# Phase I & II Geoenvironmental Site Assessment
# Cherryfield Drive

Reference:15-280-R1-4
Date: May 2024

# PHASE I & II GEOENVIRONMENTAL SITE ASSESSMENT

Cherryfield Drive
Kirkby
Liverpool
L32 8RX

Prepared for:
**Barratt and David Wilson Homes**

**Report Ref: 15-280-R1-4**
**Date Issued: May 2024**

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## QUALITY ASSURANCE

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| **PROJECT NUMBER** | 15-280 | | | |
| **VERSION** | Version 1 | Version 2 | Version 3 | Version 4 |
| **REMARKS** | Final | Updated with further ground gas monitoring results and updated proposed layout | Final ground gas monitoring results.<br><br>Updated with the supplementary site investigation in the northwestern parcel. | Updated Proposed Development Plan |
| **DATE** | 25 April 2022 | December 2022 | January 2024 | May 2024 |
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ISO 9001 (2015)
ISO 14001 (2015)
ISO 45001 (2018)

# EXECUTIVE SUMMARY

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| **Site Address** | Cherryfield Drive, Kirkby, Liverpool, L32 8RX | |
| **Grid Reference** | E 341100 N 398150 | |
| **Site Area** | 22.51 Ha | |
| **Proposed Development** | Barrett and David Wilson Homes intend to construct a low-rise residential development of circa 807 plots with associated gardens, estate roads and infrastructure. | |
| **Current Site Use** | The subject site is a large irregularly shaped parcel of land located to the south of Cherryfield Drive in Kirkby.<br><br>The southern sector of the site comprises maintained grassland with an area in the southeast of the site having recently undergone the felling of semi-mature and mature trees. The central sector of the site is currently unmaintained vacant grassland. Within the north of the site, is an area of active car park and former roadways and hardstanding associated with previous development. Knowsley Community College is located in the north west of the site with associated hardstanding car parking and small area of soft cover with a pond. There is an additional area of vacant land with areas of hardstanding associated with former development, with a small building fronting Cherryfield Drive. | |
| **Site History** | Historical mapping indicates that the site was undeveloped until the 1960s, with the subsequent construction of the college campus in the north western sector and a school in the south-eastern sector. Circa 1961, historical mapping shows earthworks associated with the adjacent landfill site, by 1976 the landfill is no longer shown.<br><br>Residential dwellings and retail buildings, including a fuel station and electrical substations, are shown at the northern site boundary pre-1961.<br><br>Aerial imagery indicates the south-eastern sector of the site was cleared pre-2011; the hotel pre-2012; the residential housing pre-2015, the college in the north-west pre-2016; with the remainder of buildings in the north of the site demolished by pre-2019 and pre-2021.<br><br>There is currently no evidence of the petrol filling station above ground however it is understood the underground storage tanks are still present.<br><br>At present, the site is largely vacant, with the former roads and hardstanding at the north of the site and areas of car parking associated with the now-demolished school and college. A building associated with the former college remains in the north-western sector. | |
| **Environmental Setting** | **Drift Geology** | None recorded in North-West of the site<br>Glacial Till across majority of the site<br>Shirley Hill Sand Formation – Northern boundary |
| | **Bedrock Geology** | Chester Sandstone Formation – SANDSTONE. |
| | **Faults** | 223m South West trending NNW-SSE |
| | **Hydrogeology** | Secondary Undifferentiated Aquifer (drift) across the majority of the site with a Secondary A drift aquifer within the north and north-west of the site. Bedrock comprises a Principal Aquifer (solid). No groundwater abstractions have been identified within a 1 km radius. |

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| **Environmental Setting** | **Hydrology** | The Kirkby Brook is located 52m west to the site at a lower topographical gradient. |
| | **Flood Risk** | Unaffected by flooding from rivers. |
| **Natural Landform and Geomorphology** | In areas of previous development on the site, for instance, in the north, north-west and south-west of the site, there is likely to have been some cut/fill works to provide a development platform, which may indicate the presence of Made Ground. For areas of the site that have remained undeveloped, the site topography is likely to broadly represent the natural landform.<br><br>There is evidence of level changes in the 1960s in the central sector of the site from historical mapping showing changes in contours, likely attributed to the levelling of the site for use as playing fields. | |
| **Previous Reports** | A series of previous reports have been provided to E3P from the client and are summarised within section 3.5 of this report. | |
| **Utility Locations** | A full Ground Penetrating Radar (GPR) survey has not been at the site however a review of statutory utility plans has identified water, electricity, Virgin Media, gas and electrical infrastructure in the north of the site, with further infrastructure in the south-east of the site. | |
| **Landfill Sites and Ground Gases** | A historical landfill site is located adjacent to the southwestern boundary of the site which was a Pre-Control of Pollution Act 1974 landfill. Three further historical landfills have been identified between 271m and 810m of the site. | |
| **Radon** | The Envirocheck report indicates the site is situated in an area where less than 1% of homes are above the “Action Level” and that the BGS reports that full radon protective measures are not necessary in the construction of new dwellings or extensions. | |
| **Coal Mining/Land Stability** | The Envirocheck report confirms the site is in an area that may not be affected by coal mining and is not within a Coal Authority Coal Mining Reporting Area. No further works are required and the site is not at risk from coal mining. | |
| **Hazardous Installations** | No hazardous installations that could potentially prejudice the proposed construction of highly sensitive residential dwellings have been identified within influencing distance of the subject site. | |

## E3P GROUND INVESTIGATION

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| **Ground Investigation Works** | E3P has completed an intrusive ground investigation comprising:<br><br>• 144 x mechanically excavated trial pits,<br>• 75 x window sample boreholes,<br>• 46 x Dynamic Cone Penetrometers,<br>• 11 x BRE365 Soakaway Tests,<br>• 3 x Cable Percussion Boreholes with Rotary Borehole follow-on and,<br>• Construction of environmental monitoring installations. |
| **Ground Conditions** | **Made Ground**<br><br>Made Ground deposits were encountered within the majority of exploratory hole locations to depths of between 0.00m and 5.50 bgl. The depth of Made Ground was not proven in 20 locations due to either underground obstructions, the collapse of the trial pit, or the ingress of water.<br><br>Made Ground deposits generally comprised reworked topsoil of dark grey slightly gravelly clayey fine to coarse SAND or gravelly sandy to very sandy CLAY with frequent rootlets with gravel of brick, mudstone, sandstone and ceramic. TP164 was overlain by asphalt and concrete associated with the former garage/petrol station, with TP168 overlain by ceramic tiles overlying concrete indicative of the former residential dwellings in this area of the site. Furthermore, WS150, TP188 and TP196 in the north-east of the site was overlain by asphalt, with WS144, WS146, WS148, TP190, TP192 and TP194 overlain by concrete with rebar. TP197 and WS147 in the north-west of the site was overlain by asphalt and concrete.<br><br>Underlying the reworked topsoil or hardstanding, deeper Made Ground deposits comprised of reworked brown very sandy gravelly clays or gravelly sands.<br><br>Within TP160 the exploratory hole location was dug down the side of a former foundation which showed the slab to be 1.10m thick and the foundation going down to 2.80mbgl.<br><br>Made Ground deposits across the central and northern sector of the site comprised a clayey very gravelly fine to coarse ashy sand with gravel of ash, glass, ceramic, textiles, clinker, wood, timber, brick, metal, mudstone and cardboard. This material was considered to be incinerated materials utilised to create the level platform currently on site.<br><br>Within the north-western sector of the site, typically, the deposits within the hardstanding areas comprise 200mm of asphalt, underlain by circa 300mm of sandy gravel with gravel of limestone, concrete, and rare asphalt (sub-base). Made Ground deposits underlying this comprised sandy gravel with cobbles, with gravel of brick, concrete, sandstone and mudstone with rare fragments of plastic, timber, metal, and cobbles of rebar and brick. |
| | **DRIFT**<br><br>Drift deposits were encountered within the majority of exploratory locations with the exception of locations where the full depth of Made Ground could not be proven. The drift deposits are varied, generally comprising a soft to very stiff, medium to very high strength, slightly gravelly sandy brown CLAY with gravel of sandstone and mudstone or a slightly gravelly to gravelly, slightly clayey to very clayey fine to medium SAND with gravel of sandstone and mudstone. |

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| | **SOLID**<br><br>The solid bedrock geology was first encountered between 4.70 mbgl and 6.10mbgl, and comprised of SANDSTONE.<br><br>A number of window sample probeholes terminated on or within weathered sandstone bedrock, which was recovered as gravelly SANDs from 1.20mbgl. to in excess of 5.45mbgl. |
| | **GROUNDWATER**<br><br>Groundwater was encountered as perched water, strikes and seepages at depths of between 0.40mbgl. and 4.00mbgl. True groundwater is considered to be between 1.40m and 4.00mbgl. within the natural drift deposits. |

## CONTAMINATED LAND ASSESSMENT

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| **Human Health** | Elevated concentrations of heavy metals, mercury, non-volatile PAHs, naphthalene, asbestos and SVOCs have been identified within the soil analysis completed to date.<br><br>Heavy metals and non-volatile PAHs are considered to pose a risk to future end-users through dermal contact and ingestion. The risk can be mitigated through the installation of a cover system within garden and landscaping areas.<br><br>Mercury, naphthalene and Dibutyl phthalate have been noted to be elevated in isolated locations across the site, and present a vapour risk to future end-users. It is recommended that a hotspot removal is completed and the materials either placed in an area of low sensitivity or removed from the site.<br><br>Within the soil analysis, no elevated concentrations of TPH or BTEX in the area of the former petrol filling station were identified to date. A hydrocarbon odour was identified within WS142 in this vicinity within SAND deposits underlying Made Ground. The tanks are understood to still be in-situ and the presence of contamination cannot be ruled out at this stage.<br><br>An exceedance of Total Petroleum Hydrocarbons C21 – C35 Aromatic hydrocarbons, in conjunction with visual and olfactory observations relating to hydrocarbon impact, have been encountered within the Made Ground deposits in TP202 and surrounding exploratory in the northwestern parcel of the site. It is recommended that a watching brief is completed during earthworks in this location, with delineation and further sampling to determine the extent of impact present at this location. This will be confirmed within a detailed remediation strategy.<br><br>Asbestos, quantified between <0.001% and 0.009%, has been identified within locations at the site. ACM-impacted soils and Made Ground will need to be placed in accordance with the asbestos conceptual site model with a suitable cover system placed in all garden and landscaped areas to prevent exposure to future site users. A hotspot removal should be completed in areas in which asbestos quantification is greater than 0.001%. |

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| **Controlled Waters** | The assessment prepared in consideration of the developed CSM has not identified any potentially complete pollutant linkage or risk to controlled waters. Elevated TPHs against EQS screening values were identified in groundwater samples from WS142 in close proximity to the former petrol filling station, however, concentrations did not exceed the DWS screening value in relation to the underlying principal aquifer which is considered to be the primary receptor in this instance. Elevated TPHs (C12-C16) were also found within WS202, exceeding the EQS threshold, but similarly, they did not exceed the DWS threshold. Therefore, the overall risk posed is reduced. |
| **Ground Gas** | Ground gas monitoring has characterised the majority of the site as CS1, with areas of deep Made Ground and noted areas adjacent to the landfill adhering to a CS2 classification.<br><br>Migration from the adjacent landfill has been identified, however a minimal flow has been recorded in the monitoring wells surrounding it, and therefore it is likely that the lateral migration of ground gases from the landfill is limited. As the landfill is uncapped, the majority of gases encapsulated within the landfill will be released to the atmosphere, however lows in barometric pressure may cause a swelling of the ground gas encroaching onto the site.<br><br>High methane concentrations have been identified within WS201 to the northwest of site, likely associated with a combination of encountered hydrocarbons in this area as well as the adjacent landfill to the south. Following suggested further investigation of the area, precautions may be increased or reduced based upon findings.<br><br>It is considered that a ground gas zoning plan is created for the site based on the sources identified, where precautionary CS2 protection measures are to be included within all of these areas. Ground gas mitigation design report required to define construction and verification requirements. |
| **Potable Water Infrastructure** | This will need to be confirmed following the completion of a UKWIR risk assessment. Post-remediation and enabling works ground conditions may be different from those identified during this site investigation however it is anticipated that a barrier pipe would be required. |

## GEOTECHNICAL ASSESSMENT

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| **Underground Obstructions** | Significant concrete and brick obstructions have been encountered within the Made Ground, indicative of relic foundations of the area of former buildings.<br><br>Historical deposited fill materials included cobbles of brick however oversized concrete, brick, and metal obstructions were encountered within TP202 in proximity to the former landfill.<br><br>During a phase of cut-and-fill enabling works to create a developable platform, all below-ground obstructions will require grubbing out to the base of the Made Ground to enable the construction of proposed plots. |
| **Allowable Bearing Pressure** | The underlying natural clay drift deposits have been assessed as being very soft to very stiff with a net ABP in the order of 8.94 – 469.56 kN/m2 at circa 1.00 m – 6.00 m bgl.<br><br>Generally, the underlying granular strata were assessed as being loose to dense with a net ABP in the order of 42 to 434KN/m2 at 1.00 m – 5.00 m bgl. |

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| | The underlying weathered bedrock has been assessed as having an ABP of between 185-466 kN/m2 at a depth of 2.00-4.80m bgl. |
| **Foundation Options** | A site-wide process of remediation and enabling works will be required to lift, sort and process the Made Ground in order to remove unacceptable material (timber, glass, plastic wood and organic materials) and process relict obstructions within the former development areas to create a suitable redevelopment platform. |
| **Foundation Options** ***Cont.*** | Within the historical deposition areas, pockets of Made Ground which are found to contain any putrescible content which will degrade and induce consolidation and potential subsidence at the surface will be unsuitable for retention and reuse within the context of residential development and will therefore require removal as it is not possible to model or predict the potential for future consolidation. Therefore, such material cannot remain beneath areas of adopted highways, drives, gardens or service infrastructure. It is likely that due to the gas generation potential of this material, it will not be suitable beneath plots in the event a plot structure is piled.<br><br>It is anticipated that on completion of the proposed site remediation comprising the lifting, sorting and processing of Made Ground, the ground will generally comprise circa 0.50 to >5.00m of Made Ground overlying CLAY or Granular soils or weathered bedrock. Materials will subsequently be replaced and engineered to the required specifications.<br><br>Therefore, upon completion of these enabling works, it is likely that the most cost-effective option for the majority of the site would be a combination of shallow strip foundations, mass trench foundations and re-engineering the Made Ground using Vibro stone columns (VSCs) to support a doubly reinforced shallow strip spread foundation.<br><br>Localised areas of the site have been noted to have soft low strength CLAYs: TP116, TP129, TP131, TP133, TP141, TP146, TP157, TP163, TP171, TP185, TP197, TP1103, TP1116, TP1123, WS103 and WS105. Where the Cu is <30kPa, the use of VSC will not be viable as the materials would provide limited lateral support for the construction of VSC. As such, there will be a requirement to utilise a driven piled foundation. Driven piled foundations may be required in areas of infilled ponds should this remain or within tree influence where VSC would not be suitable.<br><br>Foundation depths should take account of the presence of existing and proposed trees, with foundations deepened locally to mitigate the potential for volumetric instability attributed to fluctuations in moisture content, in accordance with the requirements of NHBC standards. |
| **Building Floor Slabs** | Ground-bearing floor slabs are unlikely to be viable given the anticipated depths or reworked Made Ground > 600 mm and shallow cohesive soils. |
| **Heave Precautions** | The site has been noted to be underlain by low to medium-volume change potential clay soil. A conservative approach should be followed, and the site should be deemed to be of medium volume change potential; therefore, heave precautions are required on the internal face of the external load-bearing walls (within tree influence).<br><br>Heave precautions will be required to the underside of floor slabs (where there is no 250 mm void), and pile ground beams are required within the modelled influencing distance of trees. |

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| **Soakaway Drainage** | Eleven BRE365 Soakaway tests have been completed within granular and cohesive deposits across the site. The results for all soakaways indicate poor permeability, as an infiltration rate could not be calculated. Infiltration drainage should not be used within areas of deep-made ground.<br><br>However, the application of soakaway drainage will ultimately be dependent on the specific requirements of the development. All soakaways should be designed in accordance with BRE Special Digest 365 – Soakaway Design. |
| **Sulphate Assessment** | Chemical analyses for pH and soluble sulphate content show that the soils at the site generally meet Class DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1s in accordance with BRE *Special Digest 1* (2005).<br><br>Elevated sulphate concentrations meeting Class DS-2, AC-1s were noted within the Made Ground deposits in TP117 at 0.70 m. Elevated sulphate concentrations meeting Class DS-3, AC-2s were noted within the Made Ground deposits in TP118 at 0.50m and TP1101 at 0.90m. |
| **CBR Design %** | Granular soils can be re-engineered to ensure 5% within the subgrade during favourable climatic conditions.<br><br>Natural clay soils will provide a CBR in the order of 3–5% during drier climatic periods. However, if water is allowed to shed onto the formation, the CBR will reduce to < 2%, which will require specialist engineering of the subgrade. |
| **Cut/Fill & Enabling Earthworks** | Development levels are unknown at this time; however, significant cut-and-fill work will be required to prepare the development platform.<br><br>A Geotechnical Design Report (GDR) will be required; this will make full consideration of the proposed design levels and potential for surcharge imposed loads from changes in site levels. The GDR report should also consider the potential for unacceptable total settlement within anthropogenic and natural materials associated with the proposed development.<br><br>The Ground Investigation has identified areas of the site underlain by deep-made ground and soft clays, which are potentially compressible under even relatively moderate applied surcharge or development loading. The potential for future consolidation of Made Ground and natural soils will be a key requirement of the GDR.<br><br>Made Ground will require processing to ensure suitability as backfill to be compliant with a geotechnical design standard. |
| **Civil Engineering Excavations** | The E3P Intrusive Ground Investigation identified high water ingress during the excavation of exploratory hole locations. Minor water ingress will require localised dewatering/sump pumping during the construction of site drainage infrastructure. Ingress of water into foundation excavation will potentially flood foundation excavations, limiting the viability of spread foundations to be constructed. |
| **Waste Characterisation** | Any material that is to be disposed of off-site should undergo assessment using Technical Guidance WM3: *Waste Classification – Guidance on the classification and assessment of waste*. |

## RECOMMENDATIONS

Based on the findings of the Geoenvironmental site assessment, the following additional works are recommended to be completed in due course:

- Further investigation and validation of tanks associated with former petrol filling station;
- Post-demolition sampling for PCBs in the vicinity of the former substations;
- Plot-specific foundation schedule (upon receipt of the final development levels);
- Geotechnical settlement analysis of earthworks/development platform using design levels.
- Arboriculture survey;
- CL: AIRE DoW CoP Materials management plan;
- Pre-commencement geotechnical materials testing to confirm earthworks design;
- Geotechnical Design Report (earthworks);
- Remediation and enabling works strategy;
- Full three-dimensional earthworks cut/fill model;
- Build Phase Mitigation Plan and design of specialist ground gas mitigation measures.

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## DRAWING LIST

15-280-001 - Site Location Plan
15-280-002 - Proposed Development Plan
15-280-003 - Historical Features Plan
15-280-004 - Site Features Plan
15-280-005 - Exploratory Hole Location Plan
15-280-006 - Depth of Made Ground Plan
15-280-007 - Depth to Natural Topsoil Plan
15-280-008 - Depth to Founding Plan
15-280-010 - Conceptual Site Model
15-280-025 - Depth and Thickness of Historical Deposited Materials
15-250-031 - Petrol Filling Station Location Plan

# 1. INTRODUCTION

## 1.1. BACKGROUND

E3P has been commissioned by Barrett and David Wilson Homes to undertake a detailed Phase I and II Geoenvironmental Site Assessment for a parcel of land to the south of Cherryfield Drive, Kirkby.

This report has been updated to include a supplementary investigation in the northwestern parcel of the site completed in November 2023.

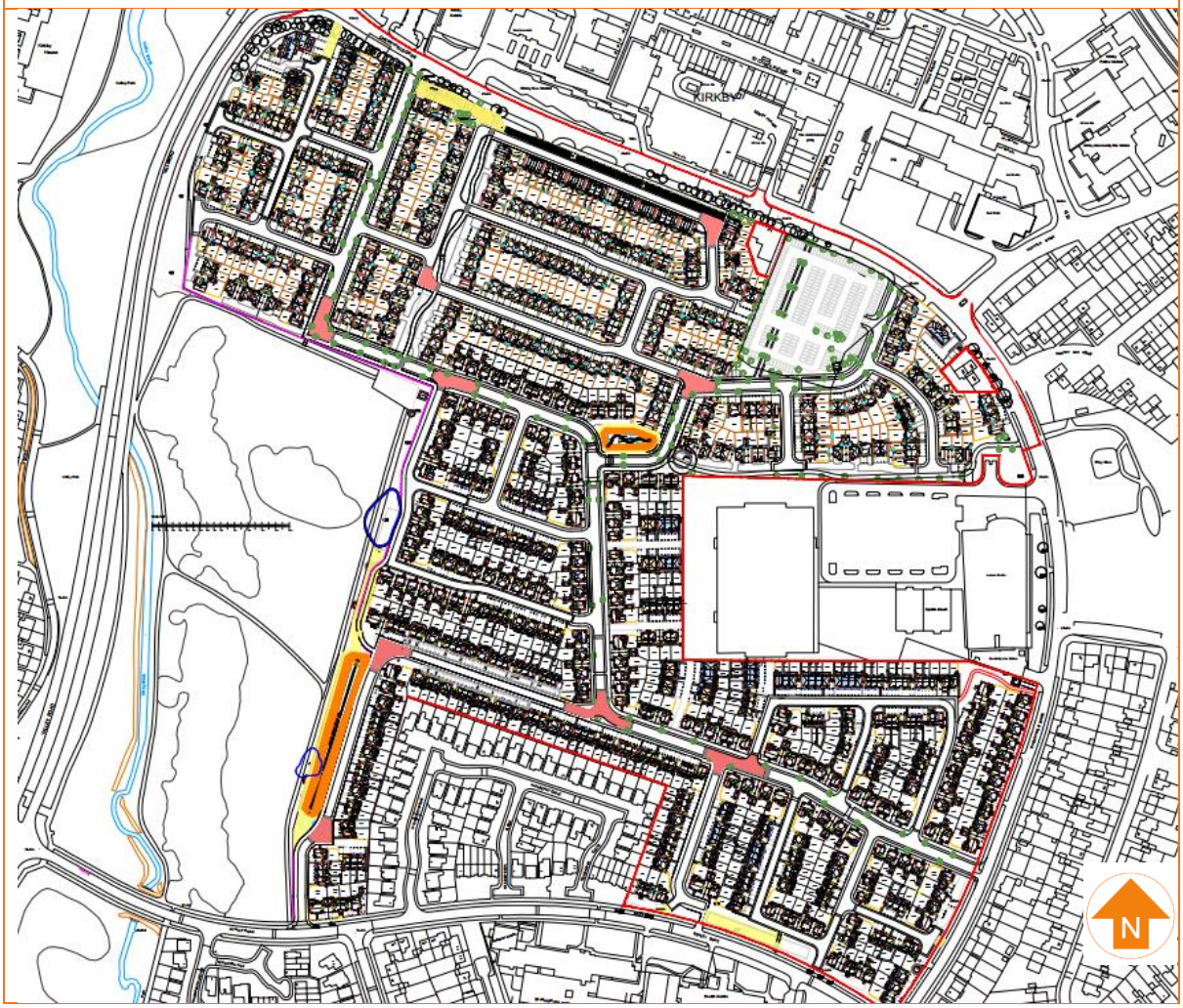
This report is required to determine potential contaminated land liabilities, remediation requirements and geotechnical engineering works that will be required as part of the proposed development for a proposed low-rise residential development.

## 1.2. PROPOSED DEVELOPMENT

Barrett and David Wilson Homes intend to construct a low-rise residential development of circa 807 plots with associated gardens, estate roads and infrastructure.

A snapshot of the proposed development layout is indicated in Figure 1.1.

FIGURE 1.1 SNAPSHOT OF PROPOSED DEVELOPMENT



## 1.3. OBJECTIVES

The objectives of the geoenvironmental assessment are as follows:

- Review historical plans, geology, hydrogeology, site sensitivity, floodplain issues, mining records and any local authority information available in order to complete a desk study in line with Environment Agency (EA) document *Land Contamination: Risk Management (LCRM) (2019).*
- Undertake a sampling and analysis to provide an overview of environmental issues identified.
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors.
- Assess the geotechnical information and provide preliminary recommendations in relation to foundations, pavement construction and floor slabs.
- Provide recommendations regarding future works required.

## 1.4. SCOPE OF WORKS

The scope of work includes the following elements:

- Desk Study
- Design of suitable intrusive ground investigation;
- Window sample probeholes with, and construction of, environmental monitoring installations;
- Deep cable percussive boreholes with rotary follow on with groundwater monitoring installations;
- BRE365 Soakaway Testing;
- Mechanically excavated trial pits;
- In-situ geotechnical testing;
- Chemical and geotechnical laboratory analysis;
- Groundwater monitoring and sampling;
- Ground gas monitoring;
- Contamination risk assessment and conceptual site model;
- Geotechnical assessment and interpretation; and
- Factual and interpretive reporting.

## 1.5. LIMITATIONS

The limitations of this report are presented in Appendix I.

Investigation of the Electricity Substation on the northern boundary was not possible due to the live nature of infrastructure in this area.

## 1.6. CONFIDENTIALITY

E3P has prepared this report solely for the use of the client and those parties with whom a warranty agreement has been executed or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.

# 2. SITE SETTING

## 2.1. SITE DETAILS

| | |
|---|---|
| **Site Address** | Cherryfield Drive, Kirkby, Liverpool, L32 8RX |
| **National Grid Reference** | E 341100 N 398150 |
| **Site Area** | 22.51 Ha |

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 15-280-001.

## 2.2. CURRENT SITE USE

E3P has undertaken a site walkover of the entire site and a description of the key findings is summarised in Table 2.1.

TABLE 2.1 SITE DESCRIPTION

| | | |
|---|---|---|
| **Occupancy/Use** | The subject site is an irregular shaped parcel of land located to the south of Cherryfield Drive in Kirkby.<br><br>The southern sector of the site comprises maintained grassland with an area in the southeast of the site having recently undergone the felling of semi-mature and mature trees.<br><br>The central sector of the site is current unmaintained vacant grassland. Within the north of the site, is an area of active car park and former roadways and hardstanding associated with former development.<br><br>Within the north-west of the site is an active structure pertaining to Knowsley community College. Surrounding the building there is associated hardstanding utilised as car parking, with small areas of managed grasses and a pond to the northwestern most point of the site.<br><br>There is an additional area of vacant land with areas of hardstanding associate with former development, with a small building against Cherryfield Drive. | |
| **Surface Cover (%)** | **Buildings** | 5% |
| | **Hardstand** | 15% |
| | **Soft Cover** | 80% |
| **Structures** | The site is predominantly vacant land with the only structures present in the north of the site associated with the community college and an unused entrance building associated with former development in the northwest of the site.<br><br>Two former gas pressure governors are present in the southeast of the site, with an additional electricity substation present in the northern sector of the site and a secondary substation on the northern boundary. | |

| | |
|---|---|
| **Access** | Pedestrian and vehicular access to the site can be gained via a locked gated entrance of Cherryfield Drive on the northern boundary of the site. Additional separate entrances are present to the north-western corner of the site and northeastern sector of the site off Cherryfield Drive. The car park is also accessed off Cherryfield Drive.<br><br>Pedestrian access can also be gained in the south of the site via an entrance off Bewley Drive. There is a locked gated entrance off Bewley Drive also however bollards are currently present preventing vehicular access. |
| **Slope** | The site is largely topographically level however the slope generally falls from north to south with a gentle slope from the hardstanding area in the north to the overgrown field directly to the south. A slope is present along a tree line in the central area of the site. The college and Covid-19 Test Centre is at a higher elevation to Cherryfield Drive and Valley Road to the west. |
| **Retaining Structures** | There are no retaining structures present on site. |
| **Vegetation/Ecology** | The southern sector of the site comprises maintained grassland, with the exception of the southeastern sector of the site which comprises scrub vegetation where trees have recently been felled. The northern central sector of the site comprises unmaintained grassland.<br><br>Dense mature trees are present in the north-east of the site, with sporadic young trees present throughout the site. Brambles and semi-mature trees are present along the boundary of the hardstanding area in the north and the unmaintained grassland.<br><br>Mature trees are present along the western boundary and in the north-west of the site.<br><br>A habitat survey will be required to support the planning application. |
| **Hazardous Material Storage** | Underground infilled petrol and diesel storage tanks are present on site associated within the vicinity of the former fuel station in the northern sector of the site. Previous site investigations indicate there are seven tanks present, where one is filled with concrete and the remainder filled with foam. However, during the walkover four fuel storage tanks and two vapour isolation tanks were identified. |
| **Asbestos-Containing Material (ACM)** | Due to the age of the former buildings in the north and south-east of the site, it is likely that ACM is present within any Made Ground present.<br><br>A pre-demolition asbestos survey will be required within all existing buildings within the site boundary. |
| **Polychlorinated Biphenyls (PCBs)** | Two electrical substations are present in the northern sector of the site and given their age PCBs may be present. |
| **Waste Storage** | Potentially hazardous waste streams are unlikely to be generated at the site and none were observed during the preliminary site inspection. |
| **Drainage** | A formal drainage survey has not been completed; however, a review of online records held by United Utilities indicates live distribution mains in the north of the site and runs along the entire perimeter of the site. Foul and surface water sewers are present in the north of the site and run along the northern, eastern and southern boundaries of the site. |

## 2.3. SURROUNDING AREA

The surrounding area land uses are summarised in Table 2.2.

TABLE 2.2 SURROUNDING LAND USES

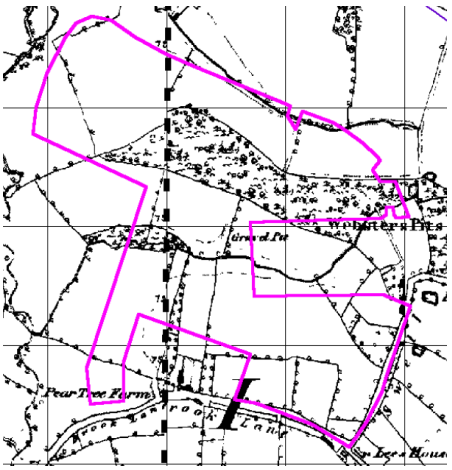
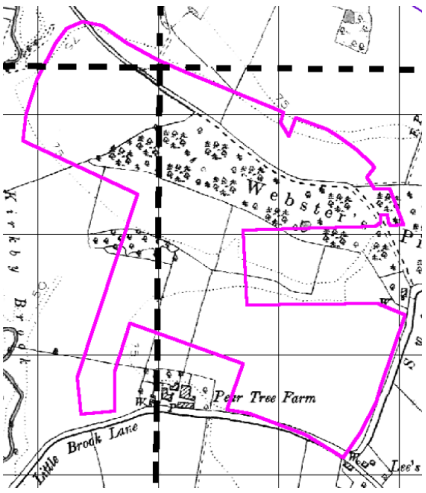
| DIRECTION | LAND USE |
|---|---|
| North | Kirkby Bus Station, Kirkby Shopping Centre |
| East | Kirkby Leisure Centre, residential dwellings |
| South | Residential units, St Joseph The Worker Roman Catholic School |
| West | Public Open Space, Kirkby Brook, residential dwellings |

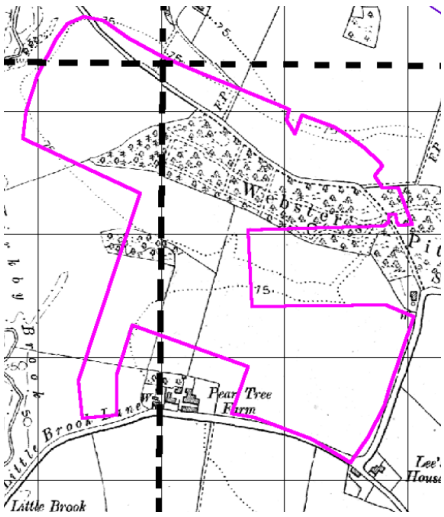
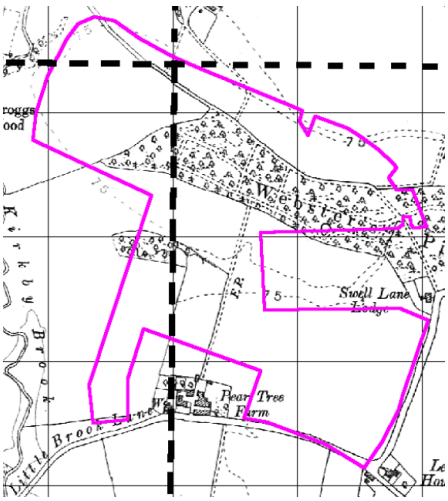
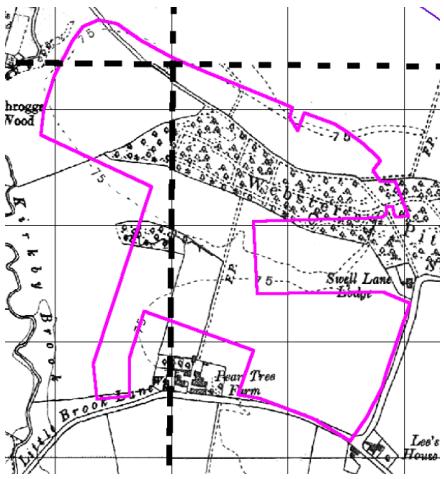
# 3. SITE HISTORY

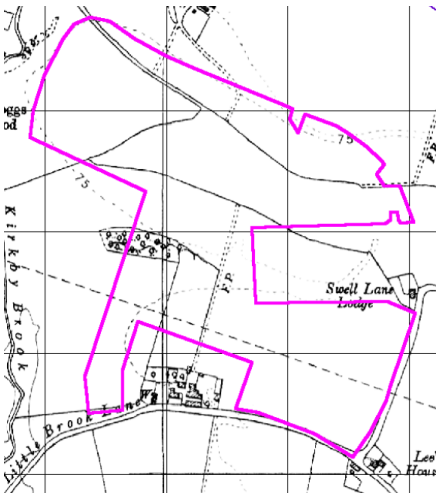
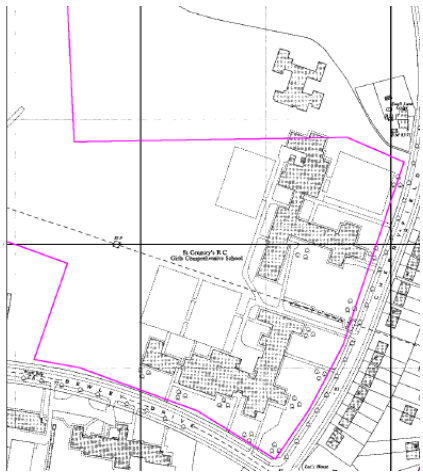
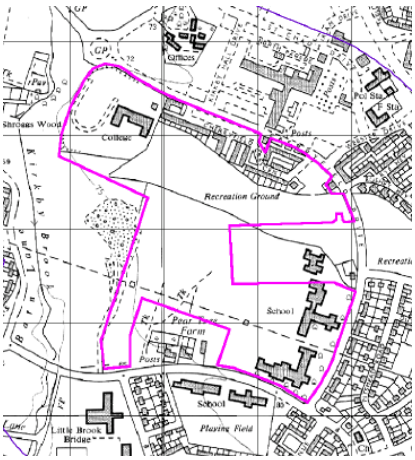
## 3.1. ON-SITE HISTORICAL DEVELOPMENT

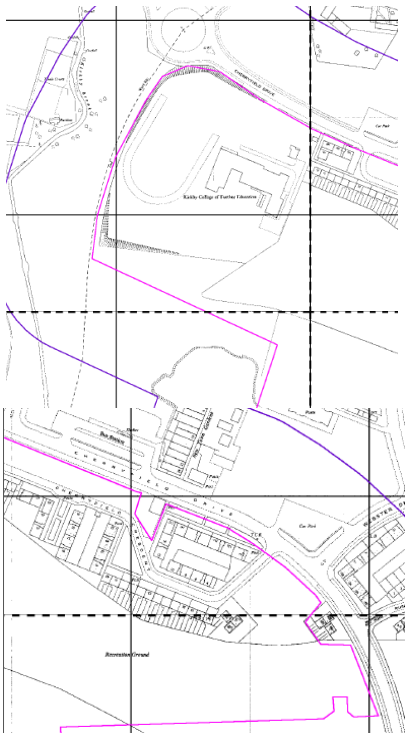
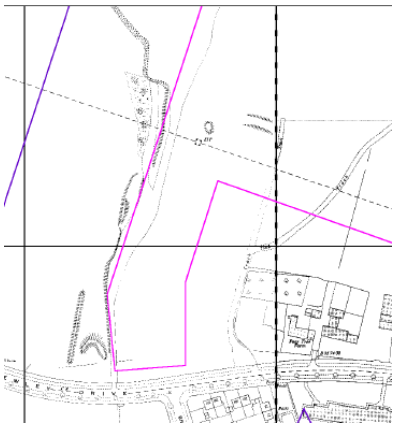
A review of historical mapping and historical aerial imagery pertinent to the site is summarised in Table 3.1. In addition, historical site features are presented on Drawing No 15-280-003 in Appendix III.

