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## **PHASE 2: GROUND INVESTIGATION REPORT**

### **ADEPT CONSULTING ENGINEERS**

### **PROPOSED RESIDENTIAL DEVELOPMENT**

### **QUEENS DRIVE**

### **KIRKHALT**

### **ROCHDALE**

### **OL11 2NP**

**Project No: 25-446**

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Date:

19/11/2025

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Date:

24/11/2025

The information and / or advice contained in this Phase 2: Ground Investigation Report is based solely on, and is limited to, the boundaries of the site, the immediate area around the site, and the historical use(s) unless otherwise stated. This 'Report' has been prepared to collate information relating to the physical, environmental, and industrial setting of the site, and to highlight, where possible, the likely problems that might be encountered when considering the future development of this site for the proposed end use. All comments, opinions, diagrams, cross sections and / or sketches contained within the report, and / or any configuration of the findings is conjectural and given for guidance only and confirmation of the anticipated ground conditions should be considered before development proceeds. Agreement for the use or copying of this report by any Third Party must be obtained in writing from Arc Environmental Limited (ARC). If a change in the proposed land use is envisaged, then a reassessment of the site should be carried out.

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## 1.0 Introduction

**November 2025**

As requested by Adept Consulting Engineers and following the results of the Phase 1 Desk Top Study Report (Ref. 25-446, Arc Environmental Ltd, July 2025), Phase 2: Ground Investigation works have been carried out at a parcel of land adjacent to Queen's Drive, Rochdale, OL11 2NW, where the site is currently proposed for development as a combination of terrace houses and apartments with associated access, car parking, gardens and soft landscaped areas.

The intrusive investigation works undertaken comprised 7 no. windowless sampling boreholes (WS01 to WS07 inclusive), 4 no. mechanically excavated trial pits (TP01 to TP04 inclusive), 8 no. hand excavated trial pits with LWD testing (HP01 to HP08 inclusive) and the installation of 3 no. monitoring wells (WS01, WS03 & WS07).

The positions of the investigation locations can be seen on the Exploratory Hole Location Plan, a copy of which is attached in Appendix I. It should be noted that this plan is for orientating purposes only, as the plan is not to a standard scale.

## 2.0 Site Details

**Table 2.1**

N = north, E = east, S = south & W = west.

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name &amp; Address:</b>               | Land adjacent to Queens Drive, Kirkhale, Rochdale, OL11 2NP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>National Grid Reference:</b>               | 389270, 411300 (representative of the central part of the site).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Description of Location:</b>               | The eastern portion of the site forms a car park and the western portion is occupied by a medical centre and allotments. It is located in the southwest of Rochdale. Site access is gained off a minor private carriageway to the north of Queens Drive.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Site Boundaries:</b>                       | N = Queens Drive, E = residential dwellings, S = open undeveloped land, W = residential dwellings / Queens Drive.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Site Shape:</b>                            | The site is irregular in layout, occupying a total area of c.0.51 Hectares (Ha).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>General Topography:</b>                    | The ground profile at the site is relatively level with a slight decline to the west (with the standard contour height recorded between c.143m to c.145mAOD). A recent detailed topographical / utility survey has not been undertaken.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Site surfacing:</b>                        | Areas of dense cover of wild grasses, shrubbery and trees. Hardstanding (asphalt) cover within car parking and footpath, demolition rubble and fly-tipping / allotment waste (wood, concrete posts etc).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Above Ground Structures:</b>               | Electrical substation in the northeastern corner of the site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Sub-surface Structures &amp; Services:</b> | Surface water drainage inspection covers were noted on site. Potential other services beneath the site associated with the historical on site and existing adjacent developments. Relic concrete in ground structures / foundations associated with historical development.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Summary of Site History:</b>               | From the historical records reviewed since c.1851, the site was encompassed by undeveloped land (agricultural). A minor carriageway and drain / small surface water course spanned over the western site boundary. By c.1956 several semi-detached buildings are recorded on site (which were demolished by c.2024). A new building is constructed in the central portion of the site by c.2024. Recently an electrical substation has been constructed in the northeastern portion of the site. Salient adjacent features have included Rochdale Canal, Crest Mill with tank and filter bed, two historical infilled ponds, schools, road infrastructure and residential and an increase in light commercial end use. |

## 3.0 Scope of Works

**Table 3.1**

|                              |                                                                                                     |
|------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>Client:</b>               | MSV Housing                                                                                         |
| <b>Consulting Engineers:</b> | Adept Consulting Engineers                                                                          |
| <b>Project Type:</b>         | Proposed residential development with associated gardens, access, car parking and soft landscaping. |
| <b>Site Location Plan:</b>   | See Appendix I.                                                                                     |
| <b>Aerial Photograph:</b>    | See Appendix I.                                                                                     |

### 3.0 Scope of Works (Cont'd): -

**Table 3.1 Cont'd**

|                                       |                                                                                                                                                                                                                                                              |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Existing Site Layout:</b>          | See Appendix I.                                                                                                                                                                                                                                              |
| <b>Proposed Development Layout:</b>   | See Appendix I.                                                                                                                                                                                                                                              |
| <b>Intrusive Investigation Works:</b> | 7 no. windowless sampling boreholes (WS01 to WS07 inclusive)<br>4 no. mechanically excavated trial pits (TP01 to TP04 inclusive)<br>8 no. hand excavated trial pits with LWD testing (HP01 to HP08 inclusive)<br>3 no. monitoring wells (WS01, WS03 & WS07). |
| <b>Laboratory Testing:</b>            | Geotechnical & Ground Contamination.                                                                                                                                                                                                                         |
| <b>CLEA Classification:</b>           | Level 1 GQRA – <i>Residential with Homegrown Produce (Housing) &amp; Residential without Homegrown Product (Apartments)</i>                                                                                                                                  |

### 4.0 Investigation Rationale

The information contained in this report is limited to the areas of the site, as indicated on the Site Investigation Location Plan, and to those areas accessible during the ground investigation. The depths of strata on the record sheets are recorded in m below current ground levels (m bgl).

When considering the full scope of the development, any features and / or issues not specifically mentioned in this report cannot be assumed to have been covered. This ground investigation has been designed to provide information on the general ground and groundwater conditions where access would allow, within the boundaries of the site.

The rationale behind the location of each exploratory location is summarised in Table 4.1 below.

**Table 4.1**

| <b>Potential issue</b>                                                                                                                                  | <b>Exploratory hole</b>                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Determine the nature of the underlying ground conditions, including shallow groundwater.                                                                | WS01 to WS07, TP01 to TP04, HP01 to HP08 |
| Determine the levels of contamination present within the initial deposits with a view to determining the risks posed towards the future site end users. | WS01 to WS07, TP01 to TP04, HP01 to HP08 |
| Undertake gas monitoring to determine the risk to the proposed development from the potential migration of gas.                                         | WS01, WS03 & WS07                        |
| Determine shallow CBR values for design of access roads, footpaths and hardstanding areas.                                                              | HP01 to HP08 (LWD)                       |

### 4.1 Contamination Related Sampling & Site Protocols: -

All works associated with this ground contamination assessment and investigations have generally been completed in accordance with BS10175:2011+A2:2017: Investigation of potentially contaminated sites – Code of practice & Land Contamination Risk Management (LCRM: October 2020) with the following precautions specific to this project.

#### 4.1.1 Ground Contamination Sampling: -

Samples were recovered by a representative of ARC Environmental Ltd. during the intrusive investigation works. All samples were stored at approximately c.2-8°C using cool boxes and ice packs prior to delivery to a UKAS / MCERTS accredited laboratory. Sampling was carried out in accordance with 'Technical Policy Statement 63: UKAS Policy on Deviating Samples'.

## **4.0 Investigation Rationale (Cont'd): -**

### **4.1 Contamination Related Sampling & Site Protocols (Cont'd): -**

#### **4.1.2 Onsite Health & Safety Requirements: -**

All site representatives wore relevant and appropriate PPE including (where appropriate) safety footwear, high visibility jacket / vest, hard hat, eye protection and overalls. In addition, disposable latex gloves were used when handling any potentially contaminated materials and when rinsing all sampling tools. Each site vehicle contained a suitable First Aid kit with hand wash station / cleansing products (i.e., sanitary wipes).

#### **4.1.3 Avoiding Cross-Contamination between Sample Locations: -**

To avoid cross-contamination of materials between soil horizons, drill casing was used to seal off the made ground. In addition, plastic liners were used to collect samples from the windowless sampling boreholes.

With regards to the trial pits, the samples were recovered manually using dedicated disposable plastic gloves replaces between each sample recovery.

## **5.0 Ground Conditions**

For an accurate description of the ground conditions encountered at each investigation position, reference should be made to the Trial Pit and Borehole Record Sheets attached in Appendix I. It should be noted that there is always the possibility of variation in the ground conditions around and between the exploratory hole locations.

### **5.1 Soil Profile: -**

Hardstanding generally comprised asphalt from ground level (GL) to c.0.05m below ground level (bgl) underlain by sandy clayey gravel with gravel-sized constituents of limestone and concrete to depths between c.0.80m to c.1.00m bgl. The remainder of the site generally comprises vegetation overlying a slightly gravelly silty, sometimes clayey, sand with gravel constituents of sandstone, limestone, mudstone and gravel-sized fragments of brick, coal, concrete, glass, plastic and tile proven to depths between c.0.60 to c.1.30m bgl.

Deeper made ground was identified in TP04 as gravelly sand with moderate cobble content. Gravel constituents comprised sandstone, limestone, mudstone and gravel sized fragments of brick, coal, concrete, glass, metal and tile. Cobble constituents comprised brick and concrete, appearing to form larger sections of wall and possible relict footings from ground level to c.1.50m bgl. In addition, ash as noted within the matrix.

The underlying natural drift deposits generally comprised a combination of very sandy slightly gravelly clay with gravel constituents of sandstone, limestone, mudstone and quartz and slightly gravelly silty sand with gravel constituents of sandstone, limestone and quartz proven from between c.0.60m bgl (WS05) to c.6.45m bgl (WS07).

No suspected bedrock was encountered during the investigation.

## **5.0 Ground Conditions (Cont'd): -**

### **5.2 Relic Foundations: -**

Trial pits were undertaken around the footprint of the previous buildings recorded on site to determine the presence of potential relic foundations. No evidence of relic foundations / buried structures was encountered within the trial pits.

Whilst the made ground identified in TP04 comprised of suspected demolition waste, likely from the historic buildings on-site, no evidence of in-situ foundations or footings were identified.

### **5.3 Foundation Exposure: -**

A manually excavated trial pit (HP05) was carried out in a single location on the existing sub-station to determine the foundation type and the immediate underlying strata. For an accurate description of the foundation details and ground conditions encountered, reference should be made to the drawings in Appendix I. The foundation details identified are summarised in Table 5.1 below.

**Table 5.1**

| <b><u>Position</u></b> | <b><u>Description &amp; General Comments</u></b>                                                                                                                                                                                                                        |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HP05                   | The existing brick wall extended to a depth of c.0.20m bgl and was based on a concrete footing c.0.15m thick. The footing projected c.0.20m from the face of the wall and was noted to be based within made ground of slightly gravelly sand at a depth of c.0.35m bgl. |

### **5.4 Groundwater & Stability: -**

Groundwater was encountered in multiple locations during the investigation. In multiple instances, groundwater resulted in the collapse of trial pit faces and 'blowing sands' within the boreholes. and is summarised in Table 5.2 below.

**Table 5.2**

| <b><u>Location</u></b> | <b><u>Depth (m)</u></b> | <b><u>20 Mins (m)</u></b> | <b><u>Comments</u></b>                                                                                                        |
|------------------------|-------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| WS01                   | 2.20                    | 1.80                      | Wet blowing sands encountered. *                                                                                              |
| WS02                   | 2.50                    | 2.10                      | Wet blowing sands encountered. *                                                                                              |
| WS03                   | 3.00                    | 3.00                      | Wet blowing sands encountered. *                                                                                              |
| WS05                   | 5.50                    | 2.20                      | ~                                                                                                                             |
| TP01                   | 2.30                    | ~                         | Groundwater encountered within the natural sand strata resulting in unstable pit face collapse due to undermining from water. |
| TP02                   | 2.20                    | ~                         | Groundwater encountered within the natural sand strata resulting in unstable pit face collapse due to undermining from water. |
| TP04                   | 0.80                    | ~                         | Likely perched within granular made ground.                                                                                   |
| TP04                   | 1.30                    | ~                         | Likely perched within base of made ground unit.                                                                               |

\* 'Blowing Sands' is the flowing of (commonly fine) fluidised sand upwards into a length of temporary casing or borehole due to pressure imbalances

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with several influences including season, rainfall, dewatering and pumping activities.

## **5.0 Ground Conditions (Cont'd): -**

### **5.5 Historical Coal Mining Features & Mineral Extraction: -**

The Phase 1: Desk Study Report (Ref. 25-944, Arc Environmental Ltd, Sept 2025) concluded that whilst the site lies within a 'Coal Mining Reporting Area', the site is not within an area of probable recorded or unrecorded shallow workings or an area of development high risk. Therefore, the site is not considered to be at risk of historical coal mining related activities and risks.

In addition, there are no records of any BGS recorded mineral sites within c.250m of the site.

The site does not lie within the Cheshire Brine Subsidence Compensation District, therefore there is no risk of subsidence due to brine extraction. As such, further investigation was not required.

## **6.0 In-situ Testing**

### **6.1 Insitu Standard Penetration Tests: -**

Standard penetration tests (SPT's) were carried out with the use of a normal split spoon sampler on the made ground and natural drift deposits noted within the boreholes to determine the relative density / strength of the materials tested. The results are shown as uncorrected 'N' values on the borehole record sheets, adjacent to the appropriate sample level. A summary of the results of the tests undertaken can be seen in Table 6.1 below.

**Table 6.1**

| <b><u>Type of Strata</u></b>                | <b><u>Range of SPT 'N' Values</u></b>             | <b><u>Result details</u></b>                                                               |
|---------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------|
| Made Ground - Granular                      | 4 & 34                                            | Indicates loose, medium dense and dense deposits with presence of large gravels / cobbles. |
| Natural Strata - Sandy gravelly Clay        | 8 to 22                                           | Indicates comparative medium strength firm deposits.                                       |
| Natural Strata - Silty Sand                 | 4 to 30                                           | Indicates very loose / loose, medium dense and dense deposits.                             |
| Natural Strata - Clayey silty gravelly Sand | 6 to 16 between GL & 5.00m bgl<br>32 at 6.00m bgl | Indicates loose and medium dense deposits. Increasing density with depth.                  |

### **6.2 Lightweight Deflectometer Testing: -**

The Light Weight Deflectometer (LWD) is a portable device that measures the on-site dynamic modulus (Evd) of subgrade soils and pavements. It is suitable for cohesionless, cohesive and mixed types of soils with a maximum grain size of 63mm. It can be used on natural subgrade and subsoils, unbound base layers, granular layers, soil stabilised with lime or other additives.

The test method was originally designed to measure the dynamic modulus (Evd) of an in-situ material which indicates the material's stiffness. The test method is set out in BS1924-2:2018, 9.2 "Hydraulically bound and stabilised materials for civil engineering purposes, Part 2, Sample preparation and testing of materials during and after treatment" but is also referenced in ASTM Standard E2583- 07: 2011 "Standard test method for measuring deflections with a light weight deflectometer (LWD)."

The test zone by the LWD is 300mm in diameter and up to 600mm in depth.

## 6.0 In-situ Testing (Cont'd): -

### 6.2 Lightweight Deflectometer Testing (Cont'd): -

Numerous standards have been developed for the LWD and allow the characterisation of various materials based on Evd, including the estimation of the compaction degree of engineered fills, and bearing capacity.

The principle of this test was developed in 1981 and simulates a truck with a 10-tonne axle weight travelling on a road at 80km per hour. A steel plate of 300mm diameter is placed on the soil to be tested.

A 10kg weight drops from a height of 0.72m onto the plate. The load pulse creates a soil pressure of 100kN/m<sup>2</sup> under the plate.

The approximate duration of the load pulse is around 17ms (+/- 1.5ms) and it is created by means of engineered springs located above the plate.

An acceleration sensor is arranged on the load plate and the velocity and displacement (settlement) of the plate is calculated ranging from 0.1mm to 2mm (+/- 0.02mm).

LWD results can be used for determining dynamic soil modulus (Evd), spring stiffness (K<sub>300</sub>), bearing capacity, degree of compaction and compaction quality control.

The LWD field results can be seen in Appendix II, the results were used to give estimates of static soil modulus (Ev1) and spring stiffness (K<sub>300</sub>) to estimate a CBR value (%) summarised in Table 6.2 using both typical correlations and the following equations below:

**Equation 1**  $K_{300} = Ev1 / B * (1 - v^2)$

where B = plate width (0.3m), v = poisson's ratio (0.35 typical for crushed rock or sub-base gravel and 0.4 for clay)

**Equation 2**  $K_{762} = 0.44 * K_{300}$

where 0.44 is the conversion factor for smaller plate sizes

**Equation 3**  $CBR (\%) = 6.1 \times 10^{-8} * (K_{762})^{1.733}$

**Table 6.2**

Evd = Dynamic Modulus, Ev1 = Static Soil Modulus (based on a correlation with Evd)

| Position | Depth (mbgl) / Strata | Δ mm  | Evd MN/m <sup>2</sup> | Ev1 MN/m <sup>2</sup> | K <sub>300</sub> kN/m <sup>2</sup> /mm | K <sub>762</sub> kN/m <sup>2</sup> /mm | Soil Characterisation  | CBR Equivalent % |
|----------|-----------------------|-------|-----------------------|-----------------------|----------------------------------------|----------------------------------------|------------------------|------------------|
| HP01     | 0.20                  | 0.372 | 60.5                  | 61.4                  | 233                                    | 102                                    | Very Dense / Hard      | 29.5             |
| HP01     | 0.50                  | 0.537 | 41.9                  | 39.8                  | 151                                    | 66                                     | Dense / Stiff          | 13.9             |
| HP02     | 0.25                  | 3.407 | 6.6                   | 5.6                   | 21                                     | 9                                      | Very Loose / Very Soft | 0.5              |
| HP02     | 0.50                  | 1.193 | 18.9                  | 16.6                  | 63                                     | 28                                     | Loose / Soft           | 3.1              |
| HP03     | 0.25                  | 4.556 | 4.9                   | 4.2                   | 16                                     | 7                                      | Very Loose / Very Soft | 0.3              |
| HP03     | 0.50                  | 3.966 | 5.7                   | 4.8                   | 18                                     | 8                                      | Very Loose / Very Soft | 0.4              |
| HP04     | 0.30                  | 2.340 | 9.6                   | 8.2                   | 31                                     | 14                                     | Very Loose / Very Soft | 0.9              |
| HP04     | 0.60                  | 4.260 | 5.3                   | 4.5                   | 17                                     | 7                                      | Very Loose / Very Soft | 0.3              |
| HP06     | 0.25                  | 6.399 | 3.5                   | 3.0                   | 11                                     | 5                                      | Very Loose / Very Soft | 0.2              |
| HP06     | 0.50                  | 7.130 | 3.2                   | 2.7                   | 10                                     | 4                                      | Very Loose / Very Soft | 0.1              |
| HP07     | 0.20                  | 1.555 | 14.5                  | 12.6                  | 48                                     | 21                                     | Loose / Vert Soft      | 1.9              |
| HP07     | 0.50                  | 1.180 | 19.1                  | 16.8                  | 64                                     | 28                                     | Loose / Soft           | 3.1              |

K<sub>300</sub> / K<sub>762</sub> = Spring Stiffness / Modulus of Sub-grade Reaction (see equations 1 & 2), CBR = Californian Bearing Ratio (see equation 3)

## **6.0 In-situ Testing (Cont'd): -**

### **6.2 Lightweight Deflectometer Testing (Cont'd): -**

Due to CBR values consistently below 1%, additional sub-grade improvement is required by adding an increased thickness of stone sub-base and geogrid reinforcements followed by rolling until the desired CBR value is met. It would be beneficial to confirm CBR values following compaction using Plate Load Testing. Any 'soft / loose' zones identified during development should be treated in the same manner.

### **6.3 In-situ Gas & Water Monitoring: -**

When considering the findings of the Phase 1: Desk Top Study Report, potential sources of ground gas were recorded on site and within a plausible distance of the site. Therefore, ground gas & water monitoring standpipes were installed within the boreholes (WS01, WS03 & WS07), primarily to check for the possible presence of hazardous ground gases, and to monitor any shallow water levels.

A standard 50mm diameter HDPE standpipe, with gravel and geo-wrap surround, bentonite seal, gas valve cap and security cover, was installed within each borehole to a depth of c.4.00m bgl, and ground gas and water levels were allowed to reach equilibrium, prior to the first monitoring visit.

Monitoring was undertaken using a Gas Data GFM series soil gas analyser, with integral flow meter, and a Geotechnical Instruments electronic dip meter. The response zones were designed to target any ground gas from both on and off-site sources. Based on the findings of the intrusive investigation works, in accordance with CIRIA Report C665, November 2007, Report Edition No. 04, March 2007 and BS8485:2015+A1 2019 – Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings, it is felt that an adequate risk assessment can be undertaken based on the following limiting factors below:

- The development has been considered as medium and high sensitivity i.e., residential (Tables 5.5a & 5.5b – Typical / Idealised frequency and period of monitoring, after Wilson et al, 2005).
- The risk associated with the generation potential of a source is considered as very low (assessment based on the findings of intrusive investigation works).
- Monitoring over a minimum of three month with six recorded readings (Tables 5.5a & 5.5b – Typical / idealised frequency and period of monitoring after Wilson et al, 2005).
- Negligible flow rates are recorded during the monitoring period (Table 8.5 – Modified Wilson & Card classification).
- A targeted and phased programme of gas monitoring should be completed, which obtains gas monitoring readings during varying atmospheric conditions, which covers the 'worst case' scenario for ground gas emissions to occur, particularly during rapid falls in atmospheric pressure (i.e. from c.1020mb and c.1010mb), and during low atmospheric pressure events (i.e. c.1000mb and below).

Monitoring of the weather conditions and predicated atmospheric pressures (Met Office Surface Pressure Charts) are carried out up to 72 hours in advance of proposed monitoring visits, in order that a reasonable period of data is obtained to determine atmospheric trends, and to target the 'worst case' scenario. The monitoring visits completed correlate with falling and steady atmospheric pressure trends and represent worst case conditions including falling atmospheric pressure trends, and atmospheric pressures below 1000mb.

A summary of the results for the visits undertaken, compared with the 'inert' background gas levels is presented in Table 6.3 on the next page, with the monitoring certificate attached in Appendix II.

## 6.0 In-situ Testing (Cont'd): -

### 6.3 In-situ Gas & Water Monitoring (Cont'd): -

**Table 6.3**

\*Taken from (Sheffield)

| Table 10: Gas Analysis Data (continued)                                                         |             |                                    |                      |                              |                   |                              |                             |                         |
|-------------------------------------------------------------------------------------------------|-------------|------------------------------------|----------------------|------------------------------|-------------------|------------------------------|-----------------------------|-------------------------|
| <u>Position</u>                                                                                 | <u>Date</u> | <u>Atmospheric Pressure (mbar)</u> | <u>Water (m bgl)</u> | <u>CH<sub>4</sub> (%v/v)</u> | <u>LEL (%v/v)</u> | <u>CO<sub>2</sub> (%v/v)</u> | <u>O<sub>2</sub> (%v/v)</u> | <u>Flow Rate (l/hr)</u> |
| Background                                                                                      |             | ~                                  | ~                    | 0                            | 0                 | 0                            | 21.0                        | <0.1                    |
| WS01                                                                                            | 05/11/2025  | 987<br>(Rising)*                   | 1.02                 | 0                            | 0                 | 0.1                          | 20.2                        | <0.1                    |
| WS03                                                                                            |             |                                    | 0.95                 | 0                            | 0                 | 9.5                          | 13.88                       | <0.1                    |
| WS07                                                                                            |             |                                    | 1.77                 | 0                            | 0                 | 4.2                          | 11.1                        | <0.1                    |
| WS01                                                                                            | 11/11/2025  | 1011<br>(Rising)*                  | 0.93                 | 0                            | 0                 | 0.1                          | 19.9                        | <0.1                    |
| WS03                                                                                            |             |                                    | 0.80                 | 0                            | 0                 | 6.8                          | 16.5                        | <0.1                    |
| WS07                                                                                            |             |                                    | 1.76                 | 0                            | 0                 | 3.1                          | 15.2                        | <0.1                    |
| WS01                                                                                            | 18/11/2025  | 1031-1032<br>(Rising)*             | 0.87                 | 0                            | 0                 | 0.1                          | 19.6                        | <0.1                    |
| WS03                                                                                            |             |                                    | 0.60                 | 0                            | 0                 | 5.6                          | 18.7                        | <0.1                    |
| WS07                                                                                            |             |                                    | 1.73                 | 0                            | 0                 | 1.4                          | 18.1                        | <0.1                    |
| Minimum 3 no. outstanding visits to be completed – results to follow as Addendum Letter Report. |             |                                    |                      |                              |                   |                              |                             |                         |

As can be seen from the results undertaken to date, detectable levels of Carbon Dioxide (CO<sub>2</sub>) (up to 9.5%) have been recorded, with minorly depleted Oxygen (O<sub>2</sub>) concentrations (minimum 11.1% v/v). Detectable levels of CH<sub>4</sub> have not been recorded. Negligible flow rates of <0.1l/hr have been recorded.

Based on the results of the monitoring undertaken, in accordance with CIRIA Report C665, a risk assessment has been completed for this site, by converting the results in Table 6.3 above to a Gas Screening Value (GSV), calculated by multiplying the typical maximum gas concentrations with the recorded maximum positive flow rates (after Wilson & Card). The GSV for CO<sub>2</sub> have been calculated, using the maximum recorded values, with a maximum flow rate of <0.1l/hr. The GSV can be calculated as follows:

$$\text{Carbon Dioxide GSV} = 0.095 \text{ (9.5\%)} \times 0.1 = 0.0095 \text{ l/hr}$$

When considering these results, in accordance with CIRIA C665, the GSV for CO<sub>2</sub> would fall below the lower target concentration of 0.07l/hr and would equate to a Characteristic Situation 1 (CS1) site classification.

However, when considering the concentrations of CO<sub>2</sub> exceeding the action trigger level of 5%, the CIRIA 665 guidance recommends an increase in the characteristic situation by an order of 1 to consider the gas concentrations recorded (i.e., Characteristic Situation 2 Classification) resulting in gas protection measures being required.

A further 3 no. visits are outstanding and following the completion of these visits, a final assessment will be carried out and the results issued as an addendum report.

The site is not considered to be at potential risk from Radon gas.

When considering the results of the groundwater monitoring, groundwater levels of between c.0.60m and c.1.77m bgl were recorded. It would be prudent to allow for the introduction of groundwater control measures (i.e., pumping equipment), to take care of any localised ingresses of groundwater which may occur during the construction period, especially during the wetter periods of the year. Any measures need to take into account potential wash out of fines and potential damage to adjacent structures / infrastructure.

## 6.0 In-situ Testing (Cont'd): -

### 6.4 In-situ Variable Head (Falling) Permeability Tests: -

Variable head (falling) permeability tests were carried out within WS01 and WS04 to determine the coefficient of permeability (k) for the natural deposits present below the site and to assess the potential for utilising soakaways.

At the test locations the calculations were carried out in accordance with BS EN ISO 22282:2012, after Hvorslev (general approach), with the summarised results displayed in Table 6.4 below with copies of the calculation sheets attached in Appendix II.

**Table 6.4**

| Position | Depth of Test (m) | Coefficient of Permeability (m/s) | Drainage Characteristics      | Permeability Classification |
|----------|-------------------|-----------------------------------|-------------------------------|-----------------------------|
| WS01     | 1.00              | $3.596 \times 10^{-8}$            | Poor / Practically Impervious | Very low                    |
| WS03     | 0.95              | $7.111 \times 10^{-6}$            | Poor                          | Very low                    |
| WS07     | 1.68              | $6.053 \times 10^{-6}$            | Poor                          | Very low                    |

## 7.0 Laboratory Testing

### 7.1 Determination of pH & SO<sub>4</sub>: -

Representative samples of the made ground and natural strata were tested to determine their acidic (pH) and soluble sulphate (SO<sub>4</sub>) levels. The results are shown in Table 7.1 below and are also contained within the Chemtech Analytical Report (Ref. 25-09964-01) a copy of which can be seen in Appendix III.

**Table 7.1**

| Position | Depth (m) | Strata        | pH  | SO <sub>4</sub> (mg/l) | Design SO <sub>4</sub> Class | ACEC Class |
|----------|-----------|---------------|-----|------------------------|------------------------------|------------|
| WS03     | 0.25      | MG - Granular | 7.1 | 30.1                   | DS-1                         | AC-1       |
| WS07     | 0.50      | MG - Granular | 8.3 | 93.9                   | DS-1                         | AC-1       |
| HP01     | 0.60      | MG - Granular | 8.7 | <10.0                  | DS-1                         | AC-1       |
| HP02     | 0.30      | NG - Granular | 8.2 | 15.7                   | DS-1                         | AC-1       |
| WS01     | 1.20      | NS - Clay     | 8.8 | <10.0                  | DS-1                         | AC-1       |
| WS01     | 1.70      | NS - Sand     | 8.0 | <10.0                  | DS-1                         | AC-1       |
| WS02     | 1.50      | NS - Sand     | 7.9 | <10.0                  | DS-1                         | AC-1       |
| WS03     | 1.25      | NS - Clay     | 6.5 | <10.0                  | DS-1                         | AC-1       |
| WS04     | 0.50      | MG - Granular | 8.2 | 328                    | DS-1                         | AC-1       |
| WS05     | 1.50      | NS - Sand     | 7.9 | 26.2                   | DS-1                         | AC-1       |
| WS06     | 2.50      | NS - Sand     | 7.5 | <10.0                  | DS-1                         | AC-1       |
| WS07     | 1.50      | NS - Sand     | 7.1 | 22.6                   | DS-1                         | AC-1       |

ACEC = Aggressive Chemical Environment for Concrete site classification, MG = Made Ground, NS = Natural Strata

From these results the pH values for the samples tested range from 6.5 to 8.8, the amount of soluble sulphate present ranges from <10.0mg/l to 328mg/l.

Therefore, in accordance with the BRE Special Digest 1:2005, the site should be given a classification of DS-1. When considering the nature of the made ground materials and natural strata tested and assuming mobile groundwater the assessment of the Chemical Environment for concrete is AC-1.

## **7.0 Laboratory Testing (Cont'd): -**

### **7.2 Determination of Particle Size Distribution: -**

Representative samples of the natural strata were scheduled for particle size distribution (PSD) testing. The results are summarised in Table 7.2 below, as well as both numerically and graphically in the PSL analytical report (Ref. PSL7270), which is provided in Appendix III.

**Table 7.2**

| <b><u>Position</u></b> | <b><u>Depth (m)</u></b> | <b><u>Clay and Silt Fraction %</u></b> | <b><u>Sand Fraction %</u></b> | <b><u>Gravel Fraction %</u></b> | <b><u>Cobble Fraction %</u></b> | <b><u>Grading Characteristics</u></b> | <b><u>Brief Soil Description</u></b> |
|------------------------|-------------------------|----------------------------------------|-------------------------------|---------------------------------|---------------------------------|---------------------------------------|--------------------------------------|
| WS01                   | 2.50                    | 14                                     | 83                            | 3                               | 0                               | Poorly Graded                         | Slightly gravelly silty SAND         |
| WS02                   | 2.00                    | 14                                     | 85                            | 1                               | 0                               | Poorly Graded                         | Slightly gravelly silty SAND         |
| WS05                   | 2.50                    | 43                                     | 57                            | 0                               | 0                               | N/A                                   | Sandy Silty CLAY                     |
| WS06                   | 1.25                    | 25                                     | 60                            | 15                              | 0                               | Poorly Graded                         | Slightly gravelly silty SAND         |

From the results of the grading analysis the samples tested are poorly graded with the laboratory results / descriptions corresponding with the field descriptions of these materials.

### **7.3 Contamination Screening / Screening Strategy: -**

Representative samples of the made ground materials were passed onto Chemtech Environmental of Stanley so that soil contamination screening could be carried out to assess any potential risk to human health, controlled waters, and assist with off-site disposal.

The samples were screened using a standard generic contamination suite as detailed below (based on the CLEA SGV listed analytes with additions), which is used to assess typical made ground (disturbed natural strata mixed with anthropogenic debris) of an unknown source.

The representative samples were also tested for Speciated PAH (Polycyclic Aromatic Hydrocarbons), Speciated TPH (Total Petroleum Hydrocarbons, PCBs (Polychlorinated Biphenyls) & Asbestos. The catalogue of testing results can be found in the Chemtech Analytical Report (Ref. 25-09964-01), attached in Appendix II, and the total analysis carried out is summarised below.

- 4 no. soil samples screened for a generic (metals and non-organics) soil suite including Arsenic, Cadmium, Chromium (III & VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Cyanide and Total Organic Carbon (TOC)
- 4 no. soil samples screened for Speciated Polycyclic Aromatic Hydrocarbons (PAH's)
- 4 no. soil samples screened for Speciated Total Petroleum Hydrocarbons (based on a full Aliphatic / Aromatic Split & BTEX)
- 4 no. soil samples screened for Presence of asbestos
- 2 no. soil samples screened for Polychlorinated Biphenyl's (PCBs)

## 8.0 Ground Contamination Risk Assessment

### 8.1 Methodology: -

Following completion of the contamination screening undertaken on various samples from this site, Level 1 quantitative ground contamination risk assessments have been undertaken, generally in accordance with BS10175: British Standard Code of Practice for the Investigation of Potentially Contaminated Sites (2011+A2:2017) & Land Contamination Risk Management (LCRM: October 2020).

This quantitative ground contamination risk assessment uses the current UK practice for assessing the risks from land contamination, which is based on the established *source-pathway-receptor* pollutant linkage methodology and 'suitable for use' approach (Part IIA, EPA 1990 - inserted through Section 57 EA 1995).

Based on the results of the contamination screening completed for this site, the risks from potential contaminants have been assessed for Human Health and Controlled Waters. The results of the risk assessments can be found in Sections 8.2 (Human Health) and 8.3 (Controlled Waters), with a summary of the potential contamination sources, migration pathways and sensitive receptors for this site described within the revised CSM in Section 8.4.

### 8.2 Level 1 Risk Assessment (Human Health): -

The soil screening results from across the site have been assessed by comparing the Maximum Concentration values ( $C_M$ ) recorded for each analyte to the Critical Concentration ( $C_C$ ) values chosen for this site (taken as *Residential with Home Grown Produce*). The results of the testing are contained in Appendix III and are summarised in Table 8.1 below and on the following page.

The average TOC percentage across the 8 no. samples tested is 4.37%, which when converted to SOM using a conversion factor of 1.72 is 7.51%. As such it is deemed suitable to adopt Critical Concentrations for the site based on an SOM of 6.0%.

