 206-44-0 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 28 | | pyrene | | 204-927-3 | 129-00-0 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 29 | | benzo[a]anthracene | 601-033-00-9 | 200-280-6 | 56-55-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 30 | | chrysene | 601-048-00-0 | 205-923-4 | 218-01-9 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 31 | | benzo[b]fluoranthene | 601-034-00-4 | 205-911-9 | 205-99-2 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 32 | | benzo[k]fluoranthene | 601-036-00-5 | 205-916-6 | 207-08-9 | | <0.03 | mg/kg | | <0.03 | mg/kg | <0.000003 % | | <LOD |
| 33 | | benzo[a]pyrene; benzo[def]chrysene | 601-032-00-3 | 200-028-5 | 50-32-8 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 34 | | indeno[123-cd]pyrene | | 205-893-2 | 193-39-5 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 35 | | dibenz[a,h]anthracene | 601-041-00-2 | 200-181-8 | 53-70-3 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 36 | | benzo[ghi]perylene | | 205-883-8 | 191-24-2 | | <0.02 | mg/kg | | <0.02 | mg/kg | <0.000002 % | | <LOD |
| 37 | | vanadium { divanadium pentaoxide; vanadium pentoxide } | 023-001-00-8 | 215-239-8 | 1314-62-1 | | 30.5 | mg/kg | 1.785 | 47.642 | mg/kg | 0.00476 % | ✓ | |
| 38 | | sulfur { sulfur } | 016-094-00-1 | 231-722-6 | 7704-34-9 | | <20 | mg/kg | | <20 | mg/kg | <0.002 % | | <LOD |
| | | | | | | | | | | | Total: | 0.0422 % | | |

Key

| | |
|---|---|
| | User supplied data |
| | Determinand values ignored for classification, see column 'Conc. Not Used' for reason |
| | Determinand defined or amended by HazWasteOnline (see Appendix A) |
| | Speciated 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 |

## Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No liquid phase, to lower concentration to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00108%)

## 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

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

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

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

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

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

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

**pH** (CAS Number: PH)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**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

**barium sulphide** (EC Number: 244-214-4, CAS Number: 21109-95-5)

GB MCL index number: 016-002-00-X
Description/Comments:
Additional Hazard Statement(s): EUH031 >= 0.8 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH031 >= 0.8 % hazard statement sourced from: WM3, Table C12.2

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

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

## 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)

**beryllium {beryllium oxide}**

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

**boron {diboron trioxide; boric oxide}**

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

**cadmium {cadmium oxide}**

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

**chromium 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)

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

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

**vanadium {divanadium pentaoxide; vanadium pentoxide}**

Most likely occurrence

**sulfur {sulfur}**

Most likely occurrence

**antimony {antimony trioxide}**

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings (edit as required)

**molybdenum {molybdenum(VI) oxide}**

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

**barium {barium sulphide}**

here isn't enough Metal and Cr(VI) to make the Metal chromate - but there are no hazardous levels in any case.