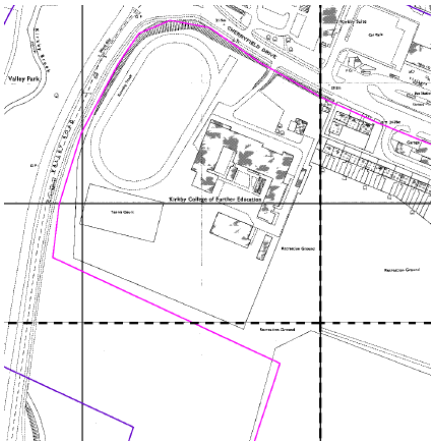
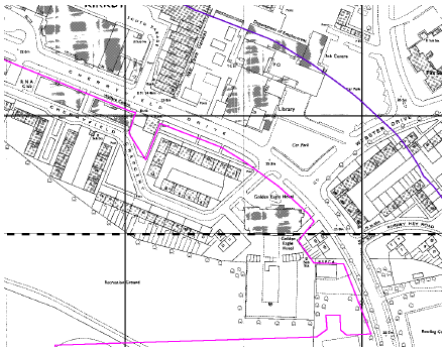
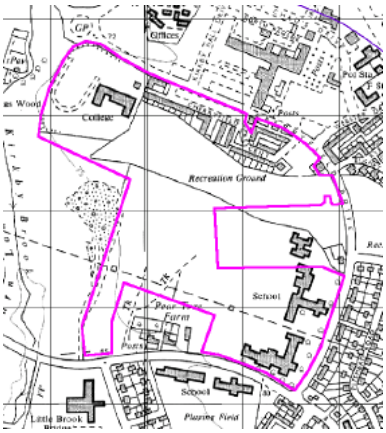
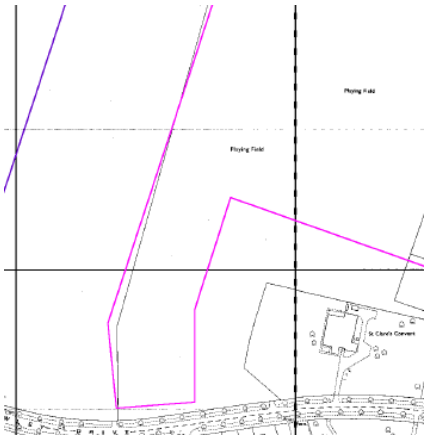
TABLE 3.1 HISTORICAL DEVELOPMENT

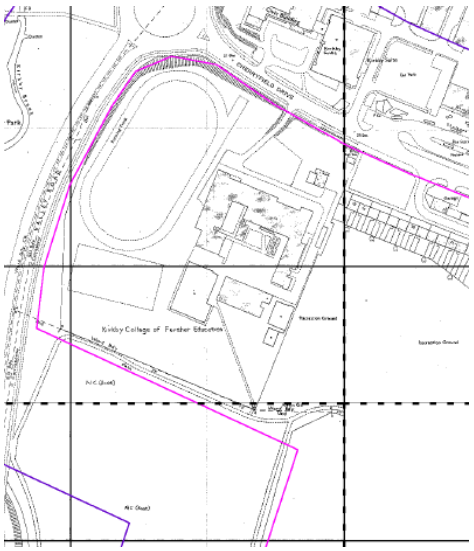
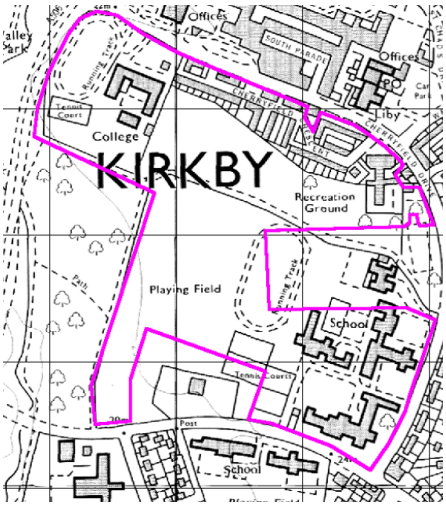
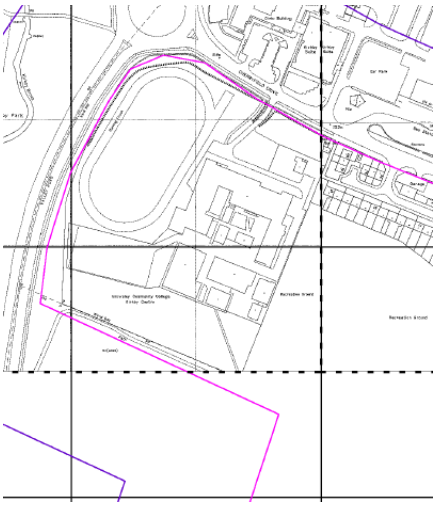
| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1850**<br>**1:10,000** | The site is predominantly undeveloped agricultural land with numerous field boundaries. The Webster Pits are located in the northern sector of the site which are as woodland comprising of non-coniferous and coniferous trees. A Gravel Pit is marked in the centre of the site. |  |
| **1894**<br>**1:10,000** | A track is marked entering the site from the northwest corner and runs east along the north of the Webster Pits. A pond is recorded in the northeast of the site within the Webster Pits. Woodland in the centre of the site is no longer recorded with numerous field boundaries also no longer recorded. A stream crosses the centre of the site from east to west. Contour lines are noted across the site. |  |

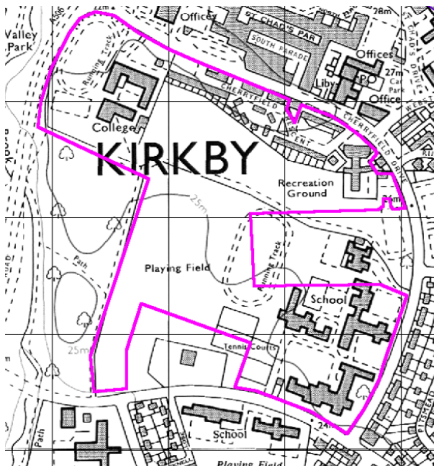
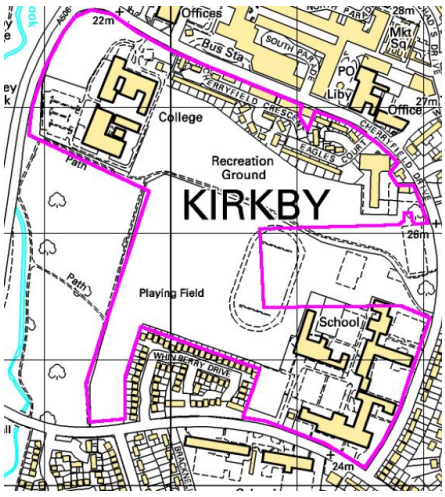
| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1909**<br>**1:10,000** | A footpath is recorded entering the site on the northern boundary and runs south to the Webster Pits. Numerous footpaths are recorded within the Webster Pits. |  |
| **1928**<br>**1:10,000** | A footpath is recorded running north-south through the centre of the site. No other significant changes are recorded. |  |
| **1938**<br>**1:10,000** | No significant changes are recorded. |  |

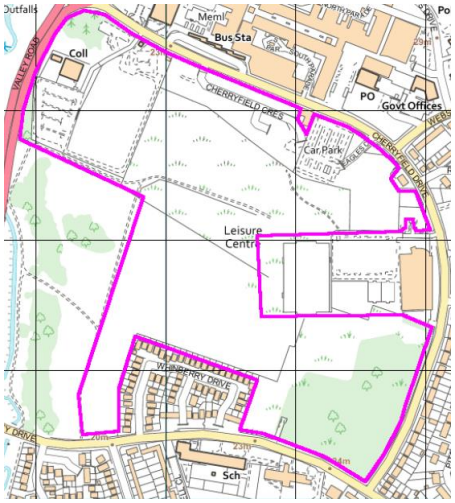
| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1956**<br>**1:10,000** | The Webster Pits and associated woodland, pond and footpaths are no longer recorded. |  |
| **1961**<br>**1:2,500**<br>**(South-East)** | St Gregory's R C Girls Comprehensive School is present in the southeast of the site comprising two large building and associated hardstanding. |  |
| **1966-1967**<br>**1:10,000** | Contour lines indicating low areas of the site are no longer marked suggesting infilling of the site in the central sector. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1961-1962**<br>**1:1,250** | Kirkby college of Further Education is present in the north-west of the site, with associated running track and hardstanding, along with an embankment. Levels have been inferred to have been raised to create the college plateau. Housing is present along the northern boundary of the site. The former site of the Webster Pits is now marked as a recreation ground. |  |
| **1961**<br>**1:1,250** | Tracks are present in the south-west of the site along with some areas of embankments and a potential pond. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1966-1967**<br>**1:1,250** | Kirkby college has extended with further buildings present along with a tennis green. Three electrical substations are located in the northwest and northeast of the site. A garage is recorded in the northwest of the site. The Golden Eagle Hotel is present in the north-east of the site. A Garage / Petrol Filling Station has been built. |  <br>  |
| **1966-1967**<br>**1:10,000** | The southwestern boundary of the site borders a refuse tip. |  |
| **1967-1975**<br>**1:1,250** | Embankments in the southwest of the site are no longer present and the area is now marked as playing fields. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1971-1989**<br>**1:1,250** | An additional building is now present in the northwest of the site associated with the Kirkby College of Further Education. |  |
| **1974-1978**<br>**1:10,000** | A playing field and running track are recorded in the centre of the site. Another building associated with the comprehensive school is located in the southeast of the site. |  |
| **1987-1991**<br>**1:1,250** | Further buildings have been constructed in the north-west of the site associated with the college. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **1990**<br>**1:10,000** | Expansion of buildings associated with college in northwest of the site is recorded. No other significant changes are recorded. |  |
| **2001**<br>**Historical Aerial Photography** | The running track in the north-west of the site is no longer present. A further building is present to the south of the college buildings with an area of car parking now present to the west of the college buildings. |  |
| **2006**<br>**1:10,000** | No significant changes to the site. |  |

| MAP EDITION | HISTORICAL LAND USE | HISTORICAL MAP EXCERPT |
|---|---|---|
| **2021**<br>**1:10,000** | Residential units in the north of the site are no longer recorded. The garage in the north of the site is no longer recorded. The college in the northwest has been demolished with now only a single building recorded associated with the college. The Golden Eagle Hotel no longer recorded. The comprehensive school and associated playing fields are no longer recorded and is marked as non-coniferous woodland in the south-east of the site. The recreation ground is no longer recorded and is marked as rough grassland.<br><br>Aerial imagery indicates the south-eastern sector of the site was cleared pre-2011; the hotel pre-2012; the residential housing pre-2015, the college in the north-west pre-2016; with remainder of buildings in the north of the site demolished by pre-2019 and pre-2021. The Petrol filling station is understood to have been demolished pre-2012 |  |

## 3.2. OFF-SITE HISTORICAL DEVELOPMENT

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 250 m radius of the site is summarised in Table 3.2.

TABLE 3.2 SURROUNDING HISTORICAL DEVELOPMENT

| SURROUNDING FEATURE | DISTANCE | DATES | DIRECTION |
|---|---|---|---|
| **Gravel Pit**<br>Historical landfill / Refuse Tip<br>Then: no longer marked | 0-100 m | Pre 1961 – Pre 1966<br>Pre 1966–Pre 1978<br>Pre 1978–Present | West |
| **Bus Station** | 20 m | Pre 1961 - Present | North |
| **Ponds (x4)** | 15-44 m | Pre 1850 – Pre 1894<br>Pre 1894 - Present | East |
| **Pond**<br>Then: no longer marked | 42 m | Pre 1908 – Pre 1937<br>Pre 1937 - Present | North |
| **Electricity substations (x7)** | 56-202 m | Pre 1973/1977 - Present | North/ Northeast |
| **Chimney**<br>Then: no longer marked | 75 m | Pre 1975 – Pre 1993<br>Pre 1993 - Present | East |
| **Electricity Substation** | 120 m | Pre 1975 - Present | Southeast |
| **Electricity Substation** | 170 m | Pre 1971 - Present | North |
| **Electricity Substation** | 170 m | Pre 1971 - Present | West |

| SURROUNDING FEATURE | DISTANCE | DATES | DIRECTION |
|---|---|---|---|
| **Pond**<br>Then: no longer marked | 175 m | Pre 1894–Pre 1928<br>Pre 1928–Present | North |

## 3.3. PLANNING HISTORY

E3P has undertaken a review of online planning records held by Knowsley Council which has identified several planning applications for the subject site, including, the demolition of buildings on the site; installation of sprinkler tank and pump housing; construction of a mixed use development including petrol filling station, car parking, landscaping, highway improvements and other associated works (including 3 no. Electricity substations) and the construction of a car park; construction of a mixed use development for a new stadium including retail, superstore, food and drink uses, hotel, offices and commercial units; proposal for a new leisure centre with associated external facilities; erection of learning centre; erection of skills and enterprise centre and additional college buildings; and extension of college buildings.

## 3.4. ANECDOTAL INFORMATION

A web-based search of the subject site has recovered the following photographs, courtesy of Historic England.

**September 1954**



Aerial imagery from September 1954 of the southern sector of the site shows the site to comprise of agricultural land with woodland in the north of the site which have been interpreted to be the Webster Pits.

**May 1959**



Aerial imagery from May 1959 has identified the school in the south-east of the site, along with housing in the north of the site. works appear to be starting in relation to the college in the north-west of the site.

**June 1962**



Aerial imagery from Junne 1962 shows the school in the south-east of the site, along with housing in the north and college in the north-west. The former gravel pit can be seen to the south-west of the site.

| | |
|---|---|
| **July 1964** |  |
| Aerial imagery looking from the south-west of the site eastwards, shows the gravel pit in the foreground, with the school in the south-east of the site and residential buildings in the north of the site. | |

## 3.5. PREVIOUS REPORTS

E3P has been provided with previous reports prepared for the site: Clancy Consulting - Ref: 10/1533/001, Clancy Consulting – Ref: 10/1519/001, Resource & Environmental Consultants Ltd – Ref: 45759Fp1r0, ALM Consult Limited – Ref: 30090/11, ALM Consult Limited – Ref: 30090/11/2, ESG – Ref: F5013-15, Ian Farmer Associates – Ref: 41989, RPS – No reference provided, Atkins – Ref: 5145660, and Baro Happold Drawings).

A summary of the previous reports is provided below:

- Historical mapping indicates that the site was undeveloped until the 1960s, with the development of a college in the northwestern sector and a school in the south eastern sector. Circa 1961, historical mapping shows earthworks associated with the adjacent landfill site, by 1976 the landfill is no longer shown. By circa 2014 the school and college had been demolished.

  Residential dwellings and retail buildings, including a fuel station and electrical substations are shown at the northern site boundary pre-1961, these buildings were demolished circa 2014, with the exception of a bank and the substations. The Petrol filling station is understood to have been demolished pre-2012.

  The site at present is largely vacant, with the former roads and hardstanding at the north of the site and areas of car parking associated with the former school and college. A building associated with eh former college remains in the western sector.

- The EA records an area of historical landfill located to the west sector of the site (south of the former college). The landfill was active from 1956 to 1974 and received domestic waste.

- The BGS indicates that the superficial deposits are predominantly glacial till (clay, sands and gravels), Shirdley Hill Sand Formation underlies the northern boundary. No drift is recorded in

the northwestern corner of the site. The solid bedrock geology comprises the Chester Formation (sandstone) beneath the entire site.

- The underlying drift geology is classified as a Secondary Undifferentiated Aquifer (Glacial Till) underlain by a Principal Aquifer in the solid geology. The site is also located with a Source Protection Zone. Kirkby Brook is adjacent to the western site boundary.

- Zetica lists the site as being at low risk from belligerent World War 2 UXOs.

- The Coal Authority does not list the site being located within a coal mining development high risk area.

- A previous phase of intrusive investigation undertaken by Clancy within the former college area, Made Ground was encountered to a maximum depth of 3.50m bgl and bedrock east encountered from 1.40m to 3.50m bgl. Elevated heavy metals, PAHs and TPHs were recorded in the chemical analysis and are associated with the on site Made Ground deposits.

- Ground gas protection measures for the former college area were recommended to be CS2.

- For proposed residential dwellings in the area of the former college it was recommended to utilise strip and mass trench fil foundations, although it is considered that engineered foundations may be required where deeper Made Ground associated with the historical landfill was encountered.

- Clancy also undertook a ground investigation within the norther sector (former houses and retail land use) where made ground associated with the former development was encountered, overlying the glacial till deposits.

- Chemical analysis identified no concentrations of PCBs near the electrical substation; no exceedances of any TPHs were recorded in the former fuel station. Elevated concentrations of heavy metals and PAHs were recorded in the Made Ground.

- Ground gas monitoring suggested that the northern sector can be classified as CS1.

- Shallow strip and mass trench foundations have been recommended but again where deeper Made Ground in excess of 2.50m bgl is encountered, an engineered foundation solution may be required.

- REC prepared a desk based assessment of the former school and list the historical landfill as a potential source of ground gases and contamination, with the fill material posing potential geotechnical risks to the proposed development.

- ALM were commissioned by Knowsley Metropolitan Borough Council to prepare an interpretative report for the southern part of the subject site utilising works previously completed by REC and ESG. The pertinent points are summarised below:

    - Made Ground was identified across the site typically <1.00m, with deposits in excess of 3m in the north of the site within an east to west valley feature thought to be related to a former surface water course. Made Ground in the east of the site in the area of former school buildings were variable and circa 1.00-2.80m in depth. Buried foundations were identified in the east of the site in the vicinity of the former school.

    - The site is underlain with firm to stiff glacial boulder clay locally overlain or underlain with medium dense to dense sands; locally very loose sand deposits have been identified.

    - Weathered sandstone was encountered as a dense to very dense sand at depths of between 1.90m and 3.50mbgl.

- Reworked topsoil had not been analysed. ALM assumed it to be suitable for reuse however E3P recommend chemical analysis is completed to confirm this given the reworked nature of the deposits.

- Made Ground materials identified localised exceedances of heavy metals and PAHs.

- Asbestos impacted soils (loose fibres) have been identified extensively across the east and south west of the site.

- The site has been provisionally noted to be classified as Green/CS1 however limited monitoring has been completed and the presence of a former domestic waste landfill site is noted as a possible ground gas risk.

- The Atkins report covers the subject site along with the town centre of Kirkby to the north of the site. Additionally the report includes previous reports completed by WSP, Arcadis and Buro Happold. Historical site investigations identified elevated xylene, benzene, MTBE and TPH concentrations in groundwater in the vicinity of the former petrol station in the north of the site along with hydrocarbon odours and staining. Cresols were identified in Made Ground deposits in the Buro Happold investigation with elevated SVOC and VOC concentrations within leachate analysis. The Buro Happold report and investigation highlighted the presence of landfill materials across the subject site. The Buro Happold investigation included works within the mapped landfill which identified two types of wastes comprising of natural arisings and construction and demolition wastes from the construction of the Mersey Tunnel along with 1960s municipal wastes including but not limited to paper, plastic, wood, ceramic, asbestos. The WSP report also indicates the landfill spans a larger area than that mapped within the Envirocheck report. Landfill materials were identified when the leisure centre to the east of the site and the residential dwellings at Whinberry Drive were constructed and it is understood the residential dwellings have gas membranes installed.

- The Atkins report has included information in relation to the underground fuel tanks associated with the former garage in the north of the site and correspondence with the petroleum officer, which indicated the presence of seven diesel and petrol underground storage tanks where one tank has been filled with concrete with all others infilled with RG22 hard foam. It is understood the tanks are still in-situ.

- The RPS report was prepared for St Modwen Developments Ltd and St Modwen Homes and a proposed residential development in the south-east of the site. The report was a Due Diligence report where Atkins were appointed to complete an intrusive investigation; Ian Farmer Associates completed the ground investigation works and a factual report has been provided by them, however the exploratory hole location plan is not detailed on a base plan so the locations are open to interpretation.

# 4. ENVIRONMENTAL SETTING

## 4.1. GEOLOGY AND HYDROGEOLOGY

The British Geological Survey (BGS) map (Sheet 84) for the site, (1:50,000, Solid and Drift editions) and online records indicate the site is underlain by the geological sequence presented in Table 4.1.

TABLE 4.1 SUMMARY OF UNDERLYING GEOLOGY

| GEOLOGICAL UNIT | CLASSIFICATION | DESCRIPTION | AQUIFER CLASSIFICATION |
|---|---|---|---|
| **Drift – North-west** | None Recorded | N/A | Secondary A Aquifer |
| **Drift – Northern Boundary** | Shirley Hill Sand Formation | SAND | |
| **Drift – Majority of Site** | Glacial Till | Diamicton | Secondary Undifferentiated Aquifer |
| **Solid** | Chester Sandstone Formation | Sandstone | Principal Aquifer |

TABLE 4.2 SUMMARY OF BGS BOREHOLE RECORDS

| LOCATION | DEPTH | MADE GROUND | DRIFT | SOLID |
|---|---|---|---|---|
| **20 m N (SJ49NW30)** | 4.00 m | 0.00-1.30 mbgl | SAND 1.30-2.30 mbgl | SANDSTONE 2.30-4.00 mbgl |
| **236 m W (SJ49NW962)** | 15.00 m | N/A | SAND and CLAY 0.10-1.70 mbgl | Weathered Red SANDSTONE 1.70 – 15.00 mbgl |

TABLE 4.3 FAULTING

| LOCATION | DESCRIPTION |
|---|---|
| **223 m SW** | Running NNW-SSE. Downthrow on the north-eastern side. |

The Envirocheck report indicates that the site is located within a Groundwater Source Protection Zone 3 – Total Catchment. There are no groundwater/potable abstractions within 1 km of the site.

## 4.2. NATURAL LANDFORM AND GEOMORPHOLOGY

Based on the initial geological assessment, a review of available topographic data and pertinent mapping, E3P has undertaken a preliminary geomorphological assessment of the landform and its possible mechanism for formation.

The subject site is predominately underlain by glacial till – these are deposits laid down by the deposition of melting ice shelf in the most recent glaciation. The underlying rock formations are associated with the Chester Sandstone Formation.

In areas of previous development on the site, for instance in the north, north-west and south-west of the site, there is likely to have been some cut/fill works to provide a development platform, which may indicate the presence of Made Ground. For areas of the site that have remained undeveloped, the site topography is likely to broadly represent the natural landform.

From a review of historical site investigations at the subject site, there appears to have been infilling and historical deposition across the site. Additionally, areas of embankments have been identified on site, which would have been filled or levelled to produce the level plateau on site. Additionally, some of the level plateau of the playing fields may be attributed to historical excavation and subsequent infilling.

There is evidence of level changes in the 1960s in the central sector of the site from historical mapping showing changes in contours and demarks a depression where the deeper Made Ground is located. This area was filled in the 1950s and early 1960s, likely attributed to the levelling of the site for use as playing fields.

Figure 4.1 -4.2 shows the site with contours marked in 1938 and then the contours no longer marked in 1966-1967 mapping.

FIGURE 4.1 HISTORIC MAPPING DATED 1938

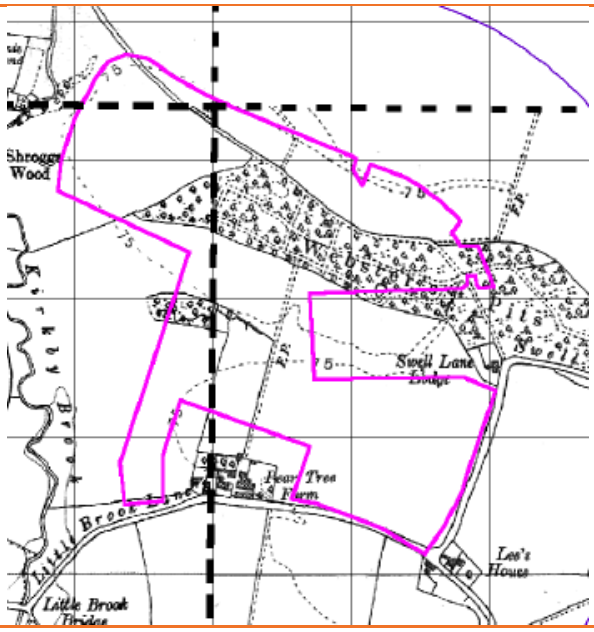



FIGURE 4.2 HISTORIC MAPPING DATES 1966-1967

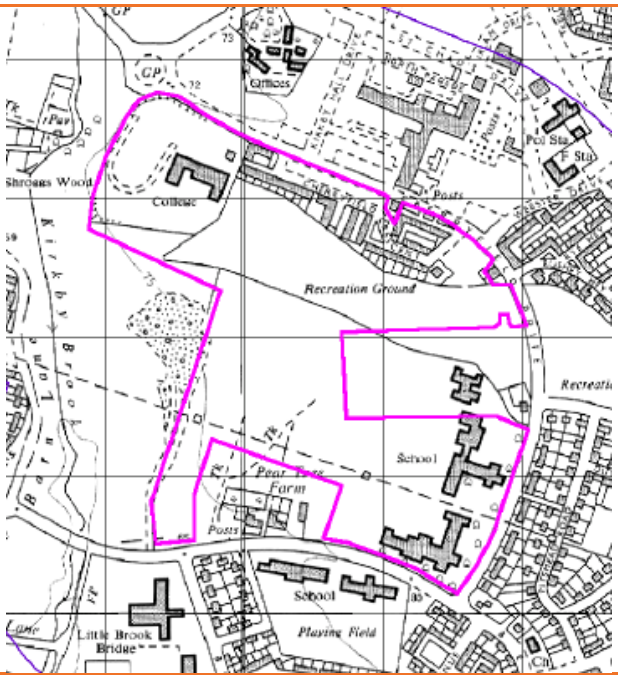


FIGURE 4.3 SURFACE LIDAR DATA OF THE SITE AND SURROUNDING AREA




## 4.3. GEOTECHNICAL DATA

Geotechnical data presented within a commercially available environmental database is summarised in Table 4.4.

TABLE 4.4 SUMMARY OF GEOTECHNICAL DATA

| HAZARD | DESIGNATION |
|---|---|
| Shrink-Swell Clay | No hazard to very low risk |
| Landslides | Very low risk |
| Ground Dissolution | No hazard |
| Compressible Ground | No hazard |
| Collapsible Deposits | Very low risk |
| Running Sand | Very low to low risk |

## 4.4. COAL MINING

The Envirocheck report confirms the site is in an area that may not be affected by coal mining and is not within a Coal Authority Coal Mining Reporting Area. No further works are required and the site is not at risk from coal mining.

## 4.5. RADON RISK POTENTIAL

The Envirocheck report indicates the site is situated in an area where less than 1% of homes are above the “Action Level” and that the BGS reports that full radon protective measures are not necessary in the construction of new dwellings or extensions.

## 4.6. PRELIMINARY GEOTECHNICAL ASSESSMENT

Based on the desk-study information, the following geotechnical assessment has been made:

- In areas where the site has been previously developed, it is likely there will be Made Ground fill deposits and obstructions. Existing buildings will require demolition, with all relict foundations grubbing out, prior to the construction of the proposed development.
- Historically infilled ponds present within the site boundary, are a potential source of alluvial deposits, silts and possible organic peat deposits in addition to potential depths of Made Ground. Investigation will be required in order to assess these and undertake in-situ geotechnical testing to determine the likely foundation solution for plots in these areas.
- There is considered to have been former cut and fill works across the site to provide a level development platform. In addition to the potential for historical to have expanded from the mapped gravel pit / landfill located to the west of the site into the subject site. Ground investigation will be required to assess the materials and understand the extent of infill deposits.
- There is the potential for relatively shallow bedrock to be present underlying the subject site which may impede drainage excavations.

## 4.7. HYDROLOGY

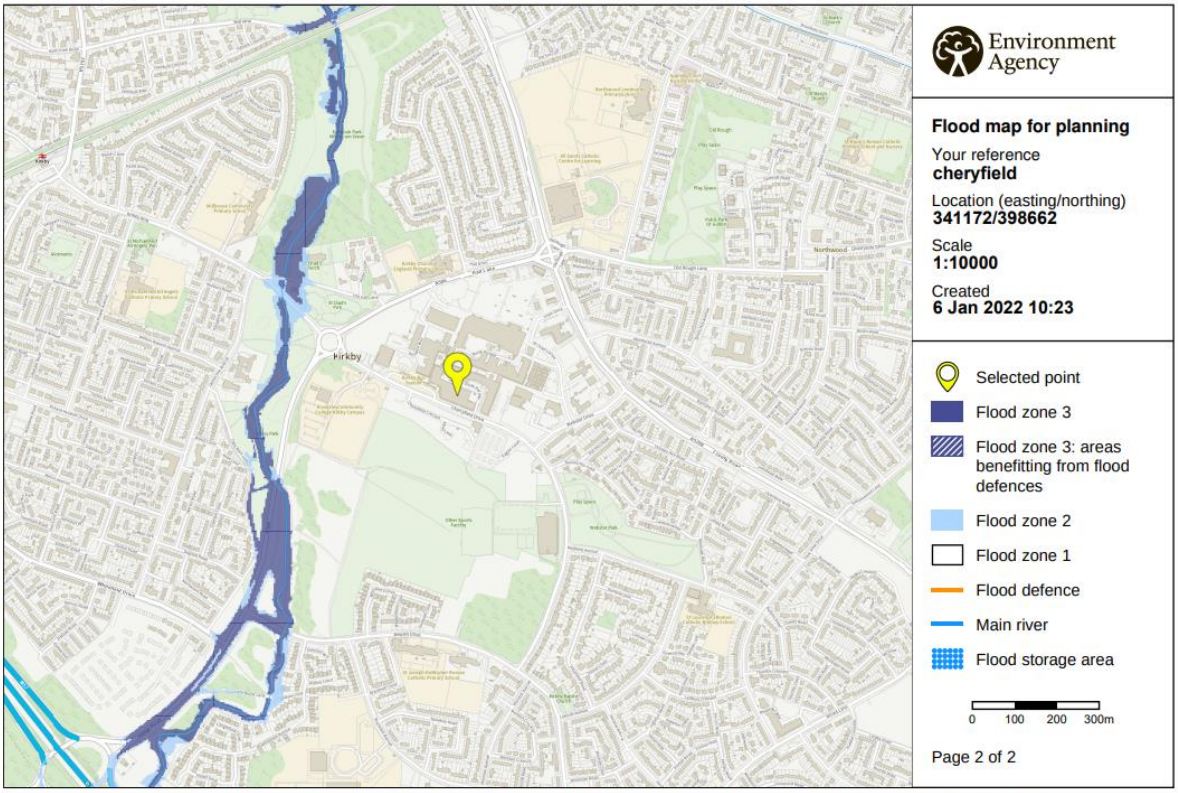
Surface water features within 250 m of the subject site are summarised in Table 4.5.

TABLE 4.5 SURFACE WATER FEATURES

| SURFACE WATER FEATURE | QUALITY | DISTANCE (m) | DIRECTION |
|---|---|---|---|
| **Kirkby Brook (Simonswood Brook)** | Moderate | 52 m | West |

The site is located within a currently defined “Flood Risk Zone 1”; defined as land assessed as having less than 1 in 1,000 annual probability of river or sea flooding (< 0.1%), and as such is considered to be unaffected by river flooding. In addition, the Envirocheck report states there is a limited potential for groundwater flooding to occur at the site. The Environment Agency (EA) Flood Risk Map for the site is presented as Figure 4.4.

FIGURE 4.4 EA FLOOD RISK MAP




Source - https://flood-map-for-planning.service.gov.uk/

## 4.8. INDUSTRIAL LAND USES

The following active industrial land uses have been identified within 250 m of the subject site:

- Liverprint – Printers Textile – 130 m North.

## 4.9. SENSITIVE LAND USES

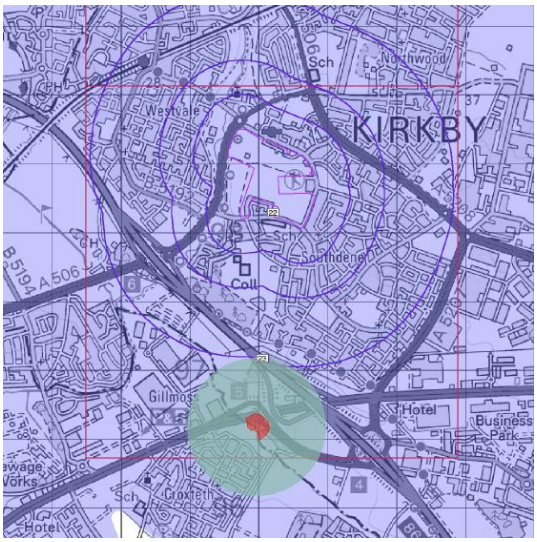
- The closest residential properties are located adjacent to the southern and eastern boundaries of the site.
- The Envirocheck report indicates that the site located within a nitrate vulnerable zone.

There are no other sensitive land uses within 250 m of the subject site.

## 4.10. SITE SENSITIVITY ASSESSMENT

The site is assessed to be located within a "Moderate" sensitivity setting as discussed within Table 4.6.

TABLE 4.6 SITE SENSITIVITY ASSESSMENT

| SENSITIVITY PROFILE | DISCUSSION | RATING |
|---|---|---|
| **Groundwater Source Protection Zone or Drinking Water Safeguard Zone** | The entire site is located within Groundwater Source Protection Zone 3 – Total Catchment.   | **High** |
| **Distance to the Closest Groundwater Abstraction Point** | The nearest groundwater abstraction point is located 1074 m northeast of the site. | **Low** |
| **Aquifer Classification in Superficial Drift Deposits** | Secondary Aquifer (Undifferentiated) across majority of the site and Secondary A Aquifer in the north of the site. | **Low** |
| **Aquifer Classification in Bedrock** | Principal Aquifer | **High** |
| **Is the Site Underlain by Low-Permeability Drift to Depths in Excess of 10 m?** | The underlying superficial deposits are likely to comprise interbedded SANDs and low permeability CLAYs to depths of less than 5.00 mbgl. Any cohesive drift deposits will afford some protection to the underlying bedrock aquifer, however SAND deposits may facilitate the movement of any potential mobile contaminants if present. | **High** |
| **Is the Site Located Within 50 m of a Surface Watercourse?** | Kirkby Brook is located 52 m west of the site at its closest point. | **Moderate** |
| **Sensitive Land Uses** | The site is located within a nitrate vulnerable zone with residential dwellings to the south and east of the site. | **High** |
| **OVERALL SITE ENVIRONMENTAL SENSITIVITY** | | **Moderate** |

# 5. CONSULTATIONS

## 5.1. KNOWSLEY METROPOLITAN BOROUGH COUNCIL

E3P contacted Knowsley Metropolitan Borough Council regarding the subject site, who confirmed the historical landfill site located directly west of the site is a landfill, pre-COPA 1974 due to the possibility of filling of a former clay pit, then raising to the present level. It was also confirmed that the site has not been identified as contaminated land under Part 2A of the Environmental Protection Act 1990 and

## 5.2. LANDFILL SITES AND WASTE TREATMENT SITES

A historical landfill site is located adjacent to the south western boundary of the site, where the licence holder was probably the Local Authority. The Envirocheck report indicates the site was active from 1956 to 1974 and deposited waste included household waste. The site has also been recorded as a local Authority Recorded Landfill Site.

A further three historical landfill sites have been identified within 1 km of the site and are summarised below:

- 271m South-West – Brookfield School – Wastes first inputted in 1990, and no last input date supplied. Deposited Wastes included inert waste.
- 718 m South-West – Burtons Bridge – Deposited wastes included household wastes however no input dates have been provided.
- 810 m West – Ingoe Lane – no further information provided.

There are 5 Local Authority Recorded Landfill Sites within 1 km of the site.

There is one registered landfill site within 1 km of the subject site: Brookfield School is located 436 m south-west of the site however the licence is noted to have lapsed or been cancelled. Authorised wastes included brick, stone, concrete, inert spoil, soils and clays.

## 5.3. REGULATORY DATABASE

The information summarised in Table 5.1 has been obtained from a commercially available environmental database. The summary table only includes records from within 250 m of the subject site and not otherwise detailed in the report.

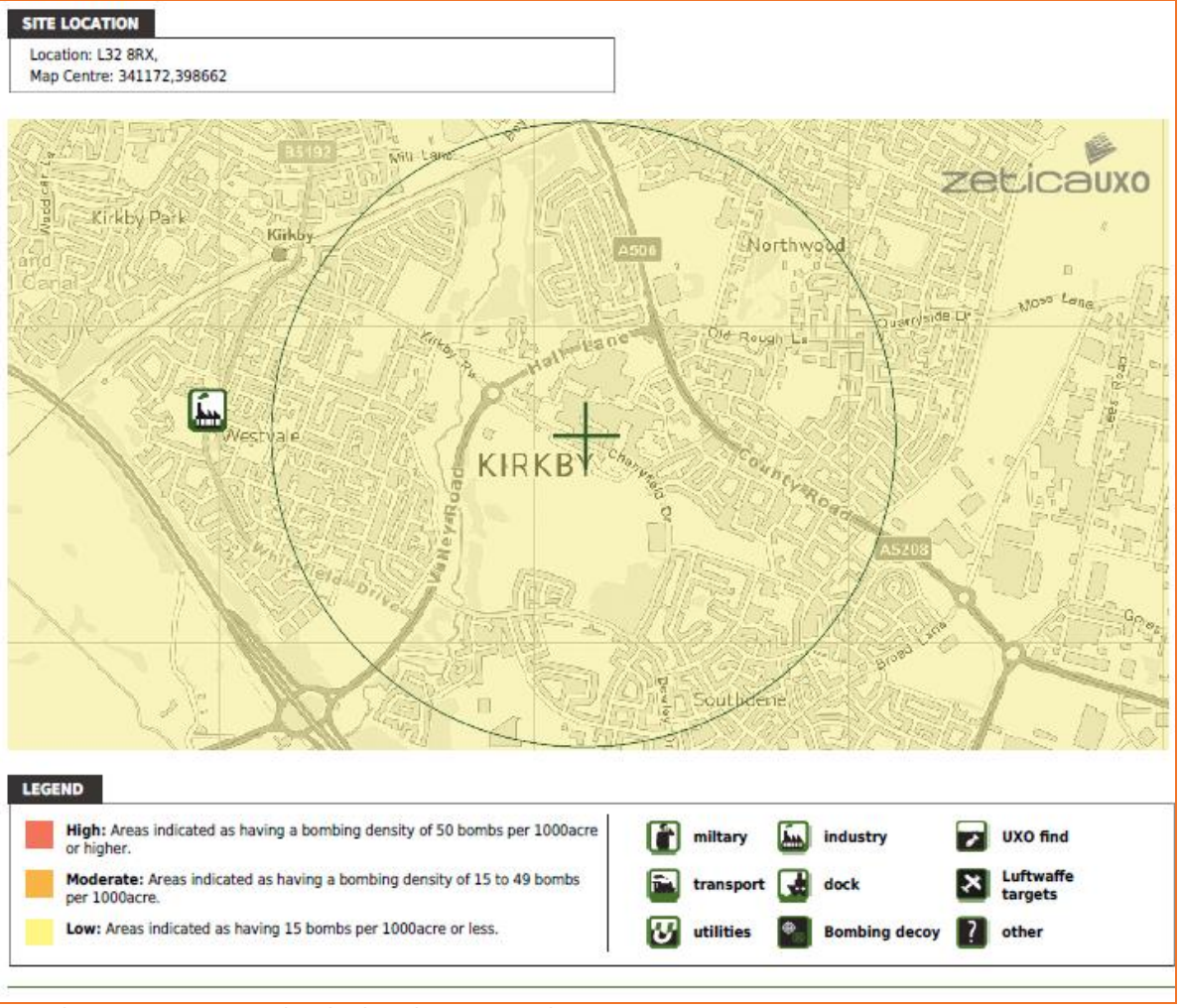
TABLE 5.1 SUMMARY OF ENVIRONMENTAL DATA

| RECORD | ENTRIES WITHIN 250 m | DETAILS |
|---|---|---|
| Contaminated Land Register Entries and Notices | 0 | None Identified |
| Authorised Industrial Processes (IPC/IPPC/LAPPC) | 2 | • Local Authority Pollution Prevention and Controls (LAPPC) located on site. Associated with air pollution control at former petrol filling station.<br>• LAPPC located 90 m north of the site associated with Johnsons Dry Cleaners. |
| Fuel Stations Entries | 1 | • One fuel station entry located onsite. Status is obsolete. |
| Licensed Radioactive Substances | 0 | None Identified |
| Enforcements, Prohibitions or Prosecutions | 0 | None Identified |
| Discharge Consents | 0 | None Identified |
| Pollution Incidents | 5 | • Category 3 – minor incident occurring in 1991 located 18 m northeast of the site. Pollutant: heating oil.<br>• Category 3 – minor incident occurring in 1998 located 72 m west of the site. Pollutant: chemicals – paints/dyes.<br>• Category 3 – minor incident occurring in 1996 located 152 m northwest of the site. Pollutant: unknown.<br>• Category 3 – minor incident occurring in 1996 located 155 m northwest of the site. Pollutant: crude sewage.<br>• Category 2 – significant incident occurring in 1997 located 171 m west of the site. Pollutant: crude sewage. |
| Consents Issued Under the Planning (Hazardous Substances) Act 1990 | 0 | None Identified |
| Control of Major Accident Hazard (COMAH) Sites | 0 | None Identified |

## 5.4. UNEXPLODED ORDNANCE

The regional unexploded bomb risk map from Zetica (2014) indicates that the site is in an area at low risk from possible unexploded ordnance (UXO) resulting from the Second World War. The Zeticia UXO Risk Map is presented as Figure 5.1.