**Table 8.1**

**Bold = Elevated concentrations**

| <b>Analyte</b>               | <b>Critical Conc. (<math>C_C</math>)</b> | <b>No. of Samples Screened</b> | <b>Max. Conc. (<math>C_M</math>) Recorded</b> | <b>No. of Samples <math>&gt;C_C</math></b> |
|------------------------------|------------------------------------------|--------------------------------|-----------------------------------------------|--------------------------------------------|
| <b>Metals and Non-metals</b> |                                          |                                |                                               |                                            |
| Arsenic                      | 37 <sup>(1)</sup>                        | 4                              | 13.4                                          | 0                                          |
| Cadmium                      | 11 <sup>(1)</sup>                        | 4                              | <1.6                                          | 0                                          |
| Chromium III                 | 910 <sup>(1)</sup>                       | 4                              | 14.9                                          | 0                                          |
| Chromium VI                  | 6 <sup>(1)</sup>                         | 4                              | <0.040                                        | 0                                          |
| Copper                       | 2400 <sup>(1)</sup>                      | 4                              | 29.5                                          | 0                                          |
| Lead                         | 200 <sup>(2)</sup>                       | 4                              | 71.4                                          | 0                                          |
| Mercury                      | 40 <sup>(1)</sup>                        | 4                              | 0.70                                          | 0                                          |
| Nickel                       | 130 <sup>(1)</sup>                       | 4                              | 14.4                                          | 0                                          |
| Selenium                     | 250 <sup>(1)</sup>                       | 4                              | <3.00                                         | 0                                          |
| Zinc                         | 3700 <sup>(1)</sup>                      | 4                              | 66.6                                          | 0                                          |
| Cyanide                      | 1.49 <sup>(3)</sup>                      | 4                              | <1.00                                         | 0                                          |
| Asbestos                     | Presence                                 | 8                              | NAD                                           | 0                                          |

<sup>(1)</sup> = LQM CIEH Suitable 4 Use Levels (S4UL Nov 2014 (Revised August 2015) – Residential with Homegrown Produce – 6.0% SOM), <sup>(2)</sup> = C4SL Values (Residential with Homegrown Produce), <sup>(3)</sup> = ATRISK<sup>SOIL</sup> SSV, NAD = No asbestos detected

## 8.0 Ground Contamination Risk Assessment (Cont'd): -

### 8.2 Level 1 Risk Assessment (Human Health) (Cont'd): -

**Table 8.1 (Cont'd)**

**Bold = Elevated concentrations**

| <u>Analyte</u>            | <u>Critical Conc. (C<sub>c</sub>)</u> | <u>No. of Samples Screened</u> | <u>Max. Conc. (C<sub>M</sub>) Recorded</u> | <u>No. of Samples &gt;C<sub>c</sub></u> |
|---------------------------|---------------------------------------|--------------------------------|--------------------------------------------|-----------------------------------------|
| <b>PAH</b>                |                                       |                                |                                            |                                         |
| Acenaphthene              | 1100 <sup>(1)</sup>                   | 4                              | 0.109                                      | 0                                       |
| Acenaphthylene            | 920 <sup>(1)</sup>                    | 4                              | 0.015                                      | 0                                       |
| Anthracene                | 11000 <sup>(1)</sup>                  | 4                              | 0.159                                      | 0                                       |
| Benzo(a)anthracene        | 13 <sup>(1)</sup>                     | 4                              | 0.732                                      | 0                                       |
| Benzo(a)pyrene            | 3 <sup>(1)</sup>                      | 4                              | 0.645                                      | 0                                       |
| Benzo(b)fluoranthene      | 3.7 <sup>(1)</sup>                    | 4                              | 1.03                                       | 0                                       |
| Benzo(ghi)perylene        | 350 <sup>(1)</sup>                    | 4                              | 0.396                                      | 0                                       |
| Benzo(k)fluoranthene      | 100 <sup>(1)</sup>                    | 4                              | 0.337                                      | 0                                       |
| Chrysene                  | 27 <sup>(1)</sup>                     | 4                              | 0.635                                      | 0                                       |
| Dibenz(ah)anthracene      | 0.3 <sup>(1)</sup>                    | 4                              | 0.14                                       | 0                                       |
| Fluoranthene              | 890 <sup>(1)</sup>                    | 4                              | 1.26                                       | 0                                       |
| Fluorene                  | 860 <sup>(1)</sup>                    | 4                              | 0.071                                      | 0                                       |
| Indeno(123cd)pyrene       | 41 <sup>(1)</sup>                     | 4                              | 0.747                                      | 0                                       |
| Naphthalene               | 13 <sup>(1)</sup>                     | 4                              | 0.091                                      | 0                                       |
| Phenanthrene              | 440 <sup>(1)</sup>                    | 4                              | 0.846                                      | 0                                       |
| Pyrene                    | 2000 <sup>(1)</sup>                   | 4                              | 1.32                                       | 0                                       |
| <b>TPH</b>                |                                       |                                |                                            |                                         |
| VPH Aliphatic (>C5-C6)    | 160 <sup>(1)</sup>                    | 4                              | <0.1                                       | 0                                       |
| VPH Aliphatic (>C6-C8)    | 530 <sup>(1)</sup>                    | 4                              | <0.1                                       | 0                                       |
| VPH Aliphatic (>C8-C10)   | 150 <sup>(1)</sup>                    | 4                              | <0.1                                       | 0                                       |
| EPH Aliphatic (>C10-C12)  | 760 <sup>(1)</sup>                    | 4                              | 3.5                                        | 0                                       |
| EPH Aliphatic (>C12-C16)  | 4300 <sup>(1)</sup>                   | 4                              | 1.1                                        | 0                                       |
| EPH Aliphatic (>C16-35)   | 110000 <sup>(1)</sup>                 | 4                              | 9.4                                        | 0                                       |
| EPH Aliphatic (>C35-C44)  | 110000 <sup>(1)</sup>                 | 4                              | <0.5                                       | 0                                       |
| VPH Aromatic (>EC5-EC7)   | 300 <sup>(1)</sup>                    | 4                              | <0.01                                      | 0                                       |
| VPH Aromatic (>EC7-EC8)   | 660 <sup>(1)</sup>                    | 4                              | <0.01                                      | 0                                       |
| VPH Aromatic (>EC8-EC10)  | 190 <sup>(1)</sup>                    | 4                              | 3.7                                        | 0                                       |
| EPH Aromatic (>EC10-EC12) | 380 <sup>(1)</sup>                    | 4                              | 9                                          | 0                                       |
| EPH Aromatic (>EC12-EC16) | 660 <sup>(1)</sup>                    | 4                              | 6.3                                        | 0                                       |
| EPH Aromatic (>EC16-EC21) | 930 <sup>(1)</sup>                    | 4                              | 23.7                                       | 0                                       |
| EPH Aromatic (>EC21-EC35) | 1700 <sup>(1)</sup>                   | 4                              | 4.5                                        | 0                                       |
| EPH Aromatic (>EC35-EC44) | 1700 <sup>(1)</sup>                   | 4                              | 61.4                                       | 0                                       |
| <b>BTEX</b>               |                                       |                                |                                            |                                         |
| Benzene                   | 0.37 <sup>(1)</sup>                   | 4                              | <0.001                                     | 0                                       |
| Toluene                   | 660 <sup>(1)</sup>                    | 4                              | 0.002                                      | 0                                       |
| Ethylbenzene              | 260 <sup>(1)</sup>                    | 4                              | <0.001                                     | 0                                       |
| m & p-Xylene              | 310 <sup>(1)</sup>                    | 4                              | <0.002                                     | 0                                       |
| o-Xylene                  | 330 <sup>(1)</sup>                    | 4                              | <0.002                                     | 0                                       |
| <b>PCBs</b>               |                                       |                                |                                            |                                         |
| PCB 101                   | 0.015 <sup>(4)</sup>                  | 4                              | <0.015                                     | 0                                       |
| PCB 118                   | 0.015 <sup>(4)</sup>                  | 4                              | <0.015                                     | 0                                       |
| PCB 138                   | 0.015 <sup>(4)</sup>                  | 4                              | <0.015                                     | 0                                       |
| PCB 153                   | 0.01 <sup>(4)</sup>                   | 4                              | <0.01                                      | 0                                       |
| PCB 180                   | 0.01 <sup>(4)</sup>                   | 4                              | <0.01                                      | 0                                       |
| PCB 28                    | 0.015 <sup>(4)</sup>                  | 4                              | <0.015                                     | 0                                       |
| PCB 52                    | 0.01 <sup>(4)</sup>                   | 4                              | <0.01                                      | 0                                       |

<sup>(1)</sup> = LQM CIEH Suitable 4 Use Levels (S4UL Nov 2014 (Revised August 2015) – Residential with Homegrown Produce – 6.0% SOM), <sup>(2)</sup> = C4SL Values (Residential with Homegrown Produce), <sup>(3)</sup> = ATRISK<sup>SOIL</sup> SSV, <sup>(4)</sup> = Analytical Detection Limit

## **8.0 Ground Contamination Risk Assessment (Cont'd): -**

### **8.2 Level 1 Risk Assessment (Human Health) (Cont'd): -**

The results have identified the following:

- No Maximum Concentration ( $C_M$ ) values for the analytes screened for exceed the Critical Concentration ( $C_C$ ) values for this site.
- No asbestos fibres have been recorded during the investigation period.
- From these results, the shallow soils in the proximity of the current electric sub-station do not represent a risk with respect to the presence of PCBs.

The results of the contamination screening and analysis have confirmed that made ground below the site does not pose a possible risk to Human Health where exposure pathways are available, and therefore no remedial measures and / or further assessments are required to protect future end users.

### **8.3 Level 1 Risk Assessment (Controlled Waters): -**

The following hydrogeological and hydrological issues have been taken into consideration when assessing the risks towards Controlled Waters:

- No raised analytes above the chosen Critical Concentrations were recorded.
- There was no 'free product' recorded during the investigation.
- The site is not situated in or within c.1km of a Source Protection Zone.
- There are 2 no. current Water Abstractions recorded within c.250m of the site boundary, both noted as 'License Status - Revoked'.
- The drift deposits (Glacial Till) are classified as Secondary Aquifer - A.
- The solid geology (PLCM) is classified as a Secondary Aquifer - A.
- There are 6 no. surface water features recorded within c.250m of the site boundary.
- The proposed development comprises the addition of several areas of hardcover therefore reducing surface infiltration.
- Published EA data shows the site is at medium risk of pluvial flooding.

From the results of these intrusive investigation works, the made ground identified does not contain any free product or mobile contamination such as waste oils, fuels, solvents, etc., that could migrate vertically or laterally from the site and impact Controlled Waters.

Consequently, the risk to Controlled Waters from on-site contamination is considered to be low. Although there are clear potential pathways and sensitive receptors, there is a low risk of on-site contamination.

### **8.4 Revised Conceptual Site Model (CSM): -**

From the results of the intrusive investigation works and Phase 1: Desk Top Study Report, a Revised Conceptual Site Model (CSM) has been developed for this site and Table 8.2 on the next page summarises the various contamination sources, plausible migration pathways and potentially sensitive receptors identified for this site, assuming no remediation, additional protection measures and / or removal of the sources of contamination takes place.

## 8.0 Ground Contamination Risk Assessment (Cont'd): -

### 8.4 Revised Conceptual Site Model (CSM) (Cont'd): -

**Table 8.2**

\* = Not included in the Human Health & Controlled Waters Risk Assessment.

|           | <b><i>Sources (S)</i></b>                                                                                                                                                                                                                                                         |           | <b><i>Pathways (P)</i></b>                                                                                     |            | <b><i>Receptors (R)</i></b>                                                                                                                                                                                                                               |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>S1</b> | Made ground associated historical use including any construction / demolition debris (from historical buildings on site) and allotment waste<br><br><b>No raised levels of analytes (including PAHs and TPHs) above C<sub>c</sub> limits.</b><br><br><b>No asbestos detected.</b> | <b>P1</b> | Ingestion & Dermal Contact                                                                                     | <b>R1</b>  | Human Health End users:<br>Residential with Homegrown Produce &<br>Residential without Homegrown Produce                                                                                                                                                  |
|           |                                                                                                                                                                                                                                                                                   | <b>P2</b> | Air – Inhalation of vapours (indoor & outdoors) and contact with dust generated through the construction works |            |                                                                                                                                                                                                                                                           |
| <b>S2</b> | Electrical Sub-Station Insulating Oils (PCBs)<br><br><b>No raised levels of PCBs above detection limits adjacent to Electrical Sub-station.</b>                                                                                                                                   | <b>P3</b> | Plant Uptake and attached soil                                                                                 | <b>R2</b>  | Controlled Waters:<br>Groundwater – anticipated within the underlying bedrock (PLCM) and Glacial Till (Secondary Aquifer – A).<br><br>Several surface water features within a plausible migration distance related to local tributaries and field drains. |
| <b>S3</b> | Potential hazardous ground gas associated with off-site sources (i.e. infilled land).<br><br><b>Monitoring indicates CS-2 (Characteristic Situation) with gas protection measures required.</b>                                                                                   | <b>P4</b> | Migration through existing service corridors                                                                   | <b>R3</b>  | Adjacent sites                                                                                                                                                                                                                                            |
|           |                                                                                                                                                                                                                                                                                   | <b>P5</b> | Direct contact with building materials                                                                         | <b>R4*</b> | Building materials & protection of water supply pipes                                                                                                                                                                                                     |
|           |                                                                                                                                                                                                                                                                                   | <b>P6</b> | Surface runoff & Infiltration                                                                                  | <b>R5*</b> | Flora and fauna                                                                                                                                                                                                                                           |

#### 8.4.1 Sources: -

The site is generally covered by varying thickness of made ground with anthropogenic constituents, mainly brick fragments, coal and concrete. These materials have been assessed using a standard generic soil suite, where no raised levels of analytes were encountered above Critical Concentration levels.

Due to the presence of an electrical Sub-station on-site, PCB levels were assessed to quantify contamination risks on-site. No raised levels above analytical detection limits were identified. The risk to receptors on-site from these possible sources of contamination are low.

Due to on-site and adjacent made ground, there is the potential for hazardous ground gases to migrate upwards and pose a risk to the proposed development.

## **8.0 Ground Contamination Risk Assessment (Cont'd): -**

### **8.4 Revised Conceptual Site Model (CSM) (Cont'd): -**

#### **8.4.2 Pathways (Cont'd): -**

When considering the proposed end use, and without considering treatment, removal or protection measures, there are some potential plausible pathways available for direct contact, dermal contact, ingestion, inhalation, wind (dust / particulate), volatilization, and vertical and lateral transportation below the site, where there is no hardcover present.

Within the CLEA Risk Assessment Model for Human Health, there are 3 exposure mediums considered for on-site receptors, comprising ingestion of soil containing contaminants, inhalation of contaminated dust / vapours and dermal contact, with up to 10 no. exposure pathways considered, as shown below.

1. Ingestion of soil and indoor dust
2. Consumption of homegrown produce and attached soil
3. Dermal contact (indoor)
4. Dermal contact (outdoor)
5. Inhalation of dust (indoor)
6. Inhalation of dust (outdoor)
7. Inhalation of vapour (indoor)
8. Inhalation of vapour (outdoor)
9. Oral background intake
10. Inhalation background intake.

Where the future site has hard cover and below new structures, a number of these pathways may not be available. In addition, when considering the potential pathways for leachate migration, where either hard cover and / or future surface water drainage systems are present, the potential effects of surface infiltration or contaminated surface water runoff will be greatly reduced. Similarly, when considering the construction work force, exposure pathways through direct contact, ingestion and dust inhalation will be available during part of the construction process, and therefore adequate PPE should be provided to protect the workforce during this period.

#### **8.4.3 Receptors: -**

Within the CLEA Risk Assessment Model for Human Health, the potential receptors are assessed initially on-site end use, followed by a delineation of age category (i.e., child or adult), with default settings for *Residential*, *Allotment* and *Public Open Space (Park)* end uses based on a child aged 0 to 6 years, *Public Open Space (Residential)* based on a child aged 3 to 9 and *Commercial* end uses based upon a working exposure period of up to 49 years (i.e., 16 to 65). Key generic assumptions for *Residential* and *Public Open Space (Residential)* are based upon a typical residential property, consisting of a two-storey small, terraced house, with private garden, and a *Commercial* end use based upon a typical commercial or light industrial property, consisting of a three-storey office building (pre-1970). No buildings are anticipated for *Allotment* or *Public Open Space (Park)* end uses. Within the CLEA Risk Assessment Model for Human Health there are 6 no. generic end use categories presently in use, as follows on the next page:

- 1) *Residential - with home grown produce*, 2) *Residential - without home grown produce*, 3) *Allotments*, 4) *Commercial*
- 5) *Public Open Space – Residential*, 6) *Public Open Space - Park*

For this Level 1 Risk Assessment when considering the sensitivity of the site the most appropriate end use category for this site has been taken as:

- 1) *Residential - with home grown produce*

With regards to Controlled Waters, the primary receptors considered for this site is the solid geology beneath the site (PLCM) which is a Secondary Aquifer - A and nearby surface water features.

## **9.0 Conclusions & Recommendations**

### **9.1 Ground Conditions: -**

Surface deposits across site generally comprised of either asphalt underlain by made ground of sandy clayey gravel to depths between c.0.80m to c.1.00m bgl or vegetation overlying made ground of slightly gravelly silty, sometimes clayey, sand proven to depths between c.0.60 to c.1.30m bgl. Deeper made ground was identified in TP04 comprising gravelly sand with moderate cobble content.

The underlying natural drift deposits generally comprised a combination of very sandy slightly gravelly clay and slightly gravelly silty sand proven from between c.0.60m bgl (WS05) to c.6.45m bgl (WS07).

No suspected bedrock was encountered during the investigation.

### **9.2 Groundwater & Stability: -**

Groundwater ingress was encountered within WS01, WS02, WS03, WS05, TP01, TP02 & TP04 at depths of between 0.80m to c.5.50m. Standing levels were recorded at depths of between c.1.80m to c.3.00m following a brief monitoring period (i.e. c.20mins). These ingresses are likely to represent pockets / lenses of trapped surface infiltration rather than that of a continuous groundwater surface (i.e. water table) below the site.

It should be noted the rapid rate of advancement of the exploratory holes may mask minor seepages and it should be borne in mind that water levels fluctuate with a number of influences including season, rainfall, dewatering and pumping activities. Therefore, water levels significantly higher than those found during this investigation may be encountered.

Consequently, shallow water ingress may be experienced during future construction related excavations. It is therefore recommended that allowance is made for some groundwater control measures, in order to take care of any localised ingresses of groundwater which may occur during the construction period, especially during the wetter periods of the year.

When considering the results of the groundwater monitoring to date, groundwater levels of between c.0.60m and c.1.77m bgl were recorded. It would be prudent to allow for the introduction of groundwater control measures (i.e., sump pumping equipment), to take care of any localised ingresses of groundwater which may occur during the construction period, especially during the wetter periods of the year.

When considering any groundwater control measures, these would have to ensure that any local 'draw down' of groundwater does not induce settlement to adjacent soils and potentially affect any nearby structures or infrastructure.

### **9.3 Waste Classification: -**

The made ground material near the surface of the site which may have to be discarded as a waste to landfill, have been assessed using Technical Guidance WM3 'Guidance on the classification and assessment of Waste', in conjunction with the on-line waste classification software tool HazWasteOnline™.

Each sample has been assessed separately to determine whether all the soils can be considered as a single waste stream or whether the different sources represent separate waste streams.

## **9.0 Conclusions & Recommendations (Cont'd): -**

### **9.3 Waste Classification (Cont'd): -**

Based on the physical (visual and olfactory) inspection of the samples recovered from the boreholes and trial pits, representative samples have been assessed as either 17 05 03 (waste soil and stones containing hazardous substances) or 17 05 04 (waste soil and stones other than those mentioned in 17 05 03) from the WM3 List of Waste (LoW).

To determine which waste code applies to each sample, the results of the laboratory testing have been assessed using the HazWasteOnline™ software. The results are summarised in Table 9.1 below and the full Waste Classification Report can be found attached in Appendix III.

**Table 9.1**

| <b><u>Position</u></b> | <b><u>Depth (m)</u></b> | <b><u>Classification</u></b> | <b><u>Waste Code</u></b> |
|------------------------|-------------------------|------------------------------|--------------------------|
| WS03                   | 0.25                    | Non-Hazardous                | 17 05 04                 |
| WS07                   | 0.50                    | Non-Hazardous                | 17 05 04                 |
| HP01                   | 0.60                    | Non-Hazardous                | 17 05 04                 |
| HP02                   | 0.20                    | Non-Hazardous                | 17 05 04                 |

The results of the assessment have identified the following:

- The materials which may need to be discarded as a waste to landfill, can be classified as Non-hazardous Waste (17 05 04).

The Non-Hazardous soils will not meet the criteria for disposal at an Inert Landfill due to TOC values above 3%. The waste classification report and results of the contamination screening should be forwarded on to the chosen landfill for their comment and assessment.

It should be noted that this Waste Classification Report is only applicable to those made ground materials which have been sampled and screened as part of the assessment (excluding any relic foundations, sub-surface structures, etc.). If materials, other than those covered by this report, are to be discarded from site as a waste to landfill or there is a significant increase in the volume of materials to be discarded, then these additional materials will also need to be assessed using Technical Guidance WM3: Guidance on the classification and assessment of Waste.

### **9.4 Foundation Options: -**

When considering the foundation options for the proposed apartment building in the west of the site, SPT N values in the area at foundation depths varied from 4 to 30, these indicate very loose / loose and medium dense deposits. Due to the rising water strike from c.5.50m bgl to c.2.20m bgl and the nature of the granular natural strata, it would be advisable to avoid excavations below c.2.00m bgl. As such, a safe bearing capacity of 125kN/m<sup>2</sup> has been determined on 1.00m wide reinforced strips at a founding depth of 1.50m bgl within natural strata to ensure settlements remain within serviceable limits.

When considering the foundation options for the proposed houses in the east of the site, SPT N values in the area at foundation depths varied from 14 to 22, these indicate comparative medium strength and medium dense deposits. Due to multiple water strikes from c.2.20m bgl onwards rising up to c.1.80m bgl, and the nature of the granular natural strata, it would be advisable to avoid excavations below c.1.50m bgl. As such, a safe bearing capacity of 80kN/m<sup>2</sup> has been determined on wide suitably reinforced strips at a founding depth of between 1.00m and 1.20m bgl within natural strata to ensure settlements remain within serviceable limits.

## **9.0 Conclusions & Recommendations (Cont'd): -**

### **9.4 Foundation Options (Cont'd): -**

Wide reinforced strips are required due to the thin variable clay layer and foundations potentially being influenced by both clay and sandy founding soils. Taking foundations deeper beyond the clay layer will lead to potential groundwater control issues.

When considering the results of the pH and soluble sulphate testing, future foundations and buried concrete on the site can be constructed utilising a concrete design class of DS-1 and ACEC class of AC-1.

Due to CBR values consistently below 1%, additional sub-grade improvement is required by adding an increased thickness of stone sub-base and geogrid reinforcements followed by rolling until the desired CBR value is met. It would be beneficial to confirm CBR values after following compaction Plate Load Testing. Any 'soft / loose' zones identified during development should be treated in the same manner.

### **9.5 Ground Contamination Assessment: -**

The results of the contamination screening and analysis have confirmed that no elevated levels of analytes have been identified above Critical Concentrations in the samples tested. As such, made below the site does not pose a possible risk to Human Health where exposure pathways are available, and therefore no remedial measures and / or further assessments are required to protect future end users.

In addition, the risk to Controlled Waters from on-site contamination is considered to be low. Although there are clear potential pathways and sensitive receptors, there is a low risk of on-site contamination.

The contamination screening should also be provided to the Main Contractor / Project Coordinator, for use in devising an adequate Site Health & Safety Plan, in accordance with current CDM Regulations. For further guidance reference should be made to the Health and Safety Executive (HSE) document EH40 / 2005 Workplace exposure limits.

### **9.6 Gas Protection Measures: -**

Considering the concentrations of CO<sub>2</sub> exceeding the action trigger level of 5%, the CIRIA 665 guidance recommends an increase in the characteristic situation by an order of 1 to consider the gas concentrations recorded (i.e., Characteristic Situation 2 Classification) resulting in gas protection measures being required.

A further 3 no. visits are outstanding and following the completion of these visits, a final assessment will be carried out and the results issued as an addendum report.

The site is not considered to be at potential risk from Radon gas.

### **9.7 General Comments: -**

Where we have sampled and tested for asbestos this is discussed in the report. Whilst we would target any asbestos sampling and testing in accordance with a Conceptual Site Model and site findings, there is always the possibility, along with other contamination, that undiscovered asbestos exists between sample locations and the possibility of unknown asbestos exists on all sites.

## **9.0 Conclusions & Recommendations (Cont'd): -**

### **9.7 General Comments (Cont'd): -**

For future site works, adequate lateral trench support will be required for excavations, to prevent trench wall collapse or over excavations, as well as to create a safe working environment, and any excavations on this site should remain open for as short a period as possible, since some of these materials may be susceptible to deterioration, especially during times of wet weather and frost, it would be prudent to protect all exposed soils in foundation excavations with a concrete binding layer. Excavations should be within the capacity of normal earthworks plant.

Prior to emplacing any foundation concrete, obvious soft or loose zones should be removed and replaced with a suitably recompacted hardcore or lean mix concrete. In addition, all excavations should be inspected to ensure that they fully penetrate any areas of disturbed ground.

It is also recommended for any new developments, adequate surface drainage should be designed and installed by a competent contractor, in order to prevent surface water 'ponding' or collection, during and post construction, particularly where the existing surface drainage system is disrupted or damaged.

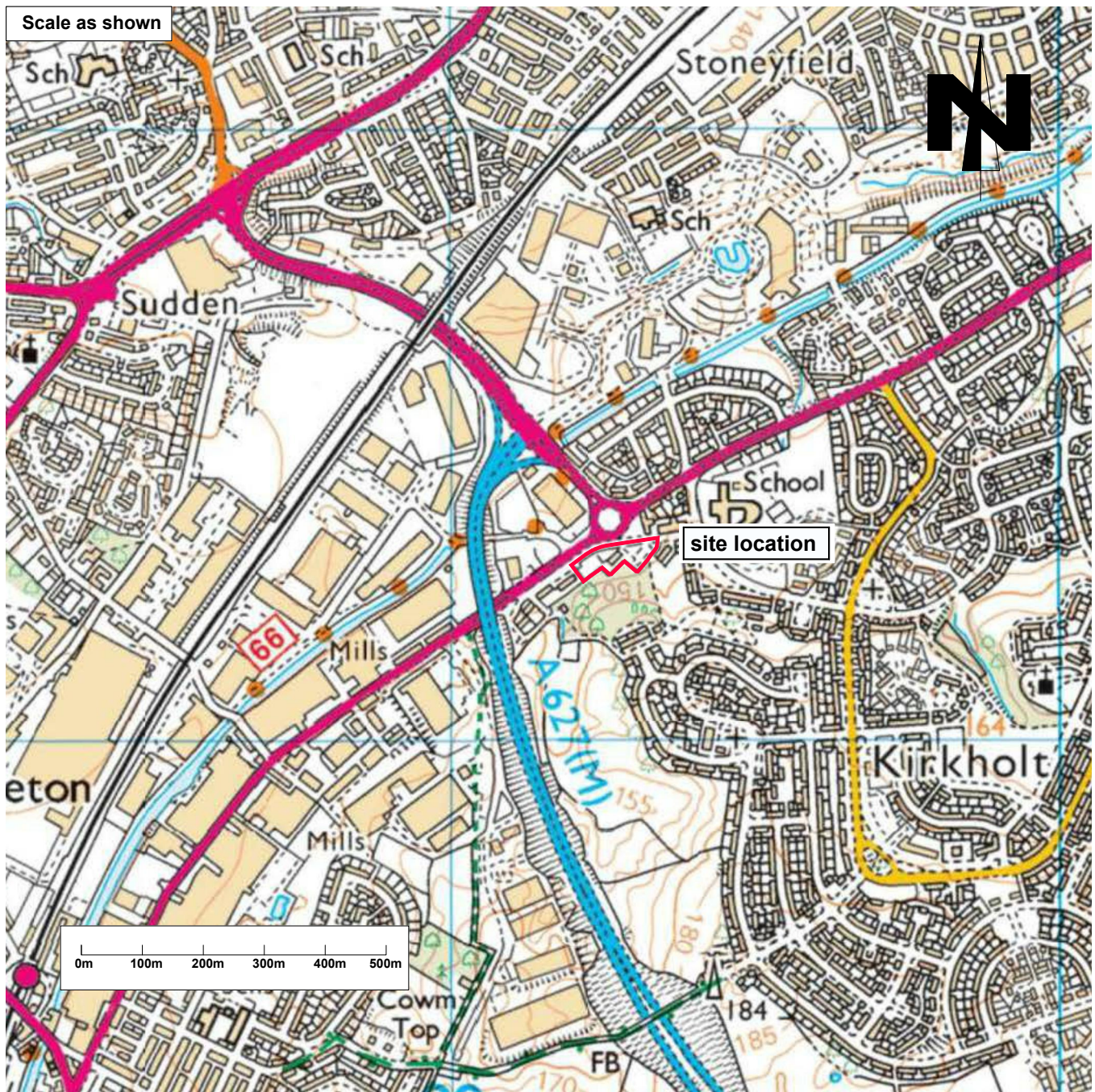
In addition, for deeper excavations, drainage, service runs or the like that may pass close to or beneath any proposed new foundations, these should be undertaken with care and completed prior to the preparation of any new foundations, so as not to allow any loose or granular material to move or 'flow', thus causing settlement to occur to any new foundations based at a higher level.

Consideration should also be given to the protection of any new service pipes for the proposed development, and a suite of contamination testing (UKWIR suite) may be required to meet the requirements of the local utilities service provider for their 'pipe selection risk assessment' (PSRA) once the location and depth of future services have been determined.

An "observational technique" can be applied to the design and construction of this site, and where ground conditions seem to vary from that indicated from the conceptual ground model derived from works to date, then advice from a suitably qualified Engineer should be sought.

### **END OF REPORT**

## **APPENDIX I**



Client:

**ADEPT CONSULTING ENGINEERS**

Project Title:

Proposed Residential Development

Queens Drive

Kirkholt, Rochdale, OL11 2NP

Drawing Title:

Location Plan

Job Reference:

28.07.25

Drawing Number:

—

Revision:

—

Drawn by:

P.D

Date:

28.07.25

Scale at A4:

As shown

Checked by:

G.W

Approved by:

G.W

The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.

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LEGEND

APPROXIMATE  
SITE BOUNDARY

| rev. | date | amendments | drawn cho |
|------|------|------------|-----------|
|------|------|------------|-----------|

Client:

**ADEPT CONSULTING ENGINEERS**

Project Title:

Project Title:  
Proposed Residential Development

Queens Drive

Kirkhald, Rochdale, OL11 2NP

Drawing Title:

Aerial Photograph

|              |          |           |              |
|--------------|----------|-----------|--------------|
| Scale at A3: | Date:    | Drawn by: | Approved by: |
| NTS @ A3     | 28.07.25 | P.D       | G.W          |

|          |         |      |
|----------|---------|------|
| Job Ref: | Drg no: | Rev: |
| 25-446   | —       | —    |



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| LEGEND |                           |
|--------|---------------------------|
|        | APPROXIMATE SITE BOUNDARY |

| rev. | date | amendments | drawn | chckd |
|------|------|------------|-------|-------|
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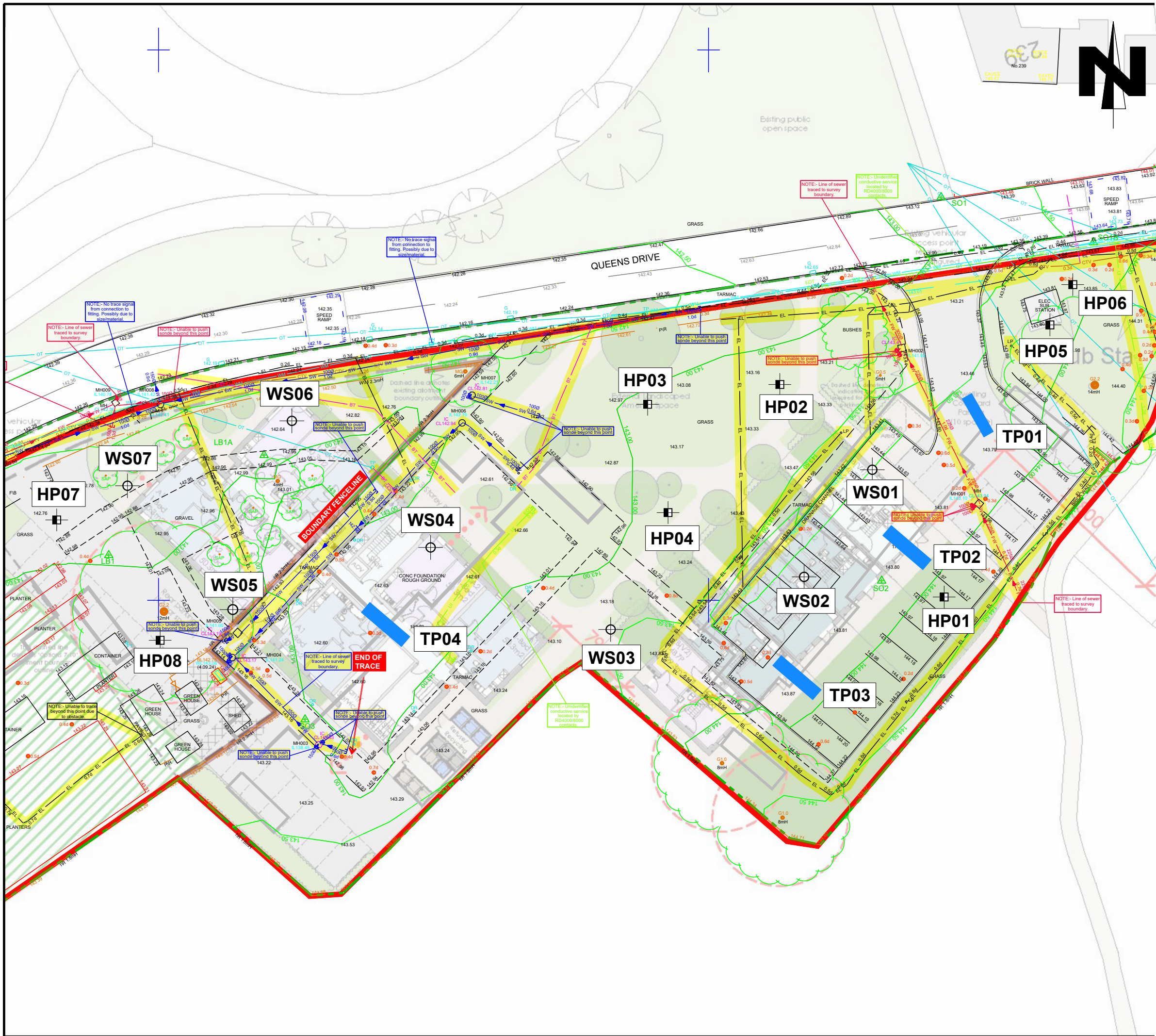
Client:  
**ADEPT CONSULTING ENGINEERS**

Project Title:  
Proposed Residential Development  
  
Queens Drive  
Kirkhale, Rochdale, OL11 2NP

Drawing Title:  
  
Proposed Development Layout Plan

|                          |                   |                  |                     |
|--------------------------|-------------------|------------------|---------------------|
| Scale at A3:<br>NTS @ A3 | Date:<br>28.07.25 | Drawn by:<br>P.D | Approved by:<br>G.W |
|--------------------------|-------------------|------------------|---------------------|

|                    |              |           |
|--------------------|--------------|-----------|
| Job Ref:<br>25-446 | Drg no:<br>— | Rev:<br>— |
|--------------------|--------------|-----------|



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| LEGEND |                                                              |
|--------|--------------------------------------------------------------|
|        | APPROXIMATE SITE BOUNDARY                                    |
|        | WINDOWLESS SAMPLING BOREHOLE POSITION                        |
|        | MANUALLY EXCAVATED TRIAL PIT POSITION                        |
|        | MECHANICALLY EXCAVATED TRIAL PIT TO TARGET RELIC FOUNDATIONS |

| rev. | date | amendments | drawn | chckd |
|------|------|------------|-------|-------|
|      |      |            |       |       |
|      |      |            |       |       |
|      |      |            |       |       |
|      |      |            |       |       |

Client:  
**ADEPT CONSULTING ENGINEERS**

Project Title:  
Proposed Residential Development  
Queens Drive  
Kirkhale, Rochdale, OL11 2NP

Drawing Title:  
Exploratory Hole Location Plan

|                          |                   |                  |                     |
|--------------------------|-------------------|------------------|---------------------|
| Scale at A3:<br>NTS @ A3 | Date:<br>10.10.25 | Drawn by:<br>P.D | Approved by:<br>S.D |
|--------------------------|-------------------|------------------|---------------------|

|                    |              |           |
|--------------------|--------------|-----------|
| Job Ref:<br>25-446 | Drg no:<br>— | Rev:<br>— |
|--------------------|--------------|-----------|



# Key to exploratory hole symbols and abbreviations

## SAMPLE TYPES

|                              |                           |                                   |
|------------------------------|---------------------------|-----------------------------------|
| ACM - Asbestos sample        | AMAL - Amalgamated sample | B - Bulk disturbed sample         |
| BLK - Block sample           | C - Core sample           | CBR - CBR test sample             |
| D - Disturbed sample         | ES - Environmental sample | EW - Environmental water sample   |
| G - Gas sample               | J - Jar sample            | L - Liner sample                  |
| TW - Pushed thin wall sample | U - Undisturbed sample    | UT - Undisturbed thin wall sample |
| W - Water sample             |                           |                                   |

## IN-SITU TESTS

|                        |                                  |                                 |
|------------------------|----------------------------------|---------------------------------|
| HV - Hand shear vane   | HV(r) - Hand shear vane residual | PID - Photo ionisation detector |
| PP - Hand penetrometer | SPT - Standard penetration test  | SPT(C) - SPT using cone         |

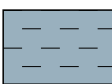
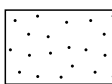
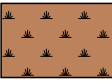
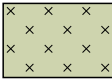
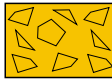
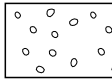
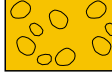
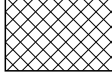
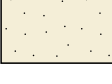
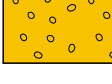
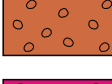
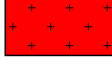
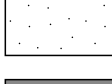
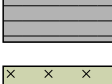
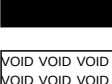
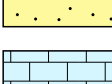
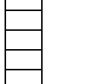
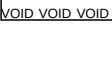
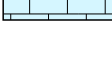
## GROUNDWATER

|                                                                                                      |                                                                                                          |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|  Groundwater strike |  Groundwater rest level |
|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|

## ROTARY CORE DETAILS

|                               |                               |                                    |
|-------------------------------|-------------------------------|------------------------------------|
| TCR - Total core recovery (%) | SCR - Solid core recovery (%) | RQD - Rock quality designation (%) |
| FI - Fracture index           | NI - Non-intact core          | AZCL - Assumed zone of core loss   |

## LEGEND

|                                                                                                                                                          |                                                                                               |                                                                                                  |                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
|  Topsoil                                                              |  Clay      |  Chalk        |  Sand backfill   |
|  Peat                                                                 |  Silt      |  Breccia      |  Gravel backfill |
|  Made ground<br>[cohesive]                                            |  Sand      |  Conglomerate |  Arisings        |
|  Concrete                                                             |  Gravel    |  Metamorphic  |  Bentonite       |
|  Wood                                                                 |  Cobbles   |  Igneous      |  Concrete        |
|  Brick                                                                |  Boulders  |                                                                                                  |  Grout           |
|  Bituminous<br>material                                               |  Mudstone  |                                                                                                  |  Plain pipe      |
|  Gypsum                                                               |  Siltstone |                                                                                                  |                                                                                                       |
|  Coal                                                                 |  Sandstone |                                                                                                  |  Slotted pipe    |
|  VOID VOID VOID<br>VOID VOID VOID<br>VOID VOID VOID<br>VOID VOID VOID |  Limestone |                                                                                                  |                                                                                                       |





# Trial Pit

**TP01**  
SUPPLEMENTARY INFO

|                       |             |            |                  |       |
|-----------------------|-------------|------------|------------------|-------|
| Hole Type             | Easting     | Northing   | Ground Level (m) | Scale |
| TP                    | 389325.00   | 411318.00  | 150.00           | 1:25  |
| Project Name          | Project No. | Start Date | End Date         |       |
| Queens Road, Rochdale | 25-446      | 2025-10-03 | 2025-10-03       |       |

|            |            |                  |
|------------|------------|------------------|
| Client     | Consultant | Contractor       |
| ADEPT CSCE | SD         | Taylors Drilling |

### Water Strike - General

| Struck (m) | Seal Depth (m) | Casing Depth (m) | Date and Time | Remarks                                                             |
|------------|----------------|------------------|---------------|---------------------------------------------------------------------|
| 2.30       |                |                  |               | Groundwater encountered within SAND resulting in pit wall collapse. |

### Sample Details

| Sample ID       | Type | Water Level (m) | Remarks |
|-----------------|------|-----------------|---------|
| 0.00 - 0.05 - B | B    |                 |         |
| 0.10 - 0.20 - B | B    |                 |         |
| 1.10 - 1.20 - B | B    |                 |         |
| 2.10 - 2.20 - B | B    |                 |         |

|                                                                                                                                                 |                                                                                            |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------|
| Remarks                                                                                                                                         | Method, Plant, Stability, Dimensions                                                       | Logger |
| TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered.<br>TP terminated due to instability. | 0.00 - 2.50m TP JCB 3CX<br>Unstable<br><div><div>L = 2.50m</div><div>W = 0.60m</div></div> | SD     |

Checked By: S.D    Approved By: J.D    Status: FINAL



# Trial Pit

**TP01**  
PHOTO PAGE

|                                       |                       |                       |                            |                        |
|---------------------------------------|-----------------------|-----------------------|----------------------------|------------------------|
| Hole Type<br>TP                       | Easting<br>389325.00  | Northing<br>411318.00 | Ground Level (m)<br>150.00 | Scale<br>1:25          |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 |                       | Start Date<br>2025-10-03   | End Date<br>2025-10-03 |

Client  
ADEPT CSCE

Consultant  
SD

Contractor  
Taylors Drilling



## Remarks

TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered.  
TP terminated due to instability.