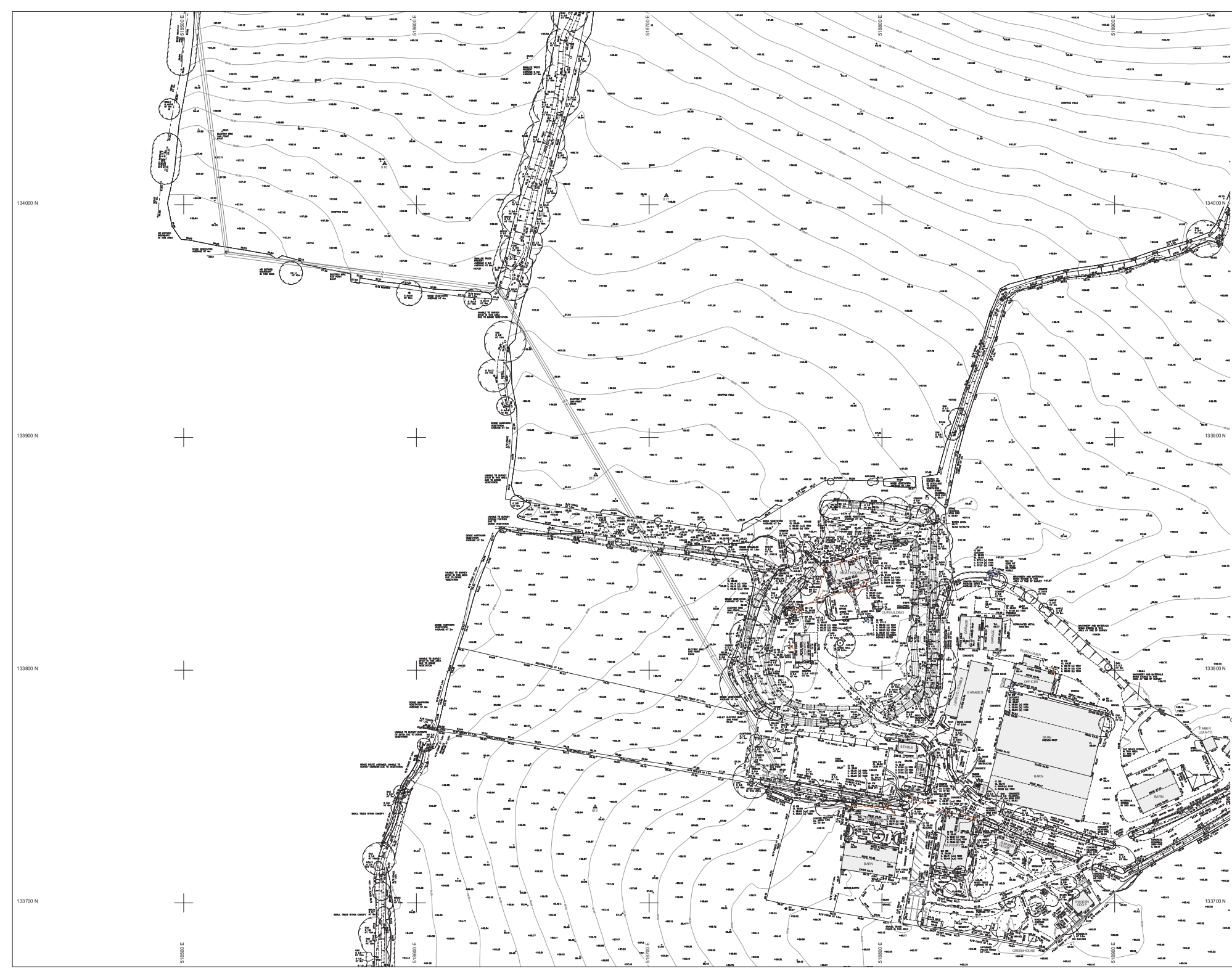
## Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.271.5764.10641 (28 Sep 2023)
HazWasteOnline Database: 2023.270.5761.10634 (27 Sep 2023)

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

# APPENDIX E

# TOPOGRAPHICAL SURVEY OF FORMER FARM YARD




Notes:

1. GRID AND LEVELS BASED ON ORDNANCE DATUM, DERIVED FROM THE NATIONAL GNSS NETWORK. LOCAL SCALE FACTOR 0.99997 APPLIED.
2. DRAINAGE INFORMATION HAS BEEN DETERMINED WITHOUT MAN ENTRY INTO CHAMBERS AND WHILST EVERY EFFORT HAS BEEN MADE TO CORRECTLY IDENTIFY THIS INFORMATION IT SHOULD ALWAYS BE CHECKED IN AREAS THAT ARE CRITICAL TO THE FUTURE PROPOSAL.
3. ALL SEWERS ARE PRESUMED TO BE STRAIGHT BETWEEN CHAMBERS. WIT H ROUTES / CONNECTIVITY OBTAINED USING ACOUSTIC METHODS ONLY. THESE ARE TO BE CONSIDERED ASSUMED AND SHOULD BE INVESTIGATED FURTHER IN CRITICAL AREAS.
4. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.
5. BACKGROUND INFORMATION TAKEN FROM ORDNANCE SURVEY DIGITAL DATA (SHOWN BLUE).