FIGURE 5.1 ZETICA UXO RISK MAP




Source - https://zeticauxo.com/downloads-and-resources/risk-maps/

# 6. INITIAL CONCEPTUAL SITE MODEL

In accordance with EA LCRM (2019) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P has developed an initial conceptual site model (CSM) to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised within Table 6.1.

## 6.1. ON-SITE SOURCES OF CONTAMINATION

The following potential on-site sources of contamination have been identified:

- Former On-site Developments
  - Made Ground associated with former school, college, hotel and residential buildings and associated demolition rubble may contain heavy metals, PAHs and ACM,
  - Substantial depths of Made Ground can present a risk of hazardous ground gases (e.g., carbon dioxide and methane).
- Infilled Features and Former Field Boundaries
  - Infilled ponds, embankments and former field boundaries may contain heavy metals, inorganic compounds, PAHs, hydrocarbon compounds and ACM.
  - Infilled features present a potential risk of hazardous ground gases (e.g., carbon dioxide and methane) due to unknown depths of Made Ground comprising potentially putrescible and degrading materials.
- Areas of Historical Deposition
  - The site is considered to contain areas of historical deposition which may be associated with the adjacent landfill to the west of the site. Made Ground deposits associated with these works may contain heavy metals, PAHs, TPHs, SVOCs, VOCs and Asbestos.
  - Should organic or putrescible materials be present they are a potential source of ground gases.
- Former fuel station
  - The former fuel station / garage and underground fuel storage tanks in the north of the site are a potential source of hydrocarbon compounds.
- Electrical sub station
  - The electricity substations in the north of the site are a potential source of PCBs.

## 6.2. OFF-SITE SOURCES OF CONTAMINATION

The following potential off-site source of contamination have been identified:

- Made Ground/infilled ponds – Heavy metals, PAHs and ground gas.
- Historic landfill site – Methane, carbon dioxide, ammonia containing leachates.
- Bus station potential leakages of hydrocarbon compounds.

TABLE 6.1 INITIAL CONCEPTUAL SITE MODEL

| SOURCE | PATHWAY | RECEPTOR |
|---|---|---|
| **Human Health** | | |
| **Heavy Metals, PAHs, heavy end TPH compounds associated Within Made Ground** | Dermal Contact and Ingestion. Consumption of Homegrown Produce. | Construction Workers. Residential End Users. Off-site receptors |
| **Discussion:** Made Ground is anticipated on site associated with former developments, associated demolition materials and areas of historical deposition.<br><br>This may pose a risk to future residential end users in areas of soft land scaping and also a short-term risk to construction workers, who may come into contact with impacted soils during earthworks. All construction works must be undertaken using the appropriate Personal Protective Equipment (PPE) to remove this potential risk.<br><br>Future residential users may come into contact with impacted soils within any garden and landscaped areas. If impacted soils are identified then localised remediation or an appropriate cover system, designed in accordance with BRE465 (Cover Systems for Land Regeneration), will mitigate the risk.<br><br>If contamination is only encountered within localised areas, impacted material should be delineated and removed as a localised hotspot. Impacted material should be sampled to determine suitability to be placed in an area of lower sensitivity or removed off-site. | | |
| **Volatile Hydrocarbon Compounds Associated Within Former Fuel Station and Made Ground associated with infilling activities.** | Volatilisation/Accumulation. Vapour Inhalation. | Construction Workers. Residential End Users. |
| **Discussion:**<br><br>Historical land uses such as a former garage / petrol station, as well as Made Ground associated with various infilling activities on-site represent potential sources of hydrocarbon compounds and volatile PAHs such as naphthalene. It cannot be ruled out that spillages or leaks associated with the fuel station have occurred previously within the area of the USTs. If high permeability soils are present, hydrocarbon compounds may have migrated across the site.<br><br>Hydrocarbon compounds, SVOCs and VOCs may pose a risk to construction workers if they come into contact with impacted soils during further earthworks, however appropriate PPE/ Respiratory Protective Equipment (RPE) will ensure they are at no unacceptable risk.<br><br>Future residential end users may come into contact with impacted soils in garden and landscaped areas, though the main pathway of volatile compounds is considered to be vapour inhalation indoors. If identified, it is likely that additional remediation of impacted soils and/or perched groundwater will be required to mitigate the risk to future residential end users. | | |

| SOURCE | PATHWAY | RECEPTOR |
|---|---|---|
| **Polychlorinated Biphenyl (PCB) associated with on-site sub stations** | Dermal Contact<br>Inhalation<br>Accumulation | Construction Workers.<br>Residential End Users.<br>Third-Party Property. |
| **Discussion:** Two electricity substations have been identified in the north of the site, therefore the presence of PCBs cannot be ruled out. However, given PCBs have general limited mobility, it is unlikely that if PCBs are present in this area, they will impact much of the proposed development site and impacted soils can be through localised delineation and removal of impact or through the provision of a cover system in landscaped areas. | | |
| **Asbestos-Containing Materials (ACMs) within Made Ground** | Fibre/Dust Inhalation. | Construction Workers.<br>Residential End Users.<br>Third-Party Property. |
| **Discussion:**<br>The presence of Made Ground underlying the site from former infilling activities may be a potential source of ACM<br><br>Dust associated with any Made Ground underlying the site may potentially contain ACMs which could be released during future earthworks and then subsequently inhaled by construction workers and possibly third-party property.<br><br>However, with the appropriate construction phase health and safety controls, asbestos containing material is likely to represent a low risk.<br><br>If asbestos is identified, it is likely to be encountered within localised areas based on the historic development on site. Therefore, in these localised areas if ACMs are identified, impacted material should be delineated and removed as a localised hotspot. Impacted material should be sampled to determine suitability to be placed in an area of lower sensitivity or removed off-site. All works should be completed by suitably trained groundworkers who can identify ACMs. | | |
| **Hazardous Ground Gases** | | |
| **Methane and Carbon Dioxide Associated with Made Ground, infilled on-site features and off site historical landfill.** | Inhalation.<br>Accumulation. | Construction Workers.<br>Residential End Users. |
| **Discussion:**<br><br>Given the presence of infilled ponds, field boundaries, embankments, Made Ground and the adjacent historical landfill, there is the potential for alluvial/organic deposits and/or Made Ground which may be a source of carbon dioxide and methane.<br><br>Carbon dioxide and methane can migrate to indoor air spaces through service ducts and collect in deep excavations and have associated asphyxiation and explosive risks, respectively. Intrusive investigation is required to determine the ground gas regime on site and subsequent mitigation measures required in the construction of new properties.<br><br>Hazardous ground gases such as carbon dioxide and methane have associated asphyxiation and explosive risks. Should a ground gas risk be identified to end users, the risks can be mitigated through the adoption of suitable control measures within the building construction using guidance presented within CIRIA 665 (Assessing Risk Posed by Hazardous Ground Gases to Buildings) and BS8485 (Code of Practice for the Characterisation and Remediation from Ground Gas in Affected Developments). | | |

| SOURCE | PATHWAY | RECEPTOR |
|---|---|---|
| **Controlled Waters** | | |
| **Hydrocarbon Compounds Associated Within Former Fuel Station** | Vertical/Lateral Migration. | Secondary A Aquifer. On-Site Stream Network. Kirkby Brook. |
| **Discussion:** Recent land uses such as the Petrol Filling Station, as well as Made Ground, represent potential sources of mobile hydrocarbon contamination. Potential granular drift deposits beneath the site will facilitate the migration of contaminated, if present, to the underlying aquifer, however cohesive deposits will provide protection to the underlying aquifer, therefore a moderate risk to controlled waters is identified. Intrusive investigation with chemical analysis of soil and groundwater samples is recommended to assess the presence of mobile contaminants and facilitate further risk assessment | | |
| **Buildings and Infrastructure** | | |
| **pH and Sulphate** | Corrosion of Concrete. | Foundations/Concrete. |
| **Discussion:** Presence of pH and sulphate within Made Ground deposits may result in corrosion of buried concrete within the proposed development. Assessment must be undertaken to confirm the levels of pH and sulphate within the underlying strata and in particular any Made Ground deposits so that a concrete classification can be determined. | | |
| **Ecology** | | |
| **Phytotoxic contaminants (Made Ground)** | Lateral Migration. | Flora and Fauna on site. |
| **Discussion:** Moderate probability as contamination considered possible, which may be taken up by flora in soft landscaping/gardens. | | |

# 7. E3P GROUND INVESTIGATION

## 7.1. GENERAL OVERVIEW

A ground investigation has been designed based on the findings of the desk study, with exploratory holes advanced to target specific potential contaminant sources summarised in Table 7.1. The investigation has also been used to collect geotechnical information to assist in the design and construction of the proposed development.

The first phase of exploratory fieldwork was completed between 10th – 13th January 2022, 24th - 25th January 2022 and 7th – 8th February 2022. A subsequent supplementary investigation was completed within the north-western parcel on 11th November 2023. The works are summarised in Table 7.1.

## 7.2. LIMITATIONS OF THE INVESTIGATION

Areas of the northern sector of the site were limited in terms of access due to a high volume of services.

Investigation of the Electricity Substation on the northern boundary was not possible due to the live nature of infrastructure in this area.

In the first phase of the investigation, the northwestern parcel of the site was inaccessible. During the supplementary site investigation works in this parcel, the managed soft cover area towards the north of the active college building was inaccessible due to weather conditions, making ground conditions unfavourable for additional trial pits in this area.

Significant obstructions were encountered within trial pit locations in areas of hardstanding within the north-western parcel, which resulted in the full depth of Made Ground being unproven within a handful of locations.

## 7.3. SCOPE OF INVESTIGATION

TABLE 7.1 SUMMARY OF FIELDWORK

| POTENTIAL SOURCE/RATIONALE | LOCATION HOLE | TYPE | MAXIMUM DEPTH (m bgl) | MONITORING WELLS RESPONSE ZONE (m bgl) |
|---|---|---|---|---|
| **General ground conditions including depth of Made Ground on western boundary against adjacent landfill.** | TP101-TP104, TP106, TP108, TP109, TP110, TP111, TP112, TP114, TP116, TP118, TP125, TP127, TP129, TP142, TP142B, TP170, TP172, TP174, TP176, TP178 | Mechanically Excavated Trial Pit | 3.30 | N/A |
| | WS102 | Window Sample Probeholes | 4.45 | 1.00 – 3.00 |
| | WS104 | | 2.38 | N/A |
| | WS106 | | 4.18 | 1.00 – 3.00 |
| | WS107 | | 2.44 | N/A |
| | WS108 | | 2.91 | 0.80 – 2.80 |
| | WS111 | | 5.45 | 0.50 – 3.00 |
| | WS113 | | 2.44 | 1.00 – 2.00 |
| | WS124 | | 4.10 | 1.00 – 4.00 |
| **Ground conditions within the central sector of the site associated with the former woodland, running tracks, tracks, tennis court, gravel pit and known area of upfilling in 20th Century.** | TP105, TP107, TP113, TP115, TP117, TP119-TP124, TP126, TP128, TP130-TP138, TP140, TP1126, TP1128, TP1130 | Mechanically Excavated Trial Pit | 3.10 | N/A |
| | WS101 | Window Sample Probeholes | 3.30 | 0.50-2.00 |
| | WS103 | | 4.94 | 2.50-3.00 |
| | WS105 | | 3.29 | 0.50-2.50 |
| | WS109 | | 5.45 | N/A |
| | WS112 | | 3.10 | N/A |
| | WS114 | | 2.31 | 1.00-2.00 |
| | WS115 | | 2.39 | 1.00-2.00 |
| | WS116 | | 2.45 | N/A |
| | WS117 | | 3.43 | 1.00-2.50 |
| | WS118 | | 2.31 | 1.00-2.00 |
| | WS120 | | 2.45 | 1.00-2.00 |
| | WS122 | | 2.45 | 0.50-1.50 |
| | WS171 | | 3.01 | 1.00-2.50 |

| | | | | |
|---|---|---|---|---|
| **Ground conditions associated with the former pond in south west of site.** | WS110 | Window Sample Probeholes | 2.38 | 1.00-2.00 |
| **Ground conditions associated with the former woodland located in the northern central area of the site.** | TP139, TP141, TP143-TP149, TP151, TP153, TP155, TP157, TP159, TP161, TP163, TP165, TP167, TP169, TP171, TP173, TP175, TP177, TP179, TP181, TP183, TP185, TP187 | Mechanically Excavated Trial Pit | 3.10 | N/A |
| | WS119 | Window Sample Probeholes | 4.44 | 0.50 – 3.50 |
| | WS125 | | 2.95 | 0.50 – 1.00 |
| | WS121 | | 3.43 | 0.50 – 1.50 |
| | WS123 | | 3.44 | 0.50 – 3.00 |
| | WS127 | | 4.45 | N/A |
| | WS129 | | 4.45 | 1.00 – 3.50 |
| | WS131 | | 2.44 | N/A |
| | WS133 | | 4.34 | 0.50 – 3.90 |
| | WS135 | | 3.43 | 0.50 – 3.00 |
| **Ground conditions associated with the former garage and petrol filling station located in the north of the site.** | TP164 | Mechanically Excavated Trial Pit | 2.90 | N/A |
| | WS140 | Window Sample Probeholes | 3.45 | 1.00 – 3.00 |
| | WS142 | | 3.11 | 1.00 – 3.00 |
| **Ground conditions associated with the former housing in the north of the site** | TP150, TP152, TP154, TP156, TP158, TP160, TP162, TP166, TP168 | Mechanically Excavated Trial Pit | 3.40 | N/A |
| | WS126 | Window Sample Probeholes | 2.45 | 0.60 – 1.60 |
| | WS128 | | 4.02 | 1.00 – 3.00 |
| | WS130 | | 3.88 | 1.00 – 3.00 |
| | WS132 | | 4.11 | 1.00 – 4.00 |
| | WS134 | | 3.45 | N/A |
| | WS136 | | 3.61 | 0.50 – 3.50 |
| | WS138 | | 4.45 | 1.00 – 4.00 |

| | | | | |
|---|---|---|---|---|
| **Ground conditions are associated with the former building located in the northeast of the site.** | TP188, TP190, TP192 (EAST/WEST), TP194, TP196, TP198 | Mechanically Excavated Trial Pit | 3.45 | N/A |
| | WS144 | Window Sample Probeholes | 3.44 | 1.00 – 3.00 |
| | WS146 | | 1.00 | N/A |
| | WS148 | | 5.45 | 1.00 – 4.00 |
| | WS150 | | 4.44 | N/A |
| | WS152 | | 3.45 | 0.50 – 2.50 |
| **Ground conditions associated with the former college building located in the northwest of the site** | TP180, TP182, TP184, TP186, TP189, TP191, TP193, TP195, TP197, TP199, TP1101, TP1103, TP1105A/B, TP1107 | Mechanically Excavated Trial Pit | 2.30 | N/A |
| | WS137 | Window Sample Probeholes | 3.28 | 2.00 – 3.00 |
| | WS139 | | 3.25 | N/A |
| | WS141 | | 3.44 | 1.00 – 3.00 |
| | WS143 | | 2.44 | N/A |
| | WS145 | | 2.44 | N/A |
| | WS147 | | 2.42 | 1.00 – 2.00 |
| **Ground conditions associated with the former school and tennis courts in the south-east of the site.** | TP1100, TP1102, TP1104, TP1106, TP1108-TP1125, TP1127, | Mechanically Excavated Trial Pit | 3.20 | N/A |
| | WS149A | Window Sample Probeholes | 1.36 | 0.50-1.00 |
| | WS149B | | 1.37 | N/A |
| | WS151 | | 2.44 | 1.00-2.00 |
| | WS153A | | 1.17 | 0.50 – 1.00 |
| | WS153B | | 1.07 | N/A |
| | WS153C | | 1.17 | N/A |
| | WS155 | | 2.29 | N/A |
| | WS157 | | 2.22 | 1.00 – 2.00 |
| | WS159 | | 2.37 | N/A |
| | WS161 | | 2.13 | 0.50 – 1.50 |
| | WS163 | | 3.44 | N/A |
| | WS165A | | 0.34 | N/A |
| | WS165B | | 0.25 | N/A |
| | WS165C | | 0.35 | N/A |
| | WS167A | | 0.35 | N/A |

| | | | | |
|---|---|---|---|---|
| **Ground conditions associated with the former school and tennis courts in the south-east of the site.** | WS167B | Window Sample Probeholes | 0.30 | N/A |
| | WS167C | | 0.30 | N/A |
| | WS169 | | 2.44 | 1.00 – 2.00 |
| **Investigation of Soakaway Potential** | SA101, SA102, SA103, SA104, SA105, SA106, SA107, SA108, SA109, SA110, SA111 | BRE365 Permeability Tests | 3.20 | N/A |
| **Investigation of Deeper Soil Horizons** | CP/RB101 | Cable Percussive/ Rotary Borehole | 12.50 | 3.00 – 5.00 |
| | CP/RB102 | | 12.00 | 3.00 – 4.00 |
| | CP/RB102 | | 11.00 | 3.00 – 4.00 |
| **Boundary of Former Landfill (North-Western parcel)** | WS201 | Window Sample Probehole | 4.43 | 0.50 – 3.00 |
| | TP201 | Mechanically Excavated Trial Pit | 0.85 | N/A |
| | TP202 | | 2.40 | |
| **General Ground Conditions (North-Western Parcel)** | TP203 | Mechanically Excavated Trial Pit | 0.90 | N/A |
| | TP204 | | 2.10 | |
| | TP205 | | 2.80 | |
| | TP206 | | 1.90 | |
| | TP207 | | 2.30 | |
| | TP208 | | 2.00 | |
| | TP209 | | 1.80 | |
| | TP210 | | 0.90 | |
| | TP211 | | 2.50 | |
| | TP212 | | 2.20 | |
| | WS202 | Window Sample Probehole | 3.44 | 2.00 – 3.00 |
| | WS203 | | 3.40 | N/A |
| | WS204 | | 3.44 | 1.50 – 3.00 |
| | WS205 | | 0.70 | N/A |
| | WS205a | | 0.70 | N/A |
| | WS206 | | 3.44 | 1.00 – 2.50 |

Mechanically excavated trial pits were advanced to investigate ground conditions and to retrieve environmental samples, spatially distributed to offer the maximum site coverage whilst also being advanced to target specific contaminant sources.

Window sample probeholes were advanced to undertake in-situ detailed geotechnical testing, obtain environmental samples and install groundwater and ground gas monitoring wells.

Cable Percussive with rotary follow on boreholes were advanced to facilitate the investigation of deeper soil horizons (in excess of 5.00m) with extensive in-situ geotechnical testing to determine the relative densities of granular soils and undrained strengths of clays.

The sampling locations are illustrated in Drawing 15-280-005 (Appendix III). The ground conditions encountered are indicated on the logs, which are provided in Appendix V.

Return visits were made to monitor installations for groundwater level and gas concentrations. In addition, selected wells were purged via the slow flow method, and samples of groundwater recovered for chemical analysis.

## 7.4. IN-SITU STANDARD PENETRATION TESTING (SPT)

In-situ geotechnical testing was conducted using the standard penetration test (SPT) and, where the ground is granular, a 60° cone (SPT(C)) was used instead of the sampling tube. The results are shown in the probehole logs in Appendix V and presented in Table 8.6 and discussed in Section 10.

## 7.5. PERMEABILITY TESTS

Eleven soakaway tests (SA101-SA111) tests were undertaken in order to assess the likely permeability of the underlying strata to determine the potential suitability for soakaway drainage within the proposed development. The results are presented in Table 8.13 and the test certificates are included within Appendix IX.

## 7.6. LABORATORY ANALYSIS

Selected soil samples were submitted for a range of chemical analyses comprising:

- Metals.
- pH, total sulphate, water-soluble sulphate (2:1 extract).
- Sulphide.
- Cyanide.
- Phenols.
- Total and speciated polycyclic aromatic hydrocarbons (PAHs).
- Semi Volatile Organic Compounds (SVOC).
- Volatile Organic Compounds (VOC).
- Asbestos identification and quantification.
- Speciated and banded total petroleum hydrocarbon (TPH).
- Poly-Chlorinated Biphenyl (PCB)

I2 Analytical undertook the analytical work and the testing results are included in Appendix VI and discussed in Section 9.

Selected samples were submitted to Murray Rix Laboratory and Professional Soil Laboratory (Supplementary Investigation) where the following geotechnical tests were undertaken:

- Atterberg limits determinations;
- Particle size distribution tests;
- Moisture content;
- Odometer tests;
- Single-stage triaxial tests; and,
- Dry density, moisture content, 2.5kg rammer compaction.

Laboratory analysis sheets are included in Appendix X and are summarised in Section 8.

# 8. GROUND AND GROUNDWATER CONDITIONS

## 8.1. SUMMARY OF GROUND CONDITIONS

The ground investigation generally confirms the published geology and identifies the strata set out in Table 8.1.

TABLE 8.1 SUMMARY OF STRATA

| HOLE | DEPTH TO STRATUM (m bgl) | | | | | |
|---|---|---|---|---|---|---|
| | TOPSOIL | MADE GROUND | CLAY | SAND | GRAVEL | BEDROCK |
| **Main Investigation** | | | | | | |
| TP101/SA104 | 0.00–0.30 | – | 0.30 – 2.00 | 2.00 – 2.60 | – | – |
| TP102 | – | 0.00 –1.30 | - | 1.30 – 3.10 | – | – |
| TP103 | – | 0.00 –0.50 | 0.50 – 1.80 | 1.80 – 2.60 | – | – |
| TP104 | – | 0.00 – 0.40 | 0.40 – 1.30 | 1.30 – 2.80 | – | – |
| TP105 | – | 0.00 –0.70 | 0.70 –1.80 | 1.80 – 2.40 | – | – |
| TP106 | – | 0.00 – 0.40 | 0.40 – 1.40 | 1.40 – 3.20 | – | – |
| TP107 | – | 0.00 – 0.80 | 0.80 – 1.70 | 1.70 – 2.10 | – | – |
| TP108 | – | 0.00 – 3.20 | - | – | – | – |
| TP109 | – | 0.00 – 2.30 | – | – | – | – |
| TP110/SA101 | - | 0.00 – 1.50 | – | 1.50 – 3.20 | – | – |
| TP111 | – | 0.00 – 2.60 | – | – | – | – |
| TP112 | – | 0.00 – 0.25 | – | 0.25 – 2.80 | – | – |
| TP113 | – | 0.00 – 2.40 | – | – | – | – |
| TP114 | – | 0.00 – 1.10 | – | 1.10 – 2.90 | – | – |
| TP115 | – | 0.00 – 2.20 | 2.20 – 2.50 | 2.50 – 2.80 | – | – |
| TP116 | – | 0.00 – 0.25 | 0.25 – 0.70 | 0.70 – 1.80 | – | – |
| TP117 | – | 0.00 – 2.50 | – | – | – | – |
| TP118 | – | 0.00 – 2.00 | 2.00 – 2.60 | – | – | – |
| TP119 | – | 0.00 – 2.50 | – | – | – | – |
| TP120 | 0.00 – 0.15 | – | 0.15 – 0.50 | 0.50 – 3.10 | – | – |
| TP121 | – | 0.00 – 2.90 | – | – | – | – |
| TP122/SA102 | 0.00 – 0.30 | - | 0.30 – 1.20 | 1.20 – 2.60 | – | – |
| TP123 | – | 0.00 – 2.80 | – | – | – | – |
| TP124 | – | 0.00 – 0.20 | 0.20 – 0.70 | 0.70 – 2.30 | – | – |
| TP125 | – | 0.00 – 0.60 | 0.60 – 1.80 | 1.80 – 2.50 | – | – |
| TP126 | – | 0.00 – 0.30 | 0.30 – 1.35 | – | – | – |
| TP127 | 0.00-0.10 | – | 0.10 – 0.70<br>1.40 – 2.40 | 0.70 – 1.40 | – | – |

| HOLE | DEPTH TO STRATUM (m bgl) | | | | | |
|---|---|---|---|---|---|---|
| | TOPSOIL | MADE GROUND | CLAY | SAND | GRAVEL | BEDROCK |
| TP128 | – | 0.00 – 1.40 | 1.40 – 2.50 | – | – | – |
| TP129 | – | 0.00 – 0.30 | 0.60 – 2.10 | 0.30 – 0.60<br>2.10 – 2.50 | – | – |
| TP130/SA103 | – | 0.00 – 0.25 | 0.25 – 0.80 | 0.80 – 2.23 | – | – |
| TP131/SA107 | – | 0.00 – 0.20 | 0.20 – 2.10 | 2.10 – 2.50 | – | – |
| TP132 | - | 0.00 – 0.30 | 0.30 – 1.20 | 1.20 – 2.45 | – | – |
| TP133 | – | 0.00 – 0.20 | 0.20 – 2.40 | – | – | – |
| TP134 | 0.00-0.40 | – | 0.40 – 1.30 | 1.30 – 2.30 | – | – |
| TP135 | – | 0.00 – 0.50 | 0.50 – 2.70 | – | – | – |
| TP136 | - | 0.00 – 0.80 | 0.80 – 2.00 | – | – | – |
| TP137 | – | 0.00 – 2.00 | 2.00 – 2.50 | – | – | – |
| TP138 | - | 0.00 – 0.60 | 0.60 – 3.10 | – | – | – |
| TP139 | – | 0.00 – 1.50 | – | – | – | – |
| TP140 | – | 0.00 - 1.30 | 1.30 – 2.80 | – | – | – |
| TP141 | – | 0.00 – 1.80 | 1.80 – 2.40 | – | – | – |
| TP142 | - | 0.00 – 3.30 | – | – | – | – |
| TP142B | 0.00-0.20 | – | 0.20 – 3.10 | – | – | – |
| TP143 | – | 0.00 – 0.60 | 0.60 – 2.50 | 2.50 – 2.90 | – | – |
| TP144 | 0.00-0.20 | – | 0.20 – 1.20 | 1.20 – 2.00 | – | – |
| TP145 | – | 0.00 – 1.50 | 1.50 – 3.10 | | – | – |
| TP146 | 0.00-0.20 | – | 0.20 – 0.60 | 0.60 – 2.40 | – | – |
| TP147 | - | 0.00 – 1.20 | 1.20 – 2.70 | – | – | – |
| TP148 | 0.00-0.10 | – | 0.35 – 1.30 | 0.10 – 0.35<br>1.30 – 2.80 | – | – |
| TP149 | – | 0.00 – 1.90 | 1.90 – 2.50 | – | – | – |
| TP150 | – | 0.00 – 0.25 | 1.50 – 1.80 | 0.25 – 1.50<br>1.80 – 2.80 | – | – |
| TP151/SA105 | – | 0.00 – 1.00 | 1.00 – 2.20 | 2.20 – 2.70 | – | – |
| TP152 | – | 0.00 – 0.25 | 2.40 – 2.60 | 0.25 – 2.40<br>2.60 – 3.00 | – | – |
| TP153 | – | 0.00 –2.70 | – | – | – | – |
| TP154 | – | 0.00 – 2.40 | 3.00 – 3.40 | 2.40 – 3.00 | – | – |
| TP155 | – | 0.00 – 1.70 | 1.70 – 2.50 | – | – | – |
| TP156 | – | 0.00 – 1.00 | 1.00 – 2.70 | – | – | – |
| TP157 | – | 0.00 – 1.50 | 1.50 – 2.50 | – | – | – |
| TP158 | – | 0.00 – 0.30 | 0.30 – 2.90 | – | – | – |
| TP159 | – | 0.00 – 0.80 | 0.80 – 2.50 | – | – | – |

| HOLE | DEPTH TO STRATUM (m bgl) | | | | | |
|---|---|---|---|---|---|---|
| | TOPSOIL | MADE GROUND | CLAY | SAND | GRAVEL | BEDROCK |
| TP160 | – | 0.00 – 0.60 | 0.60 – 2.90 | – | – | – |
| TP161 | – | 0.00 – 1.40 | 1.40 – 2.20 | 2.20 – 3.00 | – | – |
| TP162 | – | 0.00 – 0.30 | 0.30 – 2.50 | – | – | – |
| TP163/SA106 | 0.00-0.50 | – | 0.50 – 1.40<br>2.00 – 2.40 | 1.40 – 2.00 | – | – |
| TP164 | – | 0.00 – 0.30 | 1.70 – 2.90 | 0.30 – 1.70 | – | – |
| TP165 | – | 0.00 – 1.40 | 1.40 – 2.40 | – | – | – |
| TP166 | – | 0.00 – 0.60 | – | – | – | – |
| TP167 | – | 0.00 – 2.00 | – | – | – | – |
| TP168 | – | 0.00 – 0.30 | 1.00 – 3.00 | 0.30 – 1.00 | – | – |
| TP169 | – | 0.00 – 2.40 | – | – | – | – |
| TP170 | – | 0.00 – 0.90 | 0.90 – 2.50 | – | – | – |
| TP171 | – | 0.00 – 0.40 | 0.40 – 2.50 | – | – | – |
| TP172 | – | 0.00 – 0.40 | – | – | – | – |
| TP173 | – | 0.00 – 0.50 | 0.50 – 2.00 | – | – | – |
| TP174 | – | 0.00 – 1.00 | 1.00 – 2.50 | – | – | – |
| TP175 | – | 0.00 – 1.40 | – | – | – | – |
| TP176 | – | 0.00 – 1.00 | 1.00 – 2.50 | – | – | – |
| TP177 | – | 0.00 – 2.20 | 2.20 – 2.60 | – | – | – |
| TP178 | – | 0.00 – 1.00 | 1.00 – 2.50 | – | – | – |
| TP179 | 0.00-0.20 | – | 0.80 – 2.20 | 0.20 – 0.80 | – | – |
| TP180 | – | 0.00 – 1.60 | 1.60 – 1.80 | – | – | – |
| TP181 | 0.00-0.30 | – | 0.30 – 2.10 | – | – | – |
| TP182 | – | 0.00 – 1.00 | 1.00 – 2.10 | – | – | – |
| TP183 | – | 0.00 – 0.30 | 0.30 – 2.10 | – | – | – |
| TP184 | – | 0.00 – 0.80 | 0.80 – 1.80 | – | – | – |
| TP185 | – | 0.00 – 0.60 | 0.60 – 1.00<br>1.50 – 2.50 | 1.00 – 1.50 | – | – |
| TP186 | – | 0.00 – 1.80 | 1.80 – 2.00 | – | – | – |
| TP187 | – | 0.00 – 1.00 | 1.00 – 2.80 | – | – | – |
| TP188 | – | 0.00 – 0.30 | 0.85 – 2.90 | 0.30 – 0.85<br>2.90 – 3.45 | – | – |
| TP189 | – | 0.00 – 1.00 | – | 1.00 – 2.30 | – | – |
| TP190 | – | 0.00 – 0.50 | 1.10 – 3.20 | 0.50 – 1.10 | – | – |
| TP191 | – | 0.00 – 0.70 | 0.70 – 2.10 | – | – | – |
| TP192 East | – | 0.00 – 0.80 | – | – | – | – |
| TP192 West | – | 0.00 – 0.80 | – | – | – | – |

| HOLE | DEPTH TO STRATUM (m bgl) | | | | | |
|---|---|---|---|---|---|---|
| | TOPSOIL | MADE GROUND | CLAY | SAND | GRAVEL | BEDROCK |
| TP193 | – | 0.00 – 1.50 | – | – | – | – |
| TP194 | – | 0.00 – 1.10 | 1.10 – 3.30 | – | – | – |
| TP195 | – | 0.00 – 0.80 | – | – | – | – |
| TP196 | – | 0.00 – 0.70 | 1.10 – 2.80 | 0.70 – 1.10<br>2.80 – 3.00 | – | – |
| TP197 | – | 0.00 – 0.50 | 1.20 – 1.80 | 0.50 – 1.20 | – | – |
| TP198 | – | 0.00 – 1.20 | 1.20 – 3.00 | 3.00 – 3.20 | – | – |
| TP199 | – | 0.00 – 1.20 | – | – | – | – |
| TP1100 | – | 0.00 – 0.50 | 0.50 – 2.00 | 2.00 – 2.80 | – | – |
| TP1101 | – | 0.00 – 1.30 | – | 1.30 – 2.30 | – | – |
| TP1102 / SA111 | – | 0.00 – 0.40 | 0.40 – 1.50 | 1.50 – 2.50 | – | – |
| TP1103 | – | 0.00 – 0.40 | 0.40 – 2.00 | – | – | – |
| TP1104 | – | 0.00 – 1.00 | 1.00 – 1.30 | 1.30 – 3.00 | – | – |
| TP1105A | – | 0.00 – 1.40 | - | – | – | – |
| TP1105B/SA108 | - | 0.00-0.40 | 1.40 – 2.40 | 0.40 – 1.40 | – | – |
| TP1106 | – | 0.00 – 0.35 | 0.35 – 1.50 | 1.50 – 3.00 | – | – |
| TP1107 / SA109 | – | 0.00 – 0.90 | 1.20 – 2.20 | 0.90 – 1.20 | – | – |
| TP1108 | – | 0.00 – 0.60 | 0.60 – 1.20 | 1.20 – 2.60 | – | – |
| TP1109 | – | 0.00 – 1.30 | 1.30 – 2.90 | – | – | – |
| TP1110 | 0.00-0.30 | – | 0.30 – 0.40<br>0.80 – 2.50 | 0.40 – 0.80<br>2.50 – 3.00 | – | – |
| TP1111 | – | 0.00 – 1.00 | 1.00 – 2.70 | – | – | – |
| TP1112 | - | 0.00 – 0.40 | 0.40 – 1.25 | 1.25 – 3.00 | – | – |
| TP1113 | – | 0.00 – 0.40 | 0.40 – 1.20 | 1.20 – 2.50 | – | – |
| TP1114 | – | 0.00 – 0.35 | 0.35 – 2.80 | - | – | – |
| TP1115 | – | 0.00 – 1.20 | 1.20 – 1.60 | 1.60 – 2.70 | – | – |
| TP1116 | – | 0.00 – 0.20 | 0.60 – 1.70 | 0.20 – 0.60<br>1.70 – 2.50 | – | – |
| TP1117 | – | 0.00 – 0.80 | 0.80 – 1.20 | 1.20 – 2.40 | – | – |
| TP1118 | – | 0.00 – 0.80 | 0.80 – 2.80 | – | – | – |
| TP1119 | – | 0.00 – 0.80 | 0.80 – 1.70 | 1.70 – 2.60 | – | – |
| TP1120 | – | 0.00 – 0.40 | 1.40 – 2.50 | 0.40 – 1.40 | – | – |
| TP1121 | 0.00–0.70 | – | 0.70 – 1.80 | 1.80 – 3.00 | – | – |
| TP1122 | – | 0.00 – 0.50 | 1.60 – 2.90 | 0.50 – 1.60 | – | – |
| TP1123 | – | 0.00 – 2.00 | 2.00 – 2.60 | – | – | – |
| TP1124 | – | 0.00 – 0.15 | 0.70 – 1.70 | 0.15 – 0.70<br>1.70 – 3.20 | – | – |

| HOLE | DEPTH TO STRATUM (m bgl) | | | | | |
|---|---|---|---|---|---|---|
| | TOPSOIL | MADE GROUND | CLAY | SAND | GRAVEL | BEDROCK |
| TP1125 | – | 0.00 – 0.70 | 0.70 – 1.40 | 1.40 – 2.70 | – | – |
| TP1126 | – | 0.00 – 1.50 | 1.50 – 2.00 | 2.00 – 2.80 | – | – |
| TP1127 / SA110 | – | 0.00 – 0.40 | 0.40 – 1.50 | 1.50 – 2.20 | – | – |
| TP1128 | – | 0.00 – 1.80 | 1.80 – 2.70 | 2.70 – 3.00 | – | – |
| TP1130 | – | 0.00 – 2.50 | – | 2.50 – 3.00 | – | – |
| WS101 | – | 0.00 – 2.00 | 2.50 – 3.00 | 2.00 – 2.50<br>3.00 – 3.30 | – | – |
| WS102 | - | 0.00 – 3.10 | 3.10 - 4.45 | – | – | – |
| WS103 | – | 0.00 – 2.50 | 2.50 – 4.00<br>4.50 – 4.80 | 4.00 – 4.50<br>4.80 – 4.94 | – | – |
| WS104 | - | 0.00 – 1.50 | – | 1.50 – 2.38 | – | – |
| WS105 | – | 0.00 – 1.70 | 1.70 – 2.70 | 2.70 – 3.29 | – | – |
| WS106 | - | 0.00 – 2.50 | 2.50 – 3.70 | 3.70 – 4.18 | – | – |
| WS107 | – | 0.00 – 0.70 | 0.70 – 1.60 | 1.60 – 2.44 | – | – |
| WS108 | – | 0.00 – 2.91 | – | – | – | – |
| WS109 | – | 0.00 – 4.50 | – | 4.50 – 5.45 | – | – |
| WS110 | - | 0.00-0.25 | 0.25 – 1.25 | 1.25 – 2.38 | – | – |
| WS111 | – | 0.00 – 5.45 | – | – | – | – |
| WS112 | – | 0.00 – 1.80 | 1.80 – 2.30 | 2.30 – 3.10 | – | – |
| WS113 | 0.00-0.15 | – | 0.15 – 2.00 | 2.00 – 2.44 | – | – |
| WS114 | - | 0.00-0.20 | 0.20 – 1.10 | 1.10 – 2.31 | – | – |
| WS115 | 0.00-0.50 | – | 0.50 – 2.00 | 2.00 – 2.39 | – | – |
| WS116 | – | 0.00 – 0.30 | 0.30 – 1.00 | 1.00 – 2.45 | – | – |
| WS117 | – | 0.00 – 0.20 | 0.20 – 2.80 | 2.80 – 3.43 | – | – |
| WS118 | - | 0.00 – 0.70 | 0.70 – 2.31 | – | – | – |
| WS119 | – | 0.00-1.00 | 1.00-2.80<br>3.00-4.00 | 2.80-3.00<br>4.00-4.44 | – | – |
| WS120 | - | 0.00 – 2.45 | – | – | – | – |
| WS121 | – | 0.00 – 1.60 | 1.60 – 2.80 | 2.80 – 3.43 | – | – |
| WS122 | – | 0.00 – 1.00 | 1.00 – 2.45 | | – | – |
| WS123 | – | 0.00 – 1.50 | 1.50 – 2.60 | 2.60 – 3.44 | – | – |
| WS124 | – | 0.00 – 4.10 | – | – | – | – |
| WS125 | – | 0.00 – 1.00 | 1.00 – 2.95 | – | – | – |
| WS126 | - | 0.00 - 0.20 | – | 0.20 – 2.45 | – | – |
| WS127 | – | 0.00 – 1.00 | 1.00 – 3.00 | 3.00 – 4.45 | – | – |
| WS128 | 0.00–0.15 | – | 0.15 – 4.02 | – | – | – |