## Method, Plant, Stability, Dimensions

0.00 - 2.50m TP JCB 3CX  
Unstable

L = 2.50m



W = 0.60m

## Logger

SD

Checked By: S.D Approved By: J.D Status: FINAL



| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |         | Level<br><br>(m) | Depth<br>(thickness)<br><br>(m) | Strata                                                                                                                                                                                                                         |                                                                                                                                                                                                                      |
|-------------------|-----------------|-------------------|--------------|---------|------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                 | Depth (m)         | Type/<br>Ref | Results |                  |                                 | Legend                                                                                                                                                                                                                         | Description                                                                                                                                                                                                          |
|                   |                 | 0.10-0.20         | B            |         | 149.95           | (0.05)<br>0.05                  |                                                                                                                                                                                                                                | MADE GROUND - Bitumous Macadam<br>[MACADAM, MADE GROUND]                                                                                                                                                             |
|                   |                 | 1.10-1.20         | B            |         | (0.90)           |                                 | MADE GROUND - Light brown to orange sandy clayey Gravel FILL. Sand is fine to cocarse grained. Gravel is fine to coarse grained, angled to sub-angled of limestone and concrete.<br>[ENGINEERED FILL, MADE GROUND]             |                                                                                                                                                                                                                      |
|                   |                 |                   |              |         | 149.05           | 0.95                            |                                                                                                                                                                                                                                | Geotextile Mebrane noted at base of FILL. (0.94 - 0.95m)                                                                                                                                                             |
|                   |                 |                   |              |         | (0.55)           |                                 | Soft light brown very sandy slightly gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-rounded of sandstone, limestone, mudstone and quartz.<br>[CLAY, HUMMOCKY GLACIAL DEPOSITS] |                                                                                                                                                                                                                      |
|                   |                 |                   |              |         | 148.50           | 1.50                            |                                                                                                                                                                                                                                | Orange to red slightly gravelly clayey silty SAND. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-rounded to rounded of sandstone, limestone and quartz.<br>[SAND, HUMMOCKY GLACIAL DEPOSITS] |
|                   |                 | 2.10-2.20         | B            |         | (1.00)           |                                 |                                                                                                                                                                                                                                |                                                                                                                                                                                                                      |
|                   |                 |                   |              | 147.50  | 2.50             |                                 | End of Trial Pit at 2.50m                                                                                                                                                                                                      |                                                                                                                                                                                                                      |



# Trial Pit

TP02

SUPPLEMENTARY INFO

|                       |             |            |                  |       |
|-----------------------|-------------|------------|------------------|-------|
| Hole Type             | Easting     | Northing   | Ground Level (m) | Scale |
| TP                    | 389319.00   | 411307.00  | 150.00           | 1:25  |
| Project Name          | Project No. | Start Date | End Date         |       |
| Queens Road, Rochdale | 25-446      | 2025-10-03 | 2025-10-03       |       |

|            |            |                  |
|------------|------------|------------------|
| Client     | Consultant | Contractor       |
| ADEPT CSCE | SD         | Taylors Drilling |

Water Strike - General

| Struck (m) | Seal Depth (m) | Casing Depth (m) | Date and Time | Remarks                                                             |
|------------|----------------|------------------|---------------|---------------------------------------------------------------------|
| 2.20       |                |                  |               | Groundwater encountered within SAND resulting in pit wall collapse. |

Sample Details

| Sample ID       | Type | Water Level (m) | Remarks |
|-----------------|------|-----------------|---------|
| 0.10 - 0.20 - B | B    |                 |         |
| 1.10 - 1.20 - B | B    |                 |         |
| 2.10 - 2.20 - B | B    |                 |         |

|                                                                                                                                                 |                                                               |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|--------|
| Remarks                                                                                                                                         | Method, Plant, Stability, Dimensions                          | Logger |
| TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered.<br>TP terminated due to instability. | 0.00 - 2.50m TP JCB 3CX<br>Unstable<br>L = 2.20m<br>W = 0.60m | SD     |

Checked By: S.D    Approved By: J.D    Status: FINAL



# Trial Pit

**TP02**  
PHOTO PAGE

|                                       |                       |                       |                            |                        |
|---------------------------------------|-----------------------|-----------------------|----------------------------|------------------------|
| Hole Type<br>TP                       | Easting<br>389319.00  | Northing<br>411307.00 | Ground Level (m)<br>150.00 | Scale<br>1:25          |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 |                       | Start Date<br>2025-10-03   | End Date<br>2025-10-03 |

Client  
ADEPT CSCE

Consultant  
SD

Contractor  
Taylors Drilling



## Remarks

TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered.  
TP terminated due to instability.

## Method, Plant, Stability, Dimensions

0.00 - 2.50m TP JCB 3CX  
Unstable

L = 2.20m



W = 0.60m

## Logger

SD

Checked By: S.D Approved By: J.D Status: FINAL

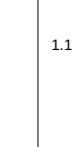


# TP03

Sheet 1 of 1

|                                              |                             |                              |                                   |                               |
|----------------------------------------------|-----------------------------|------------------------------|-----------------------------------|-------------------------------|
| <b>Hole Type</b><br>TP                       | <b>Easting</b><br>389309.00 | <b>Northing</b><br>411295.00 | <b>Ground Level (m)</b><br>150.00 | <b>Scale</b><br>1:25          |
| <b>Project Name</b><br>Queens Road, Rochdale |                             | <b>Project No.</b><br>25-446 | <b>Start Date</b><br>2025-10-03   | <b>End Date</b><br>2025-10-03 |

|               |                   |                   |
|---------------|-------------------|-------------------|
| <b>Client</b> | <b>Consultant</b> | <b>Contractor</b> |
| ADEPT CSCE    | SD                | Taylors Drilling  |

| Inst/<br>Backfill                                                                 | Water<br>Levels | Samples and Tests |              |         | Level<br>(m) | Depth<br>(thickness)<br>(m) | Strata                                                                             |                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------|-----------------|-------------------|--------------|---------|--------------|-----------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                   |                 | Depth (m)         | Type/<br>Ref | Results |              |                             | Legend                                                                             | Description                                                                                                                                                                                                                                                                                |
|  |                 | 0.10-0.20         | B            |         | 149.95       | (0.05)<br>0.05              |   | MADE GROUND - Bitumous Macadam<br>[MACADAM, MADE GROUND]                                                                                                                                                                                                                                   |
|                                                                                   |                 |                   |              |         |              | (0.95)                      |   | MADE GROUND - Light brown to orange sandy clayey Gravel FILL. Sand is fine to cocarse grained. Gravel is fine to coarse grained, angled to sub-angled of limestone and concrete.<br>[ENGINEERED FILL, MADE GROUND]                                                                         |
|                                                                                   |                 | 1.10-1.20         | B            |         | 149.00       | 1.00                        |   | Geotextile Mebrane noted at base of FILL. (0.99 - 1.00m)<br>Soft light brown very sandy slightly gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-rounded of sandstone, limestone, mudstone and quartz.<br>[CLAY, HUMMOCKY GLACIAL DEPOSITS] |
|                                                                                   |                 |                   |              |         |              | (0.50)                      |                                                                                    |                                                                                                                                                                                                                                                                                            |
|                                                                                   |                 | 2.10-2.20         | B            |         | 148.50       | 1.50                        |  | Orange to red slightly gravelly clayey silty SAND. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-rounded to rounded of sandstone, limestone and quartz.<br>[SAND, HUMMOCKY GLACIAL DEPOSITS]                                                                       |
|                                                                                   |                 |                   |              |         | (1.80)       |                             |                                                                                    |                                                                                                                                                                                                                                                                                            |
|                                                                                   |                 | 3.10-3.20         | B            |         |              |                             |                                                                                    |                                                                                                                                                                                                                                                                                            |
|                                                                                   |                 |                   |              |         | 146.70       | 3.30                        |                                                                                    | End of Trial Pit at 3.30m                                                                                                                                                                                                                                                                  |

|         |
|---------|
| Remarks |
|---------|

TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered.

Method, Plant, Stability, Dimensions

0.00 - 3.30m TP JCB 3CX  
Stable

 $L = 2.50\text{m}$ 

$$W = 0.60 \text{ m}$$

Logger

SD

Checked By: S.D    Approved By: J.D    Status: FINAL



# Trial Pit

TP03

SUPPLEMENTARY INFO

|                       |             |            |                  |       |
|-----------------------|-------------|------------|------------------|-------|
| Hole Type             | Easting     | Northing   | Ground Level (m) | Scale |
| TP                    | 389309.00   | 411295.00  | 150.00           | 1:25  |
| Project Name          | Project No. | Start Date | End Date         |       |
| Queens Road, Rochdale | 25-446      | 2025-10-03 | 2025-10-03       |       |

|            |            |                  |
|------------|------------|------------------|
| Client     | Consultant | Contractor       |
| ADEPT CSCE | SD         | Taylors Drilling |

## Sample Details

| Sample ID       | Type | Water Level (m) | Remarks |
|-----------------|------|-----------------|---------|
| 0.10 - 0.20 - B | B    |                 |         |
| 1.10 - 1.20 - B | B    |                 |         |
| 2.10 - 2.20 - B | B    |                 |         |
| 3.10 - 3.20 - B | B    |                 |         |

|                                                                                                            |                                                                                          |        |
|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------|
| Remarks                                                                                                    | Method, Plant, Stability, Dimensions                                                     | Logger |
| TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered. | 0.00 - 3.30m TP JCB 3CX<br>Stable<br><div><div>L = 2.50m</div><div>W = 0.60m</div></div> | SD     |
| Checked By: S.D    Approved By: J.D    Status: FINAL                                                       |                                                                                          |        |



# Trial Pit

**TP03**  
PHOTO PAGE

|                                       |                       |                       |                            |                        |
|---------------------------------------|-----------------------|-----------------------|----------------------------|------------------------|
| Hole Type<br>TP                       | Easting<br>389309.00  | Northing<br>411295.00 | Ground Level (m)<br>150.00 | Scale<br>1:25          |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 |                       | Start Date<br>2025-10-03   | End Date<br>2025-10-03 |

Client  
ADEPT CSCE

Consultant  
SD

Contractor  
Taylors Drilling



## Remarks

TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered.

## Method, Plant, Stability, Dimensions

0.00 - 3.30m TP JCB 3CX  
Stable

L = 2.50m

W = 0.60m

## Logger

SD

Checked By: S.D Approved By: J.D Status: FINAL



# Trial Pit

## TP04

Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>TP                       | Easting<br>389272.00  | Northing<br>411300.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-03 | End Date<br>2025-10-03     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |         | Level<br>(m) | Depth<br>(m)<br><small>(thickness)</small> | Strata |                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|-----------------|-------------------|--------------|---------|--------------|--------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                 | Depth (m)         | Type/<br>Ref | Results |              |                                            | Legend | Description                                                                                                                                                                                                                                                                                                                                                  |
|                   |                 |                   |              |         |              | (1.50)                                     |        | MADE GROUND - Dark brown to black gravelly Sand with moderate cobble content. Sand is fine to coarse grained with ash. Gravel is fine to coarse grained, angled to sub-angled of sandstone, limestone, mudstone, brick fragments, coal, concrete, glass, metal, and tile. Cobbles are angled to sub-angled of brick and concrete, [MADE GROUND, MADE GROUND] |
|                   |                 |                   |              |         | 148.50       | 1.50                                       |        | Soft light brown very sandy slightly gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-rounded of sandstone, limestone, mudstone and quartz. [CLAY, HUMMOCKY GLACIAL DEPOSITS]                                                                                                                                  |
|                   |                 |                   |              |         | 147.50       | 2.50                                       |        | Orange to red slightly gravelly clayey silty SAND. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-rounded to rounded of sandstone, limestone and quartz. [SAND, HUMMOCKY GLACIAL DEPOSITS]                                                                                                                                            |
|                   |                 |                   |              |         | 147.20       | 2.80                                       |        | End of Trial Pit at 2.80m                                                                                                                                                                                                                                                                                                                                    |

|                                                                                                                              |                                                                                                     |                     |
|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------|
| <b>Remarks</b><br>TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered. | <b>Method, Plant, Stability, Dimensions</b><br>0.00 - 2.80m<br>Stable<br><br>L = 3.50m<br>W = 1.00m | <b>Logger</b><br>SD |
|                                                                                                                              | Checked By: S.D Approved By: J.D Status: FINAL                                                      |                     |



# Trial Pit

## TP04

### SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>TP                       | Easting<br>389272.00  | Northing<br>411300.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-03 | End Date<br>2025-10-03     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

### Water Strike - General

| Struck (m) | Seal Depth (m) | Casing Depth (m) | Date and Time | Remarks                                                                   |
|------------|----------------|------------------|---------------|---------------------------------------------------------------------------|
| 0.80       |                |                  |               | Groundwater noted from more granular zone of made ground within pit wall. |
| 1.30       |                |                  |               | Groundwater noted from all faced of the pit.                              |

|                                                                                                                       |                                                                                                                                  |              |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------|
| Remarks<br>TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered. | Method, Plant, Stability, Dimensions<br>0.00 - 2.80m TP JCB 3CX<br>Stable<br><div><div>L = 3.50m</div><div>W = 1.00m</div></div> | Logger<br>SD |
| Checked By: S.D Approved By: J.D Status: FINAL                                                                        |                                                                                                                                  |              |



# Trial Pit

**TP04**  
PHOTO PAGE

|                                       |                       |                       |                            |                        |
|---------------------------------------|-----------------------|-----------------------|----------------------------|------------------------|
| Hole Type<br>TP                       | Easting<br>389272.00  | Northing<br>411300.00 | Ground Level (m)<br>150.00 | Scale<br>1:25          |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 |                       | Start Date<br>2025-10-03   | End Date<br>2025-10-03 |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|



|                                                                                                                              |                                                                                                                                                 |                     |
|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Remarks</b><br>TP Located to investigate possible presence of histoirc foundations. No suspected foundations encountered. | <b>Method, Plant, Stability, Dimensions</b><br>0.00 - 2.80m TP JCB 3CX<br>Stable<br>$L = 3.50m$<br><div><div></div><math>W = 1.00m</math></div> | <b>Logger</b><br>SD |
|                                                                                                                              | Checked By: S.D Approved By: J.D Status: FINAL                                                                                                  |                     |



# Hand Pit

**HP01**  
Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389322.00  | Northing<br>411302.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |         | Level<br>(m) | Depth<br>(m)<br><small>(thickness)</small> | Strata |                                                                                                                                                                                                                   |     |
|-------------------|-----------------|-------------------|--------------|---------|--------------|--------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                   |                 | Depth (m)         | Type/<br>Ref | Results |              |                                            | Legend | Description                                                                                                                                                                                                       |     |
|                   |                 | 0.30              | B 1          |         | 149.90       | (0.10)<br>0.10                             |        | MADE GROUND - Bitumous Macadam<br>[MACADAM, MADE GROUND]                                                                                                                                                          |     |
|                   |                 | 0.60              | B 2          |         | 149.40       | (0.50)<br>0.60                             |        | MADE GROUND - Light brown to orange sandy clayey Gravel FILL. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-angled of limestone and concrete.<br>[ENGINEERED FILL, MADE GROUND] | 0.5 |
|                   |                 |                   |              |         |              |                                            |        | End of Trial Pit at 0.60m                                                                                                                                                                                         |     |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 1.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 1.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 2.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 2.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 3.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 3.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 4.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 4.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                   | 5.0 |

|                                                       |                                                                            |              |
|-------------------------------------------------------|----------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m HP Manually Excavated | Logger<br>SH |
| Checked By: S.D Approved By: J.D Status: FINAL        |                                                                            |              |



# Hand Pit

**HP01**  
SUPPLEMENTARY INFO

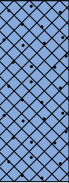
|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389322.00  | Northing<br>411302.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.3       | B    |                 |         |
| 0.6       | B    |                 |         |

|                                                       |                                                                                  |              |
|-------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m    HP    Manually Excavated | Logger<br>SH |
| Checked By: S.D    Approved By: J.D    Status: FINAL  |                                                                                  |              |

|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
|----------------------------------------------------------------------------------|-----------------|-----------------------|--------------|--------------------------|-----------------------|--------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------------------------|-----|--|--|--|--|----------------------------------------------------------------------------------|--|--------------|
|  |                 | <h1>Hand Pit</h1>     |              |                          |                       | <h2>HP02</h2>                  |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              | Sheet 1 of 1             |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 | Hole Type<br>HP       |              | Easting<br>389307.00     | Northing<br>411321.00 | Ground Level (m)<br>150.00     | Scale<br>1:25                                                                     |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
| Project Name<br>Queens Road, Rochdale                                            |                 | Project No.<br>25-446 |              | Start Date<br>2025-10-02 |                       | End Date<br>2025-10-02         |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
| Client<br>ADEPT CSCE                                                             |                 |                       |              | Consultant<br>SD         |                       | Contractor<br>Taylors Drilling |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
| Inst/<br>Backfill                                                                | Water<br>Levels | Samples and Tests     |              |                          | Level<br>(m)          | Depth<br>(m)                   | Strata                                                                            |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 | Depth (m)             | Type/<br>Ref | Results                  |                       |                                | Legend                                                                            | Description                                                                                                                                                                                                                                                                           |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
|  |                 | 0.30                  | B 1          |                          |                       | (0.60)                         |  | Grass overlying dark brown slightly gravelly silty Sand with low cobble content. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-angled of sandstone, limestone, brick fragments and coal. Cobbles are angled of brick.<br>[MADE GROUND, MADE GROUND] | 0.5                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 | 0.60                  | B 2          |                          | 149.40                | 0.60                           |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       | End of Trial Pit at 0.60m | 1.0 |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 1.5                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 2.0                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 2.5                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 3.0                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 3.5                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 4.0                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 4.5                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | 5.0                                                   |                           |     |  |  |  |  |                                                                                  |  |              |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       | Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. |                           |     |  |  |  |  | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m    HP    Manually Excavated |  | Logger<br>SH |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |
| Checked By: S.D    Approved By: J.D    Status: FINAL                             |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       |                                                       |                           |     |  |  |  |  |                                                                                  |  |              |



# Hand Pit

HP02

SUPPLEMENTARY INFO

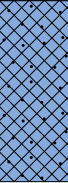
|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389307.00  | Northing<br>411321.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.30      | B    |                 |         |
| 0.60      | B    |                 |         |

|                                                       |                                                                                  |              |
|-------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m    HP    Manually Excavated | Logger<br>SH |
| Checked By: S.D    Approved By: J.D    Status: FINAL  |                                                                                  |              |

|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------|-----------------|-----------------------|--------------|--------------------------|-----------------------|--------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                 | <h1>Hand Pit</h1>     |              |                          |                       | <h2>HP03</h2>                  |                                                                                   |                                                                                                                                                                                                                                                                                       |
|                                                                                  |                 |                       |              | Sheet 1 of 1             |                       |                                |                                                                                   |                                                                                                                                                                                                                                                                                       |
|                                                                                  |                 | Hole Type<br>HP       |              | Easting<br>389291.00     | Northing<br>411320.00 | Ground Level (m)<br>150.00     | Scale<br>1:25                                                                     |                                                                                                                                                                                                                                                                                       |
| Project Name<br>Queens Road, Rochdale                                            |                 | Project No.<br>25-446 |              | Start Date<br>2025-10-02 |                       | End Date<br>2025-10-02         |                                                                                   |                                                                                                                                                                                                                                                                                       |
| Client<br>ADEPT CSCE                                                             |                 |                       |              | Consultant<br>SD         |                       | Contractor<br>Taylors Drilling |                                                                                   |                                                                                                                                                                                                                                                                                       |
| Inst/<br>Backfill                                                                | Water<br>Levels | Samples and Tests     |              |                          | Level                 | Depth                          | Strata                                                                            |                                                                                                                                                                                                                                                                                       |
|                                                                                  |                 | Depth (m)             | Type/<br>Ref | Results                  | (m)                   | (m)                            | Legend                                                                            | Description                                                                                                                                                                                                                                                                           |
|  |                 | 0.30                  | B 1          |                          |                       |                                |  | Grass overlying dark brown slightly gravelly silty Sand with low cobble content. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-angled of sandstone, limestone, brick fragments and coal. Cobbles are angled of brick.<br>[MADE GROUND, MADE GROUND] |
|                                                                                  |                 | 0.60                  | B 2          |                          | 149.40                | 0.60                           |                                                                                   |                                                                                                                                                                                                                                                                                       |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 0.5                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 1.0                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 1.5                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 2.0                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 2.5                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 3.0                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 3.5                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 4.0                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 4.5                                                                                                                                                                                                                                                                                   |
|                                                                                  |                 |                       |              |                          |                       |                                |                                                                                   | 5.0                                                                                                                                                                                                                                                                                   |
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry.                            |                 |                       |              |                          |                       |                                | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m HP Manually Excavated        |                                                                                                                                                                                                                                                                                       |
| Checked By: S.D Approved By: J.D Status: FINAL                                   |                 |                       |              |                          |                       |                                | Logger<br>SH                                                                      |                                                                                                                                                                                                                                                                                       |



# Hand Pit

HP03

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389291.00  | Northing<br>411320.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.30      | B    |                 |         |
| 0.60      | B    |                 |         |

|                                                       |                                                                                  |              |
|-------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m    HP    Manually Excavated | Logger<br>SH |
| Checked By: S.D    Approved By: J.D    Status: FINAL  |                                                                                  |              |





# Hand Pit

HP04

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389300.00  | Northing<br>411312.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.40      | B    |                 |         |
| 0.70      | B    |                 |         |

|                                                       |                                                                                  |              |
|-------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.70m    HP    Manually Excavated | Logger<br>SH |
| Checked By: S.D    Approved By: J.D    Status: FINAL  |                                                                                  |              |



# Hand Pit

**HP05**  
Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389331.00  | Northing<br>411328.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |         | Level<br>(m)     | Depth<br>(m)<br><small>(thickness)</small> | Strata |                                                                                                                                                                                                                                                                                       |     |
|-------------------|-----------------|-------------------|--------------|---------|------------------|--------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                   |                 | Depth (m)         | Type/<br>Ref | Results |                  |                                            | Legend | Description                                                                                                                                                                                                                                                                           |     |
|                   |                 | 0.30              | B 1          |         | 149.65<br>149.60 | (0.35)                                     |        | Grass overlying dark brown slightly gravelly silty Sand with low cobble content. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-angled of sandstone, limestone, brick fragments and coal. Cobbles are angled of brick.<br>[MADE GROUND, MADE GROUND] |     |
|                   |                 |                   |              |         |                  | 0.35<br>(0.05)<br>0.40                     |        | MADE GROUND - Orange to brown slightly gravelly Sand. Sand is fine to medium grained. Gravel is fine to medium grained, angled to sub-rounded of sandstone, limestone, brick fragments and coal.<br>[MADE GROUND, MADE GROUND]                                                        | 0.5 |
|                   |                 |                   |              |         |                  |                                            |        | End of Trial Pit at 0.40m                                                                                                                                                                                                                                                             | 1.0 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 1.5 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 2.0 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 2.5 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 3.0 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 3.5 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 4.0 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 4.5 |
|                   |                 |                   |              |         |                  |                                            |        |                                                                                                                                                                                                                                                                                       | 5.0 |

|                                                                                                                   |                                                                                |              |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry.<br>Foundation Exposure completed on Electrical Sub-station. | Method, Plant, Stability, Dimensions<br>0.00 - 0.40m   HP   Manually Excavated | Logger<br>SH |
|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------|

Checked By: S.D   Approved By: J.D   Status: FINAL



# Hand Pit

HP05

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389331.00  | Northing<br>411328.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.30      | B    |                 |         |

|                                                                                                                   |                                                                                  |              |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry.<br>Foundation Exposure completed on Electrical Sub-station. | Method, Plant, Stability, Dimensions<br>0.00 - 0.40m    HP    Manually Excavated | Logger<br>SH |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------|



# Hand Pit

**HP05**  
PHOTO PAGE

|                                       |                       |                       |                            |                        |
|---------------------------------------|-----------------------|-----------------------|----------------------------|------------------------|
| Hole Type<br>HP                       | Easting<br>389331.00  | Northing<br>411328.00 | Ground Level (m)<br>150.00 | Scale<br>1:25          |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 |                       | Start Date<br>2025-10-02   | End Date<br>2025-10-02 |

Client  
ADEPT CSCE

Consultant  
SD

Contractor  
Taylors Drilling



**Remarks**  
WATER OBSERVATIONS: Hand pit remained dry.  
Foundation Exposure completed on Electrical Sub-station.

|                                             |               |
|---------------------------------------------|---------------|
| <b>Method, Plant, Stability, Dimensions</b> | <b>Logger</b> |
| 0.00 - 0.40m HP Manually Excavated          | SH            |

Checked By: S.D Approved By: J.D Status: FINAL





# Hand Pit

HP06

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389334.00  | Northing<br>411331.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.30      | B    |                 |         |
| 0.60      | B    |                 |         |

|                                                       |                                                                                  |              |
|-------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m    HP    Manually Excavated | Logger<br>SH |
| Checked By: S.D    Approved By: J.D    Status: FINAL  |                                                                                  |              |



# Hand Pit

**HP07**  
Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389245.00  | Northing<br>411309.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |         | Level<br>(m) | Depth<br>(m)<br><small>(thickness)</small> | Strata |                                                                                                                                                                                                                                     |     |
|-------------------|-----------------|-------------------|--------------|---------|--------------|--------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|                   |                 | Depth (m)         | Type/<br>Ref | Results |              |                                            | Legend | Description                                                                                                                                                                                                                         |     |
|                   |                 | 0.30              | B 1          |         | 149.55       | (0.45)                                     |        | Grass overlying dark brown slightly gravelly silty Sand. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-angular to sub-rounded of sandstone, limestone, brick fragments and coal. [MADE GROUND, MADE GROUND] |     |
|                   |                 | 0.60              | B 2          |         |              | 0.45                                       |        | -----<br>End of Trial Pit at 0.45m                                                                                                                                                                                                  | 0.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 1.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 1.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 2.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 2.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 3.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 3.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 4.0 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 4.5 |
|                   |                 |                   |              |         |              |                                            |        |                                                                                                                                                                                                                                     | 5.0 |

|                                                       |                                                                            |              |
|-------------------------------------------------------|----------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m HP Manually Excavated | Logger<br>SH |
| Checked By: S.D Approved By: J.D Status: FINAL        |                                                                            |              |



# Hand Pit

HP07

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389245.00  | Northing<br>411309.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.30      | B    |                 |         |
| 0.60      | B    |                 |         |

|                                                       |                                                                                  |              |
|-------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.60m    HP    Manually Excavated | Logger<br>SH |
| Checked By: S.D    Approved By: J.D    Status: FINAL  |                                                                                  |              |





# Hand Pit

**HP08**  
SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>HP                       | Easting<br>389251.00  | Northing<br>411300.00    | Ground Level (m)<br>150.00 | Scale<br>1:25 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.30      | B    |                 |         |

|                                                       |                                                                                  |              |
|-------------------------------------------------------|----------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Hand pit remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 0.40m    HP    Manually Excavated | Logger<br>SH |
| Checked By: S.D    Approved By: J.D    Status: FINAL  |                                                                                  |              |



# Borehole Log

**WS01**  
Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389316.00  | Northing<br>411314.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |                    | Level<br>(m) | Depth<br>(m)<br><small>(thickness)</small> | Strata                   |                                                                                                                                                                                                                                  |
|-------------------|-----------------|-------------------|--------------|--------------------|--------------|--------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                 | Depth (m)         | Type/<br>Ref | Results            |              |                                            | Legend                   | Description                                                                                                                                                                                                                      |
|                   |                 | 0.00              | B 1          |                    | 149.95       | (0.05)                                     |                          | MADE GROUND - Bitumous Macadam [MACADAM, MADE GROUND]                                                                                                                                                                            |
|                   |                 | 0.20              | B 1          |                    |              | 0.05                                       |                          |                                                                                                                                                                                                                                  |
|                   |                 | 0.60              | B 1          |                    |              | (0.95)                                     |                          | MADE GROUND - Light brown to orange sandy clayey Gravel FILL. Sand is fine to cocarse grained. Gravel is fine to coarse grained, angled to sub-angled of limestone and concrete. [ENGINEERED FILL, MADE GROUND]                  |
|                   |                 | 0.80              | B 1          |                    |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 | 1.00              | SPT(C)       | N=17 (2,2/3,4,5,5) | 149.00       | 1.00                                       |                          | Geotextile Mebrane noted at base of FILL. (0.99 - 1.00m)                                                                                                                                                                         |
|                   |                 | 1.20              | B 1          |                    |              | (0.40)                                     |                          |                                                                                                                                                                                                                                  |
|                   |                 | 1.70              | B 1          |                    | 148.60       | 1.40                                       |                          | Firm light brown sandy slightly gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-rounded of sandstone, limestone, mudstone and quartz. [CLAY, HUMMOCKY GLACIAL DEPOSITS]           |
|                   |                 | 2.00              | SPT(C)       | N=15 (2,3/3,4,4,4) |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 | 2.50              | B 1          |                    |              |                                            |                          | Loose to dense orange to red slightly gravelly clayey silty SAND. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-rounded to rounded of sandstone, limestone and quartz. [SAND, HUMMOCKY GLACIAL DEPOSITS] |
|                   |                 | 3.00              | SPT(C)       | N=15 (3,3/4,3,4,4) |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 | 3.50              | B 1          |                    |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 | 4.00              | SPT(C)       | N=6 (1,1/3,1,1,1)  |              | (5.05)                                     |                          |                                                                                                                                                                                                                                  |
|                   |                 | 4.50              | B 1          |                    |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 | 5.00              | SPT(C)       | N=11 (2,3/3,2,3,3) |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 | 5.50              | B 1          |                    |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 | 6.00              | SPT(C)       | N=32 (6,5/8,8,8,8) |              |                                            |                          |                                                                                                                                                                                                                                  |
|                   |                 |                   |              |                    | 143.55       | 6.45                                       | End of Borehole at 6.45m |                                                                                                                                                                                                                                  |

|                                                                                                                                   |                                                                                                |                     |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------|
| <b>Remarks</b><br>WATER OBSERVATIONS: Groundwater strike encountered at c.2.20m bgl, water standing at c.1.80m bgl on completion. | <b>Method, Plant, Stability, Dimensions</b><br>0.00 - 6.45m BH Tracked Windowless Sampling Rig | <b>Logger</b><br>SD |
|                                                                                                                                   | Checked By: S.D Approved By: J.D Status: FINAL                                                 |                     |



# Borehole Log

WS01

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389316.00  | Northing<br>411314.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

## Water Strike - General

| Struck (m) | Seal Depth (m) | Casing Depth (m) | Date and Time | Remarks |
|------------|----------------|------------------|---------------|---------|
| 2.20       |                |                  |               |         |

## Water Strike - Details

| Struck (m) | Rose To (m) | Time (mins) | Remarks |
|------------|-------------|-------------|---------|
| 2.20       | 1.80        | 20          |         |

## SPT - Details

| Top Depth (m) (Type) | Casing Depth (m) | Water Depth (m) | Hammer Serial No. | Energy Ratio (%) | Results            |
|----------------------|------------------|-----------------|-------------------|------------------|--------------------|
| 1.00 (C)             |                  |                 |                   |                  | N=17 (2,2/3,4,5,5) |
| 2.00 (C)             |                  |                 |                   |                  | N=15 (2,3/3,4,4,4) |
| 3.00 (C)             |                  |                 |                   |                  | N=15 (3,3/4,3,4,4) |
| 4.00 (C)             |                  |                 |                   |                  | N=6 (1,1/3,1,1,1)  |
| 5.00 (C)             |                  |                 |                   |                  | N=11 (2,3/3,2,3,3) |
| 6.00 (C)             |                  |                 |                   |                  | N=32 (6,5/8,8,8,8) |

## Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0         | B    |                 |         |
| 0.2       | B    |                 |         |
| 0.6       | B    |                 |         |
| 0.8       | B    |                 |         |
| 1.2       | B    |                 |         |
| 1.7       | B    |                 |         |
| 2.5       | B    |                 |         |
| 3.5       | B    |                 |         |
| 4.5       | B    |                 |         |
| 5.5       | B    |                 |         |

|                                                                                                                            |                                                                                         |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Groundwater strike encountered at c.2.20m bgl, water standing at c.1.80m bgl on completion. | Method, Plant, Stability, Dimensions<br>0.00 - 6.45m BH Tracked Windowless Sampling Rig | Logger<br>SD |
| Checked By: S.D Approved By: J.D Status: FINAL                                                                             |                                                                                         |              |



# Borehole Log

WS02  
Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389309.00  | Northing<br>411305.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |               |                    | Level<br>(m) | Depth<br>(m)<br><small>(thickness)</small> | Strata |                                                                                                                                                                                                                            |
|-------------------|-----------------|-------------------|---------------|--------------------|--------------|--------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |                 | Depth (m)         | Type/<br>Ref  | Results            |              |                                            | Legend | Description                                                                                                                                                                                                                |
|                   |                 | 0.20              | B 1           |                    | 149.95       | (0.05)<br>0.05                             |        | MADE GROUND - Bitumous Macadam<br>[MACADAM, MADE GROUND]                                                                                                                                                                   |
|                   |                 | 0.60              | B 1           |                    |              | (0.85)                                     |        | MADE GROUND - Light brown to orange sandy clayey Gravel FILL. Sand is fine to cocarse grained. Gravel is fine to coarse grained, angled to sub-angled of limestone and concrete.<br>[ENGINEERED FILL, MADE GROUND]         |
|                   |                 | 1.00              | SPT(C)<br>B 1 | N=22 (4,4/5,6,5,6) | 149.10       | 0.90                                       |        | Geotextile Mebrane noted at base of FILL. (0.89 - 0.90m)                                                                                                                                                                   |
|                   |                 | 1.50              | B 1           |                    | 148.50       | 1.50                                       |        | Firm light brown sandy slightly gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-rounded of sandstone, limestone, mudstone and quartz.<br>[CLAY, HUMMOCKY GLACIAL DEPOSITS]  |
|                   |                 | 2.00              | SPT(C)<br>B 1 | N=15 (3,3/4,3,4,4) |              |                                            |        | Dense orange to red slightly gravelly clayey silty SAND. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-rounded to rounded of sandstone, limestone and quartz.<br>[SAND, HUMMOCKY GLACIAL DEPOSITS] |
|                   |                 | 3.00              | SPT(C)<br>B 1 | N=14 (3,3/4,3,3,4) |              | (3.95)                                     |        |                                                                                                                                                                                                                            |
|                   |                 | 4.00              | SPT(C)<br>B 1 | N=16 (2,3/4,3,4,5) |              |                                            |        |                                                                                                                                                                                                                            |
|                   |                 | 5.00              | SPT(C)        | N=12 (2,3/3,3,3,3) |              |                                            |        |                                                                                                                                                                                                                            |
|                   |                 |                   |               |                    | 144.55       | 5.45                                       |        | End of Borehole at 5.45m                                                                                                                                                                                                   |
|                   |                 | 6.00              | SPT(C)        | N=14 (3,4/3,4,4,3) |              |                                            |        |                                                                                                                                                                                                                            |

|                                                                                                                            |                                                                                         |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Groundwater strike encountered at c.2.50m bgl, water standing at c.2.10m bgl on completion. | Method, Plant, Stability, Dimensions<br>0.00 - 5.45m BH Tracked Windowless Sampling Rig | Logger<br>SD |
| Checked By: S.D Approved By: J.D Status: FINAL                                                                             |                                                                                         |              |



# Borehole Log

WS02

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389309.00  | Northing<br>411305.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

## Water Strike - General

| Struck (m) | Seal Depth (m) | Casing Depth (m) | Date and Time | Remarks |
|------------|----------------|------------------|---------------|---------|
| 2.50       |                |                  |               |         |

## Water Strike - Details

| Struck (m) | Rose To (m) | Time (mins) | Remarks |
|------------|-------------|-------------|---------|
| 2.50       | 2.10        | 20          |         |