Coordinate Table

| Station | Description | Easting | Northing | Level |
|---|---|---|---|---|
| S1 | PEG | 518868.225 | 133503.385 | 54.531 |
| S2 | PEG | 518994.596 | 133439.371 | 52.191 |
| S3 | PEG | 519085.590 | 133598.496 | 53.169 |
| S4 | PEG | 519130.181 | 133685.121 | 56.002 |
| S5 | PEG | 519194.810 | 133775.225 | 57.626 |
| S6 | PGM | 519191.647 | 133925.016 | 60.686 |
| S7 | PEG | 519068.172 | 133938.816 | 61.460 |
| S8 | PEG | 519054.168 | 134035.113 | 64.541 |
| S9 | PEG | 519088.821 | 134177.236 | 69.266 |
| S10 | PEG | 519128.805 | 134281.875 | 73.468 |
| S11 | PEG | 519022.416 | 134375.841 | 78.597 |
| S12 | PEG | 518906.736 | 134291.190 | 73.135 |
| S13 | PEG | 518826.549 | 134176.722 | 67.164 |
| S14 | PEG | 518706.365 | 134245.427 | 67.140 |
| S15 | PEG | 518607.379 | 134148.801 | 64.290 |
| S16 | PEG | 518586.341 | 134017.662 | 58.449 |
| S17 | PEG | 518707.403 | 134003.940 | 58.701 |
| S18 | PEG | 518677.073 | 133883.939 | 55.611 |
| S19 | PEG | 518676.783 | 133741.208 | 56.821 |
| S20 | PEG | 518618.374 | 133611.089 | 54.803 |
| S21 | PEG | 518731.375 | 133558.511 | 56.429 |

TOPOGRAPHICAL KEY

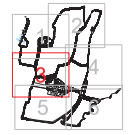
GENERAL ABBREVIATIONS

| | | | |
|---|---|---|---|
| SURVEY STATION | | AIR CONDITIONING UNIT | ACU |
| | | AIR VALVE | AV |
| | | AVERAGE | Av. |
| BARRING | | BACK OF KERB | BK |
| | | BARE LEVEL | BL |
| | | BELGIAN ROAD N | BR |
| | | BOLLARD | BO |
| | | BOLLARD LIGHT | BOLL |
| HEDGE SPREADS | | BRICK | BK |
| | | BUS STOP | BS |
| | | CABLE RISER | CR |
| WOOD AND CANOPY | | CABLE TV COVER | CATV |
| | | CABLES TV GROUND | CTV |
| ARROW ON STEPS / DIRECTION OF FLOW (POINTED TO DOWNWARDS) | | CATCH PIT | CP |
| | | CENTRE LINE | CL |
| | | COVER LEVEL | CL |
| | | CROSSING CONTROL BUTTON | CCB |
| TREES | SPREAD & BARK DIAG MIN TO SCALE | DRAINAGE CHAMBER | DCH |
| | | DROP KERB | DK |
| | | ELECTRICITY PILLE | EP |
| GATE | | FENCE | FN |
| | | FIRE HYDRANT | FH |
| KERB OR ANNEL | | FLOOR LEVEL | FL |
| | | FOOTPATH | FP |
| ROAD UNKERBED | | GAS GOVERNOR | GV |
| | | GAS INSET | GI |
| FOOTPATH | | GAS VALVE | GV |
| | | GRATING | GR |
| CHANGE IN SURFACE | | HANDHOLD | HD |
| | | INSPECTION COVER | IC |
| FENCE | | INVERT LEVEL | IL |
| | | KERB OUTLET | KO |
| WALL | | MANHOLE | MH |
| | | MARKER POST | MK |
| OVERHEAD ELECTRIC | | METER | MT |
| | | NUMBERS VISIBLE | NPV |
| OVERHEAD TELECOM | | ORDNANCE SURVEY BENCH MARK | OSBM |
| | | PEDESTAL | PED |
| FOUL SEWER | | POST | PT |
| | | POST BOX | P BOX |
| SURFACE SEWER | | ROADING EYE | RE |
| | | ROAD SIGN | RS |
| P-TRAP | | RODDING EYE | RE |
| | | RETAINING WALL | RW |
| BACK DROP (EXTERNAL) | | SOFT SPOT | SS |
| | | STEPS | STP |
| BACK DROP (INTERNAL) | | STREET NAME PLATE | SNP |
| | | STOP VALVE | SV |
| | | SUMP | SP |
| IN LINING | | SOIL STACK PIPE | SSP |
| | | SURFACE WATER | SW |
| OPEN WIDE READING | | TACTILE PAVING | TAC |
| | | TELEGRAPH POLE | TP |
| OVERHANG CANOPY | | TELEPHONE JUNCTION COVER | TJC |
| | | TELEPHONE CALL BOX | TCB |
| GLASSHOUSE | | TICKET MACHINE | TM |
| | | TRAFFIC LIGHT | TRAF |
| | | TRAFFIC LIGHT | TL |
| CONTOUR | | TRAFFIC LIGHT HOUSING | TLC |
| SPOT LEVEL | 97.73 | TRENCH LID LEVEL | TRL |
| SONAR LEVEL | 97.73 | UNABLE TO LOCATE | UTL |
| BORE HOLE | BH | UNABLE TO OPEN | UTO |
| TRIAL HOLE | TH | UNABLE TO SURVEY | UTS |
| | | VENTPIPE | VP |
| | | WATER LEVEL | WL |
| | | WATER METER | WM |
| | | WASH OUT | WO |
| | | WATER TAP | WT |