| HOLE | DEPTH TO STRATUM (m bgl) | | | | | |
|---|---|---|---|---|---|---|
| | TOPSOIL | MADE GROUND | CLAY | SAND | GRAVEL | BEDROCK |
| WS129 | – | 0.00 – 0.60 | 0.60 – 2.80 | 2.80 – 4.45 | – | – |
| WS130 | – | 0.00 – 0.20 | 0.20 – 0.60<br>1.00 – 3.88 | 0.60 – 1.00 | – | – |
| WS131 | 0.00–0.20 | – | 0.20 – 2.44 | – | – | – |
| WS132 | 0.00–0.20 | – | 0.20 – 4.11 | – | – | – |
| WS133 | – | 0.00 – 0.40 | 2.00 – 4.00 | 0.40 – 2.00<br>4.00 – 4.27 | – | – |
| WS134 | – | 0.00 – 0.20 | 0.20 – 3.45 | – | – | – |
| WS135 | 0.00-0.20 | – | 1.90 – 3.43 | 0.20 – 1.90 | – | – |
| WS136 | 0.00-0.20 | – | 0.20 – 3.61 | – | – | – |
| WS137 | – | 0.00 – 1.50 | 1.50 – 2.50 | 2.50 – 3.28 | – | – |
| WS138 | – | 0.00 – 1.00 | 1.00 – 1.80 | 1.80 – 4.45 | – | – |
| WS139 | – | 0.00 – 1.30 | 1.30 – 3.00 | 3.00 – 3.25 | – | – |
| WS140 | – | 0.00 – 1.00 | 1.40 – 3.45 | 1.00 – 1.40 | – | – |
| WS141 | – | 0.00 – 0.60 | 1.00 – 3.00 | 0.60 – 1.00<br>3.00 – 3.44 | – | – |
| WS142 | – | 0.00 – 1.00 | 2.40 – 3.11 | 1.00 – 2.40 | – | – |
| WS143 | – | 0.00 – 0.50 | 0.50 – 1.40 | 1.40 – 2.44 | – | – |
| WS144 | – | 0.00 – 1.20 | 2.10 – 3.00 | 1.20 – 2.10 | 3.00 – 3.44 | – |
| WS145 | – | 0.00 – 1.20 | – | 1.20 – 2.44 | – | – |
| WS146 | – | 0.00 – 1.00 | – | – | – | – |
| WS147 | – | 0.00 – 0.50 | 0.50 – 2.42 | – | – | – |
| WS148 | – | 0.00 – 1.20 | 1.20 – 2.00 | 2.00 – 5.45 | – | – |
| WS149A | – | 0.00 – 1.36 | – | – | – | – |
| WS149B | – | 0.00 – 1.37 | – | – | – | – |
| WS150 | – | 0.00 – 0.75 | 3.30 – 4.44 | 0.75 – 3.30 | – | – |
| WS151 | – | 0.00 – 0.70 | 0.70 – 2.00 | 2.00 – 2.44 | – | – |
| WS152 | – | 0.00 – 3.45 | – | – | – | – |
| WS153A | – | 0.00 – 1.17 | – | – | – | – |
| WS153B | – | 0.00 – 1.07 | – | – | – | – |
| WS153C | – | 0.00 – 1.17 | – | – | – | – |
| WS155 | – | 0.00 – 0.70 | 0.70 – 1.20 | 1.20 – 2.29 | – | – |
| WS157 | – | 0.00 – 0.10 | 0.10 – 1.60 | 1.60 – 2.22 | – | – |
| WS159 | – | 0.00 – 0.50 | 0.50 – 1.70 | 1.70 – 2.37 | – | – |
| WS161 | – | 0.00 – 0.40 | 0.40 – 1.60 | 1.60 – 2.06 | – | – |
| WS163 | – | 0.00 – 0.30 | 2.00 – 3.44 | 0.30 – 2.00 | – | – |
| WS165A | – | 0.00 – 0.34 | – | – | – | – |

| HOLE | DEPTH TO STRATUM (m bgl) | | | | | |
|---|---|---|---|---|---|---|
| | TOPSOIL | MADE GROUND | CLAY | SAND | GRAVEL | BEDROCK |
| WS165B | – | 0.00 – 0.25 | – | – | – | – |
| WS165C | – | 0.00 – 0.35 | – | – | – | – |
| WS167A | – | 0.00 – 0.35 | – | – | – | – |
| WS167B | – | 0.00 – 0.30 | – | – | – | – |
| WS167C | – | 0.00 – 0.30 | – | – | – | – |
| WS169 | – | 0.00 – 0.50 | 0.50 – 2.00 | 2.00 – 2.44 | – | – |
| WS171 | – | 0.00 – 0.60 | 0.60 – 1.90 | 1.90 – 3.01 | – | – |
| CP/RB101 | – | 0.00 – 5.50 | 5.50 – 6.10 | – | – | 6.10 – 12.50 |
| CP/RB102 | – | 0.00 – 4.90 | 4.90 – 5.10 | – | – | 5.10 – 12.00 |
| CP/RB103 | – | 0.00 – 3.60 | 3.60 – 4.70 | – | – | 4.70 – 11.00 |
| **Supplementary Investigation (North-western sector)** | | | | | | |
| TP201 | – | 0.00 – 0.85* | – | – | – | – |
| TP202 | – | 0.00 – 2.40* | – | – | – | – |
| TP203 | – | 0.00 – 0.90* | – | – | – | – |
| TP204 | – | 0.00 – 1.20 | 1.20 – 2.10 | – | – | – |
| TP205 | – | 0.00 – 0.60 | 0.60 – 2.80 | – | – | – |
| TP206 | – | 0.00 – 0.40 | 0.40 – 1.90 | – | – | – |
| TP207 | – | 0.00 – 0.60 | 0.60 – 2.30 | – | – | – |
| TP208 | – | 0.00 – 0.60 | 0.60 – 2.00 | – | – | – |
| TP209 | – | 0.00 – 0.80 | – | 0.80 – 1.80 | – | – |
| TP210 | – | 0.00 – 0.90 | – | – | – | – |
| TP211 | – | 0.00 – 2.50 | – | – | – | – |
| TP212 | – | 0.00 – 1.30 | 1.30 – 2.20 | – | – | – |
| WS201 | – | 0.00 – 3.00 | – | 3.00 – 4.43 | – | – |
| WS202 | – | 0.00 – 0.60 | 0.60 – 2.00 | 2.00 – 3.44 | – | – |
| WS203 | – | 0.00 – 0.55 | 0.55 – 1.60 | 1.60 – 3.40 | – | – |
| WS204 | – | 0.00 – 1.00 | 1.00 – 1.50 | 1.50 – 3.44 | – | – |
| WS205 | – | 0.00 – 0.70 | – | – | – | – |
| WS205a | – | 0.00 – 0.70 | – | – | – | – |
| WS206 | – | 0.00 – 0.80 | 0.80 – 2.60<br>3.00 – 3.20 | 2.60 – 3.00<br>3.20 – 3.44 | – | – |

## 8.2. MADE GROUND

Made Ground deposits were encountered within the majority of exploratory hole locations to depths of between 0.00m and 5.50 bgl. The depth of Made Ground was not proven in 27 locations due to either underground obstructions, the collapse of the trial pit, or the ingress of water.

Made Ground deposits generally comprised a reworked topsoil of dark grey slightly gravelly clayey fine to coarse SAND or gravelly sandy to very sandy CLAY with frequent rootlets with gravel of brick, mudstone, sandstone and ceramic. TP164 was overlain by asphalt and concrete associated with the former garage / petrol station, with TP168 overlain by ceramic tiles overlying concrete indicative of the former residential dwellings in this area of the site. Furthermore, WS150, TP188 and TP196 in the north-east of the site was overlain by asphalt, with WS144, WS146, WS148, TP190, TP192 and TP194 overlain by concrete with rebar. TP197 and WS147 in the north-west of the site was overlain by asphalt and concrete.

Underlying the reworked topsoil or hardstanding, deeper Made Ground deposits comprised of reworked brown very sandy gravelly clays or gravelly sands.

Within TP160 the exploratory hole location was dug down the side of a former foundation which showed the slab to be 1.10m thick and the foundation going down to 2.80mbgl.

Within the vicinity of the 1950s-1960s historical deposition to create a level platform within the central and northern sectors of the site Made Ground deposits comprised a clayey very gravelly fine to coarse ashy sand with gravel of ash, glass, ceramic, textiles, clinker, wood, timber, brick, metal, mudstone and cardboard.

Within the north-western sector of the site, there is considered to have been further level raising in order to construct the college; typically, the deposits within the areas of hardstanding comprised 200mm of asphalt, underlain by circa 300mm of sandy gravel with gravel of limestone, concrete and rare asphalt (sub-base). Underneath, Made Ground deposits generally comprised sandy gravel with cobbles, with gravel of brick, concrete, sandstone and mudstone with rare fragments of plastic, timber, metal, and cobbles of rebar and brick.

A Depth of Made Ground Plan is presented as Drawing 15-280-006 in Appendix III.

## 8.3. DRIFT DEPOSITS

Drift deposits were encountered within the majority of exploratory locations with the exception from locations where the full depth of Made Ground could not be proven. The drift deposits are varied, generally comprising a soft to very stiff, medium to very high strength, slightly gravelly sandy brown CLAY with gravel of sandstone and mudstone or a slightly gravelly to gravelly slightly, slightly clayey to very clayey fine to medium SAND with gravel of sandstone and mudstone.

Soft CLAYs, noted with shear strengths below 30 kN/m$^2$ have been noted within WS103 and WS105, both situated within the central region of the site.

## 8.4. SOLID GEOLOGY

The solid bedrock geology was first encountered between 4.70 mbgl and 6.10mbgl. and comprised of SANDSTONE.

A number of window sample probeholes terminated on or within weathered sandstone bedrock which was recovered as gravelly SANDs from 1.20mbgl. to in excess of 5.45mbgl.

## 8.5. GROUNDWATER

Groundwater strikes were encountered as seepages and strikes along with perched water. The depth of the strikes are shown on the exploratory hole records in Appendix V and are summarised in Table 8.2.

TABLE 8.2 SUMMARY GROUNDWATER STRIKES

| LOCATION | DEPTH TO STRIKE (m) | NOTES |
|---|---|---|
| TP101 | 2.60 | Seepage - Slow ingress |
| TP103 | 2.60 | Seepage - Slow ingress |
| TP104 | 0.40 | Seepage |
| TP106 | 1.40 | Seepage - Slow ingress |
| TP107 | 2.00 | Strike |
| TP109 | 2.30 | Strike |
| TP110 / SA101 | 1.80 | Seepage – Slow ingress |
| TP111 | 2.40 | Strike – Fast water ingress |
| TP113 | 1.80 | Strike – Fast water ingress |
| TP114 | 2.80 | Seepage - Slow ingress |
| TP116 | 0.40 | Strike – Fast water ingress |
| TP117 | 2.40 | Strike – Fast water ingress |
| TP118 | 2.00 | Strike |
| TP119 | 2.40 | Strike |
| TP120 | 2.00 | Strike – Fast water ingress |
| TP123 | 2.40 | Strike – Fast water ingress |
| TP124 | 0.65 | Seepage - Slow ingress |
| TP128 | 1.40 | Strike – Fast water ingress |
| TP129 | 1.50 | Seepage - Slow ingress |
| TP130 / SA103 | 0.80 | Seepage – Very slow ingress |
| TP134 | 2.00 | Seepage - Slow ingress |
| TP135 | 1.40 | Seepage - Slow ingress |
| TP136 | 0.80 | Seepage - Slow ingress |
| TP137 | 2.30 | Seepage - Slow ingress |
| TP139 | 1.30 | Land drain |
| TP140 | 1.20 | Seepage - Slow ingress |
| TP141 | 1.00 | Perched water |
| TP142 | 0.40 | Perched water |
| TP143 | 2.00 | Seepage - Slow ingress |
| TP144 | 1.20 | Seepage - Slow ingress |
| TP145 | 0.60 | Seepage - Slow ingress |

| LOCATION | DEPTH TO STRIKE (m) | NOTES |
|---|---|---|
| TP146 | 1.40 | Seepage - Slow ingress |
| TP148 | 0.50 | Strike – Fast water ingress |
| TP149 | 1.20 | Strike – Fast water ingress |
| TP152 | 2.40 | Seepage - Slow ingress |
| TP153 | 0.50 | Strike – Fast water ingress |
| TP154 | 2.90 | Seepage - Slow ingress |
| TP155 | 0.80 | Strike – Fast water ingress |
| TP156 | 2.70 | Seepage - Slow ingress |
| TP160 | 0.50 | Perched water – rapid ingress |
| TP161 | 1.50 | Seepage - Slow ingress |
| TP167 | 1.50 | Perched water – slow ingress |
| TP169 | 1.80 | Strike – Fast water ingress |
| TP170 | 0.90 | Seepage - Slow ingress |
| TP174 | 0.90 | Seepage - Slow ingress |
| TP177 | 2.00 | Seepage - Slow ingress |
| TP178 | 1.20 | Seepage - Slow ingress |
| TP179 | 1.60 | Seepage - Slow ingress |
| TP180 | 1.70 | Seepage |
| TP181 | 1.80 | Seepage - Slow ingress |
| TP182 | 1.00 | Seepage - Slow ingress |
| TP183 | 1.40 | Seepage - Slow ingress |
| TP184 | 0.80 | Seepage - Slow ingress |
| TP185 | 0.70 | Strike – Fast water ingress |
| TP186 | 1.80 | Land drain |
| TP187 | 1.40 | Seepage - Slow ingress |
| TP188 | 3.00 | Seepage - Slow ingress |
| TP191 | 0.80 | Seepage - Slow ingress |
| TP193 | 1.00 | Perched water – fast ingress |
| TP196 | 1.10 | Seepage - Slow ingress |
| TP198 | 3.00 | Seepage - Slow ingress |
| TP199 | 1.00 | Land drain – fast ingress |
| TP1100 | 2.00 | Seepage - Slow ingress |
| TP1101 | 0.90 | Perched Water |
| TP1106 | 2.00 | Seepage - Slow ingress |
| TP1114 | 2.60 | Seepage - Slow ingress |



| LOCATION | DEPTH TO STRIKE (m) | NOTES |
|---|---|---|
| TP1115 | 0.60 | Strike |
| TP1116 | 0.60 | Perched water |
| TP1116 | 1.70 | Running sands |
| TP1119 | 1.80 | Strike |
| TP1122 | 2.80 | Seepage - Slow ingress |
| TP1123 | 2.00 | Land drain |
| TP1124 | 0.70 | Perched water |
| TP1124 | 1.70 | Seepage - Slow ingress |
| WS105 | 2.20 | Strike |
| WS108 | 2.20 | Strike – slow ingress |
| WS109 | 4.00 | Perched water |
| WS116 | 1.00 | Seepage – slow ingress |
| WS117 | 2.00 | Strike |
| WS119 | 2.80 | Strike |
| WS129 | 2.50 | Strike |
| WS133 | 3.00 | Strike |
| WS136 | 3.50 | Seepage - Slow ingress |
| WS144 | 3.00 | Seepage - Slow ingress |
| WS145 | 1.00 | Perched water - Slow ingress |
| WS148 | 3.00 | Seepage - Slow ingress |
| WS150 | 2.00 | Seepage - Slow ingress |
| WS152 | 2.00 | Seepage - Slow ingress |
| WS155 | 1.20 | Strike |
| WS163 | 1.30 | Strike |
| CP/RB102 | 2.00 | Strike |
| CP/RB103 | 3.40 | Strike |
| TP202 | 1.80 | Perched water - Slow ingress |
| TP203 | 0.30 | Seepage - Moderate ingress |
| TP204 | 0.30 | Seepage - Slow ingress |
| WS204 | 1.00 | Strike |

True groundwater is considered to be within the natural SAND deposits between circa 1.40m and 4.00mbgl and was generally encountered as seepages with occasional water strikes. Perched water was encountered within the Made Ground deposits, overlying the underlying drift deposits.

Groundwater has not been noted within the SANDSTONE deposits during the cable percussive with rotary follow-on boreholes or generally within the shallow weathered bedrock deposits recovered as SANDs and GRAVELs with the exception of WS144 where a seepage at 3.00mbgl was encountered.

Monitoring was undertaken using an electronic dip meter and interface probe to record the depth to groundwater and the thickness of any free-phase hydrocarbon product, if present.

## 8.6. VISUAL AND OLFACTORY EVIDENCE OF CONTAMINATION

Visual and olfactory evidence of potential contamination has been identified during the site investigation and these are summarised in Table 8.3.

TABLE 8.3 SUMMARY VISUAL AND OLFACTORY EVIDENCE OF CONTAMINATION

| LOCATION | DEPTH (m) | STRATUM | NOTES |
|---|---|---|---|
| TP107 | 0.70 | Made Ground | Slight hydrocarbon odour |
| TP1128 | 0.80 | Made Ground | Strong hydrocarbon odour |
| TP139 | 1.20-1.50m | Made Ground | Slight hydrocarbon odour |
| TP1101 | 0.90 | Made Ground | Very strong hydrogen sulphide odour. |
| WS141 | 0.00-0.20 | Made Ground | Suspected asbestos sheeting. |
| WS142 | 1.00-2.40 | SAND | Hydrocarbon odour |
| WS163 | 1.00-1.40 | SAND | Organic odour |
| TP201 | 0.15 – 0.85 | Made Ground | Slight hydrocarbon odour |
| TP202 | 0.20 – 2.40 | Made Ground | Strong hydrocarbon odour |
| TP203 | 0.10 – 0.90 | Made Ground | Strong hydrocarbon odour |
| TP204 | 0.30 – 1.20 | Made Ground | Slight hydrocarbon odour |
| TP206 | 0.20 – 0.40 | Made Ground | Slight hydrocarbon odour |
| TP207 | 0.25 – 0.60 | Made Ground | Slight hydrocarbon odour |
| TP211 | 0.30 – 2.50 | Made Ground | Slight hydrocarbon odour |
| WS201 | 0.30 – 2.45 | Made Ground | Slight hydrocarbon odour & Ash constituents |
| WS202 | 0.60 – 2.00 | CLAY | Slight Hydrocarbon odour |
| WS204 | 0.15 – 0.60 | Made Ground | Slight Hydrocarbon odour |
| WS206 | 0.80 – 2.60 | CLAY | Strong Hydrocarbon odour |

## 8.7. SOIL CONSISTENCY

Undrained shear strength values were measured using both field hand shear vane tests and laboratory undrained triaxial tests. Results of the tests are presented in Table 8.4 and Table 8.5, which indicate the clay soils varying between soft and stiff. Strength test data is generally consistent with the field descriptions of the aforementioned soils.

TABLE 8.4 SUMMARY OF HAND SHEAR VANE TESTS

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP101 | 1.50 | 90 | 212 |

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP103 | 0.60 | 53 | 125 |
| TP103 | 1.00 | 76 | 179 |
| TP103 | 1.50 | 65 | 153 |
| TP104 | 0.60 | 61 | 143 |
| TP104 | 0.80 | 54 | 127 |
| TP104 | 1.00 | 71 | 167 |
| TP105 | 0.80 | 89 | 209 |
| TP105 | 1.50 | 55 | 129 |
| TP106 | 0.80 | 52 | 122 |
| TP106 | 1.20 | 60 | 141 |
| TP106 | 1.40 | 66 | 155 |
| TP107 | 1.50 | 58 | 136 |
| TP115 | 2.20 | 72 | 169 |
| TP116 | 0.25 | 23 | 54 |
| TP116 | 0.45 | 30 | 71 |
| TP118 | 2.30 | 54 | 127 |
| TP120 | 0.30 | 68 | 160 |
| TP122 | 0.50 | 70 | 165 |
| TP122 | 1.00 | 65 | 153 |
| TP124 | 0.40 | 64 | 150 |
| TP124 | 0.70 | 58 | 136 |
| TP126 | 0.50 | 70 | 165 |
| TP126 | 1.00 | 73 | 172 |
| TP127 | 1.50 | 83 | 195 |
| TP128 | 1.40 | 73 | 172 |
| TP128 | 2.00 | 91 | 214 |
| TP128 | 2.30 | 74 | 174 |
| TP128 | 2.50 | 104 | 244 |
| TP129 | 0.80 | 61 | 143 |
| TP129 | 1.50 | 29 | 68 |
| TP130 | 0.50 | 64 | 150 |
| TP131 | 0.50 | 111 | 261 |
| TP131 | 1.00 | 28 | 66 |
| TP132 | 0.50 | 83 | 195 |
| TP132 | 1.00 | 70 | 165 |

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP132 | 1.20 | 100 | 235 |
| TP133 | 0.40 | 107 | 251 |
| TP133 | 1.00 | 34 | 80 |
| TP134 | 0.70 | 54 | 127 |
| TP134 | 0.90 | 76 | 179 |
| TP134 | 1.10 | 90 | 214 |
| TP134 | 1.30 | 85 | 200 |
| TP135 | 0.70 | 112 | 263 |
| TP135 | 1.20 | 52 | 122 |
| TP136 | 0.90 | 96 | 226 |
| TP136 | 1.00 | 105 | 247 |
| TP136 | 1.50 | 107 | 251 |
| TP136 | 2.00 | 89 | 209 |
| TP138 | 0.80 | 58 | 136 |
| TP138 | 1.20 | 72 | 169 |
| TP138 | 1.50 | 66 | 155 |
| TP138 | 2.00 | 60 | 141 |
| TP140 | 1.30 | 86 | 202 |
| TP140 | 1.60 | 84 | 197 |
| TP140 | 1.80 | 81 | 190 |
| TP140 | 2.00 | 70 | 165 |
| TP142b | 0.50 | 66 | 155 |
| TP142b | 1.00 | 74 | 174 |
| TP142b | 2.00 | 64 | 150 |
| TP142b | 2.50 | 74 | 174 |
| TP142b | 3.00 | 99 | 233 |
| TP143 | 0.80 | 113 | 266 |
| TP144 | 0.40 | 52 | 122 |
| TP144 | 0.60 | 56 | 132 |
| TP144 | 1.00 | 58 | 136 |
| TP145 | 1.80 | 109 | 256 |
| TP146 | 0.20 | 39 | 92 |
| TP146 | 0.40 | 52 | 122 |
| TP146 | 0.60 | 39 | 92 |
| TP147 | 1.50 | 128 | 301 |

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP148 | 0.50 | 78 | 183 |
| TP148 | 1.00 | 81 | 190 |
| TP148 | 1.30 | 85 | 200 |
| TP149 | 2.00 | 71 | 167 |
| TP150 | 1.60 | 108 | 254 |
| TP150 | 1.70 | 116 | 273 |
| TP151 | 1.20 | 60 | 141 |
| TP153 | 2.00 | 29 | 68 |
| TP154 | 3.00 | 69 | 162 |
| TP154 | 3.20 | 70 | 165 |
| TP155 | 1.70 | 103 | 242 |
| TP155 | 2.10 | 119 | 280 |
| TP156 | 1.30 | 103 | 242 |
| TP156 | 1.80 | 115 | 270 |
| TP156 | 2.20 | 103 | 242 |
| TP157 | 1.70 | 73 | 172 |
| TP158 | 0.50 | 86 | 202 |
| TP158 | 1.00 | 99 | 233 |
| TP158 | 1.50 | 82 | 193 |
| TP158 | 2.00 | 79 | 186 |
| TP158 | 2.50 | 100 | 235 |
| TP159 | 1.50 | 122 | 287 |
| TP160 | 0.80 | 53 | 125 |
| TP160 | 1.50 | 54 | 127 |
| TP160 | 2.00 | 63 | 148 |
| TP161 | 1.40 | 138 | 324 |
| TP161 | 2.00 | 69 | 162 |
| TP162 | 0.50 | 85 | 200 |
| TP162 | 1.20 | 75 | 176 |
| TP163 | 1.10 | 84 | 197 |
| TP163 | 2.00 | 31 | 73 |
| TP163 | 2.40 | 35 | 82 |
| TP164 | 1.50 | 46 | 108 |
| TP164 | 2.20 | 63 | 148 |
| TP165 | 1.40 | 75 | 176 |

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP165 | 1.80 | 106 | 249 |
| TP165 | 2.30 | 104 | 244 |
| TP168 | 1.00 | 84 | 197 |
| TP168 | 1.50 | 85 | 200 |
| TP168 | 2.00 | 96 | 226 |
| TP168 | 2.50 | 92 | 216 |
| TP168 | 3.00 | 90 | 214 |
| TP170 | 1.00 | 55 | 129 |
| TP171 | 0.60 | 24 | 56 |
| TP171 | 0.80 | 93 | 219 |
| TP171 | 1.80 | 64 | 150 |
| TP173 | 0.50 | 62 | 146 |
| TP173 | 1.80 | 48 | 113 |
| TP174 | 1.20 | 103 | 242 |
| TP176 | 1.50 | 94 | 221 |
| TP177 | 2.30 | 46 | 108 |
| TP178 | 1.20 | 99 | 233 |
| TP179 | 0.80 | 82 | 193 |
| TP179 | 1.40 | 196 | 461 |
| TP179 | 1.80 | 85 | 200 |
| TP180 | 1.70 | 96 | 226 |
| TP181 | 0.50 | 51 | 120 |
| TP181 | 1.00 | 136 | 320 |
| TP181 | 1.50 | 103 | 242 |
| TP181 | 2.00 | 57 | 134 |
| TP182 | 1.20 | 95 | 223 |
| TP183 | 0.40 | 112 | 263 |
| TP183 | 0.90 | 57 | 134 |
| TP184 | 1.40 | 105 | 247 |
| TP185 | 1.80 | 43 | 101 |
| TP186 | 1.40 | 94 | 221 |
| TP186 | 1.80 | 99 | 232 |
| TP187 | 1.00 | 76 | 179 |
| TP187 | 1.80 | 75 | 176 |
| TP187 | 2.10 | 62 | 146 |

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP188 | 1.00 | 81 | 190 |
| TP188 | 1.50 | 72 | 169 |
| TP188 | 2.00 | 72 | 169 |
| TP188 | 2.50 | 69 | 162 |
| TP190 | 1.50 | 74 | 174 |
| TP190 | 2.00 | 76 | 179 |
| TP190 | 2.50 | 82 | 193 |
| TP191 | 0.70 | 73 | 172 |
| TP191 | 1.30 | 84 | 197 |
| TP191 | 2.00 | 75 | 176 |
| TP194 | 1.30 | 84 | 197 |
| TP194 | 1.80 | 82 | 193 |
| TP194 | 2.20 | 72 | 169 |
| TP194 | 2.80 | 53 | 125 |
| TP194 | 3.20 | 53 | 125 |
| TP196 | 1.50 | 76 | 179 |
| TP196 | 2.00 | 76 | 179 |
| TP196 | 2.50 | 72 | 169 |
| TP198 | 1.50 | 85 | 200 |
| TP198 | 2.00 | 75 | 176 |
| TP198 | 2.50 | 66 | 155 |
| TP1100 | 0.50 | 62 | 146 |
| TP1100 | 1.00 | 72 | 169 |
| TP1100 | 1.50 | 72 | 169 |
| TP1102 | 0.50 | 59 | 139 |
| TP1102 | 1.00 | 63 | 148 |
| TP1102 | 1.50 | 64 | 150 |
| TP1103 | 1.20 | 76 | 179 |
| TP1103 | 1.50 | 63 | 148 |
| TP1104 | 1.00 | 49 | 115 |
| TP1105B | 1.40 | 60 | 141 |
| TP1105B | 2.00 | 88 | 207 |
| TP1106 | 0.50 | 59 | 139 |
| TP1106 | 1.00 | 57 | 134 |
| TP1106 | 1.50 | 60 | 141 |

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP1107 | 1.20 | 50 | 118 |
| TP1107 | 1.60 | 119 | 280 |
| TP1107 | 2.00 | 103 | 242 |
| TP1108 | 1.00 | 51 | 120 |
| TP1109 | 2.50 | 114 | 268 |
| TP1110 | 1.00 | 53 | 125 |
| TP1110 | 1.50 | 56 | 132 |
| TP1110 | 2.00 | 62 | 146 |
| TP1111 | 1.20 | 112 | 263 |
| TP1111 | 1.80 | 56 | 132 |
| TP1111 | 2.50 | 119 | 280 |
| TP1112 | 0.50 | 55 | 129 |
| TP1112 | 1.00 | 56 | 132 |
| TP1113 | 0.70 | 77 | 181 |
| TP1114 | 0.50 | 58 | 136 |
| TP1114 | 1.00 | 62 | 146 |
| TP1114 | 1.50 | 61 | 143 |
| TP1114 | 2.00 | 61 | 143 |
| TP1114 | 2.50 | 60 | 141 |
| TP1115 | 1.50 | 59 | 139 |
| TP1116 | 0.80 | 41 | 96 |
| TP1116 | 1.30 | 49 | 115 |
| TP1116 | 1.70 | 37 | 87 |
| TP1117 | 0.80 | 75 | 176 |
| TP1117 | 1.10 | 84 | 197 |
| TP1118 | 0.80 | 57 | 134 |
| TP1118 | 1.50 | 62 | 146 |
| TP1118 | 2.00 | 64 | 150 |
| TP1118 | 2.50 | 62 | 146 |
| TP1119 | 1.00 | 61 | 143 |
| TP1119 | 1.50 | 44 | 103 |
| TP1120 | 1.50 | 50 | 118 |
| TP1120 | 2.00 | 64 | 150 |
| TP1120 | 2.50 | 86 | 202 |
| TP1121 | 1.00 | 67 | 157 |

| LOCATION | DEPTH | SHEAR STRENGTH (kPA) | CALCULATED ALLOWABLE BEARING PRESSURE ($kN/m^2$) |
|---|---|---|---|
| TP1121 | 1.50 | 77 | 181 |
| TP1122 | 1.60 | 80 | 188 |
| TP1122 | 2.00 | 68 | 160 |
| TP1122 | 2.40 | 45 | 106 |
| TP1124 | 0.80 | 45 | 106 |
| TP1125 | 0.80 | 91 | 214 |
| TP1125 | 1.20 | 75 | 176 |
| TP1126 | 1.50 | 53 | 125 |
| TP1127 | 0.80 | 56 | 132 |
| TP1127 | 1.30 | 94 | 221 |
| TP1128 | 1.80 | 55 | 129 |
| TP206 | 1.00 | 57 | 133 |
| TP206 | 1.40 | 70 | 164 |
| TP207 | 1.10 | 132 | 310 |
| TP208 | 0.80 | 148 | 347 |
| TP208 | 1.20 | 148 | 347 |
| TP209 | 1.60 | 73 | 171 |
| TP209 | 1.80 | 90 | 211 |
| TP212 | 1.60 | 141 | 331 |
| TP212 | 2.00 | 131 | 307 |

**Notes**
ABP Calculated using Stroud and Butler et al 1974.

Results of the standard penetration tests, including undrained shear strengths derived from SPTs are included in Table 8.6.

TABLE 8.5 SUMMARY OF UNDRAINED SHEAR STRENGTH TEST RESULTS

| LOCATION | SAMPLE DEPTH (m) | LAB DESCRIPTION | UNDRAINED SHEAR STRENGTH ($kN/m^2$) | CONSISTENCY |
|---|---|---|---|---|
| WS113 | 1.50–2.00 | Firm brown silty sandy CLAY | 44 | Firm |
| WS143 | 0.50–1.00 | Stiff brown silty sandy CLAY | 66 | Firm |
| WS116 | 0.50–1.00 | Stiff brown silty sandy CLAY | 107 | Stiff |
| WS130 | 1.50–2.00 | Soft brown silty sandy CLAY | 22 | Soft |
| WS159 | 0.50–1.00 | Soft brown silty sandy CLAY | 83 | Stiff |
| WS202 | 1.50–2.00 | Stiff brown gravelly CLAY | 83 | Stiff |

## 8.8. SIDE STABILITY AND EASE OF EXCAVATION

Trial pits were generally stable in natural strata however instability of trial pits and window sample probeholes was noted within some SAND deposits and areas of deeper Made Ground.

The presence of brick and concrete cobbles within the Made Ground deposits meant that in certain places, excavation was slow through the Made Ground and in some places, Made Ground could not be fully penetrated. The natural strata were excavated with relative ease.