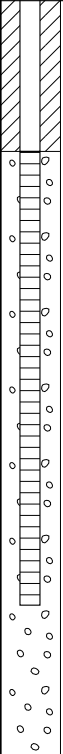
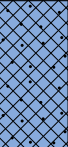
## SPT - Details

| Top Depth (m) (Type) | Casing Depth (m) | Water Depth (m) | Hammer Serial No. | Energy Ratio (%) | Results            |
|----------------------|------------------|-----------------|-------------------|------------------|--------------------|
| 1.00 (C)             |                  |                 |                   |                  | N=22 (4,4/5,6,5,6) |
| 2.00 (C)             |                  |                 |                   |                  | N=15 (3,3/4,3,4,4) |
| 3.00 (C)             |                  |                 |                   |                  | N=14 (3,3/4,3,3,4) |
| 4.00 (C)             |                  |                 |                   |                  | N=16 (2,3/4,3,4,5) |
| 5.00 (C)             |                  |                 |                   |                  | N=12 (2,3/3,3,3,3) |
| 6.00 (C)             |                  |                 |                   |                  | N=14 (3,4/3,4,4,3) |

## Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.2       | B    |                 |         |
| 0.6       | B    |                 |         |
| 1         | B    |                 |         |
| 1.5       | B    |                 |         |
| 2         | B    |                 |         |
| 3         | B    |                 |         |
| 4         | B    |                 |         |

|                                                                                                                            |                                                                                         |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Groundwater strike encountered at c.2.50m bgl, water standing at c.2.10m bgl on completion. | Method, Plant, Stability, Dimensions<br>0.00 - 5.45m BH Tracked Windowless Sampling Rig | Logger<br>SD |
| Checked By: S.D Approved By: J.D Status: FINAL                                                                             |                                                                                         |              |

|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
|--------------------------------------------------------------------------------------|-------------------------------|------------------------------|-----------------------------|---------------------------------|---------------------------------------|--------------------------------------------|---------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|      |                               | <h1>Borehole Log</h1>        |                             |                                 |                                       | <h2>WS03</h2>                              |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
|                                                                                      |                               |                              |                             |                                 |                                       | Sheet 1 of 1                               |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
|                                                                                      |                               | <b>Hole Type</b><br>BH       | <b>Easting</b><br>389292.00 | <b>Northing</b><br>411301.00    | <b>Ground Level (m)</b><br>150.00     | <b>Scale</b><br>1:50                       |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
| <b>Project Name</b><br>Queens Road, Rochdale                                         |                               | <b>Project No.</b><br>25-446 |                             | <b>Start Date</b><br>2025-10-02 | <b>End Date</b><br>2025-10-02         |                                            |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
| <b>Client</b><br>ADEPT CSCE                                                          |                               |                              | <b>Consultant</b><br>SD     |                                 | <b>Contractor</b><br>Taylors Drilling |                                            |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
| <b>Inst/</b><br><b>Backfill</b>                                                      | <b>Water</b><br><b>Levels</b> | <b>Samples and Tests</b>     |                             |                                 | <b>Level</b>                          | <b>Depth</b><br><small>(thickness)</small> | <b>Strata</b> |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
|                                                                                      |                               | <b>Depth (m)</b>             | <b>Type/Ref</b>             | <b>Results</b>                  | <b>(m)</b>                            | <b>(m)</b>                                 | <b>Legend</b> | <b>Description</b>                                                                             |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |
|     |                               | 0.25                         | B 1                         |                                 |                                       |                                            | (1.00)        |               | Grass overlying dark brown slightly gravelly silty Sand. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-angular to sub-rounded of sandstone, limestone, brick fragments and coal. [MADE GROUND, MADE GROUND] | 0.5                                                                                                                                                                                                               |     |
|                                                                                      |                               | 1.00                         | SPT(C)                      | N=4 (1,1/1,1,1,1)               | 149.00                                | 1.00                                       | (0.50)        |               | Firm light brown sandy slightly gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-rounded of sandstone, limestone, mudstone and quartz. [CLAY, HUMMOCKY GLACIAL DEPOSITS]              | 1.0                                                                                                                                                                                                               |     |
|                                                                                      |                               | 1.25                         | B 2                         |                                 |                                       |                                            | 148.50        | 1.50                                                                                           |                                                                                                                                                    | Orange to red slightly gravelly clayey silty SAND. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-rounded to rounded of sandstone, limestone and quartz. [SAND, HUMMOCKY GLACIAL DEPOSITS] | 1.5 |
|                                                                                      |                               | 1.75                         | B 3                         |                                 |                                       |                                            | 148.10        | 1.90                                                                                           |                                                                                                                                                    | Medium Dense orange to brown silty SAND. Sand is fine to coarse grained. [SAND, HUMMOCKY GLACIAL DEPOSITS]                                                                                                        | 2.0 |
|                                                                                      |                               | 2.00                         | SPT(C)                      | N=14 (3,3/3,3,4,4)              |                                       |                                            | (1.10)        |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   | 2.5 |
|                                                                                      |                               | 2.50                         | B 4                         |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   | 2.5 |
|                                                                                      |                               | 3.00                         | SPT(C)                      | N=8 (2,2/2,2,2,2)               | 147.00                                | 3.00                                       |               |                                                                                                |                                                                                                                                                    | Firm brown sandy slightly gravelly CLAY. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-angled to sub-rounded of sandstone, limestone, and mudstone. [CLAY, HUMMOCKY GLACIAL DEPOSITS]     | 3.0 |
|                                                                                      |                               | 3.50                         | B 5                         |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   | 3.5 |
|                                                                                      |                               | 4.00                         | SPT(C)                      | N=14 (2,2/3,4,3,4)              |                                       |                                            | (2.45)        |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   | 4.0 |
|                                                                                      |                               | 4.50                         | B 6                         |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   | 4.5 |
|                                                                                      | 5.00                          | SPT(C)                       | N=19 (3,3/4,5,5,5)          |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 5.0                                                                                                                                                                                                               |     |
|                                                                                      | 5.50                          | B 7                          |                             | 144.55                          | 5.45                                  |                                            |               |                                                                                                | End of Borehole at 5.45m                                                                                                                                                                                                            | 5.5                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 6.0                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 6.5                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 7.0                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 7.5                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 8.0                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 8.5                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 9.0                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 9.5                                                                                                                                                                                                               |     |
|                                                                                      |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     | 10.0                                                                                                                                                                                                              |     |
| <b>Remarks</b><br>WATER OBSERVATIONS: Groundwater strike encountered at c.3.00m bgl. |                               |                              |                             |                                 |                                       |                                            |               | <b>Method, Plant, Stability, Dimensions</b><br>0.00 - 5.45m BH Tracked Windowless Sampling Rig |                                                                                                                                                                                                                                     | <b>Logger</b><br>SH                                                                                                                                                                                               |     |
| <b>Checked By:</b> S.D <b>Approved By:</b> J.D <b>Status:</b> FINAL                  |                               |                              |                             |                                 |                                       |                                            |               |                                                                                                |                                                                                                                                                                                                                                     |                                                                                                                                                                                                                   |     |



# Borehole Log

WS03

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389292.00  | Northing<br>411301.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-02 | End Date<br>2025-10-02     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

## Water Strike - General

| Struck (m) | Seal Depth (m) | Casing Depth (m) | Date and Time | Remarks |
|------------|----------------|------------------|---------------|---------|
| 3.00       |                |                  |               |         |

## Water Strike - Details

| Struck (m) | Rose To (m) | Time (mins) | Remarks |
|------------|-------------|-------------|---------|
| 3.00       |             | 20          |         |

## SPT - Details

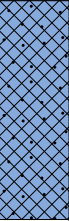
| Top Depth (m) (Type) | Casing Depth (m) | Water Depth (m) | Hammer Serial No. | Energy Ratio (%) | Results            |
|----------------------|------------------|-----------------|-------------------|------------------|--------------------|
| 1.00 (C)             |                  |                 |                   |                  | N=4 (1,1/1,1,1,1)  |
| 2.00 (C)             |                  |                 |                   |                  | N=14 (3,3/3,3,4,4) |
| 3.00 (C)             |                  |                 |                   |                  | N=8 (2,2/2,2,2,2)  |
| 4.00 (C)             |                  |                 |                   |                  | N=14 (2,2/3,4,3,4) |
| 5.00 (C)             |                  |                 |                   |                  | N=19 (3,3/4,5,5,5) |

## Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.25      | B    |                 |         |
| 1.25      | B    |                 |         |
| 1.75      | B    |                 |         |
| 2.5       | B    |                 |         |
| 3.5       | B    |                 |         |
| 4.5       | B    |                 |         |
| 5.5       | B    |                 |         |

|                                                                               |                                                                                         |              |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Groundwater strike encountered at c.3.00m bgl. | Method, Plant, Stability, Dimensions<br>0.00 - 5.45m BH Tracked Windowless Sampling Rig | Logger<br>SH |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|

Checked By: S.D Approved By: J.D Status: FINAL

|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------|----------------------|--------------------------|----------------------------|--------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|                                                            |                 | <h1>Borehole Log</h1> |                      |                          |                            | <h2>WS04</h2>                  |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
|                                                                                                                                            |                 |                       |                      | Sheet 1 of 1             |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
|                                                                                                                                            |                 | Hole Type<br>BH       | Easting<br>389276.00 | Northing<br>411308.00    | Ground Level (m)<br>150.00 | Scale<br>1:50                  |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
| Project Name<br>Queens Road, Rochdale                                                                                                      |                 | Project No.<br>25-446 |                      | Start Date<br>2025-10-03 |                            | End Date<br>2025-10-03         |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
| Client<br>ADEPT CSCE                                                                                                                       |                 |                       |                      | Consultant<br>SD         |                            | Contractor<br>Taylors Drilling |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
| Inst/<br>Backfill                                                                                                                          | Water<br>Levels | Samples and Tests     |                      |                          | Level<br>(m)               | Depth<br>(m)                   | Strata                                                                                  |                                                                                                                                                                                                                                                                                                                                                              |              |
|                                                                                                                                            |                 | Depth (m)             | Type/<br>Ref         | Results                  |                            |                                | Legend                                                                                  | Description                                                                                                                                                                                                                                                                                                                                                  |              |
|                                                            |                 | 0.50                  | B 1                  |                          |                            |                                |        | MADE GROUND - Dark brown to black gravelly Sand with moderate cobble content. Sand is fine to coarse grained with ash. Gravel is fine to coarse grained, angled to sub-angled of sandstone, limestone, mudstone, brick fragments, coal, concrete, glass, metal, and tile. Cobbles are angled to sub-angled of brick and concrete, [MADE GROUND, MADE GROUND] | 0.5          |
|                                                                                                                                            | 1.00            | SPT(C)                | N=34 (6,2/9,8,8,9)   |                          | (1.45)                     | 1.0                            |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
|                                                                                                                                            |                 |                       |                      |                          | 148.55                     | 1.45                           |                                                                                         | End of Borehole at 1.45m                                                                                                                                                                                                                                                                                                                                     | 1.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 2.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 2.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 3.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 3.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 4.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 4.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 5.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 5.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 6.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 6.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 7.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 7.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 8.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 8.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 9.0          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 9.5          |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              | 10.0         |
| Remarks<br>WATER OBSERVATIONS: Borehole remained dry.<br>Borehole terminated due to steep angle of sampler and rods after SPT @ 1.00m bgl. |                 |                       |                      |                          |                            |                                | Method, Plant, Stability, Dimensions<br>0.00 - 1.00m BH Tracked Windowless Sampling Rig |                                                                                                                                                                                                                                                                                                                                                              | Logger<br>SH |
|                                                                                                                                            |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |
| Checked By: S.D Approved By: J.D Status: FINAL                                                                                             |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                                                                                                                                              |              |



# Borehole Log

WS04

SUPPLEMENTARY INFO

|                       |             |            |                  |       |
|-----------------------|-------------|------------|------------------|-------|
| Hole Type             | Easting     | Northing   | Ground Level (m) | Scale |
| BH                    | 389276.00   | 411308.00  | 150.00           | 1:50  |
| Project Name          | Project No. | Start Date | End Date         |       |
| Queens Road, Rochdale | 25-446      | 2025-10-03 | 2025-10-03       |       |

|            |            |                  |
|------------|------------|------------------|
| Client     | Consultant | Contractor       |
| ADEPT CSCE | SD         | Taylors Drilling |

SPT - Details

| Top Depth (m) (Type) | Casing Depth (m) | Water Depth (m) | Hammer Serial No. | Energy Ratio (%) | Results            |
|----------------------|------------------|-----------------|-------------------|------------------|--------------------|
| 1.00 (C)             |                  |                 |                   |                  | N=34 (6,2/9,8,8,9) |

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.50      | B    |                 |         |

|                                                                                                                                 |                                                 |        |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|--------|
| Remarks                                                                                                                         | Method, Plant, Stability, Dimensions            | Logger |
| WATER OBSERVATIONS: Borehole remained dry.<br>Borehole terminated due to steep angle of sampler and rods after SPT @ 1.00m bgl. | 0.00 - 1.00m BH Tracked Windowless Sampling Rig | SH     |

Checked By: S.D Approved By: J.D Status: FINAL



# Borehole Log

**WS05**  
Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389255.00  | Northing<br>411302.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-03 | End Date<br>2025-10-03     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |                    | Level<br>(m) | Depth<br>(m)<br><small>(thickness)</small> | Strata |                                                                                                                                                                                                                                        |      |
|-------------------|-----------------|-------------------|--------------|--------------------|--------------|--------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                   |                 | Depth (m)         | Type/<br>Ref | Results            |              |                                            | Legend | Description                                                                                                                                                                                                                            |      |
|                   |                 |                   |              |                    |              | (0.20)                                     |        | Grass overlying dark brown slightly gravelly silty Sand. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-angular to sub-rounded of sandstone, limestone, brick fragments and coal.<br>[MADE GROUND, MADE GROUND] |      |
|                   |                 | 0.50              | B 1          |                    | 149.80       | 0.20                                       |        |                                                                                                                                                                                                                                        | 0.5  |
|                   |                 |                   |              |                    |              | (0.40)                                     |        | MADE GROUND - Brown gravelly silty Sand. Sand is fine to coarse grained. Gravel is fine to coarse grained, angled to sub-angled of sandstone, limestone, brick fragments, concrete and plastic.<br>[MADE GROUND, MADE GROUND]          |      |
|                   |                 | 1.00              | SPT(C)       | N=4 (1,1/1,1,1,1)  | 149.40       | 0.60                                       |        |                                                                                                                                                                                                                                        | 1.0  |
|                   |                 |                   |              |                    |              | (1.90)                                     |        | Loose orange to brown, occasionally black, slightly silty SAND. Sand is fine to medium grained.<br>[SAND, HUMMOCKY GLACIAL DEPOSITS]                                                                                                   |      |
|                   |                 | 1.50              | B 2          |                    |              |                                            |        |                                                                                                                                                                                                                                        | 1.5  |
|                   |                 |                   |              |                    |              | (0.50)                                     |        | Light brown sandy silty CLAY. Sand is fine to medium grained.<br>[CLAY, HUMMOCKY GLACIAL DEPOSITS]                                                                                                                                     |      |
|                   |                 | 2.00              | SPT(C)       | N=10 (2,3/2,3,2,3) | 147.50       | 2.50                                       |        |                                                                                                                                                                                                                                        | 2.0  |
|                   |                 |                   |              |                    |              | (0.50)                                     |        | Medium dense orange to brown slightly silty SAND. Sand is fine to coarse grained.<br>[SAND, HUMMOCKY GLACIAL DEPOSITS]                                                                                                                 |      |
|                   |                 | 2.50              | B 3          |                    | 147.00       | 3.00                                       |        |                                                                                                                                                                                                                                        | 2.5  |
|                   |                 |                   |              |                    |              | (3.45)                                     |        |                                                                                                                                                                                                                                        |      |
|                   |                 | 3.00              | SPT(C)       | N=4 (1,2/1,1,1,1)  |              |                                            |        |                                                                                                                                                                                                                                        | 3.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 | 3.50              | B 4          |                    |              |                                            |        |                                                                                                                                                                                                                                        | 3.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 | 4.00              | SPT(C)       | N=21 (3,4/4,5,6,6) |              |                                            |        |                                                                                                                                                                                                                                        | 4.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 | 4.50              | B 5          |                    |              |                                            |        |                                                                                                                                                                                                                                        | 4.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 | 5.00              | SPT(C)       | N=17 (3,2/3,4,5,5) |              |                                            |        |                                                                                                                                                                                                                                        | 5.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 | 5.50              | B 6          |                    |              |                                            |        |                                                                                                                                                                                                                                        | 5.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 | 6.00              | SPT(C)       | N=20 (2,3/4,6,5,5) |              |                                            |        |                                                                                                                                                                                                                                        | 6.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    | 143.55       | 6.45                                       |        |                                                                                                                                                                                                                                        | 6.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        | 7.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        | 7.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        | 8.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        | 8.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        | 9.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        | 9.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        | 10.0 |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                        |      |

|                                                                                                                                   |                                                                                                |                     |
|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------|
| <b>Remarks</b><br>WATER OBSERVATIONS: Groundwater strike encountered at c.5.50m bgl, water standing at c.2.20m bgl on completion. | <b>Method, Plant, Stability, Dimensions</b><br>0.00 - 6.45m BH Tracked Windowless Sampling Rig | <b>Logger</b><br>SH |
|                                                                                                                                   | <b>Checked By:</b> S.D <b>Approved By:</b> J.D <b>Status:</b> FINAL                            |                     |



# Borehole Log

WS05

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389255.00  | Northing<br>411302.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-03 | End Date<br>2025-10-03     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

## Water Strike - General

| Struck (m) | Seal Depth (m) | Casing Depth (m) | Date and Time | Remarks |
|------------|----------------|------------------|---------------|---------|
| 5.50       |                |                  |               |         |

## Water Strike - Details

| Struck (m) | Rose To (m) | Time (mins) | Remarks |
|------------|-------------|-------------|---------|
| 5.50       | 2.20        | 20          |         |

## SPT - Details

| Top Depth (m) (Type) | Casing Depth (m) | Water Depth (m) | Hammer Serial No. | Energy Ratio (%) | Results            |
|----------------------|------------------|-----------------|-------------------|------------------|--------------------|
| 1.00 (C)             |                  |                 |                   |                  | N=4 (1,1/1,1,1,1)  |
| 2.00 (C)             |                  |                 |                   |                  | N=10 (2,3/2,3,2,3) |
| 3.00 (C)             |                  |                 |                   |                  | N=4 (1,2/1,1,1,1)  |
| 4.00 (C)             |                  |                 |                   |                  | N=21 (3,4/4,5,6,6) |
| 5.00 (C)             |                  |                 |                   |                  | N=17 (3,2/3,4,5,5) |
| 6.00 (C)             |                  |                 |                   |                  | N=20 (2,3/4,6,5,5) |

## Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.5       | B    |                 |         |
| 1.5       | B    |                 |         |
| 2.5       | B    |                 |         |
| 3.5       | B    |                 |         |
| 4.5       | B    |                 |         |
| 5.5       | B    |                 |         |

|                                                                                                                            |                                                                                         |              |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Groundwater strike encountered at c.5.50m bgl, water standing at c.2.20m bgl on completion. | Method, Plant, Stability, Dimensions<br>0.00 - 6.45m BH Tracked Windowless Sampling Rig | Logger<br>SH |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|

Checked By: S.D Approved By: J.D Status: FINAL



# Borehole Log

**WS06**  
Sheet 1 of 1

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389264.00  | Northing<br>411316.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-03 | End Date<br>2025-10-03     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

| Inst/<br>Backfill | Water<br>Levels | Samples and Tests |              |                    | Level<br>(m) | Depth<br>(m)<br><small>(thickness)</small> | Strata |                                                                                                                                                                                                                                     |      |
|-------------------|-----------------|-------------------|--------------|--------------------|--------------|--------------------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                   |                 | Depth (m)         | Type/<br>Ref | Results            |              |                                            | Legend | Description                                                                                                                                                                                                                         |      |
|                   |                 | 0.50              | B 1          |                    |              | (1.00)                                     |        | Grass overlying dark brown slightly gravelly silty Sand. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-angular to sub-rounded of sandstone, limestone, brick fragments and coal. [MADE GROUND, MADE GROUND] | 0.5  |
|                   |                 | 1.00              | SPT(C)       | N=4 (1,1/1,1,1,1)  | 149.00       | 1.00                                       |        | Loose to medium dense orange to brown slightly silty SAND. Sand is fine to coarse grained. [SAND, HUMMOCKY GLACIAL DEPOSITS]                                                                                                        | 1.0  |
|                   |                 | 1.25              | B 2          |                    |              |                                            |        |                                                                                                                                                                                                                                     | 1.5  |
|                   |                 | 2.00              | SPT(C)       | N=30 (2,3/6,8,8,8) |              |                                            |        |                                                                                                                                                                                                                                     | 2.0  |
|                   |                 | 2.50              | B 3          |                    |              | (3.45)                                     |        |                                                                                                                                                                                                                                     | 2.5  |
|                   |                 | 3.00              | SPT(C)       | N=17 (3,3/4,4,5,4) |              |                                            |        |                                                                                                                                                                                                                                     | 3.0  |
|                   |                 | 3.50              | B 4          |                    |              |                                            |        |                                                                                                                                                                                                                                     | 3.5  |
|                   |                 | 4.00              | SPT(C)       | N=24 (3,6/6,6,5,7) |              |                                            |        |                                                                                                                                                                                                                                     | 4.0  |
|                   |                 |                   |              |                    | 145.55       | 4.45                                       |        | End of Borehole at 4.45m                                                                                                                                                                                                            | 4.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 5.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 5.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 6.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 6.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 7.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 7.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 8.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 8.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 9.0  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 9.5  |
|                   |                 |                   |              |                    |              |                                            |        |                                                                                                                                                                                                                                     | 10.0 |

|                                                       |                                                                                         |              |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Borehole remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 4.45m BH Tracked Windowless Sampling Rig | Logger<br>SH |
| Checked By: S.D Approved By: J.D Status: FINAL        |                                                                                         |              |



# Borehole Log

WS06

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389264.00  | Northing<br>411316.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-03 | End Date<br>2025-10-03     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

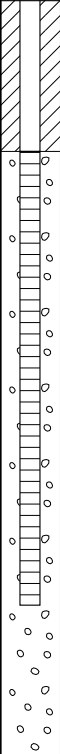
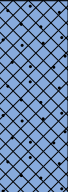
SPT - Details

| Top Depth (m) (Type) | Casing Depth (m) | Water Depth (m) | Hammer Serial No. | Energy Ratio (%) | Results            |
|----------------------|------------------|-----------------|-------------------|------------------|--------------------|
| 1.00 (C)             |                  |                 |                   |                  | N=4 (1,1/1,1,1,1)  |
| 2.00 (C)             |                  |                 |                   |                  | N=30 (2,3/6,8,8,8) |
| 3.00 (C)             |                  |                 |                   |                  | N=17 (3,3/4,4,5,4) |
| 4.00 (C)             |                  |                 |                   |                  | N=24 (3,6/6,6,5,7) |

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.5       | B    |                 |         |
| 1.25      | B    |                 |         |
| 2.5       | B    |                 |         |
| 3.5       | B    |                 |         |

|                                                       |                                                                                         |              |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Borehole remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 4.45m BH Tracked Windowless Sampling Rig | Logger<br>SH |
| Checked By: S.D Approved By: J.D Status: FINAL        |                                                                                         |              |

|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     |              |
|-----------------------------------------------------------------------------------|-----------------|-----------------------|----------------------|--------------------------|----------------------------|--------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|   |                 | <h1>Borehole Log</h1> |                      |                          |                            | <h2>WS07</h2>                  |                                                                                         |                                                                                                                                                                                                                                     |              |
|                                                                                   |                 |                       |                      |                          |                            | Sheet 1 of 1                   |                                                                                         |                                                                                                                                                                                                                                     |              |
|                                                                                   |                 | Hole Type<br>BH       | Easting<br>389249.00 | Northing<br>411314.00    | Ground Level (m)<br>150.00 | Scale<br>1:50                  |                                                                                         |                                                                                                                                                                                                                                     |              |
| Project Name<br>Queens Road, Rochdale                                             |                 | Project No.<br>25-446 |                      | Start Date<br>2025-10-03 |                            | End Date<br>2025-10-03         |                                                                                         |                                                                                                                                                                                                                                     |              |
| Client<br>ADEPT CSCE                                                              |                 |                       | Consultant<br>SD     |                          |                            | Contractor<br>Taylors Drilling |                                                                                         |                                                                                                                                                                                                                                     |              |
| Inst/<br>Backfill                                                                 | Water<br>Levels | Samples and Tests     |                      |                          | Level                      | Depth                          | Strata                                                                                  |                                                                                                                                                                                                                                     |              |
|                                                                                   |                 | Depth (m)             | Type/<br>Ref         | Results                  | (m)                        | (m)                            | Legend                                                                                  | Description                                                                                                                                                                                                                         |              |
|  |                 | 0.50                  | B 1                  |                          |                            | (1.30)                         |        | Grass overlying dark brown slightly gravelly silty Sand. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-angular to sub-rounded of sandstone, limestone, brick fragments and coal. [MADE GROUND, MADE GROUND] | 0.5          |
|                                                                                   |                 | 1.00                  | SPT(C)               | N=4 (1,1/1,1,1,1)        |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 1.0          |
|                                                                                   |                 | 1.50                  | B 2                  |                          | 148.70                     | 1.30                           |       | Medium dense orange to brown slightly silty SAND. Sand is fine to coarse grained. Gravel is fine to coarse grained, sub-angular to sub-rounded of sandstone, limestone, brick fragments and coal. [SAND, HUMMOCKY GLACIAL DEPOSITS] | 1.5          |
|                                                                                   |                 | 2.00                  | SPT(C)               | N=14 (2,3/3,3,4,4)       |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 2.0          |
|                                                                                   |                 | 2.50                  | B 3                  |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 2.5          |
|                                                                                   |                 | 3.00                  | SPT(C)               | N=15 (4,3/4,3,4,4)       |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 3.0          |
|                                                                                   |                 | 3.50                  | B 4                  |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 3.5          |
|                                                                                   |                 | 4.00                  | SPT(C)               | N=19 (4,4/4,5,5,5)       |                            | (5.15)                         |                                                                                         |                                                                                                                                                                                                                                     | 4.0          |
|                                                                                   |                 | 4.50                  | B 5                  |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 4.5          |
|                                                                                   |                 | 5.00                  | SPT(C)               | N=19 (3,4/4,5,6,4)       |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 5.0          |
|                                                                                   |                 |                       |                      |                          | 143.55                     | 6.45                           |                                                                                         | End of Borehole at 6.45m                                                                                                                                                                                                            | 6.5          |
|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 7.0          |
|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 7.5          |
|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 8.0          |
|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 8.5          |
|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 9.0          |
|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 9.5          |
|                                                                                   |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     | 10.0         |
| Remarks<br>WATER OBSERVATIONS: Borehole remained dry.                             |                 |                       |                      |                          |                            |                                | Method, Plant, Stability, Dimensions<br>0.00 - 6.45m BH Tracked Windowless Sampling Rig |                                                                                                                                                                                                                                     | Logger<br>SH |
| Checked By: S.D Approved By: J.D Status: FINAL                                    |                 |                       |                      |                          |                            |                                |                                                                                         |                                                                                                                                                                                                                                     |              |



# Borehole Log

WS07

SUPPLEMENTARY INFO

|                                       |                       |                          |                            |               |
|---------------------------------------|-----------------------|--------------------------|----------------------------|---------------|
| Hole Type<br>BH                       | Easting<br>389249.00  | Northing<br>411314.00    | Ground Level (m)<br>150.00 | Scale<br>1:50 |
| Project Name<br>Queens Road, Rochdale | Project No.<br>25-446 | Start Date<br>2025-10-03 | End Date<br>2025-10-03     |               |

|                      |                  |                                |
|----------------------|------------------|--------------------------------|
| Client<br>ADEPT CSCE | Consultant<br>SD | Contractor<br>Taylors Drilling |
|----------------------|------------------|--------------------------------|

SPT - Details

| Top Depth (m) (Type) | Casing Depth (m) | Water Depth (m) | Hammer Serial No. | Energy Ratio (%) | Results            |
|----------------------|------------------|-----------------|-------------------|------------------|--------------------|
| 1.00 (C)             |                  |                 |                   |                  | N=4 (1,1/1,1,1,1)  |
| 2.00 (C)             |                  |                 |                   |                  | N=14 (2,3/3,3,4,4) |
| 3.00 (C)             |                  |                 |                   |                  | N=15 (4,3/4,3,4,4) |
| 4.00 (C)             |                  |                 |                   |                  | N=19 (4,4/4,5,5,5) |
| 5.00 (C)             |                  |                 |                   |                  | N=19 (3,4/4,5,6,4) |

Sample Details

| Sample ID | Type | Water Level (m) | Remarks |
|-----------|------|-----------------|---------|
| 0.5       | B    |                 |         |
| 1.5       | B    |                 |         |
| 2.5       | B    |                 |         |
| 3.5       | B    |                 |         |
| 4.5       | B    |                 |         |

|                                                       |                                                                                         |              |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------|
| Remarks<br>WATER OBSERVATIONS: Borehole remained dry. | Method, Plant, Stability, Dimensions<br>0.00 - 6.45m BH Tracked Windowless Sampling Rig | Logger<br>SH |
| Checked By: S.D Approved By: J.D Status: FINAL        |                                                                                         |              |

## **APPENDIX II**

Arc Environmental Ground Gas & Groundwater Monitoring Certificate



|       |              |
|-------|--------------|
| Site: | QUEENS DRIVE |
| Ref:  | 25-446       |

| Visit | Date       | Time    | Equipment | Weather | Initials | Comments | Borehole | Gas Flow (l/hr) | Atmospheric Pressure (mb) | Trend | Methane (% v/v) |        | Methane (% LEL) |        | Carbon Dioxide (% v/v) |        | Oxygen (% v/v) |        | Hydrocarbons (GFM 435 only) |        | Other Gases (PPM) |                  |     | Depth to Water (m bgl) |
|-------|------------|---------|-----------|---------|----------|----------|----------|-----------------|---------------------------|-------|-----------------|--------|-----------------|--------|------------------------|--------|----------------|--------|-----------------------------|--------|-------------------|------------------|-----|------------------------|
|       |            |         |           |         |          |          |          |                 |                           | R/F/S | Initial         | Steady | Initial         | Steady | Initial                | Steady | Initial        | Steady | Hex %                       | PID Cf | PID (Isobutylene) | H <sub>2</sub> S | CO  |                        |
| 1     | 05/11/2025 | 9.15am  | GFM435    | RAIN    | PR       |          | WS01     | <0.1            | 987                       |       |                 | 0.0    |                 | 0.0    |                        | 0.1    |                | 20.2   |                             |        |                   | 0.0              | 0.0 | 1.02                   |
|       |            |         |           |         |          |          | WS03     | <0.1            | 987                       |       |                 | 0.0    |                 | 0.0    |                        | 9.5    |                | 13.8   |                             |        |                   | 0.0              | 1.0 | 0.95                   |
|       |            |         |           |         |          |          | WS07     | <0.1            | 987                       |       |                 | 0.0    |                 | 0.0    |                        | 4.2    |                | 11.1   |                             |        |                   | 0.0              | 0.0 | 1.77                   |
| 2     | 11/11/2025 | 11:00am | GFM435    | CLOUDY  | SD       |          | WS01     | <0.1            | 1011                      |       |                 | 0.0    |                 | 0.0    |                        | 0.1    |                | 19.9   |                             |        |                   | 0.0              | 0.0 | 0.93                   |
|       |            |         |           |         |          |          | WS03     | <0.1            | 1011                      |       |                 | 0.0    |                 | 0.0    |                        | 6.8    |                | 16.5   |                             |        |                   | 0.0              | 0.0 | 0.8                    |
|       |            |         |           |         |          |          | WS07     | <0.1            | 1011                      |       |                 | 0.0    |                 | 0.0    |                        | 3.1    |                | 15.2   |                             |        |                   | 0.0              | 0.0 | 1.76                   |
| 3     | 18/11/25   | 12.30pm | GFM435    | CLEAR   | PR       |          | WS01     | <0.1            | 996                       |       |                 | 0.0    |                 | 0.0    |                        | 0.1    |                | 19.6   |                             |        |                   | 0.0              | 0.0 | 0.87                   |
|       |            |         |           |         |          |          | WS03     | <0.1            | 996                       |       |                 | 0.0    |                 | 0.0    |                        | 5.6    |                | 18.7   |                             |        |                   | 0.0              | 0.0 | 0.6                    |
|       |            |         |           |         |          |          | WS07     | <0.1            | 996                       |       |                 | 0.0    |                 | 0.0    |                        | 1.4    |                | 18.1   |                             |        |                   | 0.0              | 0.0 | 1.73                   |
| 4     |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
|       |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
|       |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
| 5     |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
|       |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
|       |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
| 6     |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
|       |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |
|       |            |         |           |         |          |          |          |                 |                           |       |                 |        |                 |        |                        |        |                |        |                             |        |                   |                  |     |                        |

Notes:  
Detection limits - Methane = 0.0%, Carbon Dioxide = 0.0%, LEL = 0.0%, Oxygen = 0.0%, Flow = 0.1l/hr  
Monitoring order is from **Left to Right** across table  
Monitoring should be for **Not Less** than 3 minutes However, if high concentrations of gasses initially recorded, monitoring should be for up to 10 minutes  
N/A = Not applicable = Off the scale  
  
Cf = PID compensation Factor (1-10) - Must be used to multiply the PID reading to give an accurate measure of the total hydrocarbons in the borehole when methane is present  
Hex = Hexane (Valid and in range up to 2.000%) - Recorded when abnormally high methane is present.  
PID = Photo Ionisation Detector (Calibrated to Isobutylene)

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP01 @ 0.20m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 61.42                    | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 233.31                        | 233,314.34                    |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 102.66                        | 102,658.31                    |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 29.5   |

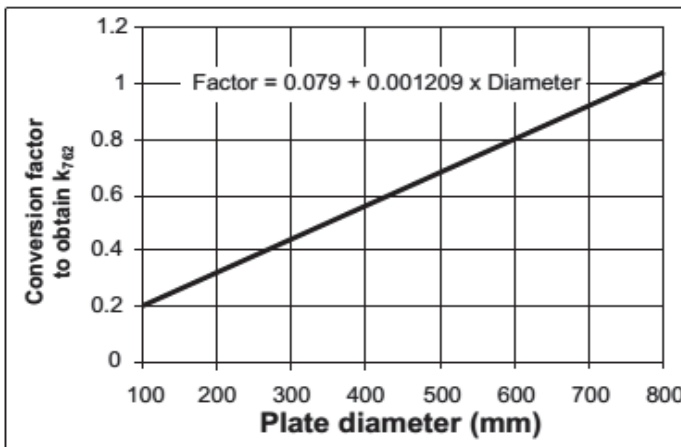
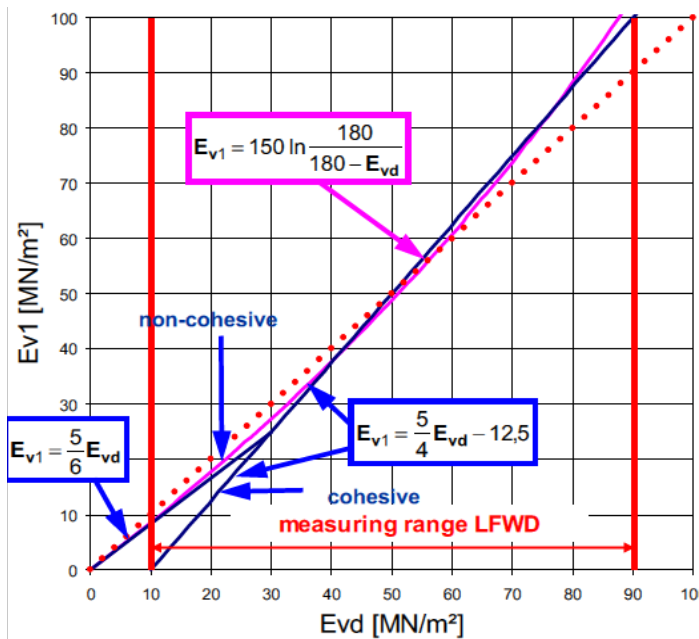


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

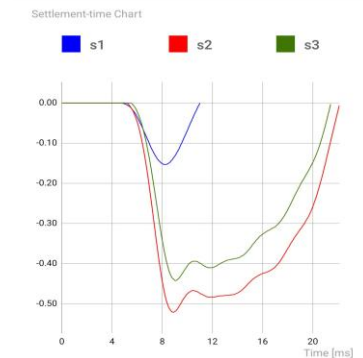
### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

|                                          |                     |
|------------------------------------------|---------------------|
| Evd [MN/m <sup>2</sup> ]<br><b>60,48</b> | Date:<br>10/02/2025 |
| s/v [ms]<br>2,2                          | Time:<br>10:54      |
| Device no.<br>LFG-11750                  | Record no.<br>028   |



Comment

HP01 @ 0.20

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 [MN/m<sup>2</sup>]

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP01 @ 0.50m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 39.75                    | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 151.00                        | 150,997.15                    |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 66.44                         | 66,438.75                     |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 13.9   |