FENCE ABBREVIATIONS

| | | | |
|---|---|---|---|
| BARBED WIRE FENCE | BWF | IRON RAILING | IR |
| CLOSE BOARDED FENCE | CBF | LARCH LAP FENCE | LLL |
| CONCRETE PANEL FENCE | CPF | POST AND RAIL FENCE | PRF |
| CORRUGATED IRON FENCE | CIF | POST AND WIRE FENCE | PWF |
| CHAIN LINK FENCE | CLF | WIRE MESH FENCE | WMF |
| CHESTNUT PALING | CHP | | |

Sheet Layout: (Not to Scale)



N

Metres / Inches: 0m 5 10 15 20 25 30 35 40 45 50 55

mksurveys

Milton Keynes: Tel 01908 606361 / Tel 01908 534019 / Fax 01908 534020 / Tel 0845 2419162 — info@mk-surveys.co.uk
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Horsham: Tel 01403 241162 — horsham@mk-surveys.co.uk

www.mksurveys.com www.surveys-ibm.co.uk

Legal & General

Phase 1
Rusper Road
Horsham
West Sussex

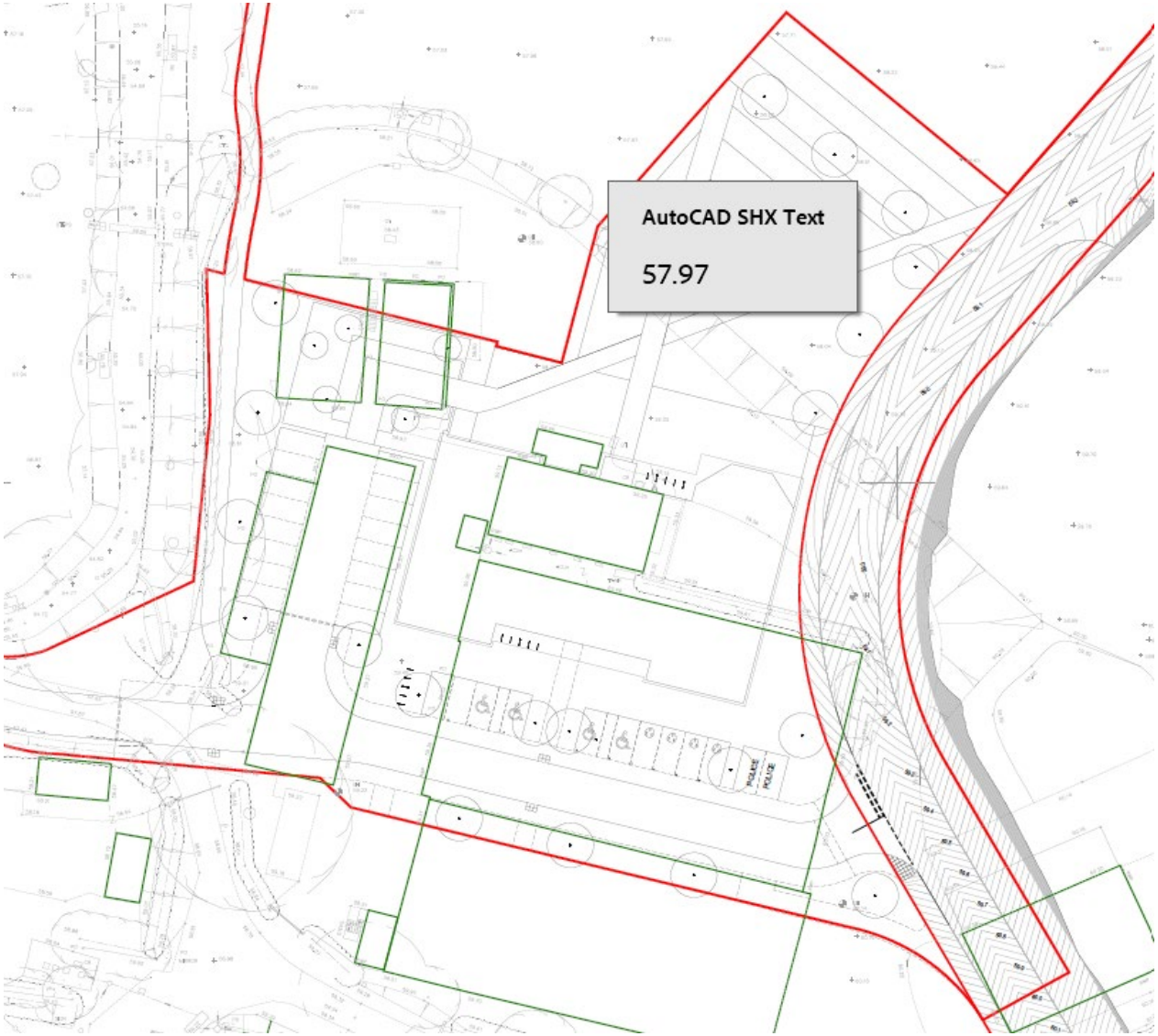
Topographical Survey

| Scale | Sheet Size | Sheet Number | Date |
|---|---|---|---|
| 1:500 | A0 | 3 | January 2020 |

| Project Number | Rev. | Surveyed by | Checked by | Approved by |
|---|---|---|---|---|
| 27971 | - | RG/JH | AJ | CP |

# APPENDIX F

# PROPOSED DEVELOPMENT OVERLAYED ON TOPOGRAPHICAL SURVEY OF FORMER FARM YARD




| | | | | | |
|---|---|---|---|---|---|
| **Project:** | Proposed Community Centre, North Horsham | | | **Title** | Proposed Development Ovelaying Topo survey of formaer farm yard |
| **Client:** | Legal and General Strategic Land North Horsham | | | **Geo-Environmental Services Ltd**<br>**Unit 7 Danworth Farm, Cuckfield Road**<br>**Hurstpierpoint, West Sussex BN6 9GL**<br>**+44(0)1273 832972 www.gesl.net** | Geo-Environmental |
| **Ref No:** | GE21959 | **Revision:** | 1 | | |
| **Drawn:** | GE21959 | **Date:** | 07/09/2023 | | |
| **Appendix** | **F** | **Scale:** | | | |