TABLE 8.6 STANDARD/CONE PENETRATION TEST RESULTS

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS101** | 1.00 | MADE GROUND: Sand | 1 | 1.01 | Very Loose | N/A | N/A | N/A | 10.08 |
| **WS101** | 2.00 | SAND | 16 | 14.62 | Medium Dense | N/A | N/A | N/A | 146.16 |
| **WS101** | 3.00 | SAND (Weathered bedrock). | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.83 |
| **WS102** | 1.00 | MADE GROUND: Clay | 4 | 4.03 | N/A | Low strength | Firm | 20.16 | 41.46 |
| **WS102** | 2.00 | MADE GROUND: Clay | 7 | 6.39 | N/A | Low strength | Firm | 31.97 | 65.74 |
| **WS102** | 3.00 | CLAY | 12 | 10.44 | N/A | Medium strength | Stiff | 52.18 | 107.28 |
| **WS102** | 4.00 | CLAY | 50 | 42.24 | N/A | Very high strength | Very Stiff | 211.21 | 434.25 |
| **WS103** | 1.00 | MADE GROUND: Gravel | 18 | 18.15 | Medium Dense | N/A | N/A | N/A | 181.46 |
| **WS103** | 2.00 | MADE GROUND: Sand | 1 | 0.91 | Very Loose | N/A | N/A | N/A | 9.135 |
| **WS103** | 3.00 | CLAY | 0 | 0.87 | N/A | Extremely low strength | Very Soft | 4.35 | 8.94 |
| **WS103** | 4.00 | SAND | 5 | 4.22 | Loose | N/A | N/A | N/A | 42.24 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS103 | 4.80 | SAND (Weathered bedrock). | 50 | 41.61 | Dense | N/A | N/A | N/A | 416.07 |
| WS104 | 1.00 | MADE GROUND: Clay | 9 | 9.07 | N/A | Medium strength | Stiff | 45.37 | 93.27 |
| WS104 | 2.00 | Clayey SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| WS105 | 1.00 | MADE GROUND: gravel | 5 | 5.04 | Loose | N/A | N/A | N/A | 50.40 |
| WS105 | 2.00 | CLAY | 4 | 3.65 | N/A | Very low strength | Soft | 18.27 | 37.56 |
| WS105 | 3.00 | SAND | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| WS106 | 1.00 | MADE GROUND: Clay | 8 | 8.07 | N/A | Medium strength | Stiff | 40.33 | 82.91 |
| WS106 | 2.00 | MADE GROUND: Clay | 11 | 10.05 | N/A | Medium strength | Stiff | 50.24 | 103.30 |
| WS106 | 3.00 | CLAY | 13 | 11.31 | N/A | Medium strength | Stiff | 56.53 | 116.22 |
| WS106 | 3.80 | SAND | 50 | 42.44 | Dense | N/A | N/A | N/A | 424.42 |
| WS107 | 1.00 | CLAY | 11 | 11.09 | N/A | Medium strength | Stiff | 55.45 | 114.00 |
| WS107 | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS108 | 1.00 | MADE GROUND: Clay | 20 | 20.16 | N/A | High strength | Very Stiff | 100.81 | 207.28 |
| WS108 | 2.00 | MADE GROUND: Clay | 1 | 0.91 | N/A | Extremely low strength | Very Soft | 4.57 | 9.39 |
| WS108 | 2.80 | MADE GROUND: Clay | 50 | 43.82 | N/A | Very high strength | Very Stiff | 219.10 | 450.48 |
| WS109 | 1.00 | MADE GROUND: gravel | 6 | 6.05 | Loose | N/A | N/A | N/A | 60.48 |
| WS109 | 2.00 | MADE GROUND: gravel | 1 | 0.91 | Very Loose | N/A | N/A | N/A | 9.13 |
| WS109 | 3.00 | MADE GROUND: gravel | 4 | 3.48 | Very Loose | N/A | N/A | N/A | 34.78 |
| WS109 | 4.00 | MADE GROUND: gravel | 1 | 0.84 | Very Loose | N/A | N/A | N/A | 8.45 |
| WS109 | 5.00 | SAND | 18 | 14.93 | Medium Dense | N/A | N/A | N/A | 149.33 |
| WS110 | 1.00 | SAND | 23 | 23.19 | Medium Dense | N/A | N/A | N/A | 231.87 |
| WS110 | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| WS111 | 1.00 | MADE GROUND: gravel | 6 | 6.05 | Loose | N/A | N/A | N/A | 60.48 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS111 | 2.00 | MADE GROUND: gravel | 5 | 4.57 | Loose | N/A | N/A | N/A | 45.67 |
| WS111 | 3.00 | MADE GROUND: gravel | 23 | 20.00 | Medium Dense | N/A | N/A | N/A | 200.01 |
| WS111 | 4.00 | MADE GROUND: gravel | 4 | 3.38 | Very Loose | N/A | N/A | N/A | 33.79 |
| WS111 | 5.00 | MADE GROUND: gravel | 19 | 15.76 | Medium Dense | N/A | N/A | N/A | 157.62 |
| WS112 | 1.00 | MADE GROUND: clay | 4 | 4.03 | N/A | Low strength | Firm | 20.16 | 41.46 |
| WS112 | 2.00 | CLAY | 12 | 10.96 | N/A | Medium strength | Stiff | 54.81 | 112.69 |
| WS112 | 3.00 | SAND | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| WS113 | 1.00 | CLAY | 12 | 12.10 | N/A | Medium strength | Stiff | 60.49 | 124.37 |
| WS113 | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| WS114 | 1.00 | SAND | 15 | 15.12 | Medium Dense | N/A | N/A | N/A | 151.22 |
| WS114 | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| WS115 | 1.00 | CLAY | 8 | 8.07 | N/A | Medium strength | Stiff | 40.33 | 82.91 |
| WS115 | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS116 | 1.00 | SAND | 25 | 25.20 | Medium Dense | N/A | N/A | N/A | 252.03 |
| WS116 | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| WS117 | 1.00 | CLAY | 16 | 16.13 | N/A | High strength | Very Stiff | 80.65 | 165.82 |
| WS117 | 2.00 | CLAY | 16 | 14.62 | N/A | Medium strength | Stiff | 73.08 | 150.26 |
| WS117 | 3.00 | SAND | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| WS118 | 1.00 | CLAY | 8 | 8.07 | N/A | Medium strength | Stiff | 40.33 | 82.91 |
| WS118 | 2.00 | CLAY | 50 | 45.68 | N/A | Very high strength | Very Stiff | 228.38 | 469.56 |
| WS119 | 1.00 | CLAY | 17 | 17.14 | N/A | High strength | Very Stiff | 85.69 | 176.18 |
| WS119 | 2.00 | CLAY | 25 | 22.84 | N/A | High strength | Very Stiff | 114.19 | 234.78 |
| WS119 | 3.00 | CLAY | 16 | 13.91 | N/A | Medium strength | Stiff | 69.57 | 143.04 |
| WS119 | 4.00 | SAND (Weathered Bedrock) | 50 | 42.24 | Dense | N/A | N/A | N/A | 422.42 |
| WS120 | 1.00 | SAND | 10 | 10.08 | Medium Dense | N/A | N/A | N/A | 100.81 |
| WS120 | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS121 | 1.00 | MADE GROUND: gravel | 1 | 1.01 | Very Loose | N/A | N/A | N/A | 10.08 |
| WS121 | 2.00 | CLAY | 17 | 15.53 | N/A | High strength | Very Stiff | 77.65 | 159.65 |
| WS121 | 3.00 | SAND | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| WS122 | 1.00 | CLAY | 7 | 7.06 | N/A | Low strength | Firm | 35.29 | 72.55 |
| WS122 | 2.00 | CLAY | 50 | 45.68 | N/A | Very high strength | Very Stiff | 228.38 | 469.56 |
| WS123 | 1.00 | MADE GROUND: gravel | 1 | 1.01 | Very Loose | N/A | N/A | N/A | 10.08 |
| WS123 | 2.00 | CLAY | 12 | 10.96 | N/A | Medium strength | Stiff | 54.81 | 112.69 |
| WS123 | 3.00 | SAND | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| WS124 | 1.00 | MADE GROUND: sand | 7 | 7.06 | Loose | N/A | N/A | N/A | 70.57 |
| WS124 | 2.00 | MADE GROUND: sand | 8 | 7.31 | Loose | N/A | N/A | N/A | 73.08 |
| WS124 | 3.00 | MADE GROUND: clay | 11 | 9.57 | N/A | Stiff | Medium strength | 47.83 | 98.34 |
| WS124 | 4.00 | MADE GROUND: clay | 50 | 42.24 | N/A | Very Stiff | Very high strength | 211.21 | 434.25 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS125** | 1.00 | CLAY | 12 | 12.10 | N/A | Medium strength | Stiff | 60.49 | 124.37 |
| **WS125** | 2.00 | CLAY | 18 | 16.44 | N/A | High strength | Very Stiff | 82.22 | 169.04 |
| **WS125** | 2.50 | CLAY | 50 | 44.41 | N/A | Very high strength | Very Stiff | 222.04 | 456.52 |
| **WS126** | 1.00 | SAND | 10 | 10.08 | Medium Dense | N/A | N/A | N/A | 100.81 |
| **WS126** | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| **WS127** | 1.00 | CLAY | 6 | 6.05 | N/A | Low strength | Firm | 30.24 | 62.18 |
| **WS127** | 2.00 | CLAY | 18 | 16.44 | N/A | High strength | Very Stiff | 82.22 | 169.04 |
| **WS127** | 3.00 | SAND | 17 | 14.78 | Medium Dense | N/A | N/A | N/A | 147.84 |
| **WS127** | 4.00 | SAND | 18 | 15.21 | Medium Dense | N/A | N/A | N/A | 152.07 |
| **WS128** | 1.00 | CLAY | 8 | 8.07 | N/A | Medium strength | Stiff | 40.33 | 82.91 |
| **WS128** | 2.00 | CLAY | 7 | 6.39 | N/A | Low strength | Firm | 31.97 | 65.74 |
| **WS128** | 3.00 | CLAY | 13 | 11.31 | N/A | Medium strength | Stiff | 56.53 | 116.22 |
| **WS128** | 3.70 | CLAY | 50 | 42.55 | N/A | Very high strength | Very Stiff | 212.75 | 437.42 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS129** | 1.00 | CLAY | 15 | 15.12 | N/A | High strength | Very Stiff | 75.61 | 155.46 |
| **WS129** | 2.00 | CLAY | 16 | 14.62 | N/A | Medium strength | Stiff | 73.08 | 150.26 |
| **WS129** | 3.00 | SAND | 10 | 8.70 | Loose | N/A | N/A | N/A | 86.96 |
| **WS129** | 4.00 | SAND (Weathered Bedrock) | 22 | 18.59 | Medium Dense | N/A | N/A | N/A | 185.86 |
| **WS130** | 1.00 | CLAY | 7 | 7.06 | N/A | Low strength | Firm | 35.29 | 72.55 |
| **WS130** | 2.00 | CLAY | 7 | 6.39 | N/A | Low strength | Firm | 31.97 | 65.74 |
| **WS130** | 3.00 | CLAY | 14 | 12.18 | N/A | Medium strength | Stiff | 60.88 | 125.16 |
| **WS130** | 3.50 | CLAY | 50 | 42.78 | N/A | Very high strength | Very Stiff | 213.92 | 439.81 |
| **WS131** | 1.00 | CLAY | 21 | 21.17 | N/A | High strength | Very Stiff | 105.86 | 217.64 |
| **WS131** | 2.00 | CLAY | 50 | 45.68 | N/A | Very high strength | Very Stiff | 228.38 | 469.56 |
| **WS132** | 1.00 | CLAY | 8 | 8.07 | N/A | Medium strength | Stiff | 40.33 | 82.91 |
| **WS132** | 2.00 | CLAY | 16 | 14.62 | N/A | Medium strength | Stiff | 73.08 | 150.26 |
| **WS132** | 3.00 | CLAY | 16 | 13.91 | N/A | Medium strength | Stiff | 69.57 | 143.04 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS132 | 3.80 | CLAY | 50 | 42.44 | N/A | Very high strength | Very Stiff | 212.21 | 436.31 |
| WS133 | 1.00 | SAND | 15 | 15.12 | Medium Dense | N/A | N/A | N/A | 151.22 |
| WS133 | 2.00 | CLAY | 12 | 10.96 | N/A | Medium strength | Stiff | 54.81 | 112.69 |
| WS133 | 3.00 | CLAY | 18 | 15.65 | N/A | High strength | Very Stiff | 78.27 | 160.92 |
| WS133 | 3.90 | SAND | 50 | 42.34 | Dense | N/A | N/A | N/A | 423.40 |
| WS134 | 1.00 | CLAY | 11 | 11.09 | N/A | Medium strength | Stiff | 55.45 | 114.00 |
| WS134 | 2.00 | CLAY | 18 | 16.44 | N/A | High strength | Very Stiff | 82.22 | 169.04 |
| WS134 | 3.00 | CLAY | 50 | 43.48 | N/A | Very high strength | Very Stiff | 217.41 | 447.00 |
| WS135 | 1.00 | SAND | 11 | 11.09 | Medium Dense | N/A | N/A | N/A | 110.89 |
| WS135 | 2.00 | CLAY | 21 | 19.18 | N/A | High strength | Very Stiff | 95.92 | 197.21 |
| WS135 | 3.00 | CLAY | 50 | 43.48 | N/A | Very high strength | Very Stiff | 217.41 | 447.00 |
| WS136 | 1.00 | CLAY | 12 | 12.10 | N/A | Medium strength | Stiff | 60.49 | 124.37 |
| WS136 | 2.00 | CLAY | 15 | 13.70 | N/A | Medium strength | Stiff | 68.52 | 140.87 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS136** | 3.00 | CLAY | 21 | 18.26 | N/A | High strength | Very Stiff | 91.31 | 187.74 |
| **WS136** | 3.50 | CLAY | 50 | 42.78 | N/A | Very high strength | Very Stiff | 213.92 | 439.81 |
| **WS137** | 1.00 | MADE GROUND: gravel | 6 | 6.05 | Loose | N/A | N/A | N/A | 60.48 |
| **WS137** | 2.00 | CLAY | 8 | 7.31 | N/A | Low strength | Firm | 36.54 | 75.13 |
| **WS137** | 3.00 | SAND (Weathered Bedrock) | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| **WS138** | 1.00 | CLAY | 7 | 7.06 | N/A | Low strength | Firm | 35.29 | 72.55 |
| **WS138** | 2.00 | SAND | 10 | 9.14 | Loose | N/A | N/A | N/A | 91.35 |
| **WS138** | 3.00 | SAND | 17 | 14.78 | Medium Dense | N/A | N/A | N/A | 147.84 |
| **WS138** | 4.00 | SAND | 50 | 42.24 | Dense | N/A | N/A | N/A | 422.42 |
| **WS139** | 1.00 | MADE GROUND: gravel | 22 | 22.18 | Medium Dense | N/A | N/A | N/A | 221.79 |
| **WS139** | 2.00 | CLAY | 13 | 11.88 | N/A | Medium strength | Stiff | 59.38 | 122.09 |
| **WS139** | 3.00 | SAND | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| **WS140** | 1.00 | SAND | 5 | 5.04 | Loose | N/A | N/A | N/A | 50.40 |
| **WS140** | 2.00 | CLAY | 8 | 7.31 | N/A | Low strength | Firm | 36.54 | 75.13 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS140** | 3.00 | CLAY | 50 | 43.48 | N/A | Very high strength | Very Stiff | 217.41 | 447.00 |
| **WS141** | 1.00 | CLAY | 11 | 11.09 | N/A | Medium strength | Stiff | 55.45 | 114.00 |
| **WS141** | 2.00 | CLAY | 27 | 24.67 | N/A | High strength | Very Stiff | 123.33 | 253.56 |
| **WS141** | 3.00 | SAND (Weathered Bedrock) | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |
| **WS142** | 1.00 | SAND | 15 | 15.12 | Medium Dense | N/A | N/A | N/A | 151.22 |
| **WS142** | 2.00 | SAND | 6 | 5.48 | Loose | N/A | N/A | N/A | 54.81 |
| **WS142** | 3.00 | CLAY | 50 | 43.48 | N/A | Very high strength | Very Stiff | 217.41 | 447.00 |
| **WS143** | 1.00 | CLAY | 12 | 12.10 | N/A | Medium strength | Stiff | 60.49 | 124.37 |
| **WS143** | 2.00 | SAND (Weathered Bedrock) | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| **WS144** | 1.00 | SAND | 6 | 6.05 | Loose | N/A | N/A | N/A | 60.48 |
| **WS144** | 2.00 | CLAY | 15 | 13.70 | N/A | Medium strength | Stiff | 68.52 | 140.87 |
| **WS144** | 3.00 | GRAVEL | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.82 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS145** | 1.00 | SAND | 12 | 12.10 | Medium Dense | N/A | N/A | N/A | 120.97 |
| **WS145** | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| **WS147** | 1.00 | CLAY | 14 | 14.11 | N/A | Medium strength | Stiff | 70.57 | 145.09 |
| **WS147** | 2.00 | CLAY | 50 | 45.68 | N/A | Very high strength | Very Stiff | 228.38 | 469.56 |
| **WS148** | 1.00 | CLAY | 10 | 10.08 | N/A | Medium strength | Stiff | 50.41 | 103.67 |
| **WS148** | 2.00 | SAND | 16 | 14.62 | Medium Dense | N/A | N/A | N/A | 146.16 |
| **WS148** | 3.00 | SAND | 11 | 9.57 | Loose | N/A | N/A | N/A | 95.66 |
| **WS148** | 4.00 | SAND | 14 | 11.83 | Medium Dense | N/A | N/A | N/A | 118.27 |
| **WS148** | 5.00 | SAND | 15 | 12.44 | Medium Dense | N/A | N/A | N/A | 124.44 |
| **WS149A** | 1.00 | MADE GROUND: Concrete | 50 | 50.41 | Very Dense | N/A | N/A | N/A | 504.07 |
| **WS149B** | 1.00 | MADE GROUND: Concrete | 50 | 50.41 | Very Dense | N/A | N/A | N/A | 504.07 |
| **WS150** | 1.00 | SAND | 6 | 6.05 | Loose | N/A | N/A | N/A | 60.48 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS150** | 2.00 | SAND | 17 | 15.53 | Medium Dense | N/A | N/A | N/A | 155.30 |
| **WS150** | 3.00 | SAND | 21 | 18.26 | Medium Dense | N/A | N/A | N/A | 182.62 |
| **WS150** | 4.00 | CLAY | 50 | 42.24 | N/A | Very high strength | Very Stiff | 211.21 | 434.25 |
| **WS151** | 1.00 | CLAY | 14 | 14.11 | N/A | Medium strength | Stiff | 70.57 | 145.09 |
| **WS151** | 2.00 | SAND (Weathered bedrock) | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| **WS152** | 1.00 | MADE GROUND: sand | 6 | 6.05 | Loose | N/A | N/A | N/A | 60.48 |
| **WS152** | 2.00 | MADE GROUND: sand | 1 | 0.91 | Very Loose | N/A | N/A | N/A | 9.13 |
| **WS152** | 3.00 | MADE GROUND: clay | 50 | 43.48 | N/A | Very high strength | Very Stiff | 217.41 | 447.00 |
| **WS153A** | 1.00 | MADE GROUND: Concrete | 50 | 50.41 | Very Dense | N/A | N/A | N/A | 504.07 |
| **WS153B** | 1.00 | MADE GROUND: Concrete | 50 | 50.41 | Very Dense | N/A | N/A | N/A | 504.07 |
| **WS153C** | 1.00 | MADE GROUND: Concrete | 50 | 50.41 | Very Dense | N/A | N/A | N/A | 504.07 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| **WS155** | 1.00 | SAND | 13 | 13.11 | Medium Dense | N/A | N/A | N/A | 131.05 |
| **WS155** | 2.00 | SAND (Weathered bedrock) | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| **WS157** | 1.00 | CLAY | 12 | 12.10 | N/A | Medium strength | Stiff | 60.49 | 124.37 |
| **WS157** | 2.00 | SAND (Weathered bedrock) | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| **WS159** | 1.00 | CLAY | 11 | 11.09 | N/A | Medium strength | Stiff | 55.45 | 114.00 |
| **WS159** | 2.00 | SAND | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| **WS161** | 1.00 | CLAY | 20 | 20.16 | N/A | High strength | Very Stiff | 100.81 | 207.28 |
| **WS161** | 1.70 | SAND | 50 | 46.69 | Dense | N/A | N/A | N/A | 466.86 |
| **WS163** | 1.00 | SAND | 17 | 17.14 | Medium Dense | N/A | N/A | N/A | 171.38 |
| **WS163** | 2.00 | CLAY | 12 | 10.96 | N/A | Medium strength | Stiff | 54.81 | 112.69 |
| **WS163** | 3.00 | CLAY | 50 | 43.48 | N/A | Very high strength | Very Stiff | 217.41 | 447.00 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS165A | 0.30 | MADE GROUND: Concrete | 50 | 60.52 | Very Dense | N/A | N/A | N/A | 605.22 |
| WS167A | 0.30 | MADE GROUND: Concrete | 50 | 60.52 | Very Dense | N/A | N/A | N/A | 605.22 |
| WS169 | 1.00 | CLAY | 13 | 13.11 | N/A | Medium strength | Stiff | 65.53 | 134.73 |
| WS169 | 2.00 | SAND (Weathered bedrock) | 50 | 45.68 | Dense | N/A | N/A | N/A | 456.76 |
| WS171 | 1.00 | CLAY | 12 | 12.10 | N/A | Medium strength | Stiff | 60.49 | 124.37 |
| WS171 | 2.00 | SAND | 40 | 36.54 | Dense | N/A | N/A | N/A | 365.41 |
| WS171 | 2.60 | SAND (Weathered bedrock) | 50 | 44.20 | Dense | N/A | N/A | N/A | 442.0 |
| CP/RB101 | 1.00 | MADE GROUND: Sand | 2 | 2.02 | Very Loose | N/A | N/A | N/A | 20.16 |
| CP/RB101 | 2.00 | MADE GROUND: Sand | 2 | 1.83 | Very Loose | N/A | N/A | N/A | 18.27 |
| CP/RB101 | 3.00 | MADE GROUND: Sand | 1 | 0.87 | Very Loose | N/A | N/A | N/A | 8.69 |
| CP/RB101 | 4.00 | MADE GROUND: Sand | 2 | 1.69 | Very Loose | N/A | N/A | N/A | 16.89 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| CP/RB101 | 5.00 | MADE GROUND: Sand | 4 | 3.32 | Very Loose | N/A | N/A | N/A | 33.18 |
| CP/RB101 | 6.00 | CLAY. | 50 | 40.99 | N/A | Very high strength | Very Stiff | 204.97 | 421.42 |
| CP/RB102 | 1.00 | MADE GROUND: Sand | 1 | 1.01 | Very Loose | N/A | N/A | N/A | 10.081 |
| CP/RB102 | 2.00 | MADE GROUND: Sand | 1 | 0.91 | Very Loose | N/A | N/A | N/A | 9.13 |
| CP/RB102 | 3.00 | MADE GROUND: Sand | 3 | 2.61 | Very Loose | N/A | N/A | N/A | 26.08 |
| CP/RB102 | 4.00 | MADE GROUND: Sand | 3 | 2.53 | Very Loose | N/A | N/A | N/A | 25.34 |
| CP/RB102 | 5.00 | SANDSTONE | 50 | 41.48 | Dense | N/A | N/A | N/A | 414.81 |
| CP/RB103 | 1.00 | MADE GROUND: Sand | 2 | 2.02 | Very Loose | N/A | N/A | N/A | 20.16 |
| CP/RB103 | 2.00 | MADE GROUND: Sand | 1 | 0.91 | Very Loose | N/A | N/A | N/A | 9.13 |
| CP/RB103 | 3.00 | MADE GROUND: Sand | 4 | 3.48 | Very Loose | N/A | N/A | N/A | 34.78 |
| CP/RB103 | 4.00 | CLAY. | 20 | 16.90 | N/A | High strength | Very Stiff | 84.49 | 173.70 |
| CP/RB103 | 5.00 | SANDSTONE | 50 | 41.48 | Dense | N/A | N/A | N/A | 414.81 |



| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS201 | 1.00 | MADE GROUND | 11 | 11.09 | Medium Dense | N/A | N/A | N/A | 110.90 |
| WS201 | 2.00 | MADE GROUND | 9 | 8.22 | Loose | N/A | N/A | N/A | 82.22 |
| WS201 | 3.00 | SAND. | 23 | 20.00 | Medium Dense | N/A | N/A | N/A | 200.02 |
| WS201 | 4.00 | SAND. | 50 | 42.24 | Dense | N/A | N/A | N/A | 422.43 |
| WS202 | 1.00 | CLAY. | 9 | 9.07 | N/A | Medium strength | Stiff | 45.37 | 93.27 |
| WS202 | 2.00 | SAND. | 20 | 18.27 | Medium Dense | N/A | N/A | N/A | 182.71 |
| WS202 | 3.00 | SAND. | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.83 |
| WS203 | 1.00 | CLAY. | 11 | 11.09 | N/A | Medium strength | Stiff | 55.45 | 114.00 |
| WS203 | 2.00 | SAND. | 29 | 26.49 | Medium Dense | N/A | N/A | N/A | 264.93 |
| WS203 | 3.00 | SAND. | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.83 |
| WS204 | 1.20 | Light brown slightly gravelly very sandy CLAY. | 7 | 6.87 | N/A | Low strength | Firm | 34.34 | 70.61 |
| WS204 | 2.00 | Light brown very clayey fine to medium SAND. | 14 | 12.79 | Medium Dense | N/A | N/A | N/A | 127.90 |

| BOREHOLES | DEPTH (m bgl) | MATERIAL FIELD DESCRIPTION | CPT/SPT "N" VALUE | CORRECTED "N" VALUE $(N_1)_{60}$ | TERZAGHI & PECK RELATIVE DENSITY (SANDS) | EUROCODE SOIL STRENGTH | CONSISTENCY (BS 5930) | TERZAGHI & PECK APPROXIMATE UNDRAINED SHEAR STRENGTH ($kN/m^2$) | ALLOWABLE BEARING PRESSURE ($kN/m^2$)* |
|---|---|---|---|---|---|---|---|---|---|
| WS204 | 3.00 | Light brown very clayey fine to medium SAND. | 50 | 43.48 | Dense | N/A | N/A | N/A | 434.83 |
| WS205 | 0.70 | MADE GROUND | 50 | 53.21 | Very Dense | N/A | N/A | N/A | 532.08 |
| WS205a | 0.70 | MADE GROUND | 50 | 53.21 | Very Dense | N/A | N/A | N/A | 532.08 |
| WS206 | 1.00 | CLAY. | 7 | 7.06 | N/A | Low strength | Firm | 35.29 | 72.55 |
| WS206 | 2.00 | CLAY. | 15 | 13.70 | N/A | Medium strength | Stiff | 68.52 | 140.87 |
| WS206 | 3.00 | CLAY. | 50 | 43.48 | N/A | Very high strength | Very Stiff | 217.41 | 447.00 |

**NOTES**
* The Allowable Bearing Pressure (ABP) should be considered indicative.
The interpretation of in situ mass undrained shear strength (cu) data from SPT Blow Count (N) results and the influence of the Plasticity Index (PI) was reported in Standard Penetration Test in Insensitive Clays and Soft Rocks. Stroud (1974). The standard penetration test and the engineering properties of glacial materials subsequently. Stroud and Butler (1975) and (1989).
Allowable bearing pressure on sands. Soil Mechanics in Engineering Practice Terzaghi, K. & Peck, R.B. 1996.



## 8.9. CONSOLIDATION

Three undisturbed samples of CLAY were submitted for oedometer analysis. The results are provided in Table 8.7.

TABLE 8.7 OEDOMETER CONSOLIDATION RESULTS

| LOCATION | DEPTH (m) | SAMPLE TYPE | MOISTURE CONTENT (%) | OEDOMETER CONSOLIDATION | | |
|---|---|---|---|---|---|---|
| | | | | PRESSURE RANGE (kPa) | Mv ($m^2$/MN) | Cv (t90 root) ($m^2$/year) |
| WS116 | 0.50-1.00 | U100 | 18 | 0–15 | 0.62 | 1.61 |
| | | | | 15–30 | 0.40 | 1.19 |
| | | | | 30–60 | 0.33 | 1.60 |
| | | | | 60–120 | 0.17 | 1.15 |
| | | | | 120–15 | 0.02 | - |
| WS138 | 2.00-3.00 | U100 | 12 | 0 – 55 | 0.39 | 1.76 |
| | | | | 55 – 110 | 0.16 | 2.48 |
| | | | | 110 – 220 | 0.12 | 2.98 |
| | | | | 220 – 440 | 0.07 | 3.56 |
| | | | | 440 – 55 | 0.02 | - |
| WS202 | 1.50-2.00 | U100 | 14 | 0 – 35 | 0.482 | 1.375 |
| | | | | 35 – 70 | 0.218 | 1.190 |
| | | | | 70 – 140 | 0.167 | 1.104 |
| | | | | 140 – 280 | 0.105 | 0.978 |
| | | | | 280 - 35 | 0.036 | 0.881 |

The results have determined that the clay soil is of very low to high compressibility under loading of 120-440 kN/m2. It should be noted that if this material is excavated for use in a cut/fill operation, then careful consideration should be taken in the stabilisation of this material.

Engineering of this type of material will need to be completed only during dry weather periods.

Predictive settlement analysis will be required where materials are to be subject to surcharge loading and to assess the construction infrastructure load and settlement potential.

## 8.10. UNIAXIAL COMPRESSION TESTS ON ROCK

Uniaxial compression tests were performed on samples of sandstone obtained from the three rotary boreholes advanced on-site. Samples were carried out where single core lengths of >200mm could be obtained. As the sandstone cores had significant fracturing (both naturally and drilling induced), the testing for UCS was limited. It is possible that additional samples may be viable if required.

The results of which are presented in Appendix X and are summarised in Table 8.8.

TABLE 8.8 SUMMARY OF UNIAXIAL COMPRESSION TESTS

| LOCATION | DEPTH (m) | TEST TYPE | LOAD FAILURE (kN) | UCS - MPa |
|---|---|---|---|---|
| CP/RB101 | 6.70 – 6.91 | C | 16.7 | 2.6 |
| CP/RB101 | 7.50-7.96 | C | 82.4 | 13.0 |
| CP/RB101 | 11.10 – 11.15 | C | 29.4 | 4.6 |
| CP/RB102 | 6.10 – 6.40 | C | 78 | 12.4 |
| CP/RB102 | 10.40 – 10.60 | C | 34.1 | 5.5 |
| CP/RB103 | 6.55 – 6.78 | C | 56.6 | 8.9 |
| CP/RB103 | 8.33 – 8.65 | C | 56.6 | 8.9 |

The results indicate a strength of between 2.6 and 13.0 (MPa) which equates to 2600–13000 kN/m$^2$

## 8.11. POINT LOAD TESTS

Select samples of sandstone rock core were submitted to a geotechnical laboratory for Point Load testing.

The results of this analysis are provided in Table 8.9 & 8.10.

The laboratory analysis sheets are included in Appendix X and the strength criteria are summarised in Table 8.9.

TABLE 8.9 DESCRIPTIVE TERMS OF ROCK STRENGTH

| TERM | STRENGTH (MPA) |
|---|---|
| Extremely Weak | 0.6-1.0 |
| Very Weak | 1-5 |
| Weak | 5-12.5 |
| Moderately Weak | 12.5-25 |
| Medium Strong | 25-50 |
| Strong | 50-100 |
| Very Strong | 100-250 |
| Extremely Strong | >250 |

TABLE 8.10 SUMMARY OF ROCK POINT LOAD TESTING

| BORE-HOLE | DEPTH (m) | ORQIENTATION | DIAMETER (mm) | $D_E$ (mm) | $D_E^2$ | Load (P) (kN) | $I_S$ (MPA) | CORR FAC (F) | $I_{S50}$ (MPA) | CALCULATED UCS (MPA) |
|---|---|---|---|---|---|---|---|---|---|---|
| CP/RB101 | 10.28-10.40 | Unknown | 90 | 90 | 8100 | 2.6 | 0.32 | 1.30 | 0.42 | **10.08** |
| | 11.50-11.65 | Unknown | 90 | 90 | 8100 | 0.6 | 0.07 | 1.30 | 0.10 | **2.40** |
| CP/RB102 | 6.66 – 6.77 | Unknown | 90 | 90 | 8100 | 2.6 | 0.32 | 1.30 | 0.42 | **10.08** |
| | 8.25 – 8.40 | Unknown | 90 | 90 | 8100 | 2.3 | 0.28 | 1.30 | 0.37 | **8.88** |
| | 9.38 – 9.50 | Unknown | 89 | 89 | 7921 | 0.1 | 0.01 | 1.30 | 0.02 | **0.48** |
| | 11.00 – 11.10 | Unknown | 88 | 88 | 7744 | 0.5 | 0.06 | 1.29 | 0.08 | **1.92** |
| CP/RB103 | 5.13 – 5.31 | Unknown | 90 | 90 | 8100 | 14.1 | 1.74 | 1.30 | 2.27 | **54.48** |
| | 10.20 – 10.40 | Unknown | 90 | 90 | 8100 | 2.6 | 0.32 | 1.30 | 0.42 | **10.08** |

In a paper titled "Using The Point Load Test To Determine The Uniaxial Compressive Strength Of Coal Measure Rock", Rusnak and Mark indicate that early studies (Bieniawski, 1975; Broch and Franklin, 1972) conducted on hard, strong rocks, and found that relationship between UCS and the point load strength could be expressed as:

$$UCS = (K)Is50 = 24Is50$$

Where K is the conversion factor and $Is_{50}$ is the corrected point load strength index. The conversion factor appears as a broad range, however, the value of 24 has been identified as an average result of published calculated conversion factors for sandstone stratum globally.

Given the results from the laboratory testing above, it would be appropriate to term the shallow bedrock underlying the site as generally extremely weak to strong and indicates a minimum UCS of 0.48 MPa (CP/RB102) which is considered conservative based on a minimum rock strength required of 2.0 MPa for piling.

## 8.12. PARTICLE SIZE DISTRIBUTION

Particle Size Distribution Tests have been undertaken on selected samples of granular material via wet sieve to obtain information on the soil fractions. The results are included in Table 8.11. The full results can be found in Appendix X.

TABLE 8.11 SUMMARY OF PARTICLE SIZE DISTRIBUTION TEST RESULTS

| LOCATION | DEPTH (m) | SOIL FRACTION (%) | | | |
|---|---|---|---|---|---|
| | | COBBLES | GRAVEL | SAND | SILT/CLAY |
| TP117 | 1.00 (Made Ground) | 0 | 45 | 21 | 34 |
| TP163 | 1.40 (Natural SAND) | 0 | 0 | 17 | 83 |
| TP118 | 1.00 (Made Ground) | 5 | 53 | 26 | 16 |
| TP140 | 0.50 (Made Ground) | 0 | 37 | 41 | 22 |
| TP152 | 0.50 (Natural SAND) | 0 | 22 | 76 | 2 |
| TP1208 | 1.20 (Natural SAND) | 0 | 1 | 82 | 17 |
| TP1119 | 1.00 (Natural CLAY) | 0 | 15 | 24 | 61 |
| TP205 | 1.70 (Natural CLAY) | 0 | 16 | 50 | 34 |
| TP210 | 0.90 (Made Ground) | 17 | 61 | 18 | 4 |

## 8.13. SOIL DENSITY/MOISTURE CONTENT RELATIONSHIP

Dry density / moisture content relationship analysis has been conducted on soils using via utilising proctor compaction tests utilising a 2.5kg. The results of the tests have been summarised in Table 8.12. The full test results can be found in Appendix X.

TABLE 8.12 SUMMARY DRY DENSITY AND MOISTURE CONTENT

| LOCATION | LABORATORY DESCRIPTION | TOP DEPTH (m) | METHOD OF COMPACTION | INITIAL MOISTURE CONTENT (%) | OPTIMUM MOISTURE CONTENT (%) | MATERIAL RETAINED ON 37.5 mm SIEVE (%) | MAX DRY DENSITY (mg/m³) | MATERIAL RETAINED ON 20.0 mm TEST SIEVE (%) |
|---|---|---|---|---|---|---|---|---|
| TP117 | Made Ground | 1.00 | 2.5kg | 16.3 | 21.0 | 2 | 1.45 | 17 |
| TP140 | Made Ground | 0.50 | 2.5kg | 15.8 | 19 | 2 | 1.53 | 13 |
| TP152 | Brown slightly silty SAND with frequent gravel | 0.50 | 2.5kg | 6.6 | 11 | 2 | 1.84 | 7 |

The compaction tests have indicated that the materials on site are not wet at the optimum. It should be noted that if this material is excavated for use in a cut/fill operation careful consideration should be taken in the stabilisation of this material / controlling the moisture. Engineering of this type of material will need to be completed during dry weather periods only.

## 8.14. SOIL INFILTRATION

In-situ BRE 365 Soakaway tests were undertaken over a 48 hour period within trial pits completed as SA101/TP110, SA102/TP122, SA103/TP130, SA104/TP101, SA105/TP151, SA106/TP163, SA107/TP131, SA108/TP1105B, SA109/TP1107, SA110/TP1127 and SA111/TP1102.

The results are presented in Table 8.13 below and the test certificates are included in Appendix IX.

TABLE 8.13 BRE365 SOAKAWAY TESTING RESULTS

| LOCATION | DEPTH (m) | MATERIAL | TEST NO. | SOIL INFILTRATION RATE (m/s) |
|---|---|---|---|---|
| SA101 | 3.20 | Clayey SAND | Test No.1 | N/A |
| SA102 | 2.60 | Gravelly SAND | Test No.1 | N/A |
| SA103 | 2.23 | Gravelly SAND | Test No.1 | N/A |
| SA104 | 2.60 | Slightly gravelly slightly sandy CLAY / Gravelly SAND | Test No.1 | N/A |
| SA105 | 2.70 | Slightly gravelly CLAY / SAND | Test No.1 | N/A |
| SA106 | 2.40 | Very sandy CLAY / Sandy CLAY / slightly gravelly slightly clayey SAND/Slightly sandy CLAY | Test No.1 | N/A |
| SA107 | 2.50 | Slightly gravelly CLAY / Gravelly silty CLAY / Gravelly SAND | Test No.1 | N/A |
| SA108 | 2.40 | Slightly clayey SAND / Sandy CLAY | Test No.1 | N/A |
| SA109 | 2.20 | Slightly clayey SAND / Slightly sandy CLAY | Test No.1 | N/A |
| SA110 | 2.20 | Sandy CLAY / SAND | Test No.1 | N/A |
| SA111 | 2.50 | Gravelly sandy CLAY / Slightly gravelly clayey SAND. | Test No.1 | N/A |

Soil infiltration was taken over the wetted area from between 75% and 25% of the effective depth. All tests showed drift deposits to have very poor soakage potential as a soil infiltration rate could not be calculated within locations due to the presence of low permeability cohesive drift deposits or clayey SANDs.

Therefore, it is considered that soakaway drainage is unlikely to be suitable for the proposed development. However, the application of soakaway drainage will ultimately be dependent on the specific requirements of the development. All soakaways should be designed in accordance with CRE Special Digest 365 – Soakaway Design.

## 8.15. SOIL PLASTICITY

The liquid and plastic limits of samples of natural in-situ clay are determined using the cone penetrometer method and the rolling thread test. These tests enable determination of an average plasticity index (PI) for each "type" of clay, although judgement is applied where variable results are reported.

PI can be related to shrinkability (low, medium or high) and then to minimum founding depth.

E3P typically only consider a soil to be shrinkable if the proportion finer than 63 µm is > 35%.

PI results are compared against guidance given in the NHBC standards, Chapter 4.2 (revised January 2014), which advocates the use of modified plasticity index (I'p), defined as:

$$I'p = Ip \times (\% < 425\ \mu m/100)$$

In other words, if PI is 30%, but the soil contains 80% < 425 µm, then I'p = 30 × 80/100 = 24%.

It should be noted that in accordance with the requirements of BS 1377, the % passing the 425 µm sieve is routinely reported by testing labs.

E3P apply engineering judgement where PI results are spread over a range of classifications. Consideration is given to the average values for each particular soil type (differentiate between residual soil and alluvium), the number of results in each class and the actual values.

The Atterberg limits determinations, summarised in Table 8.14, show the clay to be characterised as low plasticity and medium volume change potential clay.

TABLE 8.14 SUMMARY OF PLASTICITY INDEX TEST RESULTS

| LOCATION | DEPTH (m) | NATURAL MOISTURE CONTENT (%) | PLASTIC LIMIT (%) | LIQUID LIMIT (%) | PLASTICITY INDEX (%) | PASSING 425 µm SIEVE (%) | MODIFIED PLASTICITY INDEX | NHBC VOLUME CHANGE POTENTIAL |
|---|---|---|---|---|---|---|---|---|
| WS107 | 1.00 | 16 | 12 | 33 | 21 | 100 | 21 | Medium |
| WS125 | 2.00 | 16 | 12 | 30 | 18 | 100 | 18 | Low |
| WS127 | 2.00 | 24 | 16 | 43 | 27 | 99 | 26.73 | Medium |
| WS141 | 1.00 | 13 | 13 | 39 | 26 | 98 | 25.48 | Medium |
| WS104 | 1.00 | 15 | 12 | 31 | 19 | 100 | 19 | Low |
| WS112 | 2.00 | 17 | 16 | 40 | 24 | 98 | 23.52 | Medium |
| WS122 | 1.00 | 16 | 14 | 39 | 25 | 96 | 24 | Medium |
| WS128 | 1.00 | 13 | 11 | 25 | 14 | 100 | 14 | Low |
| WS155 | 1.00 | 11 | 11 | 29 | 18 | 100 | 18 | Low |
| WS163 | 2.00 | 11 | 11 | 28 | 17 | 100 | 17 | Low |
| TP205 | 1.70 | 14 | 15 | 33 | 18 | 77 | 13.86 | Low |
| WS202 | 1.50 – 2.00 | 14 | 14 | 31 | 17 | 95 | 16.15 | Low |
| WS204 | 1.50 – 2.00 | 21 | 17 | 32 | 15 | 94 | 14.1 | Low |
| WS206 | 2.00 – 2.45 | 18 | 14 | 29 | 15 | 93 | 13.95 | Low |

The results of the Atterberg limits testing confirmed that the soils would be deemed to be “Low to Medium Volume Change Potential” in accordance with the classification system utilised by the LABC/NHBC industry guidance.

Where MVCP clay is identified, it is challenging to delineate these soils due to the complexity of the geology and deposition mechanism. If delineation was considered, extensive testing at a high feqewuncy would be required in conjunction with detailed geological analysis to differentiate deposits with changeable soil mechanics behaviour.

## 8.16. CALIFORNIA BEARING RATIO

The California bearing ratio (CBR) for the soils were measured using an in-situ TRL probe. The results are summarised in Table 8.15.

The result sheets are included in Appendix VIII and the locations are shown on Drawing 15-280-005 (Appendix III). CBR results have been averaged from the blow counts across the strata tested and any abnormally high blow counts ignored as these are likely to be from larger granular material and so represent anomalies.