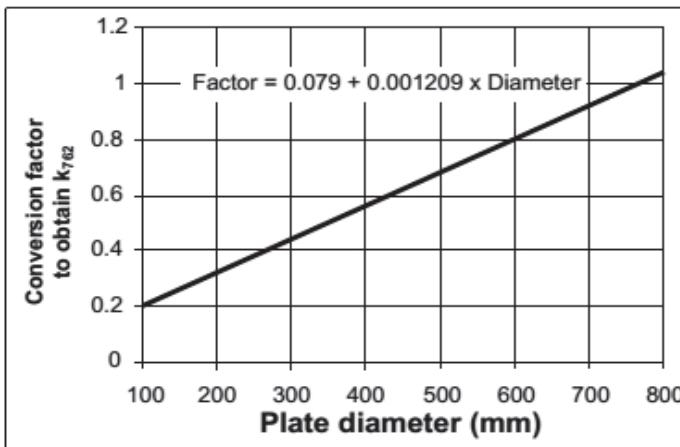
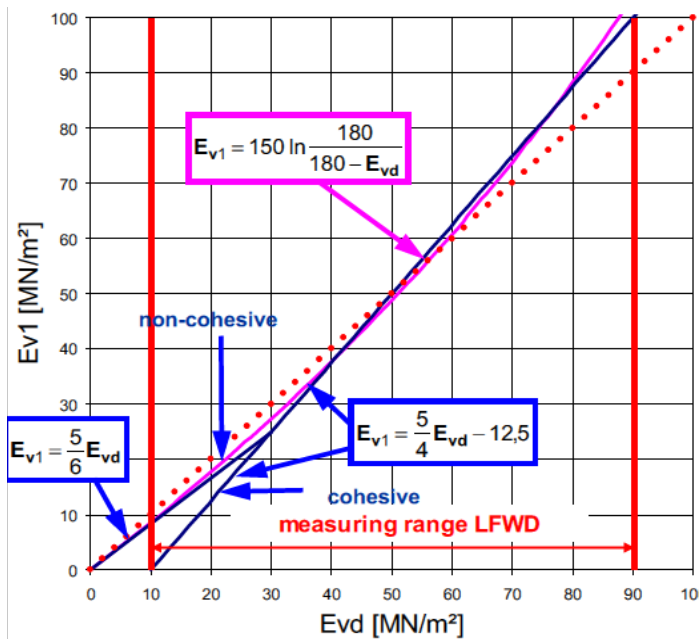


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

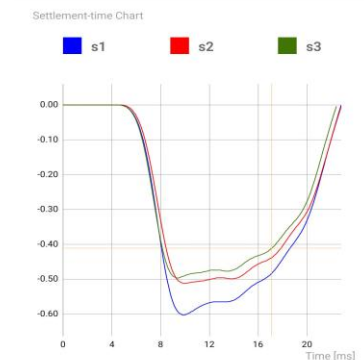
### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

|                                          |                    |
|------------------------------------------|--------------------|
| Evd [MN/m <sup>2</sup> ]<br><b>41,90</b> | Date<br>10/02/2025 |
| s/v [ms]<br>2,5                          | Time<br>11:08      |
| Device no.<br>LFG-11750                  | Record no.<br>029  |



Comment

HP01 @ 0.50

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 [MN/m<sup>2</sup>]

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP02 @ 0.25m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 5.6                      | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 21.27                         | 21,272.55                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 9.36                          | 9,359.92                      |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 0.5    |

### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

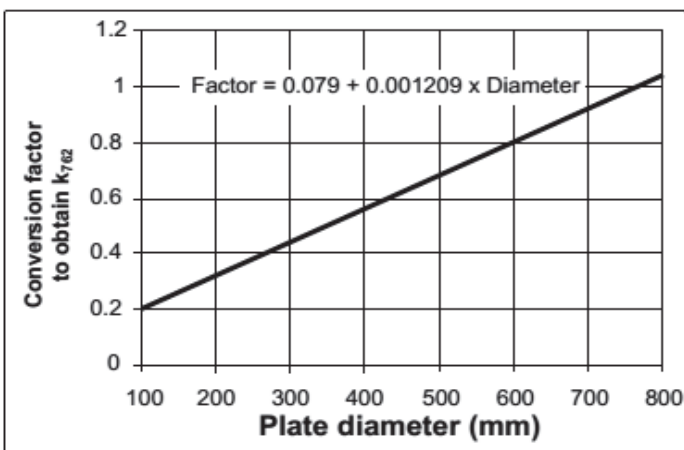
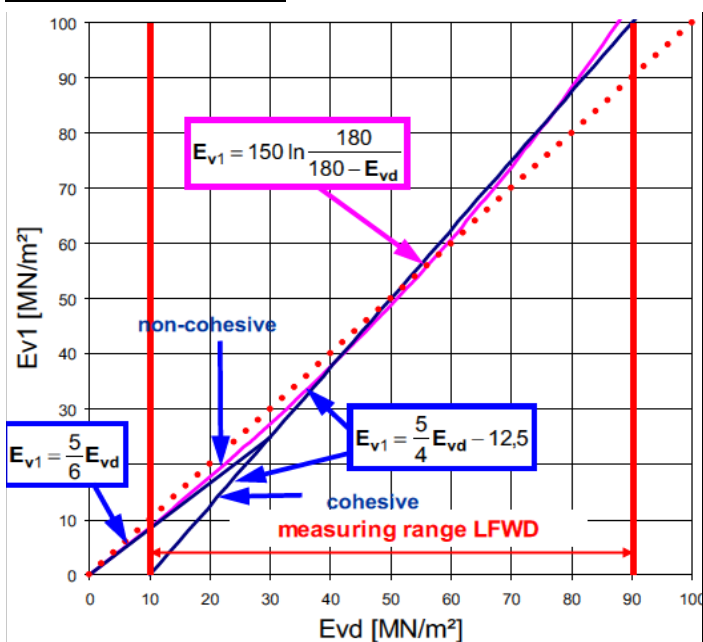


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

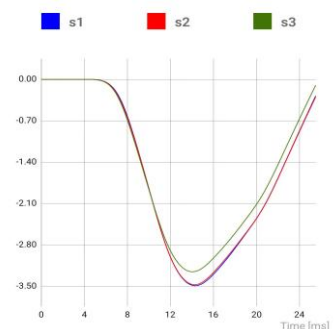
Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

|             |            |
|-------------|------------|
| Ev1 [MN/m²] | Date       |
| 6,60        | 10/02/2025 |
| s/v [ms]    | Time       |
| 5,4         | 11:26      |
| Device no.  | Record no. |
| LFG-11750   | 030        |

| Impact | s [mm] | v [mm/s] |
|--------|--------|----------|
| 1      | 3,491  | 650,20   |
| 2      | 3,474  | 649,07   |
| 3      | 3,255  | 607,01   |
| Ø      | 3,407  | 635,43   |

Settlement-time Chart



Comment

HP02 @ 0.25

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 (MN/m<sup>2</sup>)

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP02 @ 0.50m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 16.6                     | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 63.06                         | 63,057.93                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 27.75                         | 27,745.49                     |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 3.1    |

### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

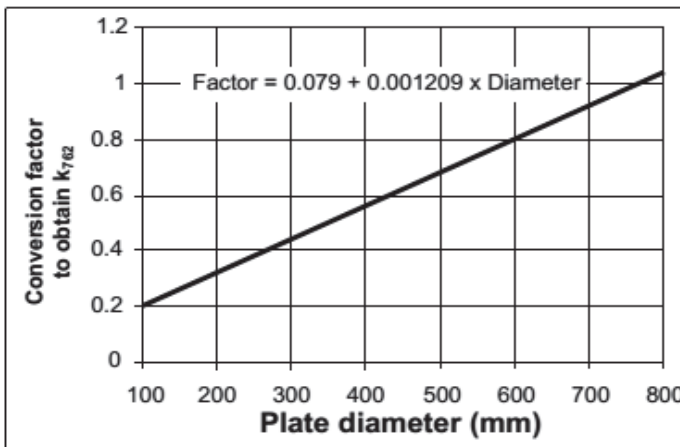
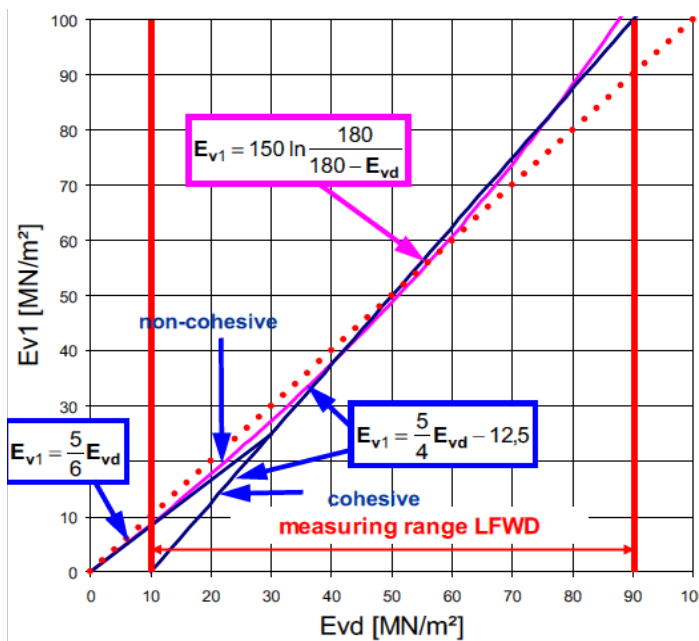


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

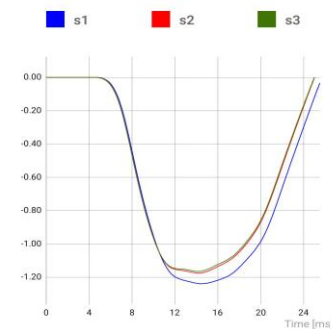
Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

|             |            |
|-------------|------------|
| Ev1 [MN/m²] | Date       |
| 18,86       | 10/02/2025 |
| s/v [ms]    | Time       |
| 4,1         | 11:46      |
| Device no.  | Record no. |
| LFG-11750   | 031        |

| Impact | s [mm] | v [mm/s] |
|--------|--------|----------|
| 1      | 1,239  | 294,30   |
| 2      | 1,175  | 291,99   |
| 3      | 1,165  | 294,13   |
| Ø      | 1,193  | 293,47   |

Settlement-time Chart



Comment

HP02 @ 0.50

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 (MN/m<sup>2</sup>)

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP03 @ 0.25m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 4.17                     | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 15.84                         | 15,840.46                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 6.97                          | 6,969.80                      |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 0.3    |

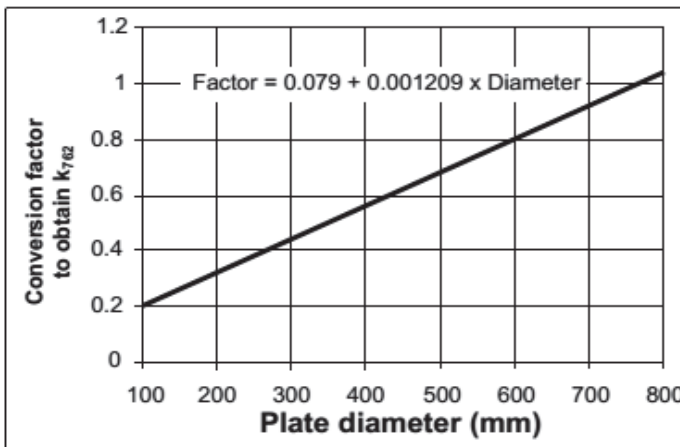
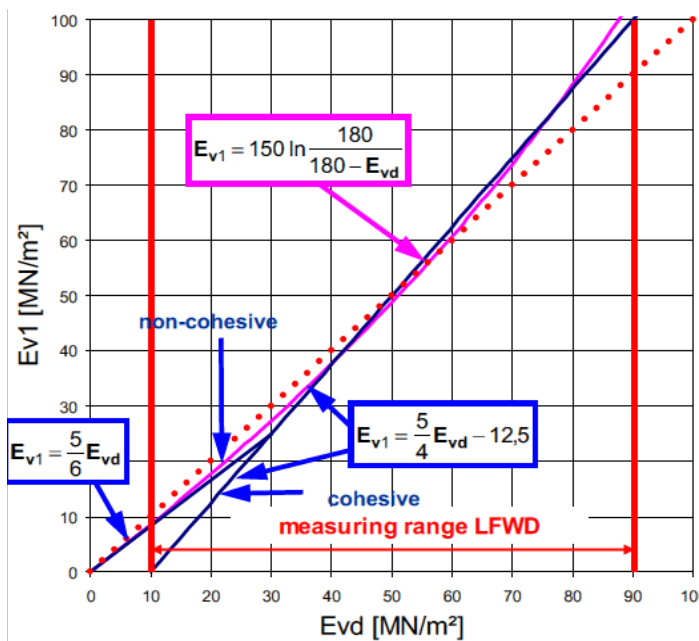


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

### Theoretical Formula

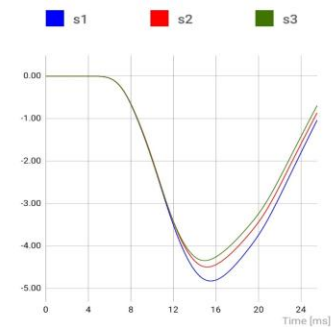
$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

|             |            |          |
|-------------|------------|----------|
| Ev1 [MN/m²] | Date       |          |
| 4,94        | 10/02/2025 |          |
| s/v [ms]    | Time       |          |
| 37,4        | 12:03      |          |
| Device no.  | Record no. |          |
| LFG-11750   | 032        |          |
| Impact      | s [mm]     | v [mm/s] |
| 1           | 4,826      | 135,23   |
| 2           | 4,497      | 122,06   |
| 3           | 4,345      | 108,49   |
| Ø           | 4,556      | 121,93   |

Settlement-time Chart



Comment

HP03 @ 0.25

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 (MN/m<sup>2</sup>)

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP03 @ 0.50m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 4.8                      | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 18.23                         | 18,233.62                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 8.02                          | 8,022.79                      |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 0.4    |

### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

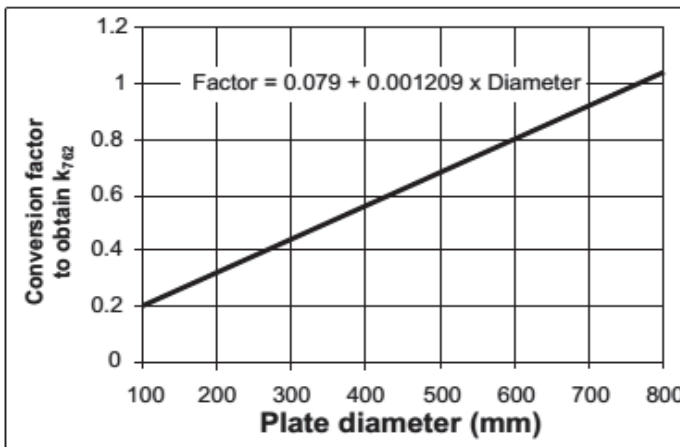
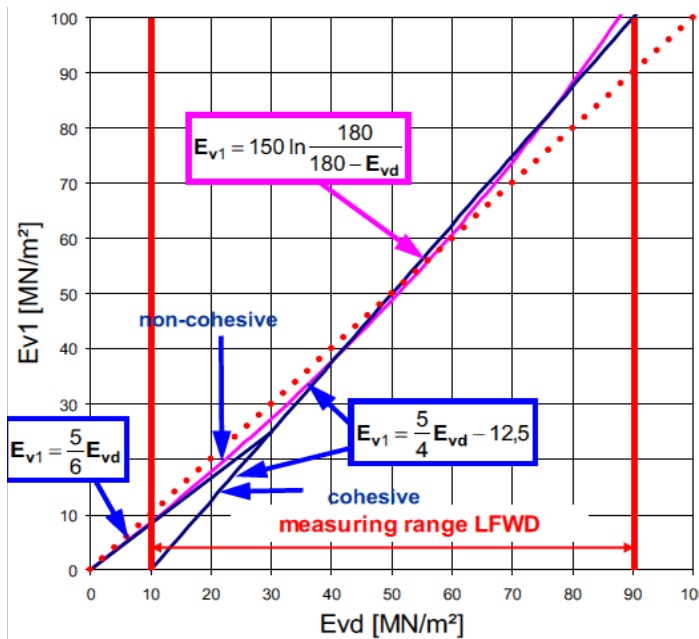


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

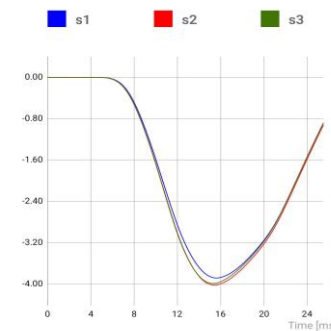
| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

|                          |            |
|--------------------------|------------|
| Evd [MN/m <sup>2</sup> ] | Date       |
| 5,67                     | 10/02/2025 |
| s/v [ms]                 | Time       |
| 133,5                    | 12:13      |
| Device no.               | Record no. |
| LFG-11750                | 033        |

| Impact | s [mm] | v [mm/s] |
|--------|--------|----------|
| 1      | 3,886  | 2,71     |
| 2      | 4,022  | 42,31    |
| 3      | 3,991  | 44,12    |
| Ø      | 3,966  | 29,71    |

Settlement-time Chart



Comment

HP03 @ 0.50

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 [MN/m<sup>2</sup>]

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP04 @ 0.30m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 8.24                     | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 31.30                         | 31,301.04                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 13.77                         | 13,772.46                     |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 0.9    |

### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

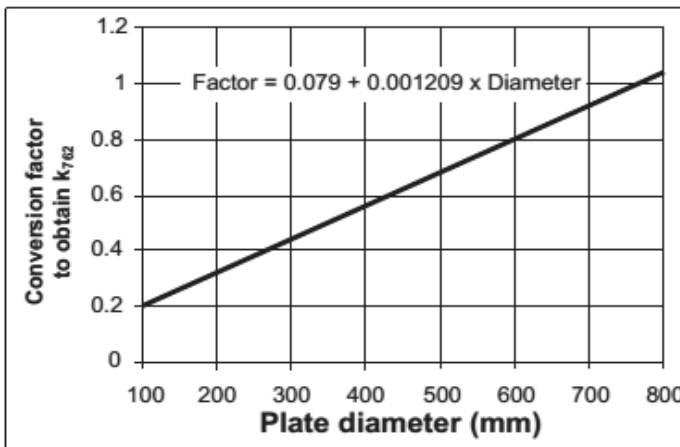
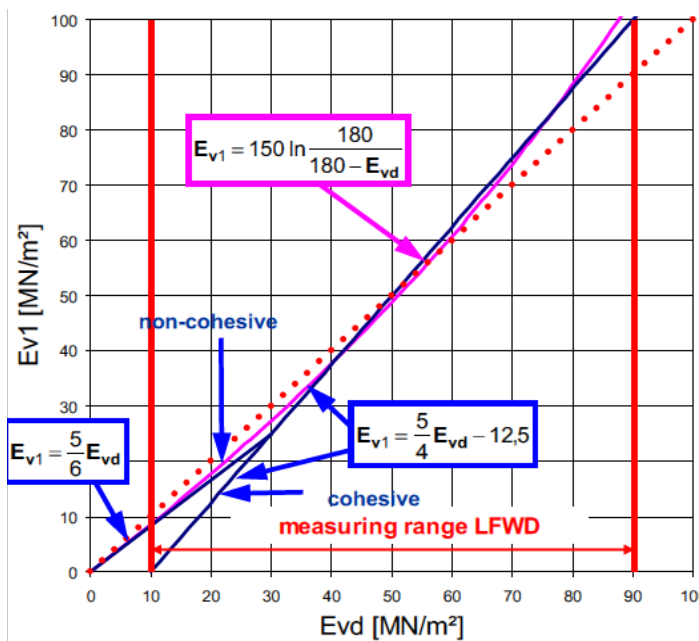


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

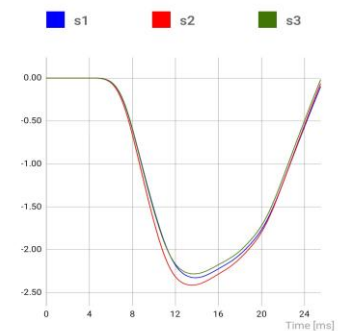
Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

|             |            |
|-------------|------------|
| Evd [MN/m²] | Date       |
| 9,62        | 10/02/2025 |
| s/v [ms]    | Time       |
| 4,7         | 12:43      |
| Device no.  | Record no. |
| LFG-11750   | 034        |

| Impact | s [mm] | v [mm/s] |
|--------|--------|----------|
| 1      | 2,326  | 484,08   |
| 2      | 2,412  | 521,06   |
| 3      | 2,281  | 490,05   |
| Ø      | 2,340  | 498,40   |

Settlement-time Chart



Comment

HP04 @ 0.30

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 (MN/m<sup>2</sup>)

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP04 @ 0.60m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 4.47                     | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 16.98                         | 16,980.06                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 7.47                          | 7,471.23                      |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 0.3    |

### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

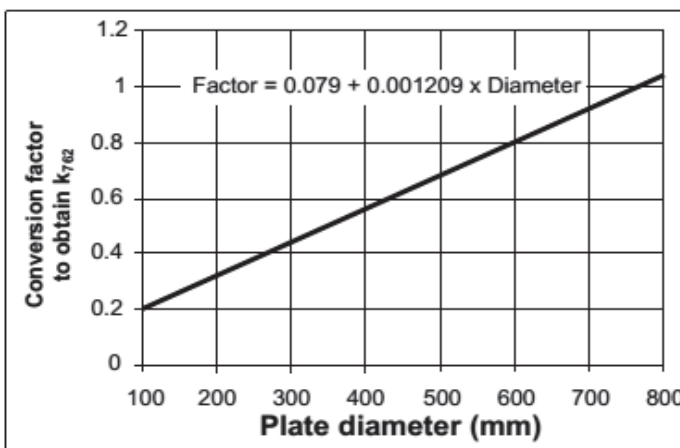
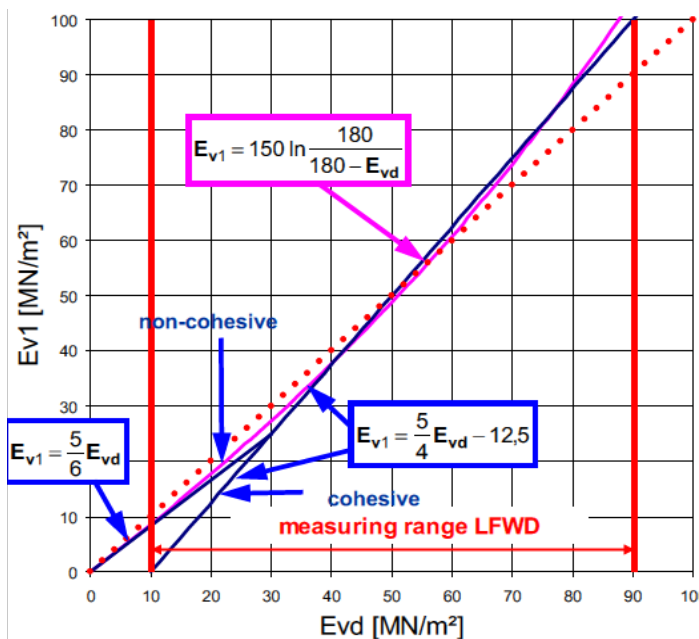


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

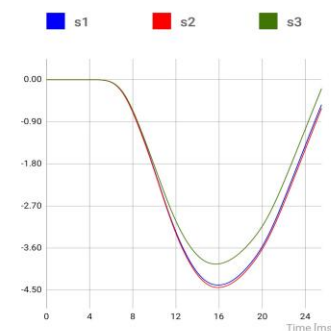
| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

|                          |            |
|--------------------------|------------|
| Evd [MN/m <sup>2</sup> ] | Date       |
| 5,28                     | 10/02/2025 |
| s/v [ms]                 | Time       |
| 17,8                     | 12:52      |
| Device no.               | Record no. |
| LFG-11750                | 035        |

| Impact | s [mm] | v [mm/s] |
|--------|--------|----------|
| 1      | 4,392  | 41,96    |
| 2      | 4,444  | 46,84    |
| 3      | 3,943  | 630,80   |
| Ø      | 4,260  | 239,87   |

Settlement-time Chart



Comment

HP04 @ 0.60

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 [MN/m<sup>2</sup>]

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP06 @ 0.25m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 2.96                     | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 11.24                         | 11,244.06                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 4.95                          | 4,947.39                      |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 0.2    |

### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

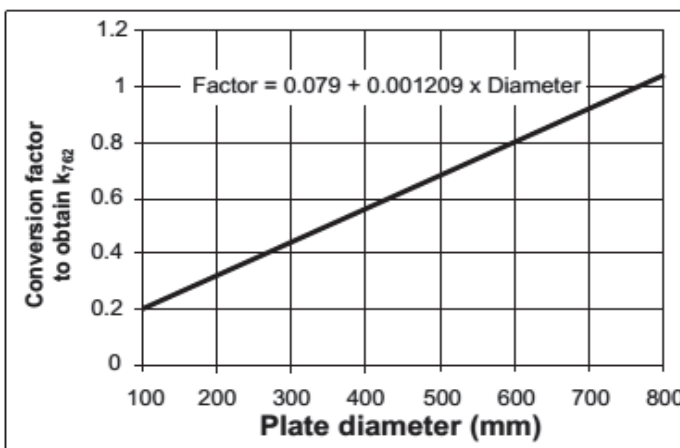
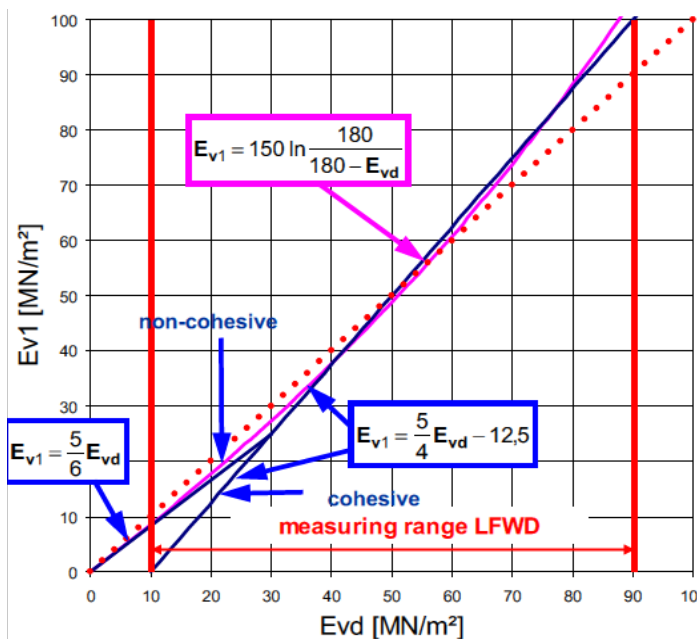


Table 1: Soil characterisation scheme for cohesionless soils

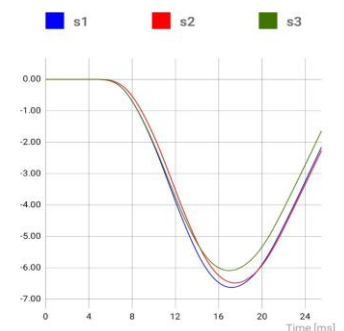
| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

|             |            |          |
|-------------|------------|----------|
| Evd [MN/m²] | Date       |          |
| 3,52        | 10/02/2025 |          |
| s/v [ms]    | Time       |          |
| 26,6        | 15:09      |          |
| Device no.  | Record no. |          |
| LFG-11750   | 036        |          |
| Impact      | s [mm]     | v [mm/s] |
| 1           | 6,625      | 262,32   |
| 2           | 6,484      | 247,11   |
| 3           | 6,089      | 212,80   |
| Ø           | 6,399      | 240,74   |

Settlement-time Chart



Comment

HP06 @ 0.25

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 [MN/m<sup>2</sup>]

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP06 @ 0.50m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 2.66                     | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 10.10                         | 10,104.46                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 4.45                          | 4,445.96                      |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 0.1    |

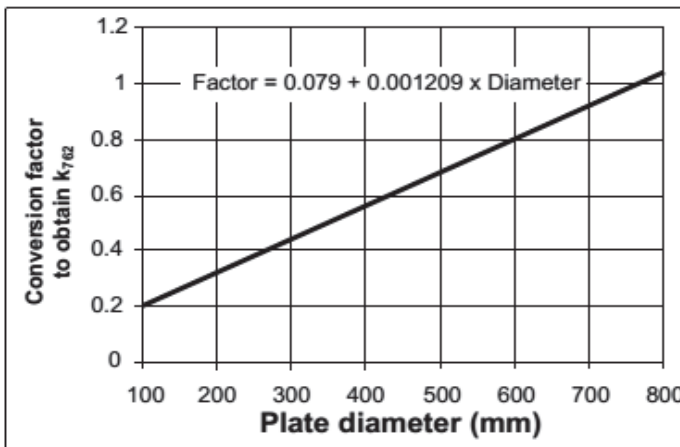
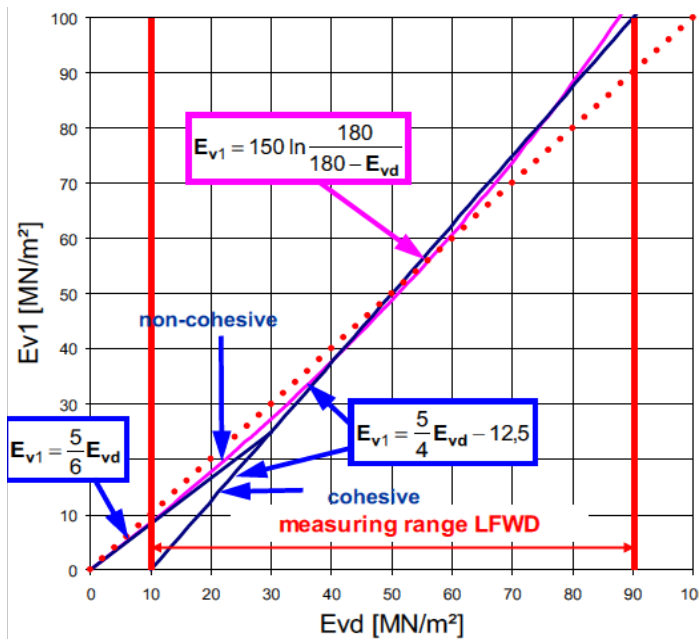


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

### Theoretical Formula

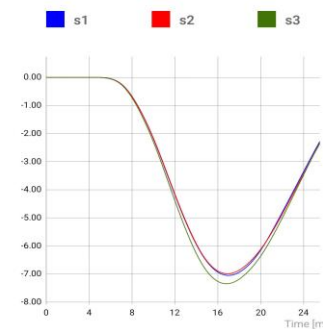
$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

|                                |                           |          |
|--------------------------------|---------------------------|----------|
| Evd [MN/m²]<br><b>3,16</b>     | Date<br><b>10/02/2025</b> |          |
| s/v [ms]<br><b>18,4</b>        | Time<br><b>15:15</b>      |          |
| Device no.<br><b>LFG-11750</b> | Record no.<br><b>037</b>  |          |
|                                |                           |          |
| Impact                         | s [mm]                    | v [mm/s] |
| 1                              | 7,051                     | 368,82   |
| 2                              | 6,991                     | 367,67   |
| 3                              | 7,347                     | 426,09   |
| Ø                              | 7,130                     | 387,53   |

Settlement-time Chart



Comment

HP06 @ 0.50

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 [MN/m<sup>2</sup>]

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP07 @ 0.20m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 12.57                    | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 47.75                         | 47,749.29                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 21.01                         | 21,009.69                     |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 1.9    |

### Theoretical Formula

$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

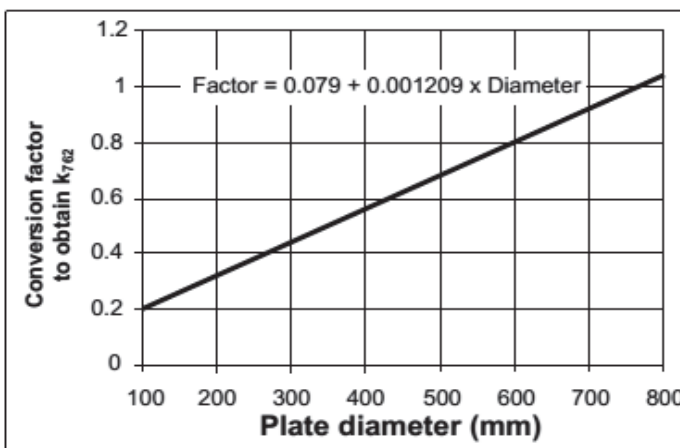
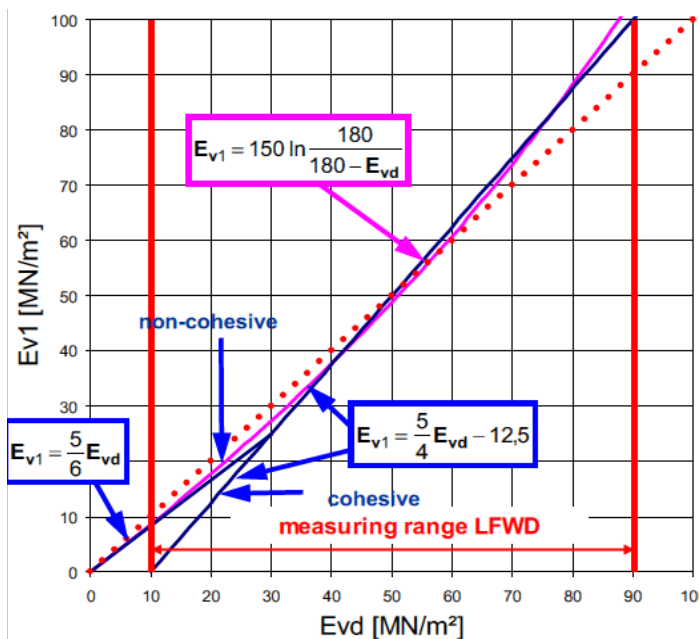


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

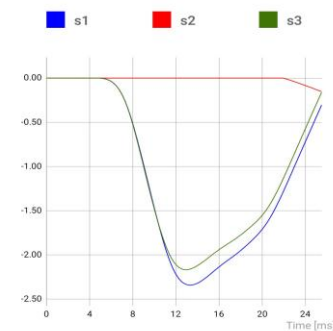
Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

|             |            |
|-------------|------------|
| Ev1 [MN/m²] | Date       |
| 14,47       | 10/02/2025 |
| s/v [ms]    | Time       |
| 4,5         | 16:02      |
| Device no.  | Record no. |
| LFG-11750   | 038        |

| Impact | s [mm] | v [mm/s] |
|--------|--------|----------|
| 1      | 2,343  | 492,33   |
| 2      | 0,154  | 51,12    |
| 3      | 2,169  | 494,80   |
| Ø      | 1,555  | 346,08   |

Settlement-time Chart



Comment

HP07 @ 0.20

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 (MN/m<sup>2</sup>)

## Conversion of Dynamic Modulus (Evd) obtained using Light Weight Deflectometer (LWD) to California Bearing Ratio (CBR) - HP07 @ 0.50m bgl

Enter values for Ev1, V, and B to determine CBR(%)

| Dynamic Modulus          | Poisson's Ratio | Plate Width |
|--------------------------|-----------------|-------------|
| Ev1 (MN/m <sup>2</sup> ) | V               | B (m)       |
| 16.8                     | 0.35            | 0.3         |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>300</sub> | 63.82                         | 63,817.66                     |

| Criteria         | Result (MN/m <sup>2</sup> /m) | Result (kN/m <sup>2</sup> /m) |
|------------------|-------------------------------|-------------------------------|
| K <sub>762</sub> | 28.08                         | 28,079.77                     |

| Criteria | Result |
|----------|--------|
| CBR (%)  | 3.1    |

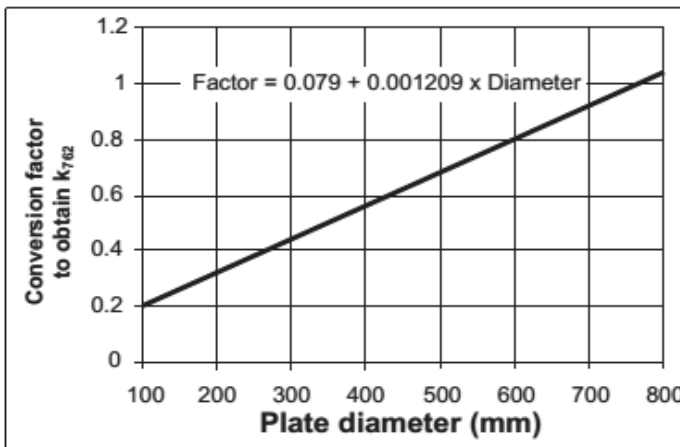
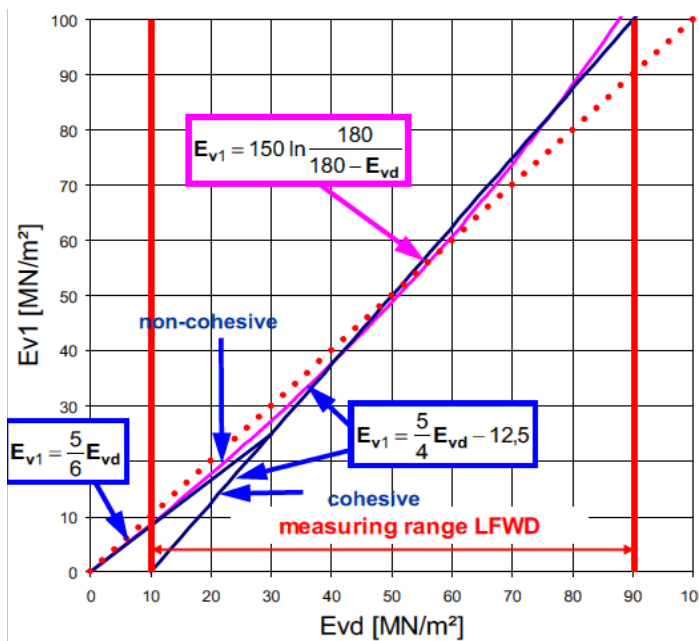


Table 1: Soil characterisation scheme for cohesionless soils

| Cohesionless soils | Very loose | Loose | Medium dense | Dense | Very dense |
|--------------------|------------|-------|--------------|-------|------------|
| Evd (MPa)          | 0-12       | 12-24 | 24-34        | 34-50 | 50-90      |
| Ev1 (MPa)          | 0-10       | 10-20 | 20-30        | 30-50 | 50-100     |

Table 2: Soil characterisation scheme for cohesive soils

| Cohesive soils | Very soft | Soft  | Firm  | Stiff | Very stiff | Hard   |
|----------------|-----------|-------|-------|-------|------------|--------|
| Evd (MPa)      | 0-22      | 22-30 | 30-36 | 36-43 | 43-50      | 50-90  |
| Ev1 (MPa)      | 0-15      | 15-25 | 25-33 | 33-41 | 41-50      | 50-100 |

### Theoretical Formula

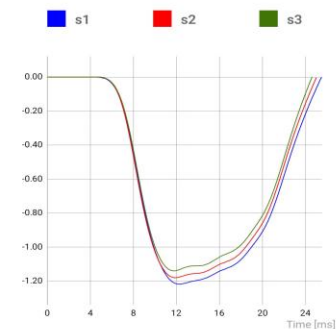
$$K_{300} = \frac{Ev1}{B \cdot (1 - v^2)}$$

$$K_{762} = K_{300} \cdot 0.44$$

$$CBR(\%) = 6.1 \times 10^{-8} \cdot (K_{762})^{1.733}$$

|             |            |          |
|-------------|------------|----------|
| Evd [MN/m²] | Date       |          |
| 19,07       | 10/02/2025 |          |
| s/v [ms]    | Time       |          |
| 3,5         | 16:10      |          |
| Device no.  | Record no. |          |
| LFG-11750   | 039        |          |
| Impact      | s [mm]     | v [mm/s] |
| 1           | 1,218      | 334,70   |
| 2           | 1,181      | 340,57   |
| 3           | 1,140      | 334,58   |
| Ø           | 1,180      | 336,62   |

Settlement-time Chart



Comment

HP07 @ 0.50

Project no.

25-446

Tester

Temperature / Weather

Measuring point

Test surface / layer

Soil type / class

Plate base

Ev2 (MN/m<sup>2</sup>)

# ARC ENVIRONMENTAL LIMITED

## VARIABLE HEAD PERMEABILITY TEST

Variable Head (Falling) Permeability Test in Borehole WS01

4.00 mBGL

SITE Queens Drive, Rochdale

CONTRACT 25-446

WS01

DEPTH 4.00 mBGL

### INITIAL CONDITIONS

|                       |        |      |
|-----------------------|--------|------|
| Bottom of Borehole    | 4.00   | mBGL |
| Base of casing        | 0.00   | mBGL |
| Diameter of casing    | 100.00 | mm   |
| Height of casing      | 0.00   | mAGL |
| Elevation of Borehole |        | mAOD |
| Groundwater Level     | 1.02   | mBGL |

|                       |            |
|-----------------------|------------|
| Operator              | SD         |
| Date                  | 05/11/2025 |
| Time                  | 10.00am    |
| Weather               | Overcast   |
| Input volume of water | 25 litres  |
| Test Zone             | 1.54 m     |

### TEST CALCULATION

| Elapsed (minutes) | Elapsed (seconds) | Total seconds | Water Depth (m) | Head (metres) | H/Ho  |
|-------------------|-------------------|---------------|-----------------|---------------|-------|
| 0                 | 0                 | 0             | 0.990           | 0.030         | 1.000 |
| 1                 | 0                 | 60            | 1.020           | 0.000         | 0.000 |
| 2                 | 0                 | 120           | 1.020           | 0.000         | 0.000 |
| 3                 | 0                 | 180           | 1.020           | 0.000         | 0.000 |
| 4                 | 0                 | 240           | 1.020           | 0.000         | 0.000 |
| 5                 | 0                 | 300           | 1.020           | 0.000         | 0.000 |
| 10                | 0                 | 600           | 1.020           | 0.000         | 0.000 |
| 15                | 0                 | 900           | 1.020           | 0.000         | 0.000 |
| 20                | 0                 | 1200          | 1.020           | 0.000         | 0.000 |
| 25                | 0                 | 1500          | 1.020           | 0.000         | 0.000 |
| 30                | 0                 | 1800          | 1.020           | 0.000         | 0.000 |
| 35                | 0                 | 2100          | 1.020           | 0.000         | 0.000 |
| 40                | 0                 | 2400          | 1.020           | 0.000         | 0.000 |
| 45                | 0                 | 2700          | 1.020           | 0.000         | 0.000 |
| 50                | 0                 | 3000          | 1.020           | 0.000         | 0.000 |
| 55                | 0                 | 3300          | 1.020           | 0.000         | 0.000 |
| 60                | 0                 | 3600          | 1.020           | 0.000         | 0.000 |

Intake Factor (F)

$$F = \frac{2 \pi L}{\log_e [(L/D) + \sqrt{1 + (L/D)^2}]} \quad (i)$$

(From BS 5930:1999 for standpipes)

L=length of test zone

D=diameter of borehole

Permeability (k)

$$k = \frac{A}{F(t_2 - t_1)} \times \log_e (H_1/H_2) \quad (ii)$$

or

$$k = \frac{A}{FT} \quad (iii)$$

Where T is the Basic Time Lag Factor corresponding to an H/Ho value of 0.37

L= 1.54 m  
D= 0.100 m  
L/D= 15.40

t<sub>1</sub>= 0 s  
t<sub>2</sub>= 3600 s  
H<sub>1</sub>= 1.54 m  
H<sub>2</sub>= 1.47 m

A= 0.00785 m<sup>2</sup>  
F= 2.8222 From (i)  
T= s  
k= 3.59616E-08 ms<sup>-1</sup> From (ii)  
k= ms<sup>-1</sup> From (iii)

Remarks

Drainage Characteristics: Poor Permeability  
Classification: Very low

# ARC ENVIRONMENTAL LIMITED

## VARIABLE HEAD PERMEABILITY TEST

Variable Head (Falling) Permeability Test in Borehole WS03

4.00 mBGL

SITE Queens Drive, Rochdale

CONTRACT 25-446

WS03

DEPTH 4.00 mBGL

### INITIAL CONDITIONS

|                       |        |      |
|-----------------------|--------|------|
| Bottom of Borehole    | 4.00   | mBGL |
| Base of casing        | 0.00   | mBGL |
| Diameter of casing    | 100.00 | mm   |
| Height of casing      | 0.00   | mAGL |
| Elevation of Borehole |        | mAOD |
| Groundwater Level     | 0.95   | mBGL |

|                       |            |
|-----------------------|------------|
| Operator              | SD         |
| Date                  | 05/11/2025 |
| Time                  | 10.00am    |
| Weather               | Overcast   |
| Input volume of water | 10 litres  |
| Test Zone             | 1.00 m     |

### TEST CALCULATION

| Elapsed (minutes) | Elapsed (seconds) | Total seconds | Water Depth (m) | Head (metres) | H/Ho  |
|-------------------|-------------------|---------------|-----------------|---------------|-------|
| 0                 | 0                 | 0             | 0.000           | 0.950         | 1.000 |
| 1                 | 0                 | 60            | 0.660           | 0.290         | 0.305 |
| 2                 | 0                 | 120           | 0.730           | 0.220         | 0.232 |
| 3                 | 0                 | 180           | 0.760           | 0.190         | 0.200 |
| 4                 | 0                 | 240           | 0.780           | 0.170         | 0.179 |
| 5                 | 0                 | 300           | 0.790           | 0.160         | 0.168 |
| 10                | 0                 | 600           | 0.850           | 0.100         | 0.105 |
| 15                | 0                 | 900           | 0.880           | 0.070         | 0.074 |
| 20                | 0                 | 1200          | 0.900           | 0.050         | 0.053 |
| 25                | 0                 | 1500          | 0.910           | 0.040         | 0.042 |
| 30                | 0                 | 1800          | 0.920           | 0.030         | 0.032 |
| 35                | 0                 | 2100          | 0.930           | 0.020         | 0.021 |
| 40                | 0                 | 2400          | 0.950           | 0.000         | 0.000 |
| 45                | 0                 | 2700          | 0.950           | 0.000         | 0.000 |
| 50                | 0                 | 3000          | 0.950           | 0.000         | 0.000 |
| 55                | 0                 | 3300          | 0.950           | 0.000         | 0.000 |
| 60                | 0                 | 3600          | 0.950           | 0.000         | 0.000 |

Intake Factor (F)

$$F = \frac{2 \pi L}{\log_e [(L/D) + \sqrt{1 + (L/D)^2}]} \quad (i)$$

(From BS 5930:1999 for standpipes)

L=length of test zone

D=diameter of borehole

Permeability (k)

$$k = \frac{A}{F(t_2 - t_1)} \times \log_e (H_1/H_2) \quad (ii)$$

or

$$k = \frac{A}{FT} \quad (iii)$$

Where T is the Basic Time Lag Factor corresponding to an H/Ho value of 0.37

L= 1.00 m  
D= 0.100 m  
L/D= 10.00

t<sub>1</sub>= 0 s  
t<sub>2</sub>= 2400 s  
H<sub>1</sub>= 0.95 m  
H<sub>2</sub>= 0.01 m

A= 0.00785 m<sup>2</sup>  
F= 2.0956 From (i)  
T= s  
k= 7.11122E-06 ms<sup>-1</sup> From (ii)  
k= ms<sup>-1</sup> From (iii)

Remarks

Drainage Characteristics: Poor Permeability  
Classification: Very low

# ARC ENVIRONMENTAL LIMITED

## VARIABLE HEAD PERMEABILITY TEST

Variable Head (Falling) Permeability Test in Borehole WS07

4.00 mBGL

SITE Queens Drive, Rochdale

CONTRACT 25-446

WS07

DEPTH 4.00 mBGL

### INITIAL CONDITIONS

|                       |        |      |
|-----------------------|--------|------|
| Bottom of Borehole    | 4.00   | mBGL |
| Base of casing        | 0.00   | mBGL |
| Diameter of casing    | 100.00 | mm   |
| Height of casing      | 0.00   | mAGL |
| Elevation of Borehole |        | mAOD |
| Groundwater Level     | 1.77   | mBGL |

|                       |            |
|-----------------------|------------|
| Operator              | SD         |
| Date                  | 05/11/2025 |
| Time                  | 10.00am    |
| Weather               | Overcast   |
| Input volume of water | 20 litres  |
| Test Zone             | 1.50 m     |

### TEST CALCULATION

| Elapsed (minutes) | Elapsed (seconds) | Total seconds | Water Depth (m) | Head (metres) | H/Ho  |
|-------------------|-------------------|---------------|-----------------|---------------|-------|
| 0                 | 0                 | 0             | 0.000           | 1.770         | 1.000 |
| 1                 | 0                 | 60            | 0.960           | 0.810         | 0.458 |
| 2                 | 0                 | 120           | 1.140           | 0.630         | 0.356 |
| 3                 | 0                 | 180           | 1.270           | 0.500         | 0.282 |
| 4                 | 0                 | 240           | 1.330           | 0.440         | 0.249 |
| 5                 | 0                 | 300           | 1.420           | 0.350         | 0.198 |
| 10                | 0                 | 600           | 1.580           | 0.190         | 0.107 |
| 15                | 0                 | 900           | 1.610           | 0.160         | 0.090 |
| 20                | 0                 | 1200          | 1.630           | 0.140         | 0.079 |
| 25                | 0                 | 1500          | 1.650           | 0.120         | 0.068 |
| 30                | 0                 | 1800          | 1.660           | 0.110         | 0.062 |
| 35                | 0                 | 2100          | 1.670           | 0.100         | 0.056 |
| 40                | 0                 | 2400          | 1.680           | 0.090         | 0.051 |
| 45                | 0                 | 2700          | 1.680           | 0.090         | 0.051 |
| 50                | 0                 | 3000          | 1.680           | 0.090         | 0.051 |
| 55                | 0                 | 3300          | 1.680           | 0.090         | 0.051 |
| 60                | 0                 | 3600          | 1.680           | 0.090         | 0.051 |

Intake Factor (F)

$$F = \frac{2 \pi L}{\log_e [(L/D) + \sqrt{1 + (L/D)^2}]} \quad (i)$$

(From BS 5930:1999 for standpipes)

L=length of test zone

D=diameter of borehole

Permeability (k)

$$k = \frac{A}{F(t_2 - t_1)} \times \log_e (H_1/H_2) \quad (ii)$$

or

$$k = \frac{A}{FT} \quad (iii)$$

Where T is the Basic Time Lag Factor corresponding to an H/Ho value of 0.37

L= 1.50 m  
D= 0.100 m  
L/D= 15.00

t<sub>1</sub>= 0 s  
t<sub>2</sub>= 2400 s  
H<sub>1</sub>= 1.68 m  
H<sub>2</sub>= 0.01 m

A= 0.00785 m<sup>2</sup>  
F= 2.7701 From (i)  
T= s  
k= 6.05323E-06 ms<sup>-1</sup> From (ii)  
k= ms<sup>-1</sup> From (iii)

Remarks

Drainage Characteristics: Poor Permeability  
Classification: Very low

## **APPENDIX III**



# LABORATORY REPORT



**Contract Number: PSL25/7720**

Report Date: 10 November 2025  
Client's Reference: 25-446  
Client Name: ARC Environmental  
Solum House  
Unit 1 Elliott Court  
St Johns Road, Meadowfield  
Durham  
DH7 8PN

**For the attention of: Shona Heatherington**

Contract Title: Queens Drive, Rochdale

Date Received: 9/10/2025  
Date Commenced: 9/10/2025  
Date Completed: 10/11/2025

**Notes: Opinions and Interpretations are outside the UKAS Accreditation**

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

Checked and Approved Signatories:

A Watkins  
(Managing Director)

R Berriman  
(Associate Director)

S Royle  
(Laboratory Manager)

L Knight  
(Assistant Laboratory Manager)

S Eyre  
(Senior Technician)

  
S Braithwaite  
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[awatkins@prosoils.co.uk](mailto:awatkins@prosoils.co.uk)

Page 1 of

## SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

4043



**Queens Drive, Rochdale**

**Contract No:****PSL25/7720****Client Ref:**

**25-446**

# PARTICLE SIZE DISTRIBUTION TEST

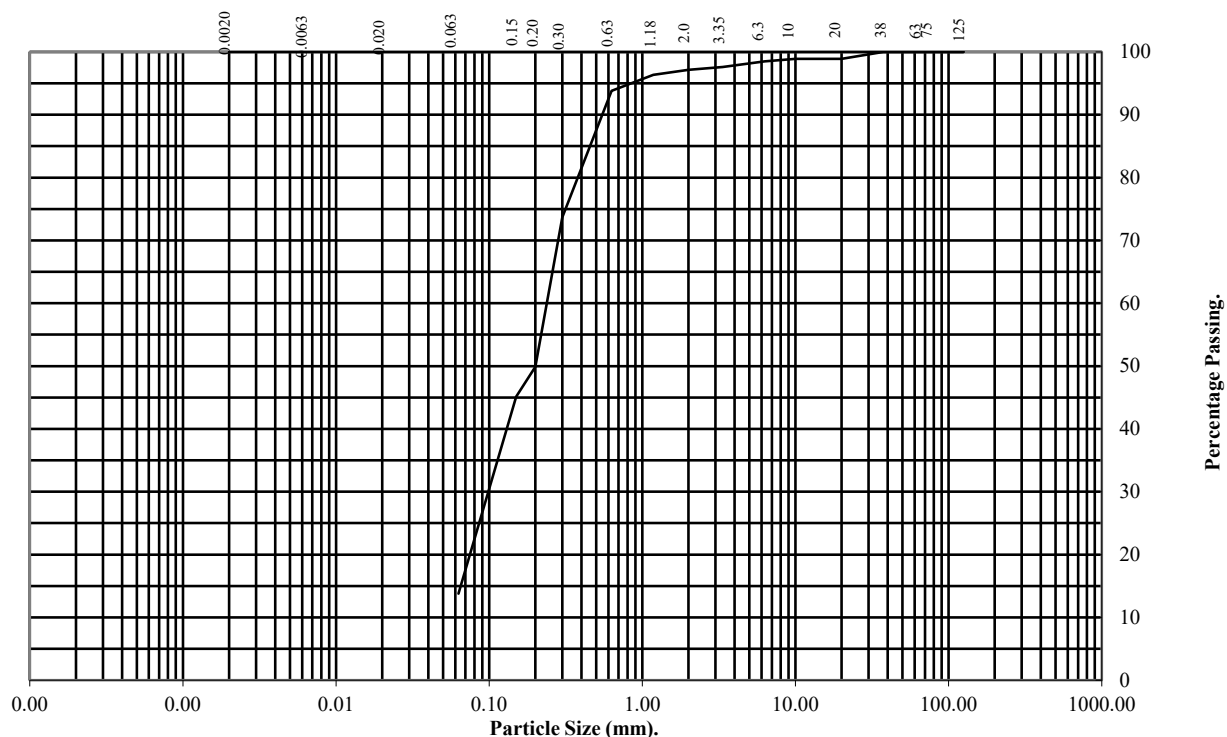
BS 1377 - Part 2 : 2022 : Clause 10 in accordance with BS EN ISO 17892 - 4 : 2016

Sieve Method, Clause 5.2

Hole Number: **WS01** Top Depth (m): **2.50**

Sample Number: **-** Base Depth (m): **-**

Sample Type: **B**



| BS Test Sieve (mm) | Percentage Passing |
|--------------------|--------------------|
| 125                | 100                |
| 75                 | 100                |
| 63                 | 100                |
| 37.5               | 100                |
| 20                 | 99                 |
| 10                 | 99                 |
| 6.3                | 99                 |
| 3.35               | 98                 |
| 2                  | 97                 |
| 1.18               | 96                 |
| 0.63               | 94                 |
| 0.3                | 74                 |
| 0.2                | 50                 |
| 0.15               | 45                 |
| 0.063              | 14                 |

| Soil Fraction | Total Percentage |
|---------------|------------------|
| Cobbles       | 0                |
| Gravel        | 3                |
| Sand          | 83               |
| Silt/Clay     | 14               |

## Remarks:

See Summary of Soil Descriptions



Queens Drive, Rochdale

Contract No:

PSL25/7720

Client Ref:

25-446

# PARTICLE SIZE DISTRIBUTION TEST

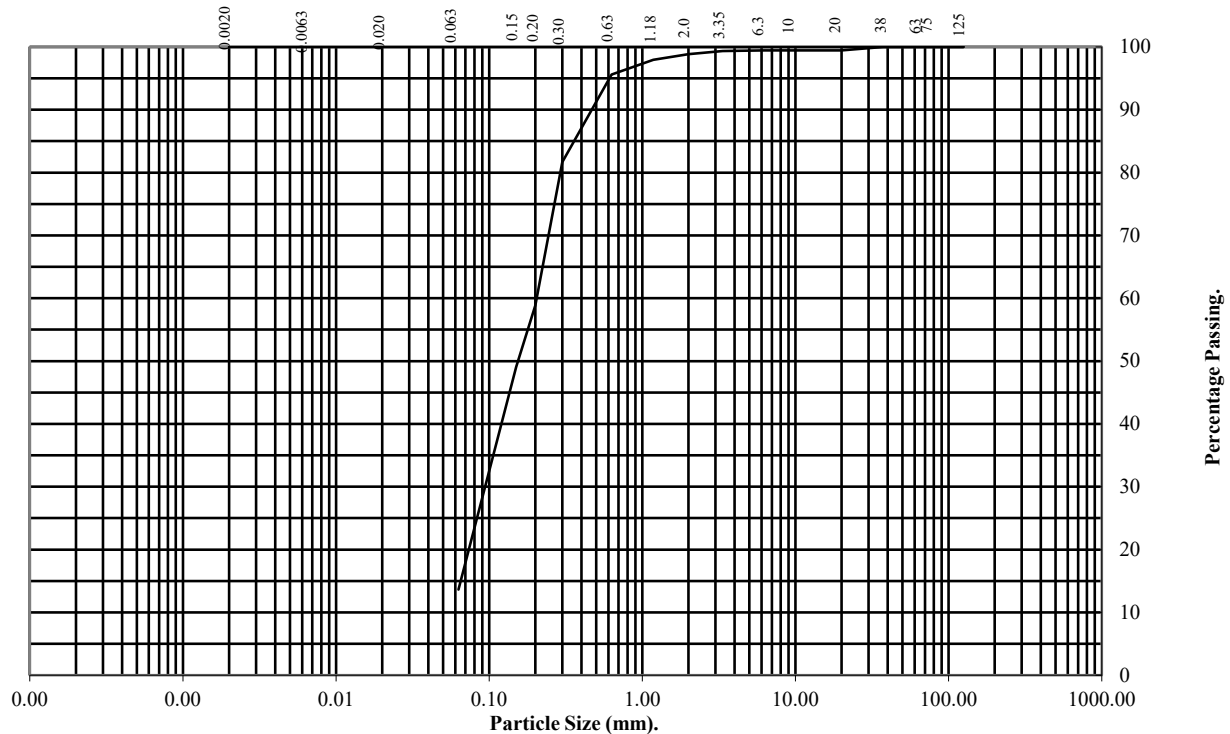
BS 1377 - Part 2 : 2022 : Clause 10 in accordance with BS EN ISO 17892 - 4 : 2016

Sieve Method, Clause 5.2

Hole Number: **WS02** Top Depth (m): **2.00**

Sample Number: **-** Base Depth (m): **-**

Sample Type: **B**



| BS Test Sieve (mm) | Percentage Passing |
|--------------------|--------------------|
| 125                | 100                |
| 75                 | 100                |
| 63                 | 100                |
| 37.5               | 100                |
| 20                 | 99                 |
| 10                 | 99                 |
| 6.3                | 99                 |
| 3.35               | 99                 |
| 2                  | 99                 |
| 1.18               | 98                 |
| 0.63               | 96                 |
| 0.3                | 82                 |
| 0.2                | 59                 |
| 0.15               | 49                 |
| 0.063              | 14                 |

| Soil Fraction | Total Percentage |
|---------------|------------------|
| Cobbles       | 0                |
| Gravel        | 1                |
| Sand          | 85               |
| Silt/Clay     | 14               |

## Remarks:

See Summary of Soil Descriptions



Queens Drive, Rochdale

|              |
|--------------|
| Contract No: |
| PSL25/7720   |
| Client Ref:  |
| 25-446       |

# PARTICLE SIZE DISTRIBUTION TEST

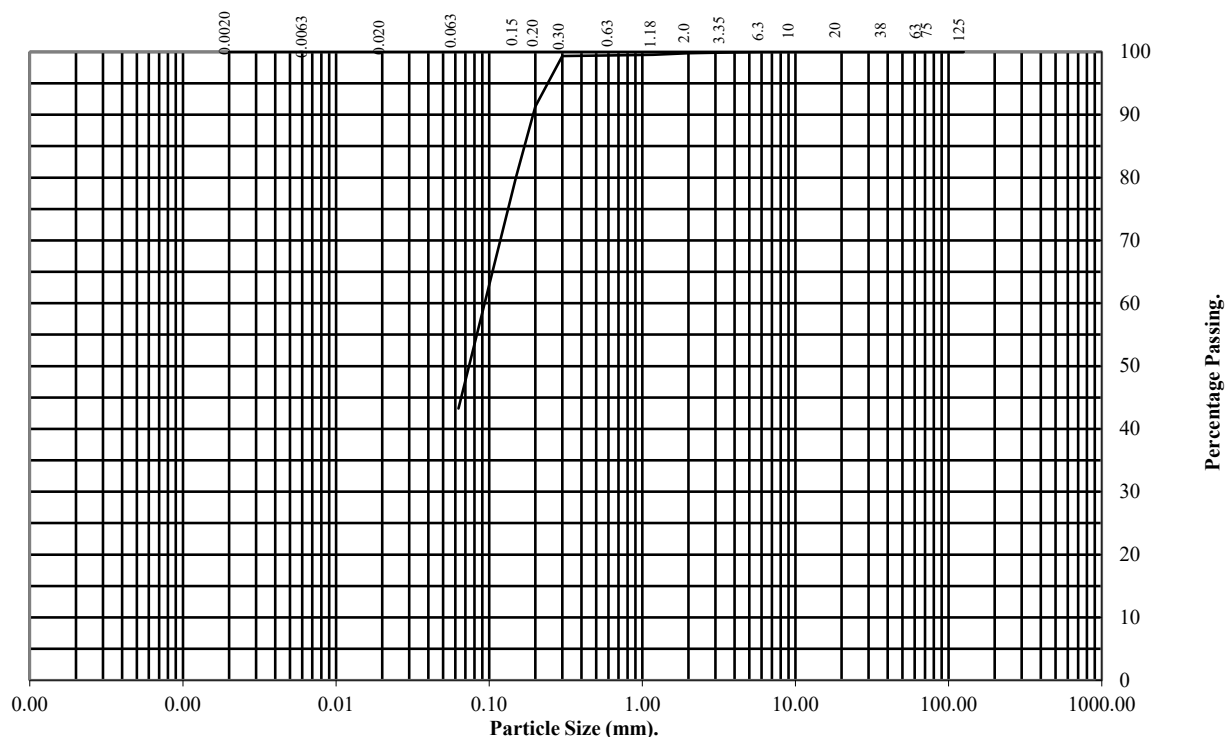
BS 1377 - Part 2 : 2022 : Clause 10 in accordance with BS EN ISO 17892 - 4 : 2016

Sieve Method, Clause 5.2

Hole Number: WS05 Top Depth (m): 2.50

Sample Number: - Base Depth (m): -

Sample Type: B



| BS Test Sieve (mm) | Percentage Passing |
|--------------------|--------------------|
| 125                | 100                |
| 75                 | 100                |
| 63                 | 100                |
| 37.5               | 100                |
| 20                 | 100                |
| 10                 | 100                |
| 6.3                | 100                |
| 3.35               | 100                |
| 2                  | 100                |
| 1.18               | 100                |
| 0.63               | 99                 |
| 0.3                | 99                 |
| 0.2                | 91                 |
| 0.15               | 80                 |
| 0.063              | 43                 |

| Soil Fraction | Total Percentage |
|---------------|------------------|
| Cobbles       | 0                |
| Gravel        | 0                |
| Sand          | 57               |
| Silt/Clay     | 43               |

## Remarks:

See Summary of Soil Descriptions



Queens Drive, Rochdale

Contract No:

PSL25/7720

Client Ref:

25-446

# PARTICLE SIZE DISTRIBUTION TEST

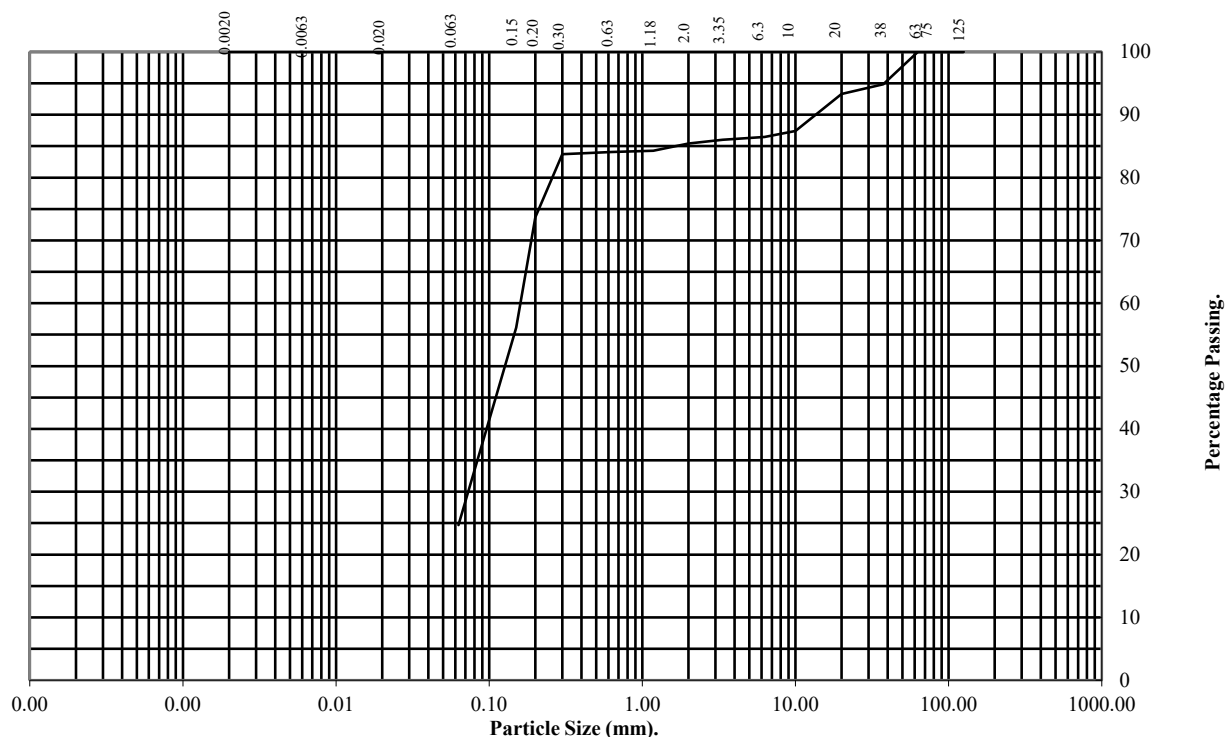
BS 1377 - Part 2 : 2022 : Clause 10 in accordance with BS EN ISO 17892 - 4 : 2016

Sieve Method, Clause 5.2

Hole Number: **WS06** Top Depth (m): **1.25**

Sample Number: **-** Base Depth (m): **-**

Sample Type: **B**



| BS Test Sieve (mm) | Percentage Passing |
|--------------------|--------------------|
| 125                | 100                |
| 75                 | 100                |
| 63                 | 100                |
| 37.5               | 95                 |
| 20                 | 93                 |
| 10                 | 87                 |
| 6.3                | 86                 |
| 3.35               | 86                 |
| 2                  | 85                 |
| 1.18               | 84                 |
| 0.63               | 84                 |
| 0.3                | 84                 |
| 0.2                | 74                 |
| 0.15               | 56                 |
| 0.063              | 25                 |

| Soil Fraction | Total Percentage |
|---------------|------------------|
| Cobbles       | 0                |
| Gravel        | 15               |
| Sand          | 60               |
| Silt/Clay     | 25               |

## Remarks:

See Summary of Soil Descriptions



Queens Drive, Rochdale

|              |
|--------------|
| Contract No: |
| PSL25/7720   |
| Client Ref:  |
| 25-446       |



## ANALYTICAL TEST REPORT

**Report Number** 25-09964, issue number 1

**Contract name:** Queens Drive Rochdale

**Client reference:** 25-446

**Clients name:** ARC Environmental Ltd

**Clients address:** ARC Environmental Ltd  
Solum House, Unit 1 Elliott Court  
St Johns Road  
DH7 8PN

**Samples received:** 10/10/2025

**Analysis started:** 10/10/2025

**Analysis completed:** 16/10/2025

**Report issued:** 16/10/2025

**Key**

U UKAS accredited test  
M MCERTS & UKAS accredited test  
(B) Analysis performed at Southampton Site  
I/S Insufficient sample to carry out test  
U/S Sample not suitable for testing  
NAD No Asbestos Detected  
Full key available on Information page

**Approved by:** Rachael Burton  
Technical Support Manager

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.  
% Moisture reported as MCERTS drying at 30°C

| Lab ref | Sample ID | Depth (m) | Sample description                            | Material removed | % Removed | % Moisture |
|---------|-----------|-----------|-----------------------------------------------|------------------|-----------|------------|
| 71663   | WS03      | 0.25      | Brown Sandy Loam with Gravel and Vegetation.  | -                | -         | 31.5       |
| 71664   | WS07      | 0.50      | Brown Clay with Gravel and Vegetation.        | -                | -         | 18.5       |
| 71665   | HP01      | 0.60      | Brown Clayey Sand with Gravel and Vegetation. | -                | -         | 3.7        |
| 71666   | HP02      | 0.30      | Brown Sandy Loam with Gravel and Vegetation.  | -                | -         | 17.3       |
| 71667   | HP05      | 0.30      | Brown Sandy Loam with Gravel and Vegetation.  | -                | -         | 15.3       |
| 71668   | HP06      | 0.60      | Brown Sandy Loam with Gravel and Vegetation.  | -                | -         | 23.1       |
| 71669   | WS01      | 1.20      | Brown Clayey Sand with Gravel and Vegetation. | -                | -         | 10.4       |
| 71670   | WS01      | 1.70      | Brown Sand with Gravel and Vegetation.        | -                | -         | 13.4       |
| 71671   | WS02      | 1.50      | Brown Sand with Gravel and Vegetation.        | -                | -         | 11.9       |
| 71672   | WS03      | 1.25      | Brown Loamy Clay with Gravel and Vegetation.  | -                | -         | 21.3       |
| 71673   | WS04      | 0.50      | Brown Sandy Clay with Gravel and Vegetation.  | -                | -         | 16.5       |
| 71674   | WS05      | 1.50      | Brown Sand with Gravel and Vegetation.        | -                | -         | 13.6       |
| 71675   | WS06      | 2.50      | Brown Clayey Sand with Gravel and Vegetation. | -                | -         | 12.6       |
| 71676   | WS07      | 1.50      | Brown Clayey Sand with Gravel and Vegetation. | -                | -         | 18.9       |

# DEVIATING SAMPLE INFORMATION

## Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

## Key

- a Sampling date not provided
- b Sampling time not provided (waters only)
- c Sample not received in appropriate containers
- d Storage Temperature
- e Headspace present in sample container
- f Sample exceeded sampling to receipt
- g Sample exceeded holding time(s)

| Lab ref | Sample ID | Depth (m) | Deviating | Tests (Reason for deviation) |
|---------|-----------|-----------|-----------|------------------------------|
| 71663   | WS03      | 0.25      | N         |                              |
| 71664   | WS07      | 0.50      | N         |                              |
| 71665   | HP01      | 0.60      | N         |                              |
| 71666   | HP02      | 0.30      | N         |                              |
| 71667   | HP05      | 0.30      | N         |                              |
| 71668   | HP06      | 0.60      | N         |                              |
| 71669   | WS01      | 1.20      | N         |                              |
| 71670   | WS01      | 1.70      | N         |                              |
| 71671   | WS02      | 1.50      | N         |                              |
| 71672   | WS03      | 1.25      | N         |                              |
| 71673   | WS04      | 0.50      | N         |                              |
| 71674   | WS05      | 1.50      | N         |                              |
| 71675   | WS06      | 2.50      | N         |                              |
| 71676   | WS07      | 1.50      | N         |                              |

## SOILS

| Lab Number                       |        |        |       |          | 71663      | 71664      | 71665      | 71666      | 71667      |
|----------------------------------|--------|--------|-------|----------|------------|------------|------------|------------|------------|
| Client Reference                 |        |        |       |          | SOIL       | SOIL       | SOIL       | SOIL       | SOIL       |
| Sample ID                        |        |        |       |          | WS03       | WS07       | HP01       | HP02       | HP05       |
| Depth (m)                        |        |        |       |          | 0.25       | 0.50       | 0.60       | 0.30       | 0.30       |
| Sampling Date                    |        |        |       |          | 02/10/2025 | 03/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 |
| Test                             | Method | Accred | LoD   | Units    |            |            |            |            |            |
| Moisture Content                 | CE001  | N      | 0.1   | %        | 31.5       | 18.5       | 3.7        | 17.3       | 15.3       |
| Arsenic                          | CE264  | U      | 1.8   | mg/kg    | < 1.8      | 10.1       | 7.9        | 13.4       | n/t        |
| Cadmium                          | CE264  | M      | 1.6   | mg/kg    | * < 1.6    | * < 1.6    | * < 1.6    | * < 1.6    | n/t        |
| Chromium                         | CE264  | U      | 2     | mg/kg    | 5.0        | 14.9       | 7.9        | 14.4       | n/t        |
| Chromium III                     | CE208  | N      | 2     | mg/kg    | 4.99       | 14.9       | 7.88       | 14.4       | n/t        |
| Water Soluble Chromium VI        | CE263  | N      | 0.04  | mg/kg    | < 0.040    | < 0.040    | < 0.040    | < 0.040    | n/t        |
| Copper                           | CE264  | U      | 1.6   | mg/kg    | 29.5       | 8.9        | < 1.6      | 25.2       | n/t        |
| Lead                             | CE264  | U      | 2.3   | mg/kg    | 2.8        | 47.6       | 26.7       | 71.4       | n/t        |
| Mercury                          | CE264  | U      | 0.7   | mg/kg    | < 0.7      | < 0.7      | 0.7        | < 0.7      | n/t        |
| Nickel                           | CE264  | M      | 2.1   | mg/kg    | * 5.3      | * 11.1     | * 6.0      | * 14.4     | n/t        |
| Selenium                         | CE264  | U      | 3     | mg/kg    | < 3.0      | < 3.0      | < 3.0      | < 3.0      | n/t        |
| Zinc                             | CE264  | M      | 4     | mg/kg    | * 52.4     | * 55.8     | * 27.0     | * 66.6     | n/t        |
| pH                               | CE004  | M      | 0.1   | pH units | * 7.1      | * 8.3      | * 8.7      | * 8.2      | n/t        |
| Water Soluble Sulphate           | CE061  | M      | 10    | mg/l     | 30.1       | 93.3       | < 10.0     | 15.7       | n/t        |
| Free Cyanide                     | CE077  | N      | 1     | mg/kg    | < 1.0      | < 1.0      | < 1.0      | < 1.0      | n/t        |
| Total Organic Carbon             | CE197  | M      | 0.1   | %        | 10.8       | * 2.06     | * 0.35     | * 4.27     | n/t        |
| <b>Polyaromatic hydrocarbons</b> |        |        |       |          |            |            |            |            |            |
| Acenaphthene                     | CE087  | M      | 0.013 | mg/kg    | * 0.017    | * 0.014    | * < 0.013  | * 0.109    | n/t        |
| Acenaphthylene                   | CE087  | M      | 0.015 | mg/kg    | * < 0.015  | * < 0.015  | * < 0.015  | * 0.015    | n/t        |
| Anthracene                       | CE087  | U      | 0.017 | mg/kg    | 0.025      | 0.027      | < 0.017    | 0.159      | n/t        |
| Benzo(a)anthracene               | CE087  | U      | 0.012 | mg/kg    | 0.107      | 0.103      | < 0.012    | 0.732      | n/t        |
| Benzo(a)pyrene                   | CE087  | U      | 0.019 | mg/kg    | 0.094      | 0.091      | < 0.019    | 0.645      | n/t        |
| Benzo(b)fluoranthene             | CE087  | M      | 0.02  | mg/kg    | * 0.148    | * 0.125    | * < 0.020  | * 1.03     | n/t        |
| Benzo(g,h,i)perylene             | CE087  | M      | 0.019 | mg/kg    | * 0.062    | * 0.052    | * < 0.019  | * 0.396    | n/t        |
| Benzo(k)fluoranthene             | CE087  | M      | 0.025 | mg/kg    | * 0.069    | * 0.050    | * < 0.025  | * 0.337    | n/t        |
| Chrysene                         | CE087  | M      | 0.028 | mg/kg    | * 0.096    | * 0.079    | * < 0.028  | * 0.635    | n/t        |
| Dibenzo(a,h)anthracene           | CE087  | M      | 0.017 | mg/kg    | * < 0.017  | * < 0.017  | * < 0.017  | * 0.140    | n/t        |
| Fluoranthene                     | CE087  | M      | 0.017 | mg/kg    | * 0.161    | * 0.157    | * < 0.017  | * 1.26     | n/t        |
| Fluorene                         | CE087  | U      | 0.013 | mg/kg    | < 0.013    | < 0.013    | < 0.013    | 0.071      | n/t        |
| Indeno(1,2,3-cd)pyrene           | CE087  | M      | 0.019 | mg/kg    | * 0.104    | * 0.099    | * < 0.019  | * 0.747    | n/t        |
| Naphthalene                      | CE087  | M      | 0.016 | mg/kg    | * 0.022    | * < 0.016  | * < 0.016  | * 0.091    | n/t        |