TABLE 8.15 SUMMARY OF DCP RESULTS

| LOCATION | DEPTH (m) | STRATA | IN-SITU OR LAB TEST | CBR (%) |
|---|---|---|---|---|
| DCP101 | 0.61 – 0.83 | CLAY | In-Situ | 5.35 |
| DCP102 | 0.18 – 0.51 | Made Ground | In-Situ | 10.09 |
| DCP103 | 0.62 – 0.82 | Made Ground | In-Situ | 7.50 |
| DCP104 | 0.46 – 0.72 | Sandy CLAY | In-Situ | 9.73 |
| DCP105 | 0.22 – 0.39 | Made Ground | In-Situ | 13.44 |
| DCP106 | 0.37 - 0.53 | Made Ground | In-Situ | 6.20 |
| DCP107 | 0.68 – 0.85 | Made Ground / CLAY | In-Situ | 10.18 |
| DCP108 | 0.29 – 0.39 | Made Ground | In-Situ | 7.92 |
| DCP109 | 0.63 – 0.73 | Made Ground | In-Situ | 17.43 |
| DCP110 | 0.58 - 0.68 | Made Ground | In-Situ | 4.73 |
| DCP111 | 0.59 – 0.71 | Made Ground | In-Situ | 6.40 |
| DCP112 | 0.44 – 0.69 | Made Ground: Sandy CLAY | In-Situ | 14.66 |
| DCP113 | 0.57 – 0.66 | Made Ground | In-Situ | 7.66 |
| DCP114 | 0.55 – 0.75 | Made Ground | In-Situ | 4.99 |
| DCP115 | 0.37 - 0.82 | CLAY | In-Situ | 7.75 |
| DCP116 | 0.28 - 0.43 | Made Ground | In-Situ | 9.85 |
| DCP117 | 0.33 – 0.61 | Made Ground | In-Situ | 11.77 |
| DCP118 | 0.33 – 0.48 | Made Ground | In-Situ | 15.12 |
| DCP119 | 0.41 – 0.75 | Made Ground / CLAY | In-Situ | 8.65 |
| DCP120 | 0.66 – 0.76 | Made Ground | In-Situ | 16.29 |
| DCP121 | 0.61 – 0.67 | Firm sandy CLAY | In-Situ | 16.67 |
| DCP122 | 0.20 – 0.34 | Made Ground | In-Situ | 8.79 |
| DCP123 | 0.19 - 0.20 | Made Ground | In-Situ | 337.57 |
| DCP124 | 0.33- 0.57 | Made Ground | In-Situ | 14.06 |
| DCP125 | 0.21 – 0.28 | Made Ground | In-Situ | 62.08 |
| DCP126 | 0.70 – 0.74 | CLAY | In-Situ | 6.84 |
| DCP127 | 0.21 – 0.35 | CLAY | In-Situ | 7.10 |
| DCP128 | 0.22 - 0.66 | CLAY | In-Situ | 7.84 |
| DCP129 | 0.34 – 0.82 | Made Ground | In-Situ | 5.06 |
| DCP130 | 0.12 – 0.64 | Made Ground | In-Situ | 10.10 |

| LOCATION | DEPTH (m) | STRATA | IN-SITU OR LAB TEST | CBR (%) |
|---|---|---|---|---|
| DCP131 | 0.00 – 0.13 | Made Ground | In-Situ | 5.62 |
| DCP132 | 0.36 – 0.58 | Made Ground | In-Situ | 11.40 |
| DCP133 | 0.00 – 0.13 | CLAY | In-Situ | 7.10 |
| DCP134 | 0.48 – 0.72 | CLAY | In-Situ | 9.60 |
| DCP135 | 0.61 – 0.82 | Made Ground / CLAY | In-Situ | 3.39 |
| DCP136 | 0.61 – 0.84 | CLAY | In-Situ | 17.25 |
| DCP137 | 0.13 – 0.15 | Made Ground | In-Situ | 119.71 |
| DCP138 | 0.47 – 0.86 | CLAY | In-Situ | 6.27 |
| DCP139 | 0.24 – 0.33 | Made Ground | In-Situ | 18.97 |
| DCP140 | 0.37 – 0.53 | Made Ground | In-Situ | 6.08 |
| DCP141 | 0.62 – 0.78 | Made Ground | In-Situ | 6.41 |
| DCP142 | 0.55 – 0.74 | Made Ground | In-Situ | 3.81 |
| DCP143 | 0.46 – 0.74 | Made Ground / CLAY | In-Situ | 2.47 |
| DCP144 | 0.12 – 0.17 | Made Ground | In-Situ | 96.44 |
| DCP145 | 0.19 – 0.45 | CLAY | In-Situ | 7.71 |
| DCP146 | 0.52 – 0.75 | Made Ground | In-Situ | 8.52 |

It should be noted that the reported CBR results were obtained from soils in a highly undisturbed state. If, however, the topsoil and surface cover is removed during periods of wetter climatic condition, the formation will soften, reducing the CBR.

## 8.17. PH AND SULPHATE

Chemical analyses for pH and soluble sulphate content contained in Appendix VI (summarised in Table 8.16), shows that the soils at the site generally meet Class DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1s in accordance with BRE *Special Digest 1* (2005).

Elevated sulphate concentrations meeting Class DS-2, AC-1s were noted within the Made Ground deposits in TP117 at 0.70 m. Elevated sulphate concentrations meeting Class DS-3, AC-2s were noted within the Made Ground deposits in TP118 at 0.50m and TP1101 at 0.90m.

TABLE 8.16 SUMMARY OF pH AND SULPHATE DATA

| LOCATION | DEPTH (m) | $SO_4$ IN 2:1 WATER/SOIL (g/l) | pH VALUE | CLASSIFICATION |
|---|---|---|---|---|
| WS106 | 0.50 | 0.0088 | 7.4 | DS-1,AC-1s |
| WS110 | 1.20 | 0.074 | 7.0 | DS-1,AC-1s |
| TP118 | 0.50 | 2.4 | 6.9 | **DS-3, AC-2s** |
| WS114 | 0.50 | 0.0053 | 7.5 | DS-1,AC-1s |
| TP132 | 0.20 | 0.073 | 7.3 | DS-1,AC-1s |
| WS124 | 1.90 | 0.26 | 7.4 | DS-1,AC-1s |
| WS130 | 0.50 | 0.030 | 6.7 | DS-1,AC-1s |

| LOCATION | DEPTH (m) | $SO_4$ IN 2:1 WATER/SOIL (g/l) | pH VALUE | CLASSIFICATION |
|---|---|---|---|---|
| TP162 | 0.10 | 0.030 | 8.9 | DS-1,AC-1s |
| TP166 | 0.40 | 0.058 | 9.0 | DS-1,AC-1s |
| WS140 | 0.50 | 0.027 | 12 | DS-1,AC-1s |
| WS142 | 1.60 | 0.0055 | 8.1 | DS-1,AC-1s |
| TP107 | 0.70 | 0.080 | 7.2 | DS-1,AC-1s |
| TP117 | 0.70 | 0.77 | 7.4 | **DS-2,AC-1s** |
| WS111 | 2.50 | 0.40 | 8.4 | DS-1,AC-1s |
| TP141 | 1.00 | 0.12 | 7.6 | DS-1,AC-1s |
| TP141 | 2.00 | 0.053 | 7.2 | DS-1,AC-1s |
| TP155 | 1.00 | 0.092 | 7.4 | DS-1,AC-1s |
| TP169 | 0.80 | 0.83 | 6.8 | DS-1,AC-1s |
| WS131 | 0.10 | 0.067 | 6.9 | DS-1,AC-1s |
| TP185 | 0.70 | 0.011 | 7.5 | DS-1,AC-1s |
| TP1101 | 0.90 | 1.8 | 8.2 | **DS-3, AC-2s** |
| TP101 | 1.30 | 0.16 | 8.4 | DS-1,AC-1s |
| WS139 | 0.10 | 0.080 | 9.0 | DS-1,AC-1s |
| WS141 | 1.80 | 0.0043 | 8.1 | DS-1,AC-1s |
| TP1115 | 1.50 | 0.080 | 8.1 | DS-1,AC-1s |
| WS148 | 0.80 | 0.016 | 7.0 | DS-1,AC-1s |
| TP194 | 0.80 | 0.18 | 7.5 | DS-1,AC-1s |
| TP1104 | 0.50 | 0.035 | 8.4 | DS-1,AC-1s |
| TP1118 | 0.70 | 0.037 | 7.7 | DS-1,AC-1s |
| TP1122 | 0.20 | 0.032 | 7.8 | DS-1,AC-1s |
| TP1128 | 0.50 | 0.10 | 7.7 | DS-1,AC-1s |
| TP206 | 1.30 | 0.0058 | 8.0 | DS-1,AC-1s |
| TP207 | 0.50 | 0.13 | 9.4 | DS-1,AC-1s |
| TP208 | 0.30 | 0.071 | 8.5 | DS-1,AC-1s |
| WS201 | 1.50 | 0.032 | 8 | DS-1,AC-1s |
| WS202 | 0.80 | 0.34 | 10.3 | DS-1,AC-1s |

# 9. TIER I QUALITATIVE CONTAMINATED LAND RISK ASSESSMENT

E3P has undertaken a Tier 1 qualitative risk assessment to determine if any potential contaminants within the underlying soils and groundwater pose an unacceptable level of risk to the identified receptors.

## 9.1. DEVIATING SAMPLES

Deviating samples were to be avoided during the ground investigation by using best practice sampling procedures including use of appropriate sampling containers and adhering to the laboratory holding times for each contaminant analysis undertaken. No deviating samples were identified during the investigation or monitoring of the site.

## 9.2. HUMAN HEALTH RISK ASSESSMENT

At Tier 1 stage, the long term (chronic) human health toxicity of the soil has been assessed by comparing the on-site concentrations of organic and inorganic compounds with reference values published in LQM/CIEH S4UL (S4UL3267).

Where Tier 1 screening values are not provided by LQM, other screening values have been used and these are referenced in Table 9.1.

The results of this comparison have been summarised within Table 9.1.

TABLE 9.1 SUMMARY OF INORGANIC AND HYDROCARBON TOXICITY ASSESSMENT FOR A RESIDENTIAL END USE

| DETERMINANT | UNIT | GAC | N | MC | LOC. OF EX | PATH -WAY | ASSESSMENT |
|---|---|---|---|---|---|---|---|
| Arsenic | mg/kg | 37 | 62 | 110<br>52<br>41<br>86<br>96<br>47<br>110<br>96<br>120<br>120<br>130<br>110<br>61 | TP118 0.50 m<br>TP132 0.20 m<br>TP140 0.10 m<br>TP117 0.70 m<br>TP121 1.00 m<br>WS111 2.50 m<br>TP141 1.00 m<br>TP155 1.00 m<br>TP169 0.80 m<br>WS131 0.10 m<br>TP1125 0.10 m<br>TP194 0.80 m<br>TP1128 0.50 m | 1 | Further Action |
| Cadmium | mg/kg | 11 | 62 | 13<br>12 | WS111 2.50 m<br>TP117 0.70 m | 1 | Further Action |
| Chromium (VI) | mg/kg | 6.0 | 62 | < 4.0 | N/A | 1 | No Further Action |
| Lead | mg/kg | 200 | 62 | 220<br>270<br>450<br>1100<br>940<br>410<br>420<br>1400<br>1400<br>1200<br>1000 | TP118 0.50 m<br>TP140 0.10 m<br>TP117 0.70 m<br>TP121 1.00 m<br>WS111 2.50 m<br>TP141 1.00 m<br>TP155 1.00 m<br>TP169 0.80 m<br>WS131 0.10 m<br>TP1125 0.10 m<br>TP194 0.80 m | 1 | Further Action |
| Mercury | mg/kg | 1.2 | 62 | 2.8<br>2.0 | TP118 0.50 m<br>TP141 1.00 m | 4 | Further Action |
| Nickel | mg/kg | 130 | 62 | 140<br>210<br>210<br>140 | TP155 1.00 m<br>TP169 0.80 m<br>WS131 0.10 m<br>TP194 0.80 m | 1 | Further Action |
| Selenium | mg/kg | 250 | 62 | 3.9 | N/A | 1 | No Further Action |
| Copper | mg/kg | 2400 | 62 | 2300 | N/A | 1 | No Further Action |
| Zinc | mg/kg | 3700 | 62 | 4200 | TP1125 0.10 m | 1 | Further Action |
| Cyanide – Total | mg/kg | 791 | 62 | 11 | N/A | 1 | No Further Action |
| Phenols – Total | mg/kg | 120 | 37 | < 1.0 | N/A | 1 | No Further Action |
| Asbestos | Fibres | NFD | 62 | 0.002%<br><0.001%<br>0.005%<br>0.009%<br><0.001% | TP118 0.50 m<br>TP132 0.20 m<br>TP140 0.10 m<br>TP202 1.00 m<br>WS206 0.90m | 3 | Further Action |
| Naphthalene | mg/kg | 2.3 | 61 | 4.1 | TP1101 0.90m | 4 | Further Action |
| Acenaphthylene | mg/kg | 170 | 61 | 1.2 | N/A | 2 | No Further Action |

| DETERMINANT | UNIT | GAC | N | MC | LOC. OF EX | PATH -WAY | ASSESSMENT |
|---|---|---|---|---|---|---|---|
| Acenaphthene | mg/kg | 210 | 61 | 6.1 | N/A | 1 | No Further Action |
| Fluorene | mg/kg | 170 | 61 | 5.1 | N/A | 1 | No Further Action |
| Phenanthrene | mg/kg | 95 | 61 | 33 | N/A | 2 | No Further Action |
| Anthracene | mg/kg | 2400 | 61 | 6.7 | N/A | 2 | No Further Action |
| Fluoranthene | mg/kg | 280 | 61 | 29 | N/A | 2 | No Further Action |
| Pyrene | mg/kg | 620 | 61 | 28 | N/A | 2 | No Further Action |
| Benzo(a)Anthracene | mg/kg | 7.2 | 61 | 7.7<br>14<br>20 | TP132 0.20m<br>TP1101 0.90 m<br>TP1125 0.10 m | 2 | Further Action |
| Chrysene | mg/kg | 15 | 61 | 19 | TP1125 0.10 m | 2 | Further Action |
| Benzo(b)Fluoranthene | mg/kg | 2.6 | 61 | 6.8<br>3.8<br>3.0<br>2.7<br>12<br>33<br>3.9<br>3.5<br>5.2 | TP132 0.20 m<br>TP142 1.00 m<br>TP199 0.10 m<br>WS139 0.10 m<br>TP1101 0.90m<br>TP1125 0.10 m<br>TP184 0.10 m<br>TP202 1.00 m<br>WS202 0.80m | 2 | Further Action |
| Benzo(k)Fluoranthene | mg/kg | 77 | 61 | 11 | N/A | 2 | No Further Action |
| Benzo(a)Pyrene | mg/kg | 5.7 | 61 | 12<br>30 | TP1101 0.90m<br>TP1125 0.10 m | 2 | Further Action |
| Indeno(123-cd)Pyrene | mg/kg | 27 | 61 | 15 | N/A | 2 | No Further Action |
| Dibenzo(a,h)Anthracene | mg/kg | 0.24 | 61 | 0.78<br>0.32<br>0.45<br>0.35<br>0.36<br>1.5<br>3.8<br>0.25<br>0.51<br>0.46<br>0.28<br>0.69 | TP132 0.20 m<br>TP120 0.10 m<br>TP142 1.00 m<br>WS139 0.10 m<br>TP155 1.00 m<br>TP1101 0.90 m<br>TP1125 0.10 m<br>TP1122 0.20m<br>TP184 0.10 m<br>TP202 1.00 m<br>TP211 0.10 m<br>WS202 0.80m | 2 | Further Action |
| Benzo(ghi)Perylene | mg/kg | 320 | 61 | 17 | N/A | 2 | No Further Action |
| TPH C5-C6 (aliphatic)* | mg/kg | 42 | 62 | < 1.0 | N/A | 4 | No Further Action |
| TPH C6-C8 (aliphatic)* | mg/kg | 100 | 62 | < 0.1 | N/A | 4 | No Further Action |
| TPH C8-C10 (aliphatic)* | mg/kg | 27 | 62 | < 0.1 | N/A | 4 | No Further Action |
| TPH C10-C12 (aromatic)* | mg/kg | 74 | 62 | 12 | N/A | 4 | No Further Action |
| TPH C12-C16 (aromatic)* | mg/kg | 140 | 62 | 52 | N/A | 4 | No Further Action |
| TPH C16-C21 (aromatic)* | mg/kg | 260 | 62 | 170 | N/A | 1 | No Further Action |

| DETERMINANT | UNIT | GAC | N | MC | LOC. OF EX | PATH -WAY | ASSESSMENT |
|---|---|---|---|---|---|---|---|
| TPH C21-C35 (aromatic)* | mg/kg | 1100 | 62 | 1700 | TP202 1.00 m | 1 | Further Action |
| TPH C5-C6 (aliphatic) | mg/kg | 42 | 62 | <0.001 | N/A | 4 | No Further Action |
| TPH C6-C8 (aliphatic) | mg/kg | 100 | 62 | <0.001 | N/A | 4 | No Further Action |
| TPH C8-C10 (aliphatic) | mg/kg | 27 | 62 | <0.001 | N/A | 4 | No Further Action |
| TPH C10-C12 (aliphatic) | mg/kg | 130 | 62 | 3.7 | N/A | 4 | No Further Action |
| TPH C12-C16 (aliphatic) | mg/kg | 1100 | 62 | 11 | N/A | 1 | No Further Action |
| TPH C16-C35 (aliphatic) | mg/kg | 65000 | 62 | 425 | N/A | 1 | No Further Action |
| TPH C5-C7 (aromatic) | mg/kg | 70 | 62 | <0.001 | N/A | 4 | No Further Action |
| TPH C7-C8 (aromatic) | mg/kg | 130 | 62 | <0.001 | N/A | 4 | No Further Action |
| TPH C8-C10 (aromatic) | mg/kg | 34 | 62 | <0.001 | N/A | 4 | No Further Action |
| TPH C10-C12 (aromatic) | mg/kg | 74 | 62 | 6.9 | N/A | 4 | No Further Action |
| TPH C12-C16 (aromatic) | mg/kg | 140 | 62 | 42 | N/A | 4 | No Further Action |
| TPH C16-C21 (aromatic) | mg/kg | 260 | 62 | 180 | N/A | 1 | No Further Action |
| TPH C21-C35 (aromatic) | mg/kg | 1100 | 62 | 470 | N/A | 1 | No Further Action |

**Notes**
PL1 = soil ingestion, PL2 = dermal contact and ingestion, PL3 = dust inhalation; PL4 = Vapour/Gas Inhalation; PL5 = Vertical / Lateral Migration; PL6 = Corrosion of concrete; PL7=Tainting of water supply; PL8 = Uptake by plants

Abbreviations: GAC = general assessment criteria, n = number of samples, MC = maximum concentration; Loc of Ex = location of exceedance; NFD = no fibres detected.

* The Tier 1 GAC for the hydrocarbon fraction is derived from the CIEH assessment for petroleum hydrocarbons Criteria Working Group (CWG) for both aliphatic and aromatic compounds. E3P has utilised the Tier 1 values for aliphatic compounds for the volatile and semi volatile fractions (C5-C12) and the Tier 1 values for aromatic compound for the non-volatile fractions (C12-C35). The comparison of a total (aliphatic/aromatic) compounds to an individual fraction is considered to be a conservative approach and satisfactory for the protection of human health.
** Atkins ATRISK
*** USEPA Risk Management Levels

Referring to Table 9.1, the results of this direct comparison indicates that the data exceeds the screening criteria for a residential end-use for the following contaminants:

- Arsenic
- Cadmium
- Lead
- Mercury
- Nickel
- Zinc
- Naphthalene
- Benzo(a)Anthracene
- Chrysene

- Benzo(b)Fluoranthene;.
- Benzo(a)Pyrene
- Dibenzo(a,h)Anthracene
- Asbestos (Chrysotile, Crocidolite and Amosite)
- TPH C21 – C35 (Aromatic)

The following SVOCs above the LOD have been identified:

- WS111 at 2.50m - Dibutyl phthalate and Butyl benzyl phthalate
- TP1101 at 0.90m - 4-Chloroaniline, 2-Methylnaphthalene, Carbazole and Dibenzofuran

Asbestos in the form of loose chrysotile and crocidolite fibres have been identified in the granular Made Ground in TP132 at 0.20 bgl, TP202 at 1.00m and WS206 at 0.90m. Chrysotile loose fibrous debris have been identified in the reworked topsoil in TP140 at 0.10m bgl. Loose amosite fibres have been identified in the granular Made Ground in TP118 at 0.50m.

Total Petroleum Hydrocarbons C21 – C35 Aromatic hydrocarbons were found exceeding general GAC within the Made Ground in TP202 at 1.00m bgl.

The soil in TP154 was tested for PCBs due to the proximity to a former electricity substation. No PCBs exceeding the laboratory limit of detection were recorded.

The laboratory analysis confirms the assessment within the initial conceptual site model that the main constituents of concern were likely to be asbestos, PAHs and heavy metals.

In relation to these exceedances, the following can be determined:

- The main exposure pathways based on the Tier I exceedances are:
  - Soil ingestion;
  - Vapour inhalation (indoor);
  - Dermal contact and ingestion;
  - Consumption of homegrown vegetables; and
  - Fibre/dust inhalation.
- The exceedances for all determinants are associated with Made Ground deposits with the exception of natural topsoil deposits in WS131 and TP120.

## PETROL FILLING STATION

Within the soils analysis no elevated concentrations of TPH or BTEX in the area of the former petrol filling station were identified to date. A hydrocarbon odour was identified within WS142 in this vicinity within SAND deposits underlying Made Ground. The tanks are understood to still be in-situ and the presence of contamination cannot be ruled out as this stage.

Historical site investigation identified hydrocarbon odours and staining in the vicinity of the petrol filling station with TPHs within soil analysis and BTEX, MTBE, TPHs and Phenols identified within groundwater analysis.

The area will be fully remediated with the tanks removed and validated to ensure that no impact poses a risk to future end users or the wider environ.

## HUMAN HEALTH RISK ASSESSMENT AND MITIGATION

The majority of the identified elevated concentrations have primary exposure pathways related to dermal contact and ingestion of soils, inhalation of particulate, vapour inhalation and consumption of homegrown vegetables. Heavy metals and non-volatile PAHs have been identified within the Made Ground deposits across the site, likely related to former deposition and levelling of the site and adjacent landfill. The risk to chronic human health associated with the elevated concentrations on inorganic heavy metals and non-volatile PAH compounds can be mitigated through the installation of a suitable cover system in all proposed private gardens, landscaping and public open space to remove any potential for direct exposure to impacted soils.

The specific design and installation process for the appropriate cover systems will be clearly defined within the site remediation and enabling works strategy; however, industry best practice (as outlined within BRE 465) will require the following minimum depths of certified clean cover:

- Private gardens where homegrown vegetables can be cultivated – 600 mm;
- Landscaped areas within private dwellings – 300 mm;
- Public open space – 300 mm.

Elevated mercury has been identified within TP118 at 0.50m bgl and TP141 1.00m bgl within Made Ground deposits. This presents a potential volatilisation to indoor air risk and are considered to be localised hotspots within this Made Ground strata. During a phase of remediation and enabling works further speciation testing should be completed to confirm the type of mercury present and whether it presents a vapour risk. Should it be volatile a hotspot removal should be undertaken to delineate the extent of impact and soils should be chemically validated to assess chemical suitability for retention on site in an area of no future sensitivity.

Exceedances of Total Petroleum Hydrocarbons C21 – C35 total hydrocarbons have been encountered within the Made Ground deposits in TP202 at 1.00 mbgl, to the south of the supplementary site investigation in the northwestern parcel of the site. This area is historically noted as a college, with several former buildings and car parking areas, however no direct link to hydrocarbon contamination can be drawn. In addition to the exceedance noted, the borehole logs in this location indicated a very strong hydrocarbon odour throughout the Made Ground in this area. The compounds are noted to only indicate exceedances in heavy-end TPHs, therefore the mobility is likely to be low. It is recommended that a watching brief is completed during earthworks in this location, with delineation and further sampling to determine the extent of contamination present. This will be confirmed within a detailed remediation strategy.

Asbestos in the form of chrysotile, crocidolite and amosite has been identified within shallow Made Ground deposits (<1.00m). Out of 62 samples tested, five samples had a positive identification for asbestos where quantification has confirmed soils to contain between <0.001% and 0.009%. It is considered that asbestos loose fibres will be present throughout the Made Ground across the site due to the nature of the fill materials on-site. However, levels of asbestos identified above <0.001% are considered to be localised and should undergo a hotspot removal.

Visual signs of ACM were encountered within various exploratory hole locations, likely to be associated with the historical deposition Made Ground materials. During the remediation and enabling works these should be removed from site by a licensed asbestos removal contractor. Impacted soils should be managed according to the asbestos risk mitigation conceptual site model shown in Figure 9.1.

FIGURE 9.1 ASBESTOS RISK MITIGATION CONCEPTUAL SITE MODEL




Notes
ND None Detect
0.001% Soils may contain ≤ 0.001% asbestos using composite testing to ensure there is no potential risk to human health. This value is present within areas where there may be a short term low level exposure of soils containing trace asbestos fibres by construction workers where an appropriate level of asbestos management is employed (dust suppression)
0.1% Soils at a depth of >1.00m bgl may contain <0.1% asbestos using composite testing where they will not be likely to be disturbed in the future and will therefore be in an area of low sensitivity. Risk assessment completed in accordance with Asbestos JIWG risk assessment tools.
Undefined- this will be dependent upon soils encountered during earthworks, which may be placed at these depths to ensure no potential risk to human health.

SVOCs Dibutyl phthalate, Butyl benzyl phthalate, 4-Chloroaniline, Carbazole, 2-Methylnaphthalene and Dibenzofuran have been identified within the analysis of Made Ground deposits within WS111(historical deposition deposits) and TP1101 (Made Ground deposits with noted sulphide odour). These elevated concentrations present a potential volatilisation to indoor air risk. Information on the identified compounds is provided herein to help inform the assessment.

**2-Methylnaphthalene**

2-methylnaphthalene is a white crystalline solid compound. This determinant is classified as a non-threshold substance, therefore even the smallest amount of exposure is considered to pose a theoretical risk to the critical receptor within the context of the developed CSM.

This compound was detected at a concentration of 2.3 mg/kg in TP1101 at 0.90m.

The vapour pressure of 2-methylnaphthalene is 0.055 mm Hg @ 25°C which is slightly lower than that of naphthalene ((0.085 mm Hg @ 25°C), it is therefore determined that the compound is less volatile than naphthalene. This data is obtained from Pub Chem.

The Tier 1 CIEH / LQM S4UL for naphthalene is 2.3 mg/kg for a residential development scenario, however this assessment assumes dermal contact, inhalation of particulate and other direct exposure pathways. The developed CSM for the subject site will incorporate a clean cover systems in landscaped areas to ensure no direct exposure pathways.

When considering that 2-Methylnaphthalene has a notably reduced vapour pressure to that of naphthalene, the absence of the compound in the vast majority of samples tested and in due consideration of the maximum concentration of the determinant being only 2.8 mg/kg, the potential for this compound to enter the vapour phase from soil with temperatures ~10oC is low.

There is no justifiable or peer reviewed toxicological data for an inhalation pathway for 2-methylnaphthalene, therefore is it not possible to develop a robust site-specific risk assessment model given the absence of suitable input parameters.

In light of the above, we must consider the lines of evidence to hand and given that the compound is a non-threshold substance with no peer reviewed, robust or justifiable toxicological data the suggested method to ensure safe regeneration is the adoption of the As Low As Reasonably Possible (ALARP) approach.

In this instance, the methodology for the analytical technique is considered to be the lowest reasonably possible method of determining the presence of the non-threshold substance and mitigating risk to the lowest practicable level.

The US national library for medicine confirms:

*If released to soil, 2-methylnaphthalene is expected to have slight to no mobility based upon log Koc values of 3.00-5.96. Volatilization from moist soil surfaces is expected based upon a Henry's Law constant of 5.18X10-4 atm-cu m/mole. However, adsorption to soil is expected to attenuate volatilization. 2-Methylnaphthalene is not expected to volatilize from dry soil surfaces based upon its vapor pressure.*

This compound has a very low to no actual volatility, there is no inhalation of dust (indoor or outdoor air) or inhalation of vapour (indoor or outdoor) exposure. The total inhalation background is 1.52%.

As discussed, herein it is highly unlikely that this compound can enter the vapour phase in the soil temperatures furthermore the presence of a passively ventilated sub-floor void with a reasonable volume change potential (24hr) will ensure that in the extremely unlikely event that this compound could volatilise and migrate, the standard mitigation measure would ensure there is absolutely no potential for ingress into the habitable space.

Therefore within the context of the developed site CSM and the lines of evidence approach, it can be determined that the residual compound in this instance is highly unlikely to pose any risk in terms of vapour migration and ingress to the dwelling.

**Dibenzofuran**

This is a white solid compound generally derived from coal tar. The US EPA have determined a threshold value of 7.8 mg/kg. As such the concentrations of 3.1 mg/kg identified within TP1101 at 0.90m is not considered to be exceeding.

In addition to the above, the relatively low volatility of this compound within soils with a temperature of ~10oC all but inhibits any volatilisation potential.

The US national library for medicine confirms:

*Volatilisation from moist soil surfaces is expected to be an important fate process based upon an estimated Henry's Law constant of 2.1X10-4 atm-cu m/mole. However, adsorption to soil is expected to attenuate volatilisation.*

Dibenzofuran is not expected to volatilise from dry soil surfaces (SRC) based upon its vapour pressure

Therefore within the context of the developed site CSM and the lines of evidence approach, it can be determined that the residual compound in this instance is highly unlikely to pose any risk in terms of vapour migration and ingress to the dwelling. There is not considered to be a risk to the future end user.

**Carbazole**

This compound is detected at a maximum concentration of 2.5 mg/kg in TP1101 at 0.90m.

Carbazole is a non-threshold substance, and is a white, crystalline solid. It has a characteristic odour. It is a product of incomplete combustion of organic matter and occurs in petroleum, coal, peat, crude oil and coal tar.

There is no toxicological data available to inform the preparation of a robust site-specific risk based assessment criteria that would model the potential for ingress of vapour to indoor air.

The US national library for medicine confirms:

*Carbazole released to air will also be in or on particles that eventually fall to the ground. It is expected to be broken down by sunlight, depending on environmental conditions. It will not move into air from moist soil and water surfaces.*

If released to soil, carbazole can have high to no mobility based upon a Koc range of 114-4980, with most values suggesting low mobility to immobility. Volatilisation from moist soil surfaces is not expected to be an important fate process based upon a Henry's Law constant of 1.16X10-7 atm-cu m/mole. Carbazole is not expected to volatilise from dry soil surfaces based upon its vapour pressure.

It is accepted that carbazole is a non-threshold substance, however it will be encapsulated in soils with a temperature in the region of 10oC, furthermore given that it is highly unlikely to move into the ambient air via a vapour phase migratory pathway from a soil or water there cannot be a complete pollutant linkage in this instance.

The recorded concentration is marginally above the limit of detection for the analytical method.

Carbazole can also be banded with dibenzofuran due to the absence of a GAC. Based on the threshold of 7.8mg/kg, the concentrations within TP1101 are not considered to be exceeding and will not present a risk to future end users.

**Dibutyl phthalate**

E3P have reviewed the CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment (January 2010) in relation to Dibutyl phthalate which has identified a GAC concentration for residential end use with consumption of homegrown produce of 13 mg/kg, and as such the elevated concentration identified within WS111 at 2.50 m, of 79 mg/kg is therefore considered to be elevated. It should be noted that the threshold for residential end use without consumption of homegrown produce is 450 mg/kg, and therefore the materials within WS111 is not considered to be exceeding providing the materials are not utilised within a garden cover system. To ensure no future risk to end users it is recommended that a garden cover system is utilised in areas in which this material is placed.

**Butyl benzyl phthalate**

The CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment for Butyl benzyl phthalate is 1400 mg/kg. The elevated concentration within WS111 at 2.50m of 2.1 mg/kg is therefore not considered to be elevated and no further works are considered necessary in relation to this determinant.

**4-Chloroaniline**

GACs are not readily available for 4-Chloroaniline within British soil assessment literature. As such E3P have completed a review of US EPA Regional Screening Levels (RSLs) at target cancer risk of 1E-06 and a target hazard quotient of 0.1 in order to be conservative. For residential soils a threshold value of 2.7 mg/kg have been identified. Within TP1101 at 0.90m, a concentration of 1.6 mg/kg has been identified and is not considered to be exceeding the US EPA threshold and therefore no further works are considered necessary.

Chemical analysis of the natural drift deposits has identified these soils to be acceptable for use as subsoil within the proposed gardens and landscaped areas.

Chemical analysis and visual inspection of the existing topsoil deposits present across the site has determined existing topsoil would not be suitable for re-use within proposed garden and soft landscaped areas.

Localised pollution may be identified however all Made Ground will be lifted, sorted and subject to a process of remediation to prepare the site for the proposed development. As part of this process any unidentified impact will be identified.

## 9.3. CONTROLLED WATERS RISK ASSESSMENT

E3P has undertaken a controlled waters risk assessment for the site based on the consideration of the conceptual site model and the sensitive receptors which are summarised in Table 9.2.

TABLE 9.2 CONTROLLED WATERS CONCEPTUAL MODEL AND SENSITIVITY PROFILE

| DISCUSSION | | SENSITIVITY RATING |
|---|---|---|
| **Contaminant Source** | | |
| **Made Ground**<br>The historical construction and redevelopment activities (construction and demolition of former buildings and possible cut/fill earthworks) on-site may have generated significant amounts of Made Ground that could contain contaminants such as inorganic heavy metals and polycyclic aromatic hydrocarbons (PAHs). The Made Ground has been identified across the majority of the site. | | **High** |
| **Adjacent Landfill**<br>The presence of the adjacent landfill west of site are a potential source of heavy metals, PAH and hydrocarbon compounds. | | **High** |
| **Former Garage**<br>The former garage in the north of the site and associated underground fuel tanks are a potential source of hydrocarbon contaminants. | | **High** |
| **Pathway** | | |
| **Vertical Migration**<br>The site has been noted to be underlain by low permeability cohesive drift deposits as well as high permeability SANDs. Cohesive deposits, albeit present on site, are not present in excess of 5.00mbgl. and sandstone bedrock is present at a relatively shallow depth, as such the CLAY will offer some protection to the underlying aquifer and inhibit lateral migration of any contaminants; however SAND deposits will facilitate the migration of any contaminants if present. | | **High** |
| **Lateral migration**<br>Lateral migration of contaminants is considered possible due to the presence of granular drift deposits across the site, however CLAY deposits will provide some protection. | | **Medium** |
| **Receptor** | | |
| **Aquifer Classification in Superficial Drift Deposits** | Secondary Undifferentiated Aquifer / Isolated area of Secondary A Aquifer | **Medium** |
| **Aquifer Classification in Bedrock** | Principal aquifer | **High** |
| **Groundwater Source Protection Zone or Drinking Water Safeguard Zone** | The site is located within Groundwater Source Protection Zone 3 – Total Catchment. The site is not located withing a Drinking Water Safeguard Zone | **Medium** |
| **Distance to the Closest Groundwater Abstraction Point** | None identified within a 1 km radius. The nearest groundwater abstraction point is located 1056 m east of the site. | **Low** |
| **Is the Site Located Within 50 m of a Surface Watercourse?** | The Kirkby Brook is located 52m west from site at its nearest point. | **Medium** |

The ICSM developed within the context of the site setting has viable pollutant pathway, which would be the downward migration of potentially mobile phase-soluble contaminants towards the underlying principal aquifer. Kirkby Brook is located circa 52m west of the site but its risk from site is considered to be moderate given the presence of a road between the north-west of the site and the brook, and an increase in elevation to the brook from the south-western sector of the site.

To ensure a robust appraisal of the identified risk to controlled waters, E3P has identified the sources of potential contamination that represent a risk to controlled waters from the initial CSM, we have then assessed the availability of ground investigation data in the form of analysis of the solid phase (soil) and dissolved phase within the perched groundwater or aquifer. The results of this assessment are presented in Table 9.3.

TABLE 9.3 QUALITATIVE RISK TO CONTROLLED WATERS FROM SOIL ANALYTICAL RESULTS

| CONTAMINANT | ASSESSMENT RATING | DISCUSSION |
|---|---|---|
| **BTEX > 1 mg/kg** | The soil data analysis has not identified any detectable concentrations of VOCs above 1mg/kg or TPH C5 to C6 that might otherwise be indicative of VOC impact. Historical investigation within the vicinity of the former petrol filling station identified elevated concentrations of TPHs, BTEX, MTBE and phenols in soils and groundwater. | Further discussion |
| **Total VOC > 1 mg/kg** | | |
| **Total SVOC > 1 mg/kg** | SVOC concentrations have been identified above 1 mg/kg in isolated locations across the site within WS111 at 2.50m and TP1101 at 0.90m. | Further discussion |
| **C5-C10 > 5 mg/kg** | All concentrations are below the laboratory LOD. | None |
| **C10-C12 > 10 mg/kg** | The maximum concentration identified is 12 mg/kg, majority of locations have concentrations below 10 mg/kg. | Further discussion |
| **C12-C16 > 50 mg/kg** | The maximum concentration identified is 52 mg/kg, majority of locations have concentrations below 50 mg/kg. | Further discussion |
| **Phenols > 2 mg/kg** | All concentrations are below the laboratory LOD. | None |
| **Naphthalene > 2 mg/kg** | A maximum concentration of 4.1 mg/kg has been identified within TP1101 at 0.90m. | Further discussion |
| **Total PAH > 10 mg/kg** | Total concentrations of low-solubility PAH compounds greater than 10 mg/kg have been detected throughout the site, with a maximum concentration recorded in TP1125 at 199 mg/kg. | Further discussion |
| **PCB > 1 mg/kg** | No elevated concentrations above the laboratory LOD have been identified. | None |
| **Heavy metals > 500 mg/kg** | Concentrations of heavy metals above 500 mg/kg have been recorded across the site within Made Ground deposits. | Further discussion |

The Tier I assessment has included a comparison of leachate analysis from samples of the Made Ground and groundwater samples to drinking water standards and environmental quality standards (EQS). Two rounds of groundwater monitoring have been completed.

These are presented in Table 9.4 and Table 9.5.