## SOILS

| Lab Number                           |        |        |       |       | 71663      | 71664      | 71665      | 71666      | 71667      |
|--------------------------------------|--------|--------|-------|-------|------------|------------|------------|------------|------------|
| Client Reference                     |        |        |       |       | SOIL       | SOIL       | SOIL       | SOIL       | SOIL       |
| Sample ID                            |        |        |       |       | WS03       | WS07       | HP01       | HP02       | HP05       |
| Depth (m)                            |        |        |       |       | 0.25       | 0.50       | 0.60       | 0.30       | 0.30       |
| Sampling Date                        |        |        |       |       | 02/10/2025 | 03/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 |
| Test                                 | Method | Accred | LoD   | Units |            |            |            |            |            |
| Phenanthrene                         | CE087  | M      | 0.014 | mg/kg | * 0.134    | * 0.112    | * < 0.014  | * 0.846    | n/t        |
| Pyrene                               | CE087  | M      | 0.016 | mg/kg | * 0.173    | * 0.162    | * < 0.016  | * 1.32     | n/t        |
| Total PAH(16)                        | CE087  | N      | 0.28  | mg/kg | 1.21       | 1.07       | < 0.280    | 8.53       | n/t        |
| BTEX & Total Petroleum Hydrocarbons  |        |        |       |       |            |            |            |            |            |
| Benzene                              | CE267  | U      | 0.001 | mg/kg | < 0.001    | < 0.001    | < 0.001    | < 0.001    | n/t        |
| Toluene                              | CE267  | U      | 0.001 | mg/kg | 0.002      | < 0.001    | < 0.001    | < 0.001    | n/t        |
| Ethylbenzene                         | CE267  | U      | 0.001 | mg/kg | < 0.001    | < 0.001    | < 0.001    | < 0.001    | n/t        |
| MTBE                                 | CE267  | N      | 0.002 | mg/kg | < 0.002    | < 0.002    | < 0.002    | < 0.002    | n/t        |
| m,p-Xylene                           | CE267  | U      | 0.002 | mg/kg | < 0.002    | < 0.002    | < 0.002    | < 0.002    | n/t        |
| oXylenes                             | CE267  | U      | 0.002 | mg/kg | < 0.002    | < 0.002    | < 0.002    | < 0.002    | n/t        |
| >C5-C6 Aliphatic (HS_1D_AL)          | CE267  | N      | 0.1   | mg/kg | < 0.10     | < 0.10     | < 0.10     | < 0.10     | n/t        |
| >C6-C8 Aliphatic (HS_1D_AL)          | CE267  | N      | 0.1   | mg/kg | < 0.10     | < 0.10     | < 0.10     | < 0.10     | n/t        |
| >C8-C10 Aliphatic (HS_1D_AL)         | CE267  | N      | 0.1   | mg/kg | < 0.10     | < 0.10     | < 0.10     | < 0.10     | n/t        |
| >C10-C12 Aliphatic (EH_2D_AL)        | CE250  | N      | 1     | mg/kg | < 1.0      | 1.1        | < 1.0      | 3.5        | n/t        |
| >C12-C16 Aliphatic (EH_2D_AL)        | CE250  | N      | 0.5   | mg/kg | < 0.5      | < 0.5      | < 0.5      | 1.1        | n/t        |
| >C16-C35 Aliphatic (EH_2D_AL)        | CE250  | N      | 3     | mg/kg | 6.1        | 5.7        | 4.4        | 9.4        | n/t        |
| >C35-C44 Aliphatic (EH_2D_AL)        | CE250  | N      | 0.5   | mg/kg | < 0.5      | < 0.5      | < 0.5      | < 0.5      | n/t        |
| >C5-C7 Aromatic (HS_1D_AR)           | CE267  | N      | 0.01  | mg/kg | < 0.010    | < 0.010    | < 0.010    | < 0.010    | n/t        |
| >C7-C8 Aromatic (HS_1D_AR)           | CE267  | N      | 0.01  | mg/kg | < 0.010    | < 0.010    | < 0.010    | < 0.010    | n/t        |
| >C8-C10 Aromatic (HS_1D_AR)          | CE267  | N      | 0.01  | mg/kg | < 0.010    | < 0.010    | < 0.010    | < 0.010    | n/t        |
| >C10-C12 Aromatic (EH_2D_AR)         | CE250  | N      | 0.6   | mg/kg | 1.6        | 1.9        | 1.2        | 3.7        | n/t        |
| >C12-C16 Aromatic (EH_2D_AR)         | CE250  | N      | 1     | mg/kg | 3.7        | 4.7        | 2.9        | 9.0        | n/t        |
| >C16-C21 Aromatic (EH_2D_AR)         | CE250  | N      | 2     | mg/kg | < 2.0      | 2.5        | < 2.0      | 6.3        | n/t        |
| >C21-C35 Aromatic (EH_2D_AR)         | CE250  | N      | 4.5   | mg/kg | 8.2        | 8.9        | 4.7        | 23.7       | n/t        |
| >C35-C44 Aromatic (EH_2D_AR)         | CE250  | N      | 2     | mg/kg | 2.2        | < 2.0      | < 2.0      | 4.5        | n/t        |
| >C5-C44 Total (HS_1D_MS+EH_2D_Total) | CE250  | N      | 14    | mg/kg | 24.4       | 27.0       | 16.4       | 61.4       | n/t        |
| PCB (ICES 7 congeners)               |        |        |       |       |            |            |            |            |            |
| Total PCBs (7 congeners)             | CE137  | M      | 0.035 | mg/kg | n/t        | n/t        | n/t        | n/t        | < 0.035    |
| PCB 101                              | CE137  | M      | 0.015 | mg/kg | n/t        | n/t        | n/t        | n/t        | < 0.015    |
| PCB 118                              | CE137  | M      | 0.015 | mg/kg | n/t        | n/t        | n/t        | n/t        | < 0.015    |
| PCB 138                              | CE137  | M      | 0.015 | mg/kg | n/t        | n/t        | n/t        | n/t        | < 0.015    |

# SOILS

|                         |               |               |            |              |            |            |            |            |            |
|-------------------------|---------------|---------------|------------|--------------|------------|------------|------------|------------|------------|
| <b>Lab Number</b>       |               |               |            |              | 71663      | 71664      | 71665      | 71666      | 71667      |
| <b>Client Reference</b> |               |               |            |              | SOIL       | SOIL       | SOIL       | SOIL       | SOIL       |
| <b>Sample ID</b>        |               |               |            |              | WS03       | WS07       | HP01       | HP02       | HP05       |
| <b>Depth (m)</b>        |               |               |            |              | 0.25       | 0.50       | 0.60       | 0.30       | 0.30       |
| <b>Sampling Date</b>    |               |               |            |              | 02/10/2025 | 03/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 |
| <b>Test</b>             | <b>Method</b> | <b>Accred</b> | <b>LoD</b> | <b>Units</b> |            |            |            |            |            |
| PCB 153                 | CE137         | M             | 0.01       | mg/kg        | n/t        | n/t        | n/t        | n/t        | < 0.010    |
| PCB 180                 | CE137         | M             | 0.01       | mg/kg        | n/t        | n/t        | n/t        | n/t        | < 0.010    |
| PCB 28                  | CE137         | M             | 0.015      | mg/kg        | n/t        | n/t        | n/t        | n/t        | < 0.015    |
| PCB 52                  | CE137         | M             | 0.01       | mg/kg        | n/t        | n/t        | n/t        | n/t        | < 0.010    |
| <b>Asbestos</b>         |               |               |            |              |            |            |            |            |            |
| Asbestos Identification | SUBCO<br>N    | SU            | 0          | -            | NAD        | NAD        | NAD        | NAD        | n/t        |

## SOILS

| Lab Number                       |        |        |       |          | 71668      | 71669      | 71670      | 71671      | 71672      |
|----------------------------------|--------|--------|-------|----------|------------|------------|------------|------------|------------|
| Client Reference                 |        |        |       |          | SOIL       | SOIL       | SOIL       | SOIL       | SOIL       |
| Sample ID                        |        |        |       |          | HP06       | WS01       | WS01       | WS02       | WS03       |
| Depth (m)                        |        |        |       |          | 0.60       | 1.20       | 1.70       | 1.50       | 1.25       |
| Sampling Date                    |        |        |       |          | 02/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 |
| Test                             | Method | Accred | LoD   | Units    |            |            |            |            |            |
| Moisture Content                 | CE001  | N      | 0.1   | %        | 23.1       | 10.4       | 13.4       | 11.9       | 21.3       |
| Arsenic                          | CE264  | U      | 1.8   | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Cadmium                          | CE264  | M      | 1.6   | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Chromium                         | CE264  | U      | 2     | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Chromium III                     | CE208  | N      | 2     | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Water Soluble Chromium VI        | CE263  | N      | 0.04  | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Copper                           | CE264  | U      | 1.6   | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Lead                             | CE264  | U      | 2.3   | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Mercury                          | CE264  | U      | 0.7   | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Nickel                           | CE264  | M      | 2.1   | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Selenium                         | CE264  | U      | 3     | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Zinc                             | CE264  | M      | 4     | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| pH                               | CE004  | M      | 0.1   | pH units | n/t        | * 8.8      | * 8.0      | * 7.9      | * 6.5      |
| Water Soluble Sulphate           | CE061  | M      | 10    | mg/l     | n/t        | < 10.0     | < 10.0     | < 10.0     | < 10.0     |
| Free Cyanide                     | CE077  | N      | 1     | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Total Organic Carbon             | CE197  | M      | 0.1   | %        | n/t        | n/t        | n/t        | n/t        | n/t        |
| <b>Polyaromatic hydrocarbons</b> |        |        |       |          |            |            |            |            |            |
| Acenaphthene                     | CE087  | M      | 0.013 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Acenaphthylene                   | CE087  | M      | 0.015 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Anthracene                       | CE087  | U      | 0.017 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Benzo(a)anthracene               | CE087  | U      | 0.012 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Benzo(a)pyrene                   | CE087  | U      | 0.019 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Benzo(b)fluoranthene             | CE087  | M      | 0.02  | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Benzo(g,h,i)perylene             | CE087  | M      | 0.019 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Benzo(k)fluoranthene             | CE087  | M      | 0.025 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Chrysene                         | CE087  | M      | 0.028 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Dibenzo(a,h)anthracene           | CE087  | M      | 0.017 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Fluoranthene                     | CE087  | M      | 0.017 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Fluorene                         | CE087  | U      | 0.013 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Indeno(1,2,3-cd)pyrene           | CE087  | M      | 0.019 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |
| Naphthalene                      | CE087  | M      | 0.016 | mg/kg    | n/t        | n/t        | n/t        | n/t        | n/t        |



## SOILS

| Lab Number                           |        |        |       |       | 71668      | 71669      | 71670      | 71671      | 71672      |
|--------------------------------------|--------|--------|-------|-------|------------|------------|------------|------------|------------|
| Client Reference                     |        |        |       |       | SOIL       | SOIL       | SOIL       | SOIL       | SOIL       |
| Sample ID                            |        |        |       |       | HP06       | WS01       | WS01       | WS02       | WS03       |
| Depth (m)                            |        |        |       |       | 0.60       | 1.20       | 1.70       | 1.50       | 1.25       |
| Sampling Date                        |        |        |       |       | 02/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 |
| Test                                 | Method | Accred | LoD   | Units |            |            |            |            |            |
| Phenanthrene                         | CE087  | M      | 0.014 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| Pyrene                               | CE087  | M      | 0.016 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| Total PAH(16)                        | CE087  | N      | 0.28  | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| BTEX & Total Petroleum Hydrocarbons  |        |        |       |       |            |            |            |            |            |
| Benzene                              | CE267  | U      | 0.001 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| Toluene                              | CE267  | U      | 0.001 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| Ethylbenzene                         | CE267  | U      | 0.001 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| MTBE                                 | CE267  | N      | 0.002 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| m,p-Xylene                           | CE267  | U      | 0.002 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| oXylenes                             | CE267  | U      | 0.002 | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C5-C6 Aliphatic (HS_1D_AL)          | CE267  | N      | 0.1   | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C6-C8 Aliphatic (HS_1D_AL)          | CE267  | N      | 0.1   | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C8-C10 Aliphatic (HS_1D_AL)         | CE267  | N      | 0.1   | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C10-C12 Aliphatic (EH_2D_AL)        | CE250  | N      | 1     | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C12-C16 Aliphatic (EH_2D_AL)        | CE250  | N      | 0.5   | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C16-C35 Aliphatic (EH_2D_AL)        | CE250  | N      | 3     | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C35-C44 Aliphatic (EH_2D_AL)        | CE250  | N      | 0.5   | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C5-C7 Aromatic (HS_1D_AR)           | CE267  | N      | 0.01  | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C7-C8 Aromatic (HS_1D_AR)           | CE267  | N      | 0.01  | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C8-C10 Aromatic (HS_1D_AR)          | CE267  | N      | 0.01  | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C10-C12 Aromatic (EH_2D_AR)         | CE250  | N      | 0.6   | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C12-C16 Aromatic (EH_2D_AR)         | CE250  | N      | 1     | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C16-C21 Aromatic (EH_2D_AR)         | CE250  | N      | 2     | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C21-C35 Aromatic (EH_2D_AR)         | CE250  | N      | 4.5   | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C35-C44 Aromatic (EH_2D_AR)         | CE250  | N      | 2     | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| >C5-C44 Total (HS_1D_MS+EH_2D_Total) | CE250  | N      | 14    | mg/kg | n/t        | n/t        | n/t        | n/t        | n/t        |
| PCB (ICES 7 congeners)               |        |        |       |       |            |            |            |            |            |
| Total PCBs (7 congeners)             | CE137  | M      | 0.035 | mg/kg | < 0.035    | n/t        | n/t        | n/t        | n/t        |
| PCB 101                              | CE137  | M      | 0.015 | mg/kg | < 0.015    | n/t        | n/t        | n/t        | n/t        |
| PCB 118                              | CE137  | M      | 0.015 | mg/kg | < 0.015    | n/t        | n/t        | n/t        | n/t        |
| PCB 138                              | CE137  | M      | 0.015 | mg/kg | < 0.015    | n/t        | n/t        | n/t        | n/t        |

# SOILS

|                         |            |        |       |       |            |            |            |            |            |
|-------------------------|------------|--------|-------|-------|------------|------------|------------|------------|------------|
| Lab Number              |            |        |       |       | 71668      | 71669      | 71670      | 71671      | 71672      |
| Client Reference        |            |        |       |       | SOIL       | SOIL       | SOIL       | SOIL       | SOIL       |
| Sample ID               |            |        |       |       | HP06       | WS01       | WS01       | WS02       | WS03       |
| Depth (m)               |            |        |       |       | 0.60       | 1.20       | 1.70       | 1.50       | 1.25       |
| Sampling Date           |            |        |       |       | 02/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 | 02/10/2025 |
| Test                    | Method     | Accred | LoD   | Units |            |            |            |            |            |
| PCB 153                 | CE137      | M      | 0.01  | mg/kg | < 0.010    | n/t        | n/t        | n/t        | n/t        |
| PCB 180                 | CE137      | M      | 0.01  | mg/kg | < 0.010    | n/t        | n/t        | n/t        | n/t        |
| PCB 28                  | CE137      | M      | 0.015 | mg/kg | < 0.015    | n/t        | n/t        | n/t        | n/t        |
| PCB 52                  | CE137      | M      | 0.01  | mg/kg | < 0.010    | n/t        | n/t        | n/t        | n/t        |
| Asbestos                |            |        |       |       |            |            |            |            |            |
| Asbestos Identification | SUBCO<br>N | SU     | 0     | -     | n/t        | n/t        | n/t        | n/t        | n/t        |

## SOILS

| Lab Number                       |        |        |       |          | 71673      | 71674      | 71675      | 71676      |
|----------------------------------|--------|--------|-------|----------|------------|------------|------------|------------|
| Client Reference                 |        |        |       |          | SOIL       | SOIL       | SOIL       | SOIL       |
| Sample ID                        |        |        |       |          | WS04       | WS05       | WS06       | WS07       |
| Depth (m)                        |        |        |       |          | 0.50       | 1.50       | 2.50       | 1.50       |
| Sampling Date                    |        |        |       |          | 03/10/2025 | 03/10/2025 | 03/10/2025 | 03/10/2025 |
| Test                             | Method | Accred | LoD   | Units    |            |            |            |            |
| Moisture Content                 | CE001  | N      | 0.1   | %        | 16.5       | 13.6       | 12.6       | 18.9       |
| Arsenic                          | CE264  | U      | 1.8   | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Cadmium                          | CE264  | M      | 1.6   | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Chromium                         | CE264  | U      | 2     | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Chromium III                     | CE208  | N      | 2     | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Water Soluble Chromium VI        | CE263  | N      | 0.04  | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Copper                           | CE264  | U      | 1.6   | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Lead                             | CE264  | U      | 2.3   | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Mercury                          | CE264  | U      | 0.7   | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Nickel                           | CE264  | M      | 2.1   | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Selenium                         | CE264  | U      | 3     | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Zinc                             | CE264  | M      | 4     | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| pH                               | CE004  | M      | 0.1   | pH units | * 8.2      | * 7.9      | * 7.5      | * 7.1      |
| Water Soluble Sulphate           | CE061  | M      | 10    | mg/l     | 328        | 26.2       | < 10.0     | 22.6       |
| Free Cyanide                     | CE077  | N      | 1     | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Total Organic Carbon             | CE197  | M      | 0.1   | %        | n/t        | n/t        | n/t        | n/t        |
| <b>Polyaromatic hydrocarbons</b> |        |        |       |          |            |            |            |            |
| Acenaphthene                     | CE087  | M      | 0.013 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Acenaphthylene                   | CE087  | M      | 0.015 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Anthracene                       | CE087  | U      | 0.017 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Benzo(a)anthracene               | CE087  | U      | 0.012 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Benzo(a)pyrene                   | CE087  | U      | 0.019 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Benzo(b)fluoranthene             | CE087  | M      | 0.02  | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Benzo(g,h,i)perylene             | CE087  | M      | 0.019 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Benzo(k)fluoranthene             | CE087  | M      | 0.025 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Chrysene                         | CE087  | M      | 0.028 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Dibenzo(a,h)anthracene           | CE087  | M      | 0.017 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Fluoranthene                     | CE087  | M      | 0.017 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Fluorene                         | CE087  | U      | 0.013 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Indeno(1,2,3-cd)pyrene           | CE087  | M      | 0.019 | mg/kg    | n/t        | n/t        | n/t        | n/t        |
| Naphthalene                      | CE087  | M      | 0.016 | mg/kg    | n/t        | n/t        | n/t        | n/t        |

## SOILS

|                                                |               |               |            |              |            |            |            |            |
|------------------------------------------------|---------------|---------------|------------|--------------|------------|------------|------------|------------|
| <b>Lab Number</b>                              |               |               |            |              | 71673      | 71674      | 71675      | 71676      |
| <b>Client Reference</b>                        |               |               |            |              | SOIL       | SOIL       | SOIL       | SOIL       |
| <b>Sample ID</b>                               |               |               |            |              | WS04       | WS05       | WS06       | WS07       |
| <b>Depth (m)</b>                               |               |               |            |              | 0.50       | 1.50       | 2.50       | 1.50       |
| <b>Sampling Date</b>                           |               |               |            |              | 03/10/2025 | 03/10/2025 | 03/10/2025 | 03/10/2025 |
| <b>Test</b>                                    | <b>Method</b> | <b>Accred</b> | <b>LoD</b> | <b>Units</b> |            |            |            |            |
| Phenanthrene                                   | CE087         | M             | 0.014      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| Pyrene                                         | CE087         | M             | 0.016      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| Total PAH(16)                                  | CE087         | N             | 0.28       | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| <b>BTEX &amp; Total Petroleum Hydrocarbons</b> |               |               |            |              |            |            |            |            |
| Benzene                                        | CE267         | U             | 0.001      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| Toluene                                        | CE267         | U             | 0.001      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| Ethylbenzene                                   | CE267         | U             | 0.001      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| MTBE                                           | CE267         | N             | 0.002      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| m,p-Xylene                                     | CE267         | U             | 0.002      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| oXylenes                                       | CE267         | U             | 0.002      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C5-C6 Aliphatic (HS_1D_AL)                    | CE267         | N             | 0.1        | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C6-C8 Aliphatic (HS_1D_AL)                    | CE267         | N             | 0.1        | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C8-C10 Aliphatic (HS_1D_AL)                   | CE267         | N             | 0.1        | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C10-C12 Aliphatic (EH_2D_AL)                  | CE250         | N             | 1          | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C12-C16 Aliphatic (EH_2D_AL)                  | CE250         | N             | 0.5        | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C16-C35 Aliphatic (EH_2D_AL)                  | CE250         | N             | 3          | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C35-C44 Aliphatic (EH_2D_AL)                  | CE250         | N             | 0.5        | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C5-C7 Aromatic (HS_1D_AR)                     | CE267         | N             | 0.01       | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C7-C8 Aromatic (HS_1D_AR)                     | CE267         | N             | 0.01       | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C8-C10 Aromatic (HS_1D_AR)                    | CE267         | N             | 0.01       | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C10-C12 Aromatic (EH_2D_AR)                   | CE250         | N             | 0.6        | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C12-C16 Aromatic (EH_2D_AR)                   | CE250         | N             | 1          | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C16-C21 Aromatic (EH_2D_AR)                   | CE250         | N             | 2          | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C21-C35 Aromatic (EH_2D_AR)                   | CE250         | N             | 4.5        | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C35-C44 Aromatic (EH_2D_AR)                   | CE250         | N             | 2          | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| >C5-C44 Total (HS_1D_MS+EH_2D_Total)           | CE250         | N             | 14         | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| <b>PCB (ICES 7 congeners)</b>                  |               |               |            |              |            |            |            |            |
| Total PCBs (7 congeners)                       | CE137         | M             | 0.035      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| PCB 101                                        | CE137         | M             | 0.015      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| PCB 118                                        | CE137         | M             | 0.015      | mg/kg        | n/t        | n/t        | n/t        | n/t        |
| PCB 138                                        | CE137         | M             | 0.015      | mg/kg        | n/t        | n/t        | n/t        | n/t        |

# SOILS

|                         |            |        |       |       |            |            |            |            |
|-------------------------|------------|--------|-------|-------|------------|------------|------------|------------|
| Lab Number              |            |        |       |       | 71673      | 71674      | 71675      | 71676      |
| Client Reference        |            |        |       |       | SOIL       | SOIL       | SOIL       | SOIL       |
| Sample ID               |            |        |       |       | WS04       | WS05       | WS06       | WS07       |
| Depth (m)               |            |        |       |       | 0.50       | 1.50       | 2.50       | 1.50       |
| Sampling Date           |            |        |       |       | 03/10/2025 | 03/10/2025 | 03/10/2025 | 03/10/2025 |
| Test                    | Method     | Accred | LoD   | Units |            |            |            |            |
| PCB 153                 | CE137      | M      | 0.01  | mg/kg | n/t        | n/t        | n/t        | n/t        |
| PCB 180                 | CE137      | M      | 0.01  | mg/kg | n/t        | n/t        | n/t        | n/t        |
| PCB 28                  | CE137      | M      | 0.015 | mg/kg | n/t        | n/t        | n/t        | n/t        |
| PCB 52                  | CE137      | M      | 0.01  | mg/kg | n/t        | n/t        | n/t        | n/t        |
| Asbestos                |            |        |       |       |            |            |            |            |
| Asbestos Identification | SUBCO<br>N | SU     | 0     | -     | n/t        | n/t        | n/t        | n/t        |

## METHOD DETAILS

| METHOD | TESTNAME                                | METHOD SUMMARY               | ANALYSIS BASIS      |
|--------|-----------------------------------------|------------------------------|---------------------|
| CE267  | VPH in Soil                             | HS-GCFID                     | As submitted sample |
| CE250  | GCXGC in Soil                           | DCM Extraction and GCxGC-FID | As submitted sample |
| SUBCON | Asbestos Soil                           | HSG248                       | Air Dried Sample    |
| CE061  | W. Sol Metals                           | ICPOES                       | Air dried sample    |
| CE137  | PCB's in Soil                           | DCM Extraction and GCMS      | As submitted sample |
| CE264  | Metals by ICP in Soil                   | ICPOES                       | Air dried sample    |
| CE267  | BTEX in Soils                           | Analysis by HSGCFID          | As submitted sample |
| CE263  | ChromiumVI by Discrete Analyser in Soil | Gallery                      | Air dried sample    |
| CE087  | PAH in Soil                             | DCM Extraction and GCMS      | As submitted sample |
| CE077  | Cyanides in Soils                       | Continuous Flow Analyser     | As submitted sample |
| CE208  | Chromium Hexavalent in Soil             | Colorimetry                  | Air dried sample    |
| CE197  | Primacs in Soil                         | Primacs                      | Air dried sample    |

## REPORT INFORMATION

**Report No.:25-09964, issue number 1**

### Key

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|     |                                                         |
|-----|---------------------------------------------------------|
| U   | ISO17025 Accredited Result                              |
| M   | ISO17025 and MCERTS Accredited Result                   |
| N   | Do not currently hold accreditation                     |
| ^   | MCERTS accreditation not applicable for sample matrix   |
| *   | ISO17025 accreditation not applicable for sample matrix |
| S   | Subcontracted                                           |
| I/S | Insufficient Sample                                     |
| U/S | Unsuitable sample                                       |
| N/T | Not tested                                              |
| <   | Means "less than"                                       |
| >   | Means "greater than"                                    |

LOD refers to limit of detection, except in the case of pH soils and pH waters where it means limit of discrimination.

This report shall not be reproduced except in full, without prior written approval.

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

The results relate only to the sample received.

Unless otherwise stated, sample information has been provided by the client. This may affect the validity of the results.

Moisture Content Calculated on a Wet Weight basis (at 30°C)

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

Where sampling was undertaken by Chemtech Environmental Limited it is outside the UKAS accreditation scope.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

For soils and solids, all results are reported on a dry basis (30°C). Samples dried at no more than 30°C in a drying cabinet.

For soils and solids, analytical results are inclusive of stones, where applicable.

'Client Reference', 'Sample ID', 'Sample Location', 'Sample Type', 'Depth', 'Sample Date' and 'Sample Time' information is provided by the customer

### Sample Retention and Disposal

All soil samples will be retained for a period of 4 weeks from the point of receipt

All water samples will be retained for a period of 2 weeks from the point of Reporting

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                                                   |

Unless specifically identified (noted as "(B)" in analyte name) all internal analysis performed at Durham site

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## **APPENDIX IV**



## Waste Classification Report

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

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

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



JAYB5-UMU66-BTLWA

Report is invalid if pages are removed.

### Job name

25-446

### Description/Comments

### Project

25-446

### Site

Land Adjacent to Queens Dr, Rochdale

### Classified by

Name: Sai Turlapati  
Date: 03 Nov 2025 15:41 GMT  
Telephone:  
Company: Arc Environmental Ltd  
Solum House, Unit 1  
Elliott Court, St. Johns Road  
Meadowfield  
DH7 8PN

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

**HazWasteOnline™ Certification:**

**CERTIFIED**

**Course**  
Hazardous Waste Classification

**Date**  
03 Apr 2025

Next 3 year Refresher due by Apr 2028

### Purpose of classification

2 - Material Characterisation

### Address of the waste

Land Adjacent to Queens Dr, Rochdale

**Post Code** OL11 2NW

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

41202 Construction of domestic buildings

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

Construction of proposed development.

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

Excavation of made ground materials.

### Description of the waste

Disturbed natural strata mixed with anthropogenic debris.



### Job summary

| # | Sample name                      | Depth [m] | Classification Result | Hazard properties | Page |
|---|----------------------------------|-----------|-----------------------|-------------------|------|
| 1 | WS03-0.25--02/10/2025-SOIL-71663 |           | Non Hazardous         |                   | 3    |
| 2 | WS07-0.50--03/10/2025-SOIL-71664 |           | Non Hazardous         |                   | 6    |
| 3 | HP01-0.60--02/10/2025-SOIL-71665 |           | Non Hazardous         |                   | 9    |
| 4 | HP02-0.30--02/10/2025-SOIL-71666 |           | Non Hazardous         |                   | 12   |

### Related documents

| # | Name                                                             | Description                                                |
|---|------------------------------------------------------------------|------------------------------------------------------------|
| 1 | HWOL_25-09964-20251016.HWOL                                      | Chemtech Environmental .hwol file used to populate the Job |
| 2 | Example worst case waste stream template: 17 05 04 or 17 05 03 * | waste stream template used to create this Job              |

### Report

Created by: Sai Turlapati

Created date: 03 Nov 2025 15:41 GMT

| Appendices                                                                 | Page |
|----------------------------------------------------------------------------|------|
| <a href="#">Appendix A: Classifier defined and non GB MCL determinands</a> | 15   |
| <a href="#">Appendix B: Rationale for selection of metal species</a>       | 16   |
| <a href="#">Appendix C: Version</a>                                        | 17   |

Classification of sample: WS03-0.25--02/10/2025-SOIL-71663

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

### Sample details

|                                         |                                                                                           |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Sample name:                            | LoW Code:                                                                                 |
| <b>WS03-0.25--02/10/2025-SOIL-71663</b> | Chapter:                                                                                  |
| Moisture content:                       | 17: Construction and Demolition Wastes (including excavated soil from contaminated sites) |
| <b>31.5%</b><br>(wet weight correction) | Entry:                                                                                    |
|                                         | 17 05 04 (Soil and stones other than those mentioned in 17 05 03)                         |

### Hazard properties

None identified

### Determinands

Moisture content: 31.5% Wet Weight Moisture Correction applied (MC)

| #  | Determinand                                                                                                                                        |           |            | CLP Note | User entered data                   | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|----------|-------------------------------------|--------------|----------------|----------------------|------------|----------------|
|    | EU CLP index number                                                                                                                                | EC Number | CAS Number |          |                                     |              |                |                      |            |                |
| 1  | asbestos fibres detected (Yes/No)                                                                                                                  |           |            |          | No                                  |              |                |                      |            |                |
|    |                                                                                                                                                    |           | ACM_FIBRES |          |                                     |              |                |                      |            |                |
| 2  | arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }                                               |           |            |          | <1.8 mg/kg                          | 1.895        | <3.41 mg/kg    | <0.000341 %          |            | <LOD           |
|    | 033-005-00-1                                                                                                                                       |           |            |          |                                     |              |                |                      |            |                |
| 3  | cadmium { cadmium sulfate }                                                                                                                        |           |            |          | <1.6 mg/kg                          | 1.855        | <2.967 mg/kg   | <0.000297 %          |            | <LOD           |
|    | 048-009-00-9                                                                                                                                       | 233-331-6 | 10124-36-4 |          |                                     |              |                |                      |            |                |
| 4  | chromium in Cr(III) compounds { chromium(III) oxide }                                                                                              |           |            |          | 4.99 mg/kg                          | 1.462        | 4.996 mg/kg    | 0.0005 %             | ✓          |                |
|    |                                                                                                                                                    | 215-160-9 | 1308-38-9  |          |                                     |              |                |                      |            |                |
| 5  | chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } |           |            |          | <0.04 mg/kg                         | 2.27         | <0.0908 mg/kg  | <0.00000908 %        |            | <LOD           |
|    | 024-017-00-8                                                                                                                                       |           |            |          |                                     |              |                |                      |            |                |
| 6  | copper { copper sulphate pentahydrate }                                                                                                            |           |            |          | 29.5 mg/kg                          | 3.929        | 79.396 mg/kg   | 0.00794 %            | ✓          |                |
|    | 029-023-00-4                                                                                                                                       | 231-847-6 | 7758-99-8  |          |                                     |              |                |                      |            |                |
| 7  | lead { lead chromate }                                                                                                                             |           |            | 1        | 2.8 mg/kg                           | 1.56         | 2.992 mg/kg    | 0.000192 %           | ✓          |                |
|    | 082-004-00-2                                                                                                                                       | 231-846-0 | 7758-97-6  |          |                                     |              |                |                      |            |                |
| 8  | mercury { mercury dichloride }                                                                                                                     |           |            |          | <0.7 mg/kg                          | 1.353        | <0.947 mg/kg   | <0.0000947 %         |            | <LOD           |
|    | 080-010-00-X                                                                                                                                       | 231-299-8 | 7487-94-7  |          |                                     |              |                |                      |            |                |
| 9  | nickel { nickel dibromate }                                                                                                                        |           |            |          | 5.3 mg/kg                           | 5.358        | 19.453 mg/kg   | 0.00195 %            | ✓          |                |
|    | 028-053-00-5                                                                                                                                       | 238-596-1 | 14550-87-9 |          |                                     |              |                |                      |            |                |
| 10 | selenium { nickel selenate }                                                                                                                       |           |            |          | <3 mg/kg                            | 2.554        | <7.662 mg/kg   | <0.000766 %          |            | <LOD           |
|    | 028-031-00-5                                                                                                                                       | 239-125-2 | 15060-62-5 |          |                                     |              |                |                      |            |                |
| 11 | zinc { zinc chromate }                                                                                                                             |           |            |          | 52.4 mg/kg                          | 2.774        | 99.575 mg/kg   | 0.00996 %            | ✓          |                |
|    | 024-007-00-3                                                                                                                                       | 236-878-9 | 13530-65-9 |          |                                     |              |                |                      |            |                |
| 12 | TPH (C6 to C40) petroleum group                                                                                                                    |           |            |          | 24.4 mg/kg                          |              | 16.714 mg/kg   | 0.00167 %            | ✓          |                |
|    |                                                                                                                                                    |           | TPH        |          |                                     |              |                |                      |            |                |
| 13 | confirm TPH has NOT arisen from diesel or petrol                                                                                                   |           |            |          | <input checked="" type="checkbox"/> |              |                |                      |            |                |
|    |                                                                                                                                                    |           |            |          |                                     |              |                |                      |            |                |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane                                                                                           |           |            |          | <0.002 mg/kg                        |              | <0.002 mg/kg   | <0.0000002 %         |            | <LOD           |
|    | 603-181-00-X                                                                                                                                       | 216-653-1 | 1634-04-4  |          |                                     |              |                |                      |            |                |
| 15 | benzene                                                                                                                                            |           |            |          | <0.001 mg/kg                        |              | <0.001 mg/kg   | <0.0000001 %         |            | <LOD           |
|    | 601-020-00-8                                                                                                                                       | 200-753-7 | 71-43-2    |          |                                     |              |                |                      |            |                |
| 16 | toluene                                                                                                                                            |           |            |          | 0.002 mg/kg                         |              | 0.0013 mg/kg   | 0.000000137 %        | ✓          |                |
|    | 601-021-00-3                                                                                                                                       | 203-625-9 | 108-88-3   |          |                                     |              |                |                      |            |                |

| #      | 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                                                   |          |                   |              |                |              |                      |            |                |
| 17     | ethylbenzene<br>601-023-00-4                                                                                                                                                                           | 202-849-4                                                        | 100-41-4                                                     |          | <0.001 mg/kg      |              | <0.001 mg/kg   | <0.0000001 % |                      |            | <LOD           |
| 18     | xylene<br>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] |          | <0.004 mg/kg      |              | <0.004 mg/kg   | <0.0000004 % |                      |            | <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 }<br>006-007-00-5 |                                                                  |                                                              |          | <1 mg/kg          | 1.884        | <1.884 mg/kg   | <0.000188 %  |                      |            | <LOD           |
| 20     | pH<br>PH                                                                                                                                                                                               |                                                                  |                                                              |          | 7.1 pH            |              | 7.1 pH         | 7.1 pH       |                      |            |                |
| 21     | naphthalene<br>601-052-00-2                                                                                                                                                                            | 202-049-5                                                        | 91-20-3                                                      |          | 0.022 mg/kg       |              | 0.0151 mg/kg   | 0.00000151 % |                      | ✓          |                |
| 22     | acenaphthylene<br>205-917-1                                                                                                                                                                            | 208-96-8                                                         |                                                              |          | <0.015 mg/kg      |              | <0.015 mg/kg   | <0.0000015 % |                      |            | <LOD           |
| 23     | acenaphthene<br>201-469-6                                                                                                                                                                              | 83-32-9                                                          |                                                              |          | 0.017 mg/kg       |              | 0.0116 mg/kg   | 0.00000116 % |                      | ✓          |                |
| 24     | fluorene<br>201-695-5                                                                                                                                                                                  | 86-73-7                                                          |                                                              |          | <0.013 mg/kg      |              | <0.013 mg/kg   | <0.0000013 % |                      |            | <LOD           |
| 25     | phenanthrene<br>201-581-5                                                                                                                                                                              | 85-01-8                                                          |                                                              |          | 0.134 mg/kg       |              | 0.0918 mg/kg   | 0.00000918 % |                      | ✓          |                |
| 26     | anthracene<br>204-371-1                                                                                                                                                                                | 120-12-7                                                         |                                                              |          | 0.025 mg/kg       |              | 0.0171 mg/kg   | 0.00000171 % |                      | ✓          |                |
| 27     | fluoranthene<br>205-912-4                                                                                                                                                                              | 206-44-0                                                         |                                                              |          | 0.161 mg/kg       |              | 0.11 mg/kg     | 0.000011 %   |                      | ✓          |                |
| 28     | pyrene<br>204-927-3                                                                                                                                                                                    | 129-00-0                                                         |                                                              |          | 0.173 mg/kg       |              | 0.119 mg/kg    | 0.0000119 %  |                      | ✓          |                |
| 29     | benzo[a]anthracene<br>601-033-00-9                                                                                                                                                                     | 200-280-6                                                        | 56-55-3                                                      |          | 0.107 mg/kg       |              | 0.0733 mg/kg   | 0.00000733 % |                      | ✓          |                |
| 30     | chrysene<br>601-048-00-0                                                                                                                                                                               | 205-923-4                                                        | 218-01-9                                                     |          | 0.096 mg/kg       |              | 0.0658 mg/kg   | 0.00000658 % |                      | ✓          |                |
| 31     | benzo[b]fluoranthene<br>601-034-00-4                                                                                                                                                                   | 205-911-9                                                        | 205-99-2                                                     |          | 0.148 mg/kg       |              | 0.101 mg/kg    | 0.0000101 %  |                      | ✓          |                |
| 32     | benzo[k]fluoranthene<br>601-036-00-5                                                                                                                                                                   | 205-916-6                                                        | 207-08-9                                                     |          | 0.069 mg/kg       |              | 0.0473 mg/kg   | 0.00000473 % |                      | ✓          |                |
| 33     | benzo[a]pyrene; benzo[def]chrysene<br>601-032-00-3                                                                                                                                                     | 200-028-5                                                        | 50-32-8                                                      |          | 0.094 mg/kg       |              | 0.0644 mg/kg   | 0.00000644 % |                      | ✓          |                |
| 34     | indeno[123-cd]pyrene<br>205-893-2                                                                                                                                                                      | 193-39-5                                                         |                                                              |          | 0.104 mg/kg       |              | 0.0712 mg/kg   | 0.00000712 % |                      | ✓          |                |
| 35     | dibenz[a,h]anthracene<br>601-041-00-2                                                                                                                                                                  | 200-181-8                                                        | 53-70-3                                                      |          | <0.017 mg/kg      |              | <0.017 mg/kg   | <0.0000017 % |                      |            | <LOD           |
| 36     | benzo[ghi]perylene<br>205-883-8                                                                                                                                                                        | 191-24-2                                                         |                                                              |          | 0.062 mg/kg       |              | 0.0425 mg/kg   | 0.00000425 % |                      | ✓          |                |
| Total: |                                                                                                                                                                                                        |                                                                  |                                                              |          |                   |              |                |              | 0.0223 %             |            |                |

#### Key

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

#### Supplementary Hazardous Property Information

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



---

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)  
because: Total TPH's to be less than 1000 mg/kg to be recorded as Non-Hazardous sample.