TABLE 9.4 COMPARISON OF LEACHATE ANALYSIS WITH TIER 1 SCREENING LEVELS

| DETERMINANT | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF LEACHATE SAMPLES | MAX CONC. IN LEACHATE | LOCATION OF EXCEEDANCE | ASSESSMENT |
|---|---|---|---|---|---|---|---|
| **Arsenic** | µg/l | 50 | 10 | 8 | 16<br>14<br>19<br>10 | TP118 0.50m (DWS)<br>TP166 0.40m (DWS)<br>TP117 2.40m (DWS)<br>TP101 0.10m (DWS) | **Further Action** |
| **Cadmium** | µg/l | 0.08-0.25 | 5 | 8 | 0.25 | N/A | **Further Action** |
| **Chromium (VI)** | µg/l | 3.4 | – | 8 | <5.0 | N/A | No Further Action |
| **Chromium (III)** | µg/l | 4.7 | 50 | 8 | 17 | TP166 0.40m (EQS) | **Further Action** |
| **Copper** | µg/l | 1 | 2000 | 8 | 12<br>6.6<br>5.8<br>14<br>44 | TP166 0.40m (EQS)<br>TP118 0.50m (EQS)<br>TP1104 0.50m (EQS)<br>TP207 0.50m (EQS)<br>WS201 1.50m (EQS) | **Further Action** |
| **Total Cyanide** | µg/l | 1 | 50 | 8 | 1.7 | WS201 1.50m (EQS) | **Further Action** |
| **Lead** | µg/l | 1.2 | 10 | 8 | 6.7<br>2.3<br>4.2<br>3.8<br>1.9<br>4.2 | TP1104 0.50m (EQS)<br>TP118 0.50m(EQS)<br>TP166 0.40m (EQS)<br>TP117 2.40m (EQS)<br>TP101 0.10m (EQS)<br>TP155 1.00m EQS) | **Further Action** |
| **Mercury** | µg/l | – | 1.0 | 8 | <0.5 | N/A | No Further Action |

| DETERMINANT | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF LEACHATE SAMPLES | MAX CONC. IN LEACHATE | LOCATION OF EXCEEDANCE | ASSESSMENT |
|---|---|---|---|---|---|---|---|
| Nickel | µg/l | 4 | 20 | 8 | 5.8<br>5.9<br>6.7<br>7.0<br>9.4<br>3.7 | TP1104 0.50m (EQS)<br>TP118 0.50m (EQS)<br>TP166 0.40m (EQS)<br>TP117 2.40m (EQS)<br>TP101 0.10m (EQS)<br>TP155 1.00m (EQS) | Further Action |
| Selenium | µg/l | – | 10 | 8 | 8.8 | N/A | No Further Action |
| Zinc | µg/l | 10.9 | – | 8 | 35<br>11<br>13 | TP155 1.00m (EQS)<br>TP101 0.10m (EQS)<br>TP1104 0.50m (EQS) | Further Action |
| pH | 6–9 | | | 8 | 9.5 | TP166 0.40m (EQS) | Further Action |
| Naphthalene | µg/l | 2 | 10* | 8 | 2 | N/A | No Further Action |
| Anthracene | µg/l | 0.1 | 10* | 8 | <0.01 | N/A | No Further Action |
| Benzo[b]fluoranthene | µg/l | 0.00017* | 10* | 8 | <0.01 | N/A | No Further Action |
| Benzo[k]fluoranthene | µg/l | 0.00017* | 10* | 8 | <0.01 | N/A | No Further Action |
| Benzo(a)pyrene | µg/l | 0.00017* | 10* | 8 | <0.01 | N/A | No Further Action |
| Indeno(123-cd)pyrene | µg/l | 0.00017* | 10* | 8 | <0.01 | N/A | No Further Action |
| Fluoranthene | µg/l | 0.0063 | 10* | 8 | <0.01 | N/A | No Further Action |
| Benzo(ghi)perylene | µg/l | 1.7–4 | 10* | 8 | <0.01 | N/A | No Further Action |
| TPH C5-C6 (benzene) | µg/l | 10 | 1 | 8 | < 1.0 | N/A | No Further Action |
| TPH C6-C8 (toluene) | µg/l | 74 | 700 | 8 | < 1.0 | N/A | No Further Action |
| TPH C8-C10 (ethyl benzene) | µg/l | 20 | 300 | 8 | < 1.0 | N/A | No Further Action |
| TPH C10-C12 (xylene) | µg/l | 30 | 500 | 8 | < 10 | N/A | No Further Action |

| DETERMINANT | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF LEACHATE SAMPLES | MAX CONC. IN LEACHATE | LOCATION OF EXCEEDANCE | ASSESSMENT |
|---|---|---|---|---|---|---|---|
| TPH C10-C12 (xylene) | µg/l | 30 | 500 | 8 | < 10 | N/A | No Further Action |
| TPH C12-C16 | µg/l | 2 | 90[5] | 8 | < 10 | N/A | No Further Action |
| TPH C16-C35 | µg/l | 50# | 90[5] | 8 | < 10 | N/A | No Further Action |
| TPH C5-C6 | µg/l | – | 15000 | 8 | < 1.0 | N/A | No Further Action |
| TPH C6-C8 | µg/l | – | 15000 | 8 | < 1.0 | N/A | No Further Action |
| TPH C8-C10 | µg/l | – | 300 | 8 | < 1.0 | N/A | No Further Action |
| TPH C10-C12 | µg/l | – | 300 | 8 | < 10 | N/A | No Further Action |
| TPH C12-C16 | µg/l | – | 300 | 8 | < 10 | N/A | No Further Action |
| TPH C16-C21 | µg/l | – | 300** | 8 | < 10 | N/A | No Further Action |
| TPH C21-C35 | µg/l | – | 300** | 8 | < 10 | N/A | No Further Action |
| Tetrachloroethylene | µg/l | 0.4 | 10 | - | - | - | No Further Action |
| Trichloroethylene | µg/l | 10 | 10 | - | - | - | No Further Action |
| Trichlorobenzene | µg/l | 0.4 | – | - | - | - | No Further Action |
| Trichloromethane | µg/l | 2.5 | – | - | - | - | No Further Action |
| Dichloromethane | µg/l | 20 | 200 | - | - | - | No Further Action |
| Carbon Tetrachloride | µg/l | 12 | 3 | - | - | - | No Further Action |
| Vinyl Chloride | µg/l | – | 0.3 | - | - | - | No Further Action |

**Notes**

# Solubility <0.01µg/l
AA – Annual Average
MAC- Maximum Admissible Concentration
* Polyaromatic hydrocarbons (PAH) - Benzo(a)pyrene (BaP), Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)-perylene and Indeno(1,2,3-cd)-pyrene. Benzo(a)pyrene can be considered as a marker for the other PAHs, hence only benzo(a)pyrene needs to be monitored for comparison with the biota EQS or the corresponding AA-EQS in water
** There are no WHO Guideline Values for aliphatic fractions C16-C21 and C21-C35, therefore the guideline value for aliphatic fractions inclusive of C8-C16 (300µg/l) has been applied.
1. The Water Environment (Water Framework Directive) (England and Wales) (Amendment) Regulations (2015)

2. Directive establishing a framework for Community action in the field of water policy (Water Framework Directive)
3. Council Directive on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (Dangerous Substances Directive) - List II substances
4. Council Directive on the quality of water intended for human consumption (Drinking Water Directive)
5. WHO Guidelines for Drinking Water Quality. Third edition (2004)

TABLE 9.5 COMPARISON OF GROUNDWATER ANALYSIS WITH TIER 1 SCREENING LEVELS

| DETERMINAND | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF SAMPLES | MAXIMUM CONCENTRATION IN GROUNDWATER AND LOCATION OF EXCEEDANCE | | | | | | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 17/02/2022 | LOCATION OF EXCEEDANCE | 09/03/2022 / 17/03/2022 | LOCATION OF EXCEEDANCE | 27/11/2023 | LOCATION OF EXCEEDANCE | |
| **Arsenic** | µg/l | 50 | 10 | 13 | 6.36 | N/A | 2.3 | N/A | 1.94 | N/A | No Further Action |
| **Cadmium** | µg/l | 0.08-0.25 | 5 | 13 | 0.50 | CP102 (EQS) | 0.55 | CP102(EQS) | 0.04 | N/A | **Further Action** |
| **Chromium (VI)** | µg/l | 3.4 | – | 13 | <5.0 | N/A | <5.0 | N/A | <5.0 | N/A | No Further Action |
| **Chromium (III)** | µg/l | 4.7 | 50 | 13 | 5.2 | CP102(EQS) | 5.3<br>7.7<br>7.5 | CP102(EQS)<br>CP101(EQS)<br>WS161(EQS) | 3.1 | N/A | **Further Action** |
| **Copper** | µg/l | 1 | 2000 | 13 | 6.0<br>3.5<br>1.4<br>4.3<br>8.8<br>15<br>2.4 | WS161(EQS)<br>WS142(EQS)<br>WS124(EQS)<br>WS106(EQS)<br>CP103(EQS)<br>CP102(EQS)<br>CP101(EQS) | 10<br>2<br>16<br>1.1<br>1.2 | WS142(EQS)<br>WS124(EQS)<br>CP102(EQS)<br>CP101(EQS)<br>WS106(EQS) | 5.1 | WS204 (EQS) | **Further Action** |
| **Total Cyanide** | µg/l | 1 | 50 | 13 | 2.8<br>1.9 | CP103(EQS)<br>WS161(EQS) | <1.0 | N/A | <1.0 | N/A | **Further Action** |
| **Lead** | µg/l | 1.2 | 10 | 13 | 1.7<br>1.5 | WS142(EQS)<br>CP101(EQS) | 0.4 | N/A | < 0.2 | N/A | **Further Action** |
| **Mercury** | µg/l | – | 1.0 | 13 | <0.05 | N/A | <0.05 | N/A | <0.05 | N/A | No Further Action |

| DETERMINAND | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF SAMPLES | MAXIMUM CONCENTRATION IN GROUNDWATER AND LOCATION OF EXCEEDANCE | | | | | | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 17/02/2022 | LOCATION OF EXCEEDANCE | 09/03/2022 / 17/03/2022 | LOCATION OF EXCEEDANCE | 27/11/2023 | LOCATION OF EXCEEDANCE | |
| **Manganese** | µg/l | – | 50 | 13 | 3600<br>3200<br>1900<br>1100<br>240<br>130 | WS124 (DWS)<br>CP103 (DWS)<br>WS106 (DWS)<br>CP101 (DWS)<br>CP102 (DWS)<br>WS142 (DWS) | 2800<br>1700<br>1400<br>340 | WS124 (DWS)<br>WS161 (DWS)<br>CP101 (DWS)<br>CP102 (DWS) | 4000<br>76 | WS202<br>WS204 | **Further Action** |
| **Nickel** | µg/l | 4 | 20 | 13 | 7.0<br>8.1<br>26<br>22<br>5.6 | WS161(EQS)<br>WS106(EQS)<br>CP103(EQS/DWS)<br>CP102(EQS/DWS)<br>CP101(EQS) | 5.3<br>26<br>13<br>13<br>6 | WS142(EQS)<br>CP102(EQS/DWS)<br>CP101(EQS)<br>WS161(EQS)<br>WS106(EQS) | 6.2 | WS202 (EQS) | **Further Action** |
| **Selenium** | µg/l | – | 10 | 13 | 4.4 | N/A | 4 | N/A | 4.0 | N/A | No Further Action |
| **Zinc** | µg/l | 10.9 | – | 13 | 12<br>650<br>21<br>60<br>1100<br>19 | WS161(EQS)<br>WS124(EQS)<br>WS106(EQS)<br>CP103(EQS)<br>CP102(EQS)<br>CP101(EQS) | 150<br>1200<br>11 | WS124(EQS)<br>CP102(EQS)<br>WS161(EQS) | 2.6 | N/A | **Further Action** |
| **pH** | 6–9 | | | 13 | 7.1-7.8 | N/A | 6.8-7.4 | N/A | | | No Further Action |
| **Naphthalene** | µg/l | 2 | 10* | 13 | <0.01 | N/A | <0.01 | N/A | <0.01 | N/A | No Further Action |
| **Anthracene** | µg/l | 0.1 | 10* | 13 | <0.01 | N/A | <0.01 | N/A | <0.01 | N/A | No Further Action |

| DETERMINAND | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF SAMPLES | MAXIMUM CONCENTRATION IN GROUNDWATER AND LOCATION OF EXCEEDANCE | | | | | | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 17/02/2022 | LOCATION OF EXCEEDANCE | 09/03/2022 / 17/03/2022 | LOCATION OF EXCEEDANCE | 27/11/2023 | LOCATION OF EXCEEDANCE | |
| Benzo[b]fluoranthene | µg/l | 0.00017* | 10* | 13 | <0.01 | N/A | <0.01 | N/A | <0.01 | N/A | No Further Action |
| Benzo[k]fluoranthene | µg/l | 0.00017* | 10* | 13 | <0.01 | N/A | <0.01 | N/A | <0.01 | N/A | No Further Action |
| Benzo(a)pyrene | µg/l | 0.00017* | 10* | 13 | <0.01 | N/A | <0.01 | N/A | <0.01 | N/A | No Further Action |
| Indeno(123-cd)pyrene | µg/l | 0.00017* | 10* | 13 | <0.01 | N/A | <0.01 | N/A | <0.01 | N/A | No Further Action |
| Fluoranthene | µg/l | 0.0063 | 10* | 13 | <0.01 | N/A | <0.01 | N/A | 2.1 | N/A | No Further Action |
| Benzo(ghi)perylene | µg/l | 1.7–4 | 10* | 13 | <0.01 | N/A | <0.01 | N/A | <0.01 | N/A | No Further Action |
| **TPH Aromatic** | | | | | | | | | | | |
| TPH C5-C6 (benzene) | µg/l | 10 | 1 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| TPH C6-C8 (toluene) | µg/l | 74 | 700 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| TPH C8-C10 (ethyl benzene) | µg/l | 20 | 300 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| TPH C10-C12 (xylene) | µg/l | 30 | 500 | 13 | 50 | WS142(EQS) | <10 | N/A | <10 | N/A | Further Action |
| TPH C12-C16 | µg/l | 2 | 90[5] | 13 | <10 | N/A | <10 | N/A | 15 | WS202 (EQS) | Further Action |

| DETERMINAND | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF SAMPLES | MAXIMUM CONCENTRATION IN GROUNDWATER AND LOCATION OF EXCEEDANCE | | | | | | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 17/02/2022 | LOCATION OF EXCEEDANCE | 09/03/2022 / 17/03/2022 | LOCATION OF EXCEEDANCE | 27/11/2023 | LOCATION OF EXCEEDANCE | |
| TPH C16-C35 | µg/l | 50# | 90[5] | 13 | <10 | N/A | <10 | N/A | <10 | N/A | No Further Action |
| **TPH Aliphatic** | | | | | | | | | | | |
| TPH C5-C6 | µg/l | – | 15000 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| TPH C6-C8 | µg/l | – | 15000 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| TPH C8-C10 | µg/l | – | 300 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| TPH C10-C12 | µg/l | – | 300 | 13 | <10 | N/A | <10 | N/A | <10 | N/A | No Further Action |
| TPH C12-C16 | µg/l | – | 300 | 13 | <10 | N/A | <10 | N/A | <10 | N/A | No Further Action |
| TPH C16 – C21 | µg/l | – | 300** | 13 | <10 | N/A | <10 | N/A | <10 | N/A | No Further Action |
| TPH C21-C35 | µg/l | – | 300** | 13 | <10 | N/A | <10 | N/A | <10 | N/A | No Further Action |
| Tetrachloroethylene | µg/l | 0.4 | 10 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| Trichloroethylene | µg/l | 10 | 10 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| Trichlorobenzene | µg/l | 0.4 | – | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |

| DETERMINAND | UNIT | EQS [1, 2, 3] AA | DWS [3,4,5] | NO. OF SAMPLES | MAXIMUM CONCENTRATION IN GROUNDWATER AND LOCATION OF EXCEEDANCE | | | | | | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 17/02/2022 | LOCATION OF EXCEEDANCE | 09/03/2022 / 17/03/2022 | LOCATION OF EXCEEDANCE | 27/11/2023 | LOCATION OF EXCEEDANCE | |
| Trichloromethane | µg/l | 2.5 | – | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| Dichloromethane | µg/l | 20 | 200 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| Carbon Tetrachloride | µg/l | 12 | 3 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |
| Vinyl Chloride | µg/l | – | 0.3 | 13 | <1.0 | N/A | <1.0 | N/A | <1.0 | N/A | No Further Action |

**Notes**

# Solubility <0.01µg/l
AA – Annual Average
MAC- Maximum Admissible Concentration
* Polyaromatic hydrocarbons (PAH) - Benzo(a)pyrene (BaP), Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)-perylene and Indeno(1,2,3-cd)-pyrene. Benzo(a)pyrene can be considered as a marker for the other PAHs, hence only benzo(a)pyrene needs to be monitored for comparison with the biota EQS or the corresponding AA-EQS in water
** There are no WHO Guideline Values for aliphatic fractions C16-C21 and C21-C35, therefore the guideline value for aliphatic fractions inclusive of C8-C16 (300µg/l) has been applied.

6. The Water Environment (Water Framework Directive) (England and Wales) (Amendment) Regulations (2015)
7. Directive establishing a framework for Community action in the field of water policy (Water Framework Directive)
8. Council Directive on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community (Dangerous Substances Directive) - List II substances
9. Council Directive on the quality of water intended for human consumption (Drinking Water Directive)
10. WHO Guidelines for Drinking Water Quality. Third edition (2004)

### 9.3.1. CONTROLLED WATER RISK ASSESSMENT AND MITIGATION

This comparison indicates that the data exceeds the EQS values for the following inorganic compounds:

- Cadmium (Groundwater)
- Chromium (III) (Leachate and Groundwater)
- Copper (Leachate and Groundwater)
- Total Cyanide (Groundwater)
- Lead (Leachate and Groundwater)
- Nickel (Leachate and Groundwater)
- Zinc (Leachate and Groundwater)
- pH (Leachate)
- Total Cyanide
- TPH Aromatic C10-C12 (Groundwater)
- TPH Aromatic C12-C16

The comparison indicates the data exceeds the DWS values for the following inorganic compounds:

- Arsenic (Leachate)
- Nickel (Groundwater)
- Manganese (Groundwater)

In addition to the above, the following SVOCs were recorded as being above the limit of detection, and further commentary is therefore required:

- Acenaphthene
- Fluorene
- Carbazole
- Fluoranthene
- Pyrene

Exceedances in heavy metals against EQS and DWS screening values have been identified across the site within groundwater samples and leachate samples.

Arsenic concentrations exceeded the DWS screening value in leachate samples TP118 0.50m, TP166 0.40m, TP117 2.40m and TP101 0.10m. No groundwater or leachate samples were noted to be exceeding the EQS screening criteria.

Concentrations of chromium (III) exceeded the EQS screening value and not the DWS within a leachate sample in TP166 at 0.40m and groundwater samples from CP102 on both monitoring occasions completed and CP101 and WS161 on one monitoring occasion.

Cadmium EQS screening values were exceeded within groundwater samples from CP102 on both monitoring occasions.

Copper concentrations exceeded the EQS screening value but not the DWS screening value in leachate samples TP166 0.40m, TP118 0.50m TP1104 0.50m and groundwater samples WS161, WS142, WS124, WS106, CP101, CP102 and CP103. Groundwater samples from WS142, WS124, CP102, CP101 and WS106 exceeded on both monitoring occasions, and WS204 on the initial groundwater sampling.

Total cyanide exceeded the EQS screening value within leachate sample within WS201 at 1.50m and within groundwater samples CP103 and WS161 on one occasion; the DWS was not exceeded.

Lead exceeded the EQS AA screening value but not the DWS in leachate samples TP166 0.40m, TP118 0.50m, TP117 2.40m, TP101 0.10m, TP155 1.00m and TP1104 0.50m along with groundwater sample WS142 and CP101 on one occasion.

Manganese has been identified as exceeding the DWS in the majority of groundwater samples undertaken, with values recorded between 130 µg/l and 4000 µg/l.

Nickel concentrations were noted to exceed the EQS AA and DWS within groundwater samples from CP102 and CP103. With groundwater samples WS161, WS206, WS204, CP101 and WS142 exceeding the EQS screening value. Only the EQS screening value was noted to be exceeding within the leachate samples TP166 0.40m, TP118 0.50m, TP1104 0.50m, TP117 2.40m, TP155 1.00m and TP101 0.10m.

Zinc concentrations exceeded the EQS AA screening value in leachate samples TP101 0.10m, TP155 1.00m and TP1104 0.50m and groundwater samples WS161, WS124, WS106, CP101, CP102 and CP103. WS124, CP102 and WS161 were noted to be exceeding on both monitoring visits. A DWS screening value is not available for this determinant.

Leachate sample TP166 at 0.40m exceeded the pH range of 6-9.

The EQS screening value for TPH Aromatic C10-C12 was exceeded within a groundwater sample from WS142 on the first monitoring visit, but was below the limit of detection during the second monitoring visit completed. WS142 was located in close proximity to the former fuel station and underground storage tanks. The EQS screening value for TPH aromatic C12–C16 was exceeded within the groundwater sample from WS202, however the exceedance was not mirrored in the soil chemical analysis.

Where leachate analysis has been undertaken, this can overstate the risk and is not wholly representative of the site characterisation. As such, reliance should be on the groundwater samples rather than the leachate analysis completed.

In relation to the remaining exceedances within groundwater samples, Table 9.6 provides a summary.

TABLE 9.6 SUMMARY OF ELEVATED CONTAMINANTS IN GROUNDWATER

| CONTAMINANT | WS161 (µg/l) | WS142 (µg/l) | WS124 (µg/l) | WS106 (µg/l) | CP101 (µg/l) | CP102 (µg/l) | CP103 (µg/l) | WS202 (µg/l) | WS204 (µg/l) |
|---|---|---|---|---|---|---|---|---|---|
| | Contaminant Source | | | | | | | | |
| | Former School Building | Former Fuel Station/ Garage | Made Ground/ historic deposition | Made Ground | Made Ground/ historic deposition | Made Ground / historic deposition | Made Ground / historic deposition | Made Ground / historic deposition | Made Ground / historic deposition |
| Cadmium | – | – | – | – | – | 0.50 - 0.55 | – | – | – |
| Chromium (III) | 7.5 | – | – | – | 7.7 | 5.2 - 5.3 | – | – | – |
| Copper | 6.0 | 3.5 - 10 | 1.4 -2.0 | 1.2 - 4.3 | 1.1 - 2.4 | 15 - 16 | 8.8 | - | 5.1 |
| Total Cyanide | 1.9 | – | – | – | – | – | 2.8 | – | – |
| Lead | – | 1.7 | – | – | 1.5 | – | – | – | – |
| Manganese | 1700 | 130 | 2800-3600 | 1900 | 1100-1400 | 240-340 | 3200 | 4000 | 75 |
| Nickel | 5.3 – 13 | 5.3 | – | 6.0 - 8.1 | 5.6 - 13 | 22 - 26 | 26 | - | 6.2 |
| Zinc | 11 - 12 | – | 150 - 650 | 21 | 19 | 1100 - 1200 | 60 | – | – |
| TPH Aromatic C10-C12 | - | 50 | - | - | - | - | - | – | – |
| TPH Aromatic C12-C16 | - | - | - | - | - | - | - | 15 | – |

## 9.3.2. DISCUSSION OF CONTROLLED WATERS RISK ASSESSMENT

Historically, the site has been subject to extensive infilling and a number of industrial and residential uses within different locations across the site including educational buildings located in the southeast and northwest sectors and a garage with associated fuel tanks and residential housing located in the northern sector of the site. A historic landfill is located adjacent to the south-west of the site, with historical deposition of Made Ground appearing to have taken place across the site as shown from the E3P site investigation and historical phases of ground investigation.

Chemical compounds within the Made Ground associated with these land uses may have subsequently leached down into underlying stratum and groundwater both within Made Ground and natural drift deposits.

The site is underlain by mixed geology; with cohesive CLAYs and granular SAND and GRAVEL deposits also present. There is not considered to be greater than 5.00m of CLAY across any part of the site, with deeper cable percussive boreholes identifying a small band of CLAY underlying deep Made Ground deposits which are overlying relatively shallow bedrock.

The granular drift deposits will afford little protection to the underlying Principal Aquifer in the bedrock. Impacted groundwater has the potential to migrate vertically towards the underlying bedrock aquifer.

Elevated heavy metal concentrations have been identified in the soil, leachate and groundwater analysis at the site. However as discussed above reliance should be on groundwater samples rather than leachate analysis as they are considered to overstate the risk.

Elevated Manganese has been identified across all but 3 no. groundwater samples across 4 separate visits. It is likely that exceedances in Manganese can be attributed to the adjacent landfills, as no on-site source of manganese has been identified. Due to the low mobility of manganese in groundwater with low to neutral pH, alongside the presence of low permeability clays, a contaminant pathway is not considered to be complete. No groundwater abstraction points are present within 1 km of the site, which further reduces the risk. Based on the above discussion, it is considered that no manganese source has been identified on site, and therefore no remediation on-site will remove or reduce the source, and no pollutant pathway has been identified. Therefore, E3P can confirm that manganese does not pose significant risk to the underlying aquifer.

The main controlled water receptor is considered to be the underlying principal aquifer within the bedrock; the site is also noted to be within a Zone 3 Source Protection Zone. However, the only elevated concentrations, other than manganese, of heavy metals exceeding DWS screening values were arsenic in a leachate sample which is considered to overstate the risk, and nickel within CP102 and CP103. In regards to the elevated nickel concentrations, the risk is considered to be low given there is not a complete pollutant linkage given the absence of a groundwater abstraction point within 1 km of the subject site.

Given that areas of the site are underlain by low permeability CLAY, albeit of minimal thicknesses, the migration of contaminants where these deposits are present will be somewhat reduced.

The proposed development will create hardstanding cover across the site, thus reducing the amount of infiltration generated. This will in turn, reduce the amount of contaminants present in leachate off the site and reduce the risk further to the underlying aquifer. In addition, in the vicinity of the former Petrol Fuel Station, the area will be remediated, which will include the removal of USTs and validation of surrounding soils, and as such materials will be checked for any TPH impact, and if encountered remediated as necessary to ensure no risk to future end users and controlled waters.

**Surface Water Receptor**

The closest surface feature Kirkby brook is located 56m west of the site at its nearest point. A comparison of leachate and groundwater samples has been completed against EQS screening values for completeness given the known sensitivity of Kirkby Brook. Given the distance of the brook to the subject site it is not considered to be of significance.

Additionally, Kirkby Brook is at its closest proximity to the subject site in the north-west of the site, and located at a lower elevation to the subject site. However, it should be noted that even though the brook is at a lower elevation which would facilitate the migration of contaminants if present, there is a road between the site and the brook which would intercept any potential run-off.

From the south-west of the site towards Kirkby Brook, the topography increases from the site to the centre of the off-site recorded landfill, and then falls towards the brook. There is not considered to be a complete pollutant pathway from the site to the brook at this part of the site, and the elevation runs against a natural migration pathway. The brook is also at a greater distance from the site at this point, and any potential impact present would be negated given the presence of the landfill.

Based on the above there is not considered to be risk to Kirkby Brook, nor to the underlying Principal Aquifer. During any future remediation and enabling works care should be take to ensure no generation of potential leachate which may migrate to the underlying principal aquifer.

## 9.4. GROUND GAS

### 9.4.1. INVESTIGATION RATIONALE

The ICSM has identified that the underlying Made Ground, adjacent landfill and infill materials associated with former ponds and across the site may represent a potential source of ground gas generation. Based on the identification of these sources, E3P has determined that the site represents a high ground gas source generation potential.

Within the context of the proposed residential end use and ground gas generation potential, the gas assessment requires that 24 visits are required over 12 months, with at least two sets of readings at low or falling atmospheric pressure as set out within CIRIA 665 Tables 5.5a and 5.5b.

The spacing requirements for monitoring wells are detailed within CIRIA 665 Table 4.2, which indicates that for moderate gas hazard sites and a high sensitivity development, nominal well spacing should be between 25 m and 50 m.

The spacing requirements for high gas hazard sites (domestic landfill sites) and a high sensitivity development, nominal well spacing should be less than 25 m.

TABLE 9.7 GROUND GAS MONITORING LOCATION RATIONALE

| LOCATION | GROUND GAS SOURCE | DEPTH OF MONITORING WELL (m) |
|---|---|---|
| WS101 | Made Ground. | 0.50 – 2.00 |
| WS102 | Adjacent Landfill / Made Ground. | 1.00 – 3.00 |
| WS103 | Natural Strata / Deeper Groundwater Well | 2.50 – 3.00 |
| WS105 | Made Ground / Natural Strata / Deeper Groundwater Well | 0.50 – 2.50 |
| WS106 | Adjacent Landfill / Made Ground. | 1.00 – 3.00 |
| WS108 | Adjacent Landfill / Made Ground. | 0.80 – 2.80 |
| WS110 | Former Pond / Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS111 | Adjacent Landfill / Made Ground / Historic deposited materials | 0.50 – 3.00 |
| WS113 | Adjacent Landfill / Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS114 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS115 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS117 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.50 |
| WS118 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS119 | Made Ground / Natural Strata / Deeper Groundwater Well | 0.50 – 3.50 |
| WS120 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS121 | Made Ground / Historic deposited materials | 0.50 – 1.50 |
| WS122 | Made Ground / Natural Strata / Deeper Groundwater Well. | 0.50 – 1.50 |

| LOCATION | GROUND GAS SOURCE | DEPTH OF MONITORING WELL (m) |
|---|---|---|
| WS123 | Made Ground / Natural Strata / Deeper Groundwater Well | 0.50 – 3.00 |
| WS124 | Adjacent Landfill / Made Ground / Historic deposited materials | 1.00 – 4.00 |
| WS125 | Made Ground / Historic deposited materials | 0.50 – 1.00 |
| WS126 | Natural Strata / Deeper Groundwater Well. | 0.60 – 1.60 |
| WS128 | Natural Strata / Deeper Groundwater Well. | 1.00 – 3.00 |
| WS129 | Natural Strata / Deeper Groundwater Well | 1.00 – 3.50 |
| WS130 | Natural Strata / Deeper Groundwater Well. | 1.00 – 3.00 |
| WS132 | Natural Strata / Deeper Groundwater Well. | 1.00 – 4.00 |
| WS133 | Natural Strata / Deeper Groundwater Well | 0.50 – 3.90 |
| WS135 | Natural Strata / Deeper Groundwater Well | 0.50 – 3.00 |
| WS136 | Natural Strata / Deeper Groundwater Well. | 0.50 – 3.50 |
| WS137 | Natural Strata / Deeper Groundwater Well | 2.00 – 3.00 |
| WS138 | Natural Strata / Deeper Groundwater Well. | 1.00 – 4.00 |
| WS140 | Former Garage / Natural Strata / Deeper Groundwater Well. | 1.00 – 3.00 |
| WS141 | Natural Strata / Deeper Groundwater Well | 1.00 – 3.00 |
| WS142 | Former Garage / Natural Strata / Deeper Groundwater Well. | 1.00 – 3.00 |
| WS144 | Natural Strata / Deeper Groundwater Well | 1.00 – 3.00 |
| WS147 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS148 | Natural Strata / Deeper Groundwater Well | 1.00 – 4.00 |
| WS149A | Made Ground. | 0.50 – 1.00 |
| WS151 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS152 | Made Ground. | 0.50 – 2.50 |
| WS153A | Made Ground. | 0.50 – 1.00 |
| WS157 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS161 | Natural Strata / Deeper Groundwater Well | 0.50 – 1.50 |
| WS169 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.00 |
| WS171 | Natural Strata / Deeper Groundwater Well | 1.00 – 2.50 |
| CP/RB101 | Adjacent Landfill / Made Ground materials / Historic deposited materials | 3.00 – 5.00 |
| CP/RB102 | Made Ground materials / Historic deposited materials | 3.00 – 4.00 |
| CP/RB103 | Made Ground / Natural Strata / Deeper Groundwater Well | 3.00 – 4.00 |
| WS201 | Adjacent Landfill / Made Ground. | 0.50 – 3.00 |

| LOCATION | GROUND GAS SOURCE | DEPTH OF MONITORING WELL (m) |
|---|---|---|
| WS202 | Natural Strata | 2.00 – 3.00 |
| WS204 | Natural Strata | 1.50 – 3.00 |
| WS206 | Natural Strata / Hydrocarbon Odour | 1.00 – 2.50 |

### 9.4.2. GROUND GAS RISK ASSESSMENT METHODOLOGY

The potential impact on the development from ground gases has been assessed with reference to standards and guidelines published in:

CIRIA Report 665 – Assessing risks posed by hazardous ground gases to buildings (2007)

BS8485:2015+A1:2019 – Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

BS8485 provides guidance on the level of gas protection requirements based upon the characteristic situation (CS) and the proposed development based on building type.

Therefore, in accordance with BS8485, based on the measured flow rates and hazardous gas concentrations, individual hazardous gas flow rates ($Q_{hg}$) shall be derived for each monitoring point, from which the site characteristic hazardous gas flow rate ($Q_{hgs}$), and then the Characteristic Situation (CS) can be determined.

The following equation should be utilised:

$$Q_{hg} = q\left(\frac{C_{hg}}{100}\right)$$

Where:
$q$ is the measured flow rate (in litres per hour) of combined gases from the monitoring standpipe
$C_{hg}$ is the measured hazardous gas concentration (in percentage volume/volume).

The subsequent derived gas screening value (GSV) should be the maximum $Q_{hg}$ (flow rate x concentration as a percentage volume) for all the monitoring events.

A 'worst case check' may be carried out using the maximum recorded flow in any hole with the maximum concentration in any hole to present the plausible worst case conditions. Adoption of the worst case $Q_{hg}$ requires thorough justification and reference to the CSM.

The final derived GSV can then be used to characterise the site as summarised in Table 9.8.

TABLE 9.8 SITE CHARACTERISATION BY GSV (BS8485:2015)

| CS | HAZARD POTENTIAL | GSV (l/hr) FOR METHANE AND CARBON DIOXIDE | ADDITIONAL FACTORS |
|---|---|---|---|
| CS1 | Very Low | < 0.07 | Typically <1% methane concentration and <5% carbon dioxide concentration (otherwise consider an increase to CS2) |
| CS2 | Low | < 0.70 | Typical measured flow rate <70 l/h (otherwise consider an increase to CS3) |
| CS3 | Moderate | < 3.5 | N/A |
| CS4 | Moderate to High | < 15 | N/A |
| CS5 | High | < 70 | N/A |
| CS6 | Very High | > 70 | N/A |

**Notes**
1. The CS is equivalent to the characteristic GSV in CIRIA C665.
2. The worst-case ground gas regime identified on the site, either methane or carbon dioxide, at the worst-case temporal conditions that the site may be expected to encounter should be considered.
3. Gas Screening Value is the Borehole Gas Volume Flow Rate, in litres per hour, multiplied by the concentration in the air stream of the particular gas being considered.
4. The Gas Screening Value thresholds should not generally be exceeded without the completion of a detailed ground gas risk assessment taking into account site-specific conditions.

### 9.4.3. MONITORING METHODOLOGY

Concentrations of methane ($CH_4$), carbon dioxide ($CO_2$) and oxygen ($O_2$) (hydrogen sulphide) were measured using a calibrated infrared gas analyser (GFM435) with gas flow rates measured using an integrated flow meter.

Gas measurements were recorded for a minimum of 500 seconds at each location, at which point the maximum concentration of $CH_4$ and $CO_2$, together with the lowest concentration of $O_2$ were recorded.

The results of the ground gas monitoring are presented in Table 9.10.

In addition to the raw data, the results for each individual standpipe have been assessed with reference to guidance provided in BS8485:2015. Based on the initial peak measured flow rates and hazardous gas concentrations, individual hazardous gas flow rates (Qhg) have been derived for each monitoring point, from which an individual Characteristic Situation (CS) can ultimately be determined.

### 9.4.4. SUMMARY OF MONTIORING RESULTS

Due to the size of the dataset, a full table of monitoring results has been provided in Appendix XI, and a summary of these results is found in section 9.5.

### 9.4.5. DAMAGED WELLS/LIMITATIONS

Wells were noted to be damaged on a few occasions, where the bung was noted to be missing. These were replaced on each visit, however monitoring data has been interpreted with caution on these occasions. A summary of the damaged occasions is summarised in Table 9.9 overleaf.

### 9.4.6. GROUNDWATER

The water level within several of the monitoring wells was recorded to be above the top of the response zone (flooded) on a number of occasions, as summarised in Table 9.10 and 9.11, thus rendering some of the monitoring data unreliable. Therefore, each time a flooded well was encountered, the well was bailed and left to re-equilibrate. Wells were re-monitored after a period of 20–30 minutes.

Monitoring wells noted to be flooded on one or more visits are indicated below:

- WS113
- WS115
- WS120
- WS133
- WS135
- WS137
- WS147
- WS151
- WS157
- WS169
- CP/RB101
- CP/RB102
- CP/RB103

On these occasions, results are considered to be unreliable and therefore have not been considered further within the gas assessment. Despite several flooded occasions, it is considered by E3P that sufficient data has still been collected for a complete gas assessment.

Table 9.9 Damaged Monitoring Wells

| Well | VISIT NUMBER | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| WS101 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Y | - | Y | - | - | - | - | - | Y |
| WS123 | - | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS124 | - | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS129 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| WS135 | Y | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS149A | - | - | - | - | - | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS152 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Y |
| WS153A | - | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS157 | - | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS169 | - | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| CP/RP101 | - | - | - | - | - | Y | - | - | - | - | - | - | - | - | - | Y | - | - | - | Y | - | - | Y | - |
| CP/RP102 | - | - | - | - | - | Y | - | - | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Table 9.10 FLOODED MONITORING WELL DATA

| Well | VISIT NUMBER | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| WS113 | Y | Y | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Y | - | Y | - | - | Y | Y |
| WS115 | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | |
| WS120 | Y | Y | Y | Y | - | - | - | - | - | - | - | - | - | - | - | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| WS133 | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS135 | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| WS137 | Y | Y | Y | Y | Y | Y | Y | Y | Y | - | - | - | - | - | - | Y | Y | Y | Y | Y | - | - | Y | Y |
| WS147 | Y | Y | Y | - | - | Y | - | - | - | Y | - | - | - | - | - | Y | Y | Y | - | Y | - | - | Y | Y |
| WS151 | Y | Y | Y | Y | Y | Y | Y | Y | - | Y | Y | - | - | - | - | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| WS157 | Y | Y | Y | - | Y | - | - | - | - | - | - | - | - | - | - | - | - | Y | - | - | - | - | Y | Y |
| WS169 | Y | Y | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Y | - | - | - | - | Y | - |
| CP/RB101 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Y | Y |
| CP/RB102 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Y | Y |
| CP/RB103 | Y | Y | Y | Y | Y | Y | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | Y | Y |

Table 9.11 FLOODED MONITORING WELL DATA SUPPLEMETRY VISITS

| Well | Visit 1 – 27th November 2023 | Visit 2 – 8th December 2023 | Visit 3 – 21st December 2023 | Visit 4 – 9th January 2024 | Visit 5 – 23rd January 2024 | Visit 6 – 8th February 2024 | Visit 7 – 23rd February 2024 | Visit 8 – 4th March 2024 |
|---|---|---|---|---|---|---|---|---|
| WS202 | Y | Y | Y | Y | Y | Y | Y | Y |
| WS204 | Y | Y | Y | Y | Y | Y | Y | Y |
| WS206 | Y | Y | - | - | - | - | - | - |
| WS113 | - | - | Y | Y | Y | Y | Y | Y |

Several monitoring wells from the first visit that were noted as flooded indicated a fast recharge of water and therefore no data could be gained from these wells. These occasions have not been including in the ground gas assessment and occurred at the following locations and visits:

- WS115 – Visit 1
- WS135 – Visit 1
- WS136 – Visit 1
- WS157 – Visit 1

Within remaining monitoring wells, a number of the wells were noted to be dry and the groundwater levels generally dropped over the monitoring period or remained at a similar level.

### 9.4.7. BAROMETRIC PRESSURE

The ground gas assessment has included over 20 visits across the majority of wells on the site. Within these visits, atmospheric has been noted to be rising, steady and falling, with several visits noted to have atmospheric pressures below 1000 mbar, with a pressure range recorded between 988 mbar and 1029 mbar.