Hazard Statements hit:

---

**Flam. Liq. 2; H225** "Highly flammable liquid and vapour."

Because of determinand:

toluene (conc.: 1.37e-07%)

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

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00167%)

Classification of sample: WS07-0.50--03/10/2025-SOIL-71664

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

### Sample details

|                                         |                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Sample name:                            | LoW Code:                                                                                          |
| <b>WS07-0.50--03/10/2025-SOIL-71664</b> | Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites) |
| Moisture content:                       | Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)                           |
| <b>18.5%</b><br>(wet weight correction) |                                                                                                    |

### Hazard properties

None identified

### Determinands

Moisture content: 18.5% Wet Weight Moisture Correction applied (MC)

| #  | Determinand                                                                                                                                       |           |            | CLP Note | User entered data                   | Conv. Factor | Compound conc. |  | Classification value | MC Applied | Conc. Not Used |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|----------|-------------------------------------|--------------|----------------|--|----------------------|------------|----------------|
|    | EU CLP index number                                                                                                                               | EC Number | CAS Number |          |                                     |              |                |  |                      |            |                |
| 1  | asbestos fibres detected (Yes/No)                                                                                                                 |           |            |          | No                                  |              |                |  |                      |            |                |
|    |                                                                                                                                                   |           | ACM_FIBRES |          |                                     |              |                |  |                      |            |                |
| 2  | arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }                                              |           |            |          | 10.1 mg/kg                          | 1.895        | 15.595 mg/kg   |  | 0.00156 %            | ✓          |                |
|    | 033-005-00-1                                                                                                                                      |           |            |          |                                     |              |                |  |                      |            |                |
| 3  | cadmium { cadmium sulfate }                                                                                                                       |           |            |          | <1.6 mg/kg                          | 1.855        | <2.967 mg/kg   |  | <0.000297 %          |            | <LOD           |
|    | 048-009-00-9                                                                                                                                      | 233-331-6 | 10124-36-4 |          |                                     |              |                |  |                      |            |                |
| 4  | chromium in Cr(III) compounds { chromium(III) oxide }                                                                                             |           |            |          | 14.9 mg/kg                          | 1.462        | 17.748 mg/kg   |  | 0.00177 %            | ✓          |                |
|    |                                                                                                                                                   | 215-160-9 | 1308-38-9  |          |                                     |              |                |  |                      |            |                |
| 5  | chromium in Cr(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } |           |            |          | <0.04 mg/kg                         | 2.27         | <0.0908 mg/kg  |  | <0.0000908 %         |            | <LOD           |
|    | 024-017-00-8                                                                                                                                      |           |            |          |                                     |              |                |  |                      |            |                |
| 6  | copper { copper sulphate pentahydrate }                                                                                                           |           |            |          | 8.9 mg/kg                           | 3.929        | 28.499 mg/kg   |  | 0.00285 %            | ✓          |                |
|    | 029-023-00-4                                                                                                                                      | 231-847-6 | 7758-99-8  |          |                                     |              |                |  |                      |            |                |
| 7  | lead { lead chromate }                                                                                                                            |           |            | 1        | 47.6 mg/kg                          | 1.56         | 60.511 mg/kg   |  | 0.00388 %            | ✓          |                |
|    | 082-004-00-2                                                                                                                                      | 231-846-0 | 7758-97-6  |          |                                     |              |                |  |                      |            |                |
| 8  | mercury { mercury dichloride }                                                                                                                    |           |            |          | <0.7 mg/kg                          | 1.353        | <0.947 mg/kg   |  | <0.0000947 %         |            | <LOD           |
|    | 080-010-00-X                                                                                                                                      | 231-299-8 | 7487-94-7  |          |                                     |              |                |  |                      |            |                |
| 9  | nickel { nickel dibromate }                                                                                                                       |           |            |          | 11.1 mg/kg                          | 5.358        | 48.474 mg/kg   |  | 0.00485 %            | ✓          |                |
|    | 028-053-00-5                                                                                                                                      | 238-596-1 | 14550-87-9 |          |                                     |              |                |  |                      |            |                |
| 10 | selenium { nickel selenate }                                                                                                                      |           |            |          | <3 mg/kg                            | 2.554        | <7.662 mg/kg   |  | <0.000766 %          |            | <LOD           |
|    | 028-031-00-5                                                                                                                                      | 239-125-2 | 15060-62-5 |          |                                     |              |                |  |                      |            |                |
| 11 | zinc { zinc chromate }                                                                                                                            |           |            |          | 55.8 mg/kg                          | 2.774        | 126.16 mg/kg   |  | 0.0126 %             | ✓          |                |
|    | 024-007-00-3                                                                                                                                      | 236-878-9 | 13530-65-9 |          |                                     |              |                |  |                      |            |                |
| 12 | TPH (C6 to C40) petroleum group                                                                                                                   |           |            |          | 27 mg/kg                            |              | 22.005 mg/kg   |  | 0.0022 %             | ✓          |                |
|    |                                                                                                                                                   |           | TPH        |          |                                     |              |                |  |                      |            |                |
| 13 | confirm TPH has NOT arisen from diesel or petrol                                                                                                  |           |            |          | <input checked="" type="checkbox"/> |              |                |  |                      |            |                |
|    |                                                                                                                                                   |           |            |          |                                     |              |                |  |                      |            |                |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane                                                                                          |           |            |          | <0.002 mg/kg                        |              | <0.002 mg/kg   |  | <0.0000002 %         |            | <LOD           |
|    | 603-181-00-X                                                                                                                                      | 216-653-1 | 1634-04-4  |          |                                     |              |                |  |                      |            |                |
| 15 | benzene                                                                                                                                           |           |            |          | <0.001 mg/kg                        |              | <0.001 mg/kg   |  | <0.0000001 %         |            | <LOD           |
|    | 601-020-00-8                                                                                                                                      | 200-753-7 | 71-43-2    |          |                                     |              |                |  |                      |            |                |
| 16 | toluene                                                                                                                                           |           |            |          | <0.001 mg/kg                        |              | <0.001 mg/kg   |  | <0.0000001 %         |            | <LOD           |
|    | 601-021-00-3                                                                                                                                      | 203-625-9 | 108-88-3   |          |                                     |              |                |  |                      |            |                |

| #      | 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                                                   |          |                   |              |                |                      |            |                |
| 17     | ethylbenzene<br>601-023-00-4                                                                                                                                                                           | 202-849-4                                                        | 100-41-4                                                     |          | <0.001 mg/kg      |              | <0.001 mg/kg   | <0.0000001 %         |            | <LOD           |
| 18     | xylene<br>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] |          | <0.004 mg/kg      |              | <0.004 mg/kg   | <0.0000004 %         |            | <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 }<br>006-007-00-5 |                                                                  |                                                              |          | <1 mg/kg          | 1.884        | <1.884 mg/kg   | <0.000188 %          |            | <LOD           |
| 20     | pH<br>PH                                                                                                                                                                                               |                                                                  |                                                              |          | 8.3 pH            |              | 8.3 pH         | 8.3 pH               |            |                |
| 21     | naphthalene<br>601-052-00-2                                                                                                                                                                            | 202-049-5                                                        | 91-20-3                                                      |          | <0.016 mg/kg      |              | <0.016 mg/kg   | <0.0000016 %         |            | <LOD           |
| 22     | acenaphthylene<br>205-917-1                                                                                                                                                                            | 208-96-8                                                         |                                                              |          | <0.015 mg/kg      |              | <0.015 mg/kg   | <0.0000015 %         |            | <LOD           |
| 23     | acenaphthene<br>201-469-6                                                                                                                                                                              | 83-32-9                                                          |                                                              |          | 0.014 mg/kg       |              | 0.0114 mg/kg   | 0.00000114 %         | ✓          |                |
| 24     | fluorene<br>201-695-5                                                                                                                                                                                  | 86-73-7                                                          |                                                              |          | <0.013 mg/kg      |              | <0.013 mg/kg   | <0.0000013 %         |            | <LOD           |
| 25     | phenanthrene<br>201-581-5                                                                                                                                                                              | 85-01-8                                                          |                                                              |          | 0.112 mg/kg       |              | 0.0913 mg/kg   | 0.00000913 %         | ✓          |                |
| 26     | anthracene<br>204-371-1                                                                                                                                                                                | 120-12-7                                                         |                                                              |          | 0.027 mg/kg       |              | 0.022 mg/kg    | 0.0000022 %          | ✓          |                |
| 27     | fluoranthene<br>205-912-4                                                                                                                                                                              | 206-44-0                                                         |                                                              |          | 0.157 mg/kg       |              | 0.128 mg/kg    | 0.0000128 %          | ✓          |                |
| 28     | pyrene<br>204-927-3                                                                                                                                                                                    | 129-00-0                                                         |                                                              |          | 0.162 mg/kg       |              | 0.132 mg/kg    | 0.0000132 %          | ✓          |                |
| 29     | benzo[a]anthracene<br>601-033-00-9                                                                                                                                                                     | 200-280-6                                                        | 56-55-3                                                      |          | 0.103 mg/kg       |              | 0.0839 mg/kg   | 0.00000839 %         | ✓          |                |
| 30     | chrysene<br>601-048-00-0                                                                                                                                                                               | 205-923-4                                                        | 218-01-9                                                     |          | 0.079 mg/kg       |              | 0.0644 mg/kg   | 0.00000644 %         | ✓          |                |
| 31     | benzo[b]fluoranthene<br>601-034-00-4                                                                                                                                                                   | 205-911-9                                                        | 205-99-2                                                     |          | 0.125 mg/kg       |              | 0.102 mg/kg    | 0.0000102 %          | ✓          |                |
| 32     | benzo[k]fluoranthene<br>601-036-00-5                                                                                                                                                                   | 205-916-6                                                        | 207-08-9                                                     |          | 0.05 mg/kg        |              | 0.0408 mg/kg   | 0.00000408 %         | ✓          |                |
| 33     | benzo[a]pyrene; benzo[def]chrysene<br>601-032-00-3                                                                                                                                                     | 200-028-5                                                        | 50-32-8                                                      |          | 0.091 mg/kg       |              | 0.0742 mg/kg   | 0.00000742 %         | ✓          |                |
| 34     | indeno[123-cd]pyrene<br>205-893-2                                                                                                                                                                      | 193-39-5                                                         |                                                              |          | 0.099 mg/kg       |              | 0.0807 mg/kg   | 0.00000807 %         | ✓          |                |
| 35     | dibenz[a,h]anthracene<br>601-041-00-2                                                                                                                                                                  | 200-181-8                                                        | 53-70-3                                                      |          | <0.017 mg/kg      |              | <0.017 mg/kg   | <0.0000017 %         |            | <LOD           |
| 36     | benzo[ghi]perylene<br>205-883-8                                                                                                                                                                        | 191-24-2                                                         |                                                              |          | 0.052 mg/kg       |              | 0.0424 mg/kg   | 0.00000424 %         | ✓          |                |
| Total: |                                                                                                                                                                                                        |                                                                  |                                                              |          |                   |              |                | 0.0298 %             |            |                |

**Key**

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

**Supplementary Hazardous Property Information**

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



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Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)  
because: Total TPH's to be less than 1000 mg/kg to be recorded as Non-Hazardous sample.

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Hazard Statements hit:

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

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Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0022%)

Classification of sample: HP01-0.60--02/10/2025-SOIL-71665

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

### Sample details

|                                         |                                                                                           |
|-----------------------------------------|-------------------------------------------------------------------------------------------|
| Sample name:                            | LoW Code:                                                                                 |
| <b>HP01-0.60--02/10/2025-SOIL-71665</b> | Chapter:                                                                                  |
| Moisture content:                       | 17: Construction and Demolition Wastes (including excavated soil from contaminated sites) |
| <b>3.7%</b><br>(wet weight correction)  | Entry:                                                                                    |
|                                         | 17 05 04 (Soil and stones other than those mentioned in 17 05 03)                         |

### Hazard properties

None identified

### Determinands

Moisture content: 3.7% Wet Weight Moisture Correction applied (MC)

| #  | Determinand                                                                                                                                        |           |            | CLP Note | User entered data                   | Conv. Factor | Compound conc. | Classification value | MC Applied | Conc. Not Used |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|----------|-------------------------------------|--------------|----------------|----------------------|------------|----------------|
|    | EU CLP index number                                                                                                                                | EC Number | CAS Number |          |                                     |              |                |                      |            |                |
| 1  | asbestos fibres detected (Yes/No)                                                                                                                  |           |            |          | No                                  |              |                |                      |            |                |
|    |                                                                                                                                                    |           | ACM_FIBRES |          |                                     |              |                |                      |            |                |
| 2  | arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }                                               |           |            |          | 7.9 mg/kg                           | 1.895        | 14.413 mg/kg   | 0.00144 %            | ✓          |                |
|    | 033-005-00-1                                                                                                                                       |           |            |          |                                     |              |                |                      |            |                |
| 3  | cadmium { cadmium sulfate }                                                                                                                        |           |            |          | <1.6 mg/kg                          | 1.855        | <2.967 mg/kg   | <0.000297 %          |            | <LOD           |
|    | 048-009-00-9                                                                                                                                       | 233-331-6 | 10124-36-4 |          |                                     |              |                |                      |            |                |
| 4  | chromium in Cr(III) compounds { chromium(III) oxide }                                                                                              |           |            |          | 7.88 mg/kg                          | 1.462        | 11.091 mg/kg   | 0.00111 %            | ✓          |                |
|    |                                                                                                                                                    | 215-160-9 | 1308-38-9  |          |                                     |              |                |                      |            |                |
| 5  | chromium in Cr(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } |           |            |          | <0.04 mg/kg                         | 2.27         | <0.0908 mg/kg  | <0.00000908 %        |            | <LOD           |
|    | 024-017-00-8                                                                                                                                       |           |            |          |                                     |              |                |                      |            |                |
| 6  | copper { copper sulphate pentahydrate }                                                                                                            |           |            |          | <1.6 mg/kg                          | 3.929        | <6.286 mg/kg   | <0.000629 %          |            | <LOD           |
|    | 029-023-00-4                                                                                                                                       | 231-847-6 | 7758-99-8  |          |                                     |              |                |                      |            |                |
| 7  | lead { lead chromate }                                                                                                                             |           |            | 1        | 26.7 mg/kg                          | 1.56         | 40.106 mg/kg   | 0.00257 %            | ✓          |                |
|    | 082-004-00-2                                                                                                                                       | 231-846-0 | 7758-97-6  |          |                                     |              |                |                      |            |                |
| 8  | mercury { mercury dichloride }                                                                                                                     |           |            |          | 0.7 mg/kg                           | 1.353        | 0.912 mg/kg    | 0.0000912 %          | ✓          |                |
|    | 080-010-00-X                                                                                                                                       | 231-299-8 | 7487-94-7  |          |                                     |              |                |                      |            |                |
| 9  | nickel { nickel dibromate }                                                                                                                        |           |            |          | 6 mg/kg                             | 5.358        | 30.96 mg/kg    | 0.0031 %             | ✓          |                |
|    | 028-053-00-5                                                                                                                                       | 238-596-1 | 14550-87-9 |          |                                     |              |                |                      |            |                |
| 10 | selenium { nickel selenate }                                                                                                                       |           |            |          | <3 mg/kg                            | 2.554        | <7.662 mg/kg   | <0.000766 %          |            | <LOD           |
|    | 028-031-00-5                                                                                                                                       | 239-125-2 | 15060-62-5 |          |                                     |              |                |                      |            |                |
| 11 | zinc { zinc chromate }                                                                                                                             |           |            |          | 27 mg/kg                            | 2.774        | 72.131 mg/kg   | 0.00721 %            | ✓          |                |
|    | 024-007-00-3                                                                                                                                       | 236-878-9 | 13530-65-9 |          |                                     |              |                |                      |            |                |
| 12 | TPH (C6 to C40) petroleum group                                                                                                                    |           |            |          | 16.4 mg/kg                          |              | 15.793 mg/kg   | 0.00158 %            | ✓          |                |
|    |                                                                                                                                                    |           | TPH        |          |                                     |              |                |                      |            |                |
| 13 | confirm TPH has NOT arisen from diesel or petrol                                                                                                   |           |            |          | <input checked="" type="checkbox"/> |              |                |                      |            |                |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane                                                                                           |           |            |          | <0.002 mg/kg                        |              | <0.002 mg/kg   | <0.0000002 %         |            | <LOD           |
|    | 603-181-00-X                                                                                                                                       | 216-653-1 | 1634-04-4  |          |                                     |              |                |                      |            |                |
| 15 | benzene                                                                                                                                            |           |            |          | <0.001 mg/kg                        |              | <0.001 mg/kg   | <0.0000001 %         |            | <LOD           |
|    | 601-020-00-8                                                                                                                                       | 200-753-7 | 71-43-2    |          |                                     |              |                |                      |            |                |
| 16 | toluene                                                                                                                                            |           |            |          | <0.001 mg/kg                        |              | <0.001 mg/kg   | <0.0000001 %         |            | <LOD           |
|    | 601-021-00-3                                                                                                                                       | 203-625-9 | 108-88-3   |          |                                     |              |                |                      |            |                |

| #      | 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                                                   |          |                   |              |                |              |                      |            |                |
| 17     | ethylbenzene<br>601-023-00-4                                                                                                                                                                           | 202-849-4                                                        | 100-41-4                                                     |          | <0.001 mg/kg      |              | <0.001 mg/kg   | <0.0000001 % |                      |            | <LOD           |
| 18     | xylene<br>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] |          | <0.004 mg/kg      |              | <0.004 mg/kg   | <0.0000004 % |                      |            | <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 }<br>006-007-00-5 |                                                                  |                                                              |          | <1 mg/kg          | 1.884        | <1.884 mg/kg   | <0.000188 %  |                      |            | <LOD           |
| 20     | pH                                                                                                                                                                                                     |                                                                  | PH                                                           |          | 8.7 pH            |              | 8.7 pH         | 8.7 pH       |                      |            |                |
| 21     | naphthalene<br>601-052-00-2                                                                                                                                                                            | 202-049-5                                                        | 91-20-3                                                      |          | <0.016 mg/kg      |              | <0.016 mg/kg   | <0.0000016 % |                      |            | <LOD           |
| 22     | acenaphthylene<br>205-917-1                                                                                                                                                                            | 208-96-8                                                         |                                                              |          | <0.015 mg/kg      |              | <0.015 mg/kg   | <0.0000015 % |                      |            | <LOD           |
| 23     | acenaphthene<br>201-469-6                                                                                                                                                                              | 83-32-9                                                          |                                                              |          | <0.013 mg/kg      |              | <0.013 mg/kg   | <0.0000013 % |                      |            | <LOD           |
| 24     | fluorene<br>201-695-5                                                                                                                                                                                  | 86-73-7                                                          |                                                              |          | <0.013 mg/kg      |              | <0.013 mg/kg   | <0.0000013 % |                      |            | <LOD           |
| 25     | phenanthrene<br>201-581-5                                                                                                                                                                              | 85-01-8                                                          |                                                              |          | <0.014 mg/kg      |              | <0.014 mg/kg   | <0.0000014 % |                      |            | <LOD           |
| 26     | anthracene<br>204-371-1                                                                                                                                                                                | 120-12-7                                                         |                                                              |          | <0.017 mg/kg      |              | <0.017 mg/kg   | <0.0000017 % |                      |            | <LOD           |
| 27     | fluoranthene<br>205-912-4                                                                                                                                                                              | 206-44-0                                                         |                                                              |          | <0.017 mg/kg      |              | <0.017 mg/kg   | <0.0000017 % |                      |            | <LOD           |
| 28     | pyrene<br>204-927-3                                                                                                                                                                                    | 129-00-0                                                         |                                                              |          | <0.016 mg/kg      |              | <0.016 mg/kg   | <0.0000016 % |                      |            | <LOD           |
| 29     | benzo[a]anthracene<br>601-033-00-9                                                                                                                                                                     | 200-280-6                                                        | 56-55-3                                                      |          | <0.012 mg/kg      |              | <0.012 mg/kg   | <0.0000012 % |                      |            | <LOD           |
| 30     | chrysene<br>601-048-00-0                                                                                                                                                                               | 205-923-4                                                        | 218-01-9                                                     |          | <0.028 mg/kg      |              | <0.028 mg/kg   | <0.0000028 % |                      |            | <LOD           |
| 31     | benzo[b]fluoranthene<br>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<br>601-036-00-5                                                                                                                                                                   | 205-916-6                                                        | 207-08-9                                                     |          | <0.025 mg/kg      |              | <0.025 mg/kg   | <0.0000025 % |                      |            | <LOD           |
| 33     | benzo[a]pyrene; benzo[def]chrysene<br>601-032-00-3                                                                                                                                                     | 200-028-5                                                        | 50-32-8                                                      |          | <0.019 mg/kg      |              | <0.019 mg/kg   | <0.0000019 % |                      |            | <LOD           |
| 34     | indeno[123-cd]pyrene<br>205-893-2                                                                                                                                                                      | 193-39-5                                                         |                                                              |          | <0.019 mg/kg      |              | <0.019 mg/kg   | <0.0000019 % |                      |            | <LOD           |
| 35     | dibenz[a,h]anthracene<br>601-041-00-2                                                                                                                                                                  | 200-181-8                                                        | 53-70-3                                                      |          | <0.017 mg/kg      |              | <0.017 mg/kg   | <0.0000017 % |                      |            | <LOD           |
| 36     | benzo[ghi]perylene<br>205-883-8                                                                                                                                                                        | 191-24-2                                                         |                                                              |          | <0.019 mg/kg      |              | <0.019 mg/kg   | <0.0000019 % |                      |            | <LOD           |
| Total: |                                                                                                                                                                                                        |                                                                  |                                                              |          |                   |              |                |              | 0.0171 %             |            |                |

#### Key

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

#### Supplementary Hazardous Property Information

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



---

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)  
because: Total TPH's to be less than 1000 mg/kg to be recorded as Non-Hazardous sample.

Hazard Statements hit:

---

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

Because of determinand:

---

TPH (C6 to C40) petroleum group (conc.: 0.00158%)

Classification of sample: HP02-0.30--02/10/2025-SOIL-71666

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

**Sample details**

|                                         |                                                                                                    |
|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| Sample name:                            | LoW Code:                                                                                          |
| <b>HP02-0.30--02/10/2025-SOIL-71666</b> | Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites) |
| Moisture content:                       | Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)                           |
| <b>17.3%</b><br>(wet weight correction) |                                                                                                    |

**Hazard properties**

None identified

**Determinands**

Moisture content: 17.3% Wet Weight Moisture Correction applied (MC)

| #  | Determinand                                                                                                                                       |           |            | CLP Note | User entered data                   | Conv. Factor | Compound conc. |              | Classification value | MC Applied | Conc. Not Used |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|----------|-------------------------------------|--------------|----------------|--------------|----------------------|------------|----------------|
|    | EU CLP index number                                                                                                                               | EC Number | CAS Number |          |                                     |              |                |              |                      |            |                |
| 1  | asbestos fibres detected (Yes/No)                                                                                                                 |           |            |          | No                                  |              |                |              |                      |            |                |
|    |                                                                                                                                                   |           | ACM_FIBRES |          |                                     |              |                |              |                      |            |                |
| 2  | arsenic { arsenic acid and its salts with the exception of those specified elsewhere in this Annex }                                              |           |            |          | 13.4 mg/kg                          | 1.895        | 20.995 mg/kg   | 0.0021 %     |                      | ✓          |                |
|    | 033-005-00-1                                                                                                                                      |           |            |          |                                     |              |                |              |                      |            |                |
| 3  | cadmium { cadmium sulfate }                                                                                                                       |           |            |          | <1.6 mg/kg                          | 1.855        | <2.967 mg/kg   | <0.000297 %  |                      |            | <LOD           |
|    | 048-009-00-9                                                                                                                                      | 233-331-6 | 10124-36-4 |          |                                     |              |                |              |                      |            |                |
| 4  | chromium in Cr(III) compounds { chromium(III) oxide }                                                                                             |           |            |          | 14.4 mg/kg                          | 1.462        | 17.405 mg/kg   | 0.00174 %    |                      | ✓          |                |
|    |                                                                                                                                                   | 215-160-9 | 1308-38-9  |          |                                     |              |                |              |                      |            |                |
| 5  | chromium in Cr(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex } |           |            |          | <0.04 mg/kg                         | 2.27         | <0.0908 mg/kg  | <0.0000908 % |                      |            | <LOD           |
|    | 024-017-00-8                                                                                                                                      |           |            |          |                                     |              |                |              |                      |            |                |
| 6  | copper { copper sulphate pentahydrate }                                                                                                           |           |            |          | 25.2 mg/kg                          | 3.929        | 81.883 mg/kg   | 0.00819 %    |                      | ✓          |                |
|    | 029-023-00-4                                                                                                                                      | 231-847-6 | 7758-99-8  |          |                                     |              |                |              |                      |            |                |
| 7  | lead { lead chromate }                                                                                                                            |           |            | 1        | 71.4 mg/kg                          | 1.56         | 92.104 mg/kg   | 0.0059 %     |                      | ✓          |                |
|    | 082-004-00-2                                                                                                                                      | 231-846-0 | 7758-97-6  |          |                                     |              |                |              |                      |            |                |
| 8  | mercury { mercury dichloride }                                                                                                                    |           |            |          | <0.7 mg/kg                          | 1.353        | <0.947 mg/kg   | <0.0000947 % |                      |            | <LOD           |
|    | 080-010-00-X                                                                                                                                      | 231-299-8 | 7487-94-7  |          |                                     |              |                |              |                      |            |                |
| 9  | nickel { nickel dibromate }                                                                                                                       |           |            |          | 14.4 mg/kg                          | 5.358        | 63.811 mg/kg   | 0.00638 %    |                      | ✓          |                |
|    | 028-053-00-5                                                                                                                                      | 238-596-1 | 14550-87-9 |          |                                     |              |                |              |                      |            |                |
| 10 | selenium { nickel selenate }                                                                                                                      |           |            |          | <3 mg/kg                            | 2.554        | <7.662 mg/kg   | <0.000766 %  |                      |            | <LOD           |
|    | 028-031-00-5                                                                                                                                      | 239-125-2 | 15060-62-5 |          |                                     |              |                |              |                      |            |                |
| 11 | zinc { zinc chromate }                                                                                                                            |           |            |          | 66.6 mg/kg                          | 2.774        | 152.795 mg/kg  | 0.0153 %     |                      | ✓          |                |
|    | 024-007-00-3                                                                                                                                      | 236-878-9 | 13530-65-9 |          |                                     |              |                |              |                      |            |                |
| 12 | TPH (C6 to C40) petroleum group                                                                                                                   |           |            |          | 61.4 mg/kg                          |              | 50.778 mg/kg   | 0.00508 %    |                      | ✓          |                |
|    |                                                                                                                                                   |           | TPH        |          |                                     |              |                |              |                      |            |                |
| 13 | confirm TPH has NOT arisen from diesel or petrol                                                                                                  |           |            |          | <input checked="" type="checkbox"/> |              |                |              |                      |            |                |
|    |                                                                                                                                                   |           |            |          |                                     |              |                |              |                      |            |                |
| 14 | tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane                                                                                          |           |            |          | <0.002 mg/kg                        |              | <0.002 mg/kg   | <0.0000002 % |                      |            | <LOD           |
|    | 603-181-00-X                                                                                                                                      | 216-653-1 | 1634-04-4  |          |                                     |              |                |              |                      |            |                |
| 15 | benzene                                                                                                                                           |           |            |          | <0.001 mg/kg                        |              | <0.001 mg/kg   | <0.0000001 % |                      |            | <LOD           |
|    | 601-020-00-8                                                                                                                                      | 200-753-7 | 71-43-2    |          |                                     |              |                |              |                      |            |                |
| 16 | toluene                                                                                                                                           |           |            |          | <0.001 mg/kg                        |              | <0.001 mg/kg   | <0.0000001 % |                      |            | <LOD           |
|    | 601-021-00-3                                                                                                                                      | 203-625-9 | 108-88-3   |          |                                     |              |                |              |                      |            |                |

| #      | 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                                                   |          |                   |              |                |                      |            |                |
| 17     | ethylbenzene<br>601-023-00-4                                                                                                                                                                           | 202-849-4                                                        | 100-41-4                                                     |          | <0.001 mg/kg      |              | <0.001 mg/kg   | <0.0000001 %         |            | <LOD           |
| 18     | xylene<br>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] |          | <0.004 mg/kg      |              | <0.004 mg/kg   | <0.0000004 %         |            | <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 }<br>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<br>601-052-00-2                                                                                                                                                                            | 202-049-5                                                        | 91-20-3                                                      |          | 0.091 mg/kg       |              | 0.0753 mg/kg   | 0.00000753 %         | ✓          |                |
| 22     | acenaphthylene<br>205-917-1                                                                                                                                                                            | 208-96-8                                                         |                                                              |          | 0.015 mg/kg       |              | 0.0124 mg/kg   | 0.00000124 %         | ✓          |                |
| 23     | acenaphthene<br>201-469-6                                                                                                                                                                              | 83-32-9                                                          |                                                              |          | 0.109 mg/kg       |              | 0.0901 mg/kg   | 0.00000901 %         | ✓          |                |
| 24     | fluorene<br>201-695-5                                                                                                                                                                                  | 86-73-7                                                          |                                                              |          | 0.071 mg/kg       |              | 0.0587 mg/kg   | 0.00000587 %         | ✓          |                |
| 25     | phenanthrene<br>201-581-5                                                                                                                                                                              | 85-01-8                                                          |                                                              |          | 0.846 mg/kg       |              | 0.7 mg/kg      | 0.00007 %            | ✓          |                |
| 26     | anthracene<br>204-371-1                                                                                                                                                                                | 120-12-7                                                         |                                                              |          | 0.159 mg/kg       |              | 0.131 mg/kg    | 0.0000131 %          | ✓          |                |
| 27     | fluoranthene<br>205-912-4                                                                                                                                                                              | 206-44-0                                                         |                                                              |          | 1.26 mg/kg        |              | 1.042 mg/kg    | 0.000104 %           | ✓          |                |
| 28     | pyrene<br>204-927-3                                                                                                                                                                                    | 129-00-0                                                         |                                                              |          | 1.32 mg/kg        |              | 1.092 mg/kg    | 0.000109 %           | ✓          |                |
| 29     | benzo[a]anthracene<br>601-033-00-9                                                                                                                                                                     | 200-280-6                                                        | 56-55-3                                                      |          | 0.732 mg/kg       |              | 0.605 mg/kg    | 0.0000605 %          | ✓          |                |
| 30     | chrysene<br>601-048-00-0                                                                                                                                                                               | 205-923-4                                                        | 218-01-9                                                     |          | 0.635 mg/kg       |              | 0.525 mg/kg    | 0.0000525 %          | ✓          |                |
| 31     | benzo[b]fluoranthene<br>601-034-00-4                                                                                                                                                                   | 205-911-9                                                        | 205-99-2                                                     |          | 1.03 mg/kg        |              | 0.852 mg/kg    | 0.0000852 %          | ✓          |                |
| 32     | benzo[k]fluoranthene<br>601-036-00-5                                                                                                                                                                   | 205-916-6                                                        | 207-08-9                                                     |          | 0.337 mg/kg       |              | 0.279 mg/kg    | 0.0000279 %          | ✓          |                |
| 33     | benzo[a]pyrene; benzo[def]chrysene<br>601-032-00-3                                                                                                                                                     | 200-028-5                                                        | 50-32-8                                                      |          | 0.645 mg/kg       |              | 0.533 mg/kg    | 0.0000533 %          | ✓          |                |
| 34     | indeno[123-cd]pyrene<br>205-893-2                                                                                                                                                                      | 193-39-5                                                         |                                                              |          | 0.747 mg/kg       |              | 0.618 mg/kg    | 0.0000618 %          | ✓          |                |
| 35     | dibenz[a,h]anthracene<br>601-041-00-2                                                                                                                                                                  | 200-181-8                                                        | 53-70-3                                                      |          | 0.14 mg/kg        |              | 0.116 mg/kg    | 0.0000116 %          | ✓          |                |
| 36     | benzo[ghi]perylene<br>205-883-8                                                                                                                                                                        | 191-24-2                                                         |                                                              |          | 0.396 mg/kg       |              | 0.327 mg/kg    | 0.0000327 %          | ✓          |                |
| Total: |                                                                                                                                                                                                        |                                                                  |                                                              |          |                   |              |                | 0.0454 %             |            |                |

#### Key

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

#### Supplementary Hazardous Property Information

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



---

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 1000 mg/kg (0.1%)  
because: Total TPH's to be less than 1000 mg/kg to be recorded as Non-Hazardous sample.

---

Hazard Statements hit:

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

---

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00508%)

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

### ▀ **asbestos fibres detected (Yes/No)** (CAS Number: ACM\_FIBRES)

Description/Comments: not classified, information only

Data source: N/A

Data source date: 15 Jan 2020

Hazard Statements: None.

### ▀ **chromium(III) oxide** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from ECHA's C&L inventory database

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

Data source date: 30 Apr 2020

Hazard Statements: Acute Tox. 4; H302 , Skin Sens. 1; H317 , Eye Irrit. 2; H319

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

Description/Comments: Unknown Oil

Hazard statements taken from WM3 1st Edition 2015

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

### ▀ **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

### ▀ **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

## Appendix B: Rationale for selection of metal species

### arsenic {arsenic acid and its salts with the exception of those specified elsewhere in this Annex}

Worst case CLP species based on hazard statements/molecular weight and conversion factor for arsenic acid H<sub>3</sub>AsO<sub>4</sub>. (edit as required)

### cadmium {cadmium sulfate}

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

### chromium in Cr(III) compounds {chromium(III) oxide}

Worst case scenario CRIII selected as levels of oxygen too low to be oxidised.

### chromium in Cr(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 {copper sulphate pentahydrate}

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

### lead {lead chromate}

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

### mercury {mercury dichloride}

Reasonable worst case CLP species based on hazard statements/molecular weight and assuming no evidence for the use of explosives. (edit as required)



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**nickel {nickel dibromate}**

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)

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**Appendix C: Version**

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2025.303.6844.12384 (30 Oct 2025)

HazWasteOnline Database: 2025.303.6844.12384 (30 Oct 2025)

This classification utilises the following guidance and legislation:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**GB MCL List** - version 1.1 of 09 June 2021

**GB MCL List v2.0** - version 2.0 of 20th October 2023

**GB MCL List v3.0** - version 3.0 of 11th January 2024

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

**GB MCL List v5.0** - version 5.0 of 26th June 2024

**GB MCL List v6.0** - version 6.0 of 15th February 2025