For the supplementary monitoring wells in the northwestern sector of the site, visits were undertaken across varying conditions, with visits 1, 2 and 7 noted as low rising pressure, visit 3, 5, 6 and 8 as falling pressure, and one instance of steady high pressure (visit 4).

It is therefore considered that the visits have been undertaken over representative conditions, however further visits are to be completed which will capture further atmospheric events.

### 9.4.8. GAS FLOW

During the monitoring a positive flow was noted in almost all monitoring wells. The measure of positive flow is considered to be the result of groundwater fluctuations. A negative peak flow of -0.3 l/hr was identified within WS140 on the 21st March 2022 however this then became a steady flow of 0.1 l/hr.

To date gas flows have generally been at the limit of detection (LOD) of the gas analyser at 0.1 l/hr, however within WS113 and WS138 during the first visit a peak flow of 6.4 l/hr and 25.3 l/hr respectively were identified, where the steady flow reduced to 0.1 l/hr. Within WS147 on the first visit the peak flow was 3.3 l/hr, reducing to a steady flow of 0.1 l/hr. Within WS126 on a number of monitoring visits the peak flow was 0.40 l/hr with a steady flow recorded at 0.1 l/hr.

All supplementary monitoring wells have generally been recorded at flow rate of 0.1 (l/hr), the limit of detection, across all visits. Within WS202, peak flows up to 2.0 l/hr were recorded across visits 4, 5 and 7, however steady flow was recorded as the limit of detection.

### 9.4.9. GAS CONCENTRATIONS

Methane has been recorded within all monitoring wells at concentrations between 0.1 % v/v (LOD) and a maximum concentration of 69.3 % v/v (WS201). Elevated concentrations of methane were noted during the first monitoring visit in the following locations and are associated with Made Ground deposits and historical deposited materials:

- WS101 – Visit 1 - 6.8 % v/v (both peak and steady concentrations).
- WS102 – Visit 1 - 3.7 % v/v (both peak and steady concentrations).
- WS108 – Visit 1 - 46.1 % v/v (both peak and steady concentrations).
- WS108 – Visit 18 – 9.6 % v/v peak concentration, reducing to 3.4 % v/v steady concentration.
- WS108 – Visit 23 – 5.2% v/v (both peak and steady concentrations).
- WS108 – Visit 24 – 15.2% v/v peak concentration, reducing to 12.7 % v/v steady concentration.
- WS111 – Visit 1 - 6.2 % v/v (both peak and steady concentrations).
- WS124 – Visit 1 - 13.7 % v/v (both peak and steady concentrations).
- CP/RB101 – Visit 1 - 4.4 % v/v (both peak and steady concentrations).
- WS201 – Visit 2 – 66.3 % (v/v) peak concentration, reducing to 65.9 % (v/v) steady conditions.
- WS201 – Visit 3 – 68.3 % (v/v) peak concentration, reducing to 67.9 % (v/v) steady conditions.

No other elevated methane concentrations were detected in subsequent monitoring visits.

Carbon dioxide concentrations were recorded within all the monitoring wells at concentrations ranging from 0.1% v/v (LOD) to 22% v/v (WS201). As with the methane concentrations highlighted above, elevated concentrations of carbon dioxide were identified during the 1$^{st}$ and 18$^{th}$ monitoring visits and are associated with Made Ground and historically deposited materials. The locations of exceedances are summarised below:

- WS101 – Visit 1 - 8.5 % v/v (both peak and steady concentrations).
- WS102 – Visit 1 - 10.8 % v/v (both peak and steady concentrations).
- WS105 – Visit 1 - 6.9 % v/v (both peak and steady concentrations).
- WS106 – Visit 1 – 6.2 % v/v (both peak and steady concentrations).
- WS106 – Visit 18 - 7.7 % v/v peak concentration, falling to a steady concentration of 7.6 % v/v.
- WS106 – Visit 23 – 5.0 % v/v peak concentration, falling to a steady concentration of 4.7 % v/v.
- WS108 – Visit 1 – 7.8 % v/v peak concentration, falling to a steady concentration of 7.5 % v/v.
- WS108 – Visit 18 - 10.3 % v/v peak concentration, falling to a steady concentration of 6.9 % v/v.
- WS108 – Visit 24 – 9.5 % v/v peak concentration, falling to a steady concentration of 9.0% v/v.
- WS111 – Visit 1 - 5.3 % v/v (both peak and steady concentrations).

- WS124 – Visit 1 - 5.4 % v/v peak concentration, falling to a steady concentration of 5.2 % v/v.
- CP/RB101 – Visit 1 - 9.5 % v/v (both peak and steady concentrations).
- CP/RB103 – Visit 1 - 6.0 % v/v (both peak and steady concentrations).
- WS201 – Visit 2 – 22 % (v/v) (both peak and steady concentrations).
- WS201 – Visit 3 – 21.5 % (v/v) (both peak and steady concentrations).
- WS201 – Visit 5 – 6.8 % (v/v) (both peak and steady concentrations).
- WS201 – Visit 6 – 21.3 % (v/v) (both peak and steady concentrations).
- WS201 – Visit 8 – 10.7 % (v/v) (both peak and steady concentrations).

The maximum carbon dioxide and methane levels were also associated with low oxygen concentrations.

## 9.5. CONCLUSION

The determined Characteristic Situation for each standpipe is presented in Table 9.12. This indicates that based on the peak flow rates the majority of the monitoring visits classify as Characteristic Situation (CS)1 – Very Low Gas Risk with areas of the site characterised as CS2 and CS3 associated with Made Ground and historically deposited materials.

TABLE 9.12 GAS RISK PROFILE AND LOCATION

| LOCATION | MAX $CH_4$ (% v/v) | GSV (l/hr) | MAX $CO_2$ (% v/v) | GSV (l/hr) | CHARACTERISTIC SITUATION |
|---|---|---|---|---|---|
| WS101 | 6.8 | 0.0068 | 8.5 | 0.0085 | CS2* |
| WS102 | 3.7 | 0.0037 | 10.8 | 0.0108 | CS2* |
| WS105 | 0.1 | 0.0001 | 6.9 | 0.0069 | CS2* |
| WS106 | 0.4 | 0.0004 | 7.7 | 0.0077 | CS2* |
| WS108 | 46.1 | 0.0461 | 10.3 | 0.0103 | CS2* |
| WS110 | 0.1 | 0.0001 | 1.5 | 0.0015 | CS1 |
| WS111 | 6.2 | 0.0062 | 5.3 | 0.0053 | CS2* |
| WS113 | 0.1 | 0.0164 | 3.1 | 0.1984 | CS2 |
| WS115 | 0.1 | 0.0001 | 0.1 | 0.0001 | CS1 |
| WS117 | 0.1 | 0.0001 | 4.7 | 0.0047 | CS1 |
| WS118 | 0.1 | 0.0001 | 0.3 | 0.0003 | CS1 |
| WS119 | 0.1 | 0.0001 | 2.1 | 0.0021 | CS1 |
| WS120 | 0.1 | 0.0001 | 0.2 | 0.0002 | CS1 |
| WS121 | 0.1 | 0.0001 | 2.2 | 0.0022 | CS1 |
| WS123 | 0.1 | 0.0001 | 0.1 | 0.0001 | CS1 |
| WS124 | 13.7 | 0.0137 | 5.4 | 0.0054 | CS2* |
| WS125 | 0.1 | 0.0001 | 2.1 | 0.0021 | CS1 |
| WS126 | 0.4 | 0.0016 | 1.0 | 0.0010 | CS1 |



| LOCATION | MAX $CH_4$ (% v/v) | GSV (l/hr) | MAX $CO_2$ (% v/v) | GSV (l/hr) | CHARACTERISTIC SITUATION |
|---|---|---|---|---|---|
| WS128 | 0.1 | 0.0001 | 1.5 | 0.0015 | CS1 |
| WS130 | 0.1 | 0.0001 | 0.1 | 0.0001 | CS1 |
| WS132 | 0.1 | 0.0001 | 0.4 | 0.0004 | CS1 |
| WS133 | 0.1 | 0.0001 | 2.3 | 0.0023 | CS1 |
| WS135 | 0.1 | 0.0001 | 0.1 | 0.0001 | CS1 |
| WS136 | 0.1 | 0.0001 | 0.8 | 0.0008 | CS1 |
| WS137 | 0.1 | 0.0001 | 1.6 | 0.0016 | CS1 |
| WS138 | 0.1 | 0.0253 | 1.4 | 0.3542 | CS2 |
| WS140 | 0.1 | -0.0003 | 0.8 | 0.0008 | CS1 |
| WS141 | 0.1 | 0.0001 | 2.4 | 0.0024 | CS1 |
| WS142 | 0.1 | 0.0001 | 1.1 | 0.0011 | CS1 |
| WS144 | 0.1 | 0.0001 | 0.8 | 0.0008 | CS1 |
| WS147 | 0.1 | 0.0033 | 0.1 | 0.0033 | CS1 |
| WS149A | 0.1 | 0.0001 | 0.8 | 0.0008 | CS1 |
| WS151 | 0.1 | 0.0001 | 0.8 | 0.0008 | CS1 |
| WS152 | 0.8 | 0.0008 | 4.8 | 0.0048 | CS1 |
| WS153A | 0.1 | 0.0001 | 0.7 | 0.0007 | CS1 |
| WS157 | 0.1 | 0.0001 | 0.2 | 0.0002 | CS1 |
| WS161 | 0.1 | 0.0001 | 0.5 | 0.0005 | CS1 |
| WS169 | 0.1 | 0.0001 | 0.1 | 0.0001 | CS1 |
| WS171 | 0.1 | 0.0001 | 1.3 | 0.0013 | CS1 |
| CP/RB101 | 4.4 | 0.0044 | 9.5 | 0.0095 | CS2* |
| CP/RB102 | 0.1 | 0.0001 | 4.1 | 0.0041 | CS1 |
| CP/RB103 | 0.3 | 0.0003 | 6.0 | 0.0060 | CS2* |
| WS201 | **69.30** | 0.0693 | 22.0 | 0.022 | CS2* |
| WS202 | 0.10 | 0.002 | 0.50 | 0.0006 | CS1 |
| WS204 | 0.10 | 0.0001 | 0.4 | 0.0004 | CS1 |
| WS206 | 0.10 | 0.0001 | 0.10 | 0.0001 | CS1 |

* Classified as precautionary CS2 based on high concentrations observed. GSV however noted to fall under CS2 threshold.

E3P has assessed the previous variables and come to the following conclusions based on preliminary ground gas monitoring:

- Ground gas monitoring thus far suggests that the site can be predominantly classified as CS1, and in these areas it is considered that gas protection measures will not be required.
- However, localised areas of the site, including WS113 along the western boundary of the site and WS138 to the north of the site and have been classified as CS2.
- The key sources of ground gas identified within the conceptual site model are the adjacent landfill at Bewley Road (Ref: EAHLD06985), which is noted to include household waste and was active from the 1950s to circa 1974. In addition, deep Made Ground has been encountered across the site, with deeper deposits within the southern half of the site associated with former infilling. The supplementary site investigation to the northwest of the site has also identified areas of volatile hydrocarbon contamination.
- High concentrations in WS113 are likely associated with the known landfill located directly adjacent to the western boundary, however, across a total of 30 visits completed, only one visit noted any indication of gas flow, with the majority of visits encountering carbon dioxide and methane at the limit of detection.
- The monitoring well in WS138 was installed within natural sand deposits, and the high GSV noted is more likely in reference to moving groundwater creating pressure at the top of the well creating a piston effect for collected air, as no source of gas has been identified in this part of the site.
- The site is predominantly underlain by glacial till of SANDS and CLAY at depths of 0.10m bgl to 6.10 mbgl.
- A number of monitoring wells across the site have identified elevated concentrations of methane and/or carbon dioxide, however with GSV thresholds noted to be below the CS2 criteria. These wells include: WS101, WS102, WS105, WS106, WS108, WS111, WS124, CP/RB101, CP/RB103 and WS201. In general, all of the above noted locations can be associated with the infilling of ground in the southern parts of the site, adjacent to the known landfill and noted hydrocarbons. It. is therefore considered that a grond gas zoning plan is created for the site basd o the sources identified, where precautionary CS2 protection measures are to be included within all of these areas.
- High methane concentrations have been identified within WS201 to the northwest of site, likely associated with a combination of encountered hydrocarbons in this area aswell as the adjacent landfill to the south. Following suggested further investigation of the area, precautions may be increased or reduced based upon findings.
- Migration from the adjacent landfill has been identified, however a minimal flow has been recorded in the monitoring wells surrounding it, and therefore it is likely that the lateral migration of ground gases from the landfill is limited. As the landfill is uncapped, the majority of gases encapsulated within the landfill will be released to the atmosphere, however lows in barometric pressure may cause a swelling of the ground gas encroaching onto the site.
- Completion of the ground gas monitoring regime is suggested for all monitoring wells within the north western parcel (WS201 – WS206) to fully assess the potential hazardous ground gas risk posed to subsequently classify the characteristic situation suitable.
- Within the area of the pond identified towards the north west of the site, precautionary CS2 protections are suggested within the vicinity. Following suggested further investigation of the area, precautions may be increased or reduced based upon organic content noted.

It is recommended that the full ground gas assessment and recommended protection measures (if applicable) are agreed with the local authority prior to their adoption on site. Furthermore, all protection measures adopted should be validated by a suitably qualified engineer.

## 9.6. RESIDENTIAL BUILDING GAS RISK MITIGATION

British Standard BS8485 (2015)+A1(2019) provides two types of residential property that require assessment. These building types are:

- **Type A Building** – Private ownership with no building management controls on alterations to the internal structure, the use of rooms, the ventilation of rooms or the structural fabric of the building. Some small rooms are present. Probably conventional building construction (rather than civil engineering). Examples include private housing and some retail premises.

- **Type B Building** – Private or commercial property with central building management control of any alterations to the building or its uses but limited or no central building management control of the maintenance of the building, including the gas protection measures. Multiple occupancy. Small- to medium-sized rooms with passive ventilation of rooms and other internal spaces throughout ground floor and basement areas. May be conventional building or civil engineering construction. Examples include managed apartments, multiple occupancy offices, some retail premises and parts of some public buildings (such as schools, hospitals, leisure centres) and parts of hotels.

Based on the ground gas risk assessment and the proposed Type A Building, it is envisaged that a point score of 3.5 will be required for affected properties, as summarised in Table 9.13.

TABLE 9.13. BS 8485 (2015) POINTS REQUIRED FOR TYPE A AND TYPE B BUILDINGS

| CHARACTERISTIC SITUATION | NHBC TRAFFIC LIGHT SYSTEM | MINIMUM GAS PROTECTION SCORE (POINTS) | |
|---|---|---|---|
| | | HIGH SENSITIVITY | |
| | | TYPE A BUILDING | TYPE B BUILDING |
| 1 | Green | 0 | 0 |
| 2 | Amber 1 | 3.5 | 3.5 |
| 3 | Amber 2 | 4.5 | 4 |
| 4 | Red | 6.5 | 5.5 |
| 5 | N/A | N/A | 6.5 |
| 6 | N/A | N/A | N/A |

Residential buildings should not be built on CS4 or higher sites unless the type of construction or site circumstances allow additional levels of protection to be incorporated, for example, high-performance ventilation or pathway intervention measures, and an associated sustainable system of management of maintenance of the gas control system such as in institutional and/or fully serviced contractual situations.

The requisite 3.5 points must be achieved by installation of a suitable combination of measures detailed in Table 9.14.

TABLE 9.14. SUMMARY OF GROUND GAS MITIGATION MEASURES – BS8485 (2015)+A1(2019)

| GAS PROTECTION SCORES FOR THE STRUCTURAL BARRIER | SCORE[A] |
|---|---|
| **Floor and Substructure Design** | |

| | |
|---|---|
| **Precast Suspended Segmental Subfloor (Beam and Block)** | 0 |
| **Cast In-Situ Ground-Bearing Floor Slab (With Only Nominal Mesh Reinforcement)** | 0.5 |
| **Cast In-Situ Monolithic Reinforced Ground-Bearing Raft or Reinforced Cast In-Situ Suspended Floor Slab With Minimal Penetrations** | 1 or 1.5[B] |
| **Basement Floor and Walls Conforming to BS 8102:2009, Grade 2 Waterproofing[C]** | 2 |
| **Basement Floor and Walls Conforming to BS 8102:2009, Grade 3 Waterproofing[C]** | 2.5 |

[A] The scores are conditional on breaches of floor slabs, etc. being effectively sealed.
[B] To achieve a score of 1.5 the raft or suspended slab should be well reinforced to control cracking and have minimal penetrations cast in (see **A.2.2.2**).
[C] The score is conditional on the waterproofing not being based on the use of a geosynthetic clay liner waterproofing product (see **C.3,** Note 4).

| PROTECTION ELEMENT SYSTEM | | SCORE | COMMENTS |
|---|---|---|---|
| **Gas protection scores for ventilation protection measures** | | | |
| **(a) Pressure Relief Pathway** – Usually formed of low fines gravel or with a thin geocomposite blanket or strips terminating in a gravel trench external to the building. | | 0.5 | Whenever possible a pressure relief pathway (as a minimum) should be installed in all gas protection measures systems.<br><br>If the layer has a low permeability and/or is not terminated in a venting trench (or similar), then the score is 0. |
| **(b) Passive Subfloor Dispersal Layer** – Media used to provide the dispersal layer are:<br><br>• Clear void;<br>• Polystyrene void former blanket;<br>• Geocomposite void former blanket;<br>• No-fines gravel layer with gas drains; and<br>• No-fines gravel layer. | Very good performance | 2.5 | The ventilation effectiveness of different media depends on a number of different factors including the transmissivity of the medium, the width of the building, the side ventilation spacing and type and the thickness of the layer. The selected score should be assigned taking into account the recommendations in Annex B of BS 8485 (2015).<br><br>Passive ventilation should be designed to meet at least "good performance". |
| | Good performance | 1.5 | |
| **(c) Active Dispersal Layer** – Usually comprising fans with active abstraction (suction) from a subfloor dilution layer with roof-level vents. The dilution layer may comprise a clear void or be formed of geocomposite or polystyrene void formers. | | 1.5 to 2.5 | This system relies on continued serviceability of the pumps, therefore alarm and response systems should be in place.<br><br>There should be robust management systems in place to ensure the continued maintenance of the system, including pumps and vents.<br><br>Active ventilation should always be designed to meet at least "good performance". |

| | | |
|---|---|---|
| **(d) Active Positive Pressurisation** – Provided by the creation of a blanket of external fresh air beneath the building floor slab by pumps supplying air to points across the central footprint of the building into a permeable layer, usually formed of a thin geocomposite blanket. | 1.5 to 2.5 | This system relies on continued operation of the pumps, therefore alarm and response systems should be in place.<br><br>The score assigned should be based on the efficient "coverage" of the building footprint and the redundancy of the system.<br><br>Active ventilation should always be designed to meet at least "good performance". |
| **(e) Ventilated Car Park** – Floor slab of occupied part of the building under consideration is underlain by a basement or undercroft car park. | 4 | Assumes that the car park is vented to deal with car exhaust fumes, designed to Buildings Regulations 2000, Approved Document F [9]. |
| **PROTECTION ELEMENT SYSTEM** | **SCORE** | **COMMENTS** |
| **Gas Protection Score for the Gas-Resistant Membrane** | | |
| **Gas-resistant membrane meeting all of the following criteria:**<br>• Sufficiently impervious to the gases with a methane gas transmission rate < 40.0 ml/day/m$^2$/atm (average) for sheet and joints (tested in accordance with BS ISO 15105-1 manometric method);<br>• Sufficiently durable to remain serviceable for the anticipated life of the building and duration of gas emissions;<br>• Sufficiently strong to withstand in-service stresses (e.g. settlement if placed below a floor slab);<br>• Sufficiently strong to withstand the installation process and following trades until covered (e.g. penetration from steel fibres in fibre-reinforced concrete, penetration of reinforcement ties, tearing due to working above it, dropping tools);<br>• Capable, after installation, of providing a complete barrier to the entry of the relevant gas; and<br>• Verified in accordance with CIRIA C735. | 2 | The performance of membranes is heavily dependent on the quality and design of the installation, resistance to damage after installation and integrity of joints.<br><br>For example, a minimum 0.4 mm thickness (equivalent to 370 g/m$^2$ for polyethylene) reinforced membrane (virgin polymer) meets the performance criteria opposite.<br><br>If a membrane is installed that does not meet all the criteria opposite, then the score is 0. |
| This table should be read in conjunction with the notes presented in BS 8485 (2015)+A1 (2019) | | |

### 9.6.1. NHBC

The NHBC Traffic Light guidance can still be used where the development proposals are based on the 'typical house' used in the modelling for the traffic light classification system.

A typical house is defined as a house (up to three storeys) with <100m2 footprint and minimum 150mm depth clear ventilated void achieving sub-slab ventilation of one complete air exchange per day.

NHBC expectations for verification to satisfy the Traffic Light gas regime classifications are as detailed in Table 9.15.

TABLE 9.15 TYPICAL NHBC EXPECTATION AND VERIFICATION REQUIREMENTS

| GAS REGIME | MINIMUM GAS PROTECTION EXPECTATIONS | VERIFICATION OR INFORMATION REQUIREMENTS |
|---|---|---|
| Green | N/A – but need to comply with BR211 radon requirements, where applicable | |
| Amber 1 | Ventilation – subfloor venting to achieve at least one air exchange per day (minimum 150mm void height; 1500 mm2 /m air vent opening or<br>500mm2 /m2 floor area spaced at not more than 2m centres on at least two opposing sides).<br><br>Membrane – must be suitable for purpose.<br><br>Membrane installation/design - to achieve complete integrity across entire building footprint. Penetrations and joints sealed. | Construction drawings – showing position of membrane; sealing details and ventilation points to be provided.<br><br>Membrane specification – technical data sheet(s) for gas membrane (including gas permeability data) to be provided.<br><br>Installation – photographic evidence of installed membrane may be requested. |
| Amber 2 | Ventilation – subfloor venting to achieve at least one air exchange per day.<br><br>Membrane – must be suitable for purpose (criterion detailed in BS8485 clause 7.2.4).<br><br>Membrane installation and design to achieve complete integrity across entire building footprint. Penetrations and joints sealed.<br><br>Installer – installers must be experienced and appropriately trained and/or qualified. | Construction drawings showing position of membrane, sealing details and ventilation points to be provided.<br><br>Membrane specification – technical data sheet(s) for gas membrane (including gas permeability data) to be provided.<br><br>Installation – third-party verification report with supporting evidence to be included (i.e. photographic evidence and certificates of conformity, observations relating to sealing, location of ventilators and standards of installation).<br><br>Integrity testing – may be requested; testing plan to be agreed in advance. |
| Red | Standard residential housing is not generally acceptable without further ground gas risk assessment and/or possible remedial mitigation measures to reduce or remove the source of the ground gases. | |

## 9.7. POTABLE WATER SUPPLY

This section provides a summary of the site investigation data with reference to the selection of potable water supply pipework. The assessment is made with reference to the UK Water Industry Research (UKWIR) publication "*Guidance on the selection of Water Supply Pipes to be used in Brownfield Sites*"

TABLE 9.16. PIPELINE SELECTION PE THRESHOLD CONCENTRATIONS

| Contaminant Group | PE-threshold (mg/kg) | Concentrations at Current pipeline depth (mg/kg) |
|---|---|---|
| **Total VOC** | 0.5 | <LOD |
| **Total BTEX And MTBE** | 0.1 | <LOD |
| **Total SVOCs (Excluding PAH and those substances marked with an *)** | 2 | 9.5 |
| **EC5-EC10 Aliphatic and Aromatic Hydrocarbons** | 2 | <1.2 |
| **EC10-EC16- Aliphatic and Aromatic Hydrocarbons** | 10 | 59.9 |
| **EC16-EC40 Aliphatic and Aromatic Hydrocarbons** | 500 | 3100 |
| **Phenols (From SVOC Analysis)*** | 2 | N/A |
| **Cresols and Chlorinated Phenols (From SVOC Analysis)** | 2 | NA |
| **Ethers*** | 0.5 | NA |
| **Nitrobenzene*** | 0.5 | NA |
| **Ketones*** | 0.5 | NA |
| **Aldehydes*** | 0.5 | NA |
| **Amines** | Fail | NA |
| **Other Consideration** | | |
| **Are there any exceedances of the PE threshold outside of the pipeline depth?** | Yes – exceedances of TPH compounds and SVOCs have been noted outside of pipeline depth. | |
| **Is free product present in soil and groundwater?** | None identified. | |
| **Could hydrocarbon impact at greater depth than current pipeline depth be mobilised by rising groundwater levels?** | Heavy end hydrocarbon impact have been identified within Made Ground. Perched water has been identified within Made Ground deposits at pipeline depth and monitoring has shown levels to fluctuate which may cause the mobilisation of determinants. | |
| **Will soils impacted with above determinands likely be utilised elsewhere on site?** | The site is expected to undergo a site wide turnover with materials likely to be reused on site. | |
| **Will soils be imported to site as part of any future earth works** | Site levels will likely undergo some cut/fill works as part of a phase of enabling works. The importation of materials may affect the WIR Risk Assessment which should be updated after completion. | |

**Notes -** Pipe line depth normally between 0.75m–1.35m

Based on the assessment of current site conditions it is likely that barrier pipe will be required at the proposed development. A UKWIR Risk Assessment should be completed to fully inform the pipeline selection. Post-remediation an updated assessment should be completed as conditions may be different to those on site currently.

## 9.8. CONCEPTUAL SITE MODEL

Following the completion of the intrusive site investigation, chemical analysis and risk assessment, the conceptual model shown in Table 9.17. has been prepared for the site.

TABLE 9.17. CONCEPTUAL MODEL

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL1<br><br>PL2 | Heavy Metals, non-volatile PAH (Made Ground) | Dermal contact.<br><br>Dermal contact and ingestion. | Future site users.<br><br>Off-site receptors. | Likely | High | LOW |
| **Discussion:**<br>Elevated concentrations of heavy metals (Lead, Arsenic, Nickel and Zinc) and non-volatile PAHs have been identified throughout Made Ground deposits between depths of 0.10m and 2.50m. These elevated levels have a dermal contact and ingestion pathway to future site users and construction workers when coming into direct contact with impacted soils.<br><br>**Recommendation:**<br>In order to remove the pathway of direct contact for future site users, a suitable clean cover system to garden and landscaped areas, designed in accordance with BRE465 (Cover Systems for Land Regeneration), will prevent exposure. Construction works should be completed with PPE and provision of welfare to ensure exposure and direct contact with impacted materials is at a minimum. | | | | | | |
| PL3 | ACM in Made Ground | Inhalation of dust. | Future site users.<br><br>Buildings.<br><br>Off-site land users. | Likely | High | LOW |
| **Assessment:**<br>Asbestos in the form of loose chrysotile, amosite and crocidolite fibres and fibrous debris has been identified in the granular Made Ground in TP132 at 0.20 bgl, TP140 at 0.10m bgl, TP118 at 0.50m, TP202 at 1.00m, and WS206 at 0.90m quantified between <0.001% and 0.009%. | | | | | | |

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| **Recommendation:**<br>Asbestos impacted soils and Made Ground will need to be placed in accordance with the asbestos conceptual site model with a suitable cover system placed in all garden and landscaped areas to prevent exposure to future site users. A hotspot removal should be completed in areas in which asbestos quantification is greater than 0.001%. Risks from ACM can be mitigated through the development of a detailed enabling works strategy following guidance and protocol specified within the Control of Asbestos Regulations (2012) and industry best practice as detailed in CIRIA733 (Asbestos in Soil and Made Ground: A guide to understanding risk). Construction works must be completed with appropriate PPE/RPE and the provision of adequate welfare facilities for site workers. | | | | | | |
| **PL4** | Volatile Contaminants such as Mercury, SVOCs. Naphthalene (Made Ground) | Inhalation of vapours.<br><br>Migration through permeable strata and preferential pathways. | Future site users.<br><br>Off-site receptors. | Likely | Moderate | **LOW** |
| **Assessment:**<br>Elevated concentrations of Mercury have been identified across the site within TP118 at 0.50m bgl and TP141 at 0.10m bgl. Elevated naphthalene concentrations have been identified within TP1101 at 0.90m, and elevated Dibutyl phthalate has been identified within WS111 at 2.50m. Elevated TPH C21 – C35 were identified within TP202 at 1.00mbgl in the Made Ground.<br><br>**Recommendation:**<br>During a process of cut/fill enabling works, a watching brief should be undertaken where these soils may be chemically validated to assess chemical suitability for retention on site in an area of no future sensitivity. In regards to the mercury, further testing should be completed to confirm the type of mercury present and whether it presents a vapour risk. Should it be volatile a hotspot removal should be undertaken.<br><br>Regarding the elevated TPHs noted I the northwestern parcel, a watching brief and delineation exercise should be undertaken to determine the extent of the risk. This will be confirmed within a detailed remediation strategy. | | | | | | |

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL5 | Methane, carbon dioxide (Made Ground)<br><br>Pond (North West) | Inhalation of gas.<br><br>Migration through permeable strata and preferential pathways.<br><br>Explosion in confined spaces. | Future site users.<br><br>Buildings.<br><br>Off-site land users. | Low likelihood | Moderate | LOW |

**Assessment:**
Ground gas monitoring has characterised the majority of the site as CS1, with areas of deep Made Ground and noted areas adjacent to the landfill adhering to a CS2 classification.

Migration from the adjacent landfill has been identified, however a minimal flow has been recorded in the monitoring wells surrounding it, and therefore it is likely that the lateral migration of ground gases from the landfill is limited. As the landfill is uncapped, the majority of gases encapsulated within the landfill will be released to the atmosphere, however lows in barometric pressure may cause a swelling of the ground gas encroaching onto the site.

High methane concentrations have been identified within WS201 to the northwest of site, likely associated with a combination of encountered hydrocarbons in this area as well as the adjacent landfill to the south. Following suggested further investigation of the area, precautions may be increased or reduced based upon findings.

**Recommendation:**
It is considered that a ground gas zoning plan is created for the site based on the sources identified, where precautionary CS2 protection measures are to be included within all of these areas.

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL6 | Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds (Made Ground) | Surface runoff.<br><br>Migration through permeable strata and preferential pathways.<br><br>Perched waters migration. | Groundwater (Principal aquifer). | Likely | Moderate | LOW |
| **Assessment:**<br>Likely probability as significant sources of mobile contamination have been identified. Leakages/spillages of mobile contamination are considered possible within the vicinity of the previous Petrol Filling Station although no elevated concentrations of TPHs, SVOCs or VOCs have been identified within soil or leachate analysis however elevated TPH Aromatic C10-C12 and C12 -C16 concentrations against the EQS screening have been detected; the DWS screening value was not exceeded. Cohesive material across the site may present some mitigation against the downward migration into the underlying bedrock aquifer.<br><br>The risk to the underlying bedrock aquifer is considered to be low given the minimal exceedances within analysis against DWS screening concentrations. Furthermore, there is not considered to be a complete pollutant linkage given the absence of a groundwater abstraction point within 1 km of the site. The site is however located within a Zone 3 Source Protection Zone, and care should be taken during remediation and enabling works to ensure no creation of leachate which could pose a risk to the underlying bedrock aquifer.<br><br>**Recommendation:**<br>No further works considered necessary. | | | | | | |
| PL7 | Sulphate (potential ash within Made Ground) | Sulphate attack on concrete. | Building structure. | Likely | Moderate/Low | LOW |
| **Assessment:**<br>The soils generally meet class DS-1, AC-1s. Elevated sulphate concentrations meeting Class DS-2, AC-1s were noted within the Made Ground deposits in TP117 at 0.70. Elevated sulphate concentrations meeting Class DS-3, AC-2s were noted within the Made Ground deposits in TP118 at 0.50m and TP1101 at 0.90m.<br>**Recommendation:**<br>Concrete should be designed in accordance with the chemical testing results. | | | | | | |

| POLLUTANT LINKAGE | CONTAMINANT (SOURCE) | PATHWAY | RECEPTOR | PROBABILITY | CURRENT RISK | RESIDUAL RISK AFTER MITIGATION |
|---|---|---|---|---|---|---|
| PL8 | Organic contaminants such as hydrocarbons, solvents (Made Ground) | Ingestion of tainted water supply. | Future site users.<br><br>Water pipes. | Likely | Moderate | LOW |
| **Assessment:**<br>Likely probability as contamination anticipated at pipeline depth across the site (0.75–1.35 m) is considered possible due to the previous site uses. Elevated concentrations have been identified in testing completed to date so likely requirement for the use of barrier pipe.<br>**Recommendation:**<br>Based on the assessment of current site conditions, it is likely that barrier pipe will be required. This will need to be confirmed with a UKWIR risk assessment post remediation. | | | | | | |
| PL9 | Phytotoxic contaminants (Made Ground) | Direct Contact (plant uptake). | Flora. | Likely | Low | LOW |
| **Assessment:**<br>Contamination has been encountered within Made Ground across the site which may be taken up by flora in soft landscaping.<br><br>**Recommendation:**<br>Installation of a clean cover system within gardens and any areas of soft landscaping to prevent plant uptake of contaminants. | | | | | | |

Main exposure pathways:
PL1 = soil ingestion, PL2 = dermal contact and ingestion, PL3 = dust inhalation; PL4 = Vapour/Gas Inhalation; PL5 = Vertical / Lateral Migration; PL6 = Corrosion of concrete; PL7=Tainting of water supply; PL8 = Uptake by plant.

# 10. GEOTECHNICAL ASSESSMENT

## 10.1. PROPOSED DEVELOPMENT

Barrett and David Wilson Homes intend to construct a low-rise residential development of circa 807 plots with associated gardens, estate roads and infrastructure.

## 10.2. SUMMARY OF GROUND CONDITIONS

**Made Ground**

- Made Ground deposits were encountered within the majority of exploratory hole locations to depths of between 0.00m and 5.50 bgl. The depth of Made Ground was not proven in 20 locations due to either underground obstructions, collapse of the trial pit, or the ingress of water.
- Made Ground deposits generally comprised a reworked topsoil of dark grey slightly gravelly clayey fine to coarse SAND or gravelly sandy to very sandy CLAY with frequent rootlets with gravel of brick, mudstone, sandstone and ceramic. TP164 was overlain by asphalt and concrete associated with the former garage / petrol station, with TP168 overlain by ceramic tiles overlying concrete indicative of the former residential dwellings in this area of the site. Furthermore, WS150, TP188 and TP196 in the north-east of the site was overlain by asphalt, with WS144, WS146, WS148, TP190, TP192 and TP194 overlain by concrete with rebar. TP197 and WS147 in the north-west of the site was overlain by asphalt and concrete.
- Underlying the reworked topsoil or hardstanding, deeper Made Ground deposits comprised of reworked brown very sandy gravelly clays or gravelly sands.
- Within TP160 the exploratory hole location was dug down the side of a former foundation which showed the slab to be 1.10m thick and the foundation going down to 2.80mbgl.
- Within the vicinity of the 1950s-1960s historical deposition to create a level platform within the central and northern sectors of the site, Made Ground deposits comprised a clayey very gravelly fine to coarse ashy sand with gravel of ash, glass, ceramic, textiles, clinker, wood, timber, brick, metal, mudstone and cardboard.
- Within the north-western sector of the site, there is considered to have been further level raising in order to construct the college; typically, the deposits within the areas of hardstanding comprised 200mm of asphalt, underlain by circa 300mm of sandy gravel with gravel of limestone, concrete and rare asphalt (sub-base). Underlying Made Ground deposits generally comprised a sandy gravel with cobbles, with gravel of brick, concrete, sandstone and mudstone with rare fragments of plastic, timber, metal, and cobbles of rebar and brick.

**Drift**

- Drift deposits were encountered within the majority of exploratory locations with the exception from locations where the full depth of Made Ground could not be proven. The drift deposits are varied, generally comprising a soft to very stiff, medium to very high strength, slightly gravelly sandy brown CLAY with gravel of sandstone and mudstone or a slightly gravelly to gravelly slightly, slightly clayey to very clayey fine to medium SAND with gravel of sandstone and mudstone.

**Solid**

- The solid bedrock geology was first encountered between 4.70 mbgl and 6.10mbgl. and comprised of SANDSTONE.
- A number of window sample probeholes terminated on or within weathered sandstone bedrock which was recovered as gravelly SANDs from 1.20mbgl. to in excess of 5.45mbgl.

**Groundwater**

- Groundwater was encountered as perched water, strikes and seepages at depths of between 0.40mbgl. and 4.00mbgl.
- True groundwater is considered to be between 1.40m and 4.00mbgl within the natural drift deposits.

## 10.3. SITE PREPARATION

The site should be cleared and any vegetation below areas of proposed development stripped in accordance with Series 200 of the *Manual of Contract Documents for Highway Works (MCHW)*. This should include the following:

- Roots present below the footprint of proposed structures and infrastructure should be grubbed out and the resulting void infilled with suitable compacted engineered fill.
- Removal of all concrete and asphalt hardstanding.
- Redundant services should be sealed off and grubbed out and replaced with suitable compacted engineered fill.
- Buried structures and old foundations have been encountered on site. These should be excavated from below the proposed development footprint with the resulting void backfilled.
- The areas of historical material deposition will be subject to a process or remediation and ground engineering to construct a development platform.

## 10.4. FOUNDATION CONDITIONS AND ASSESSMENT OF POTENTIAL BEARING CAPACITIES

In due consideration of the identified ground conditions, in-situ and laboratory geotechnical testing, E3P has undertaken an assessment of the net safe allowable bearing pressure (ABP) within the underlying natural stratum to assist in the detailed design of foundations and infrastructure and determine the target founding stratum. The results of this assessment are summarised in Table 10.1.

TABLE 10.1 SUMMARY OF ABP

| GRANULAR SOILS | | | |
|---|---|---|---|
| **Description** | **Depth (Range m bgl)** | **Relative Density** | **Allowable Bearing Pressure ($kN/m^2$)** |
| **SAND** | 1.00-4.45 | Loose | 42-95 |
| **SAND** | 1.00-5.45 | Medium Dense | 100-264 |
| **SAND** | 1.70-4.00 | Dense | 365-466 |
| **SAND (Weathered Bedrock)** | 4.00-4.45 | Medium Dense | 185 |
| **SAND (Weathered Bedrock)** | 2.00-4.80 | Dense | 416-456 |
| **SANDSTONE** | 5.00-5.45 | Dense | 414 |
| **Clayey SAND** | 2.00 | Dense | 456.76 |
| **GRAVEL** | 3.00 | Dense | 434.82 |
| **COHESIVE SOILS** | | | |
| **Description** | **Depth (range m bgl)** | **Undrained Shear Strength (Cu) ($kN/m^2$)** | **Allowable Bearing Pressure ($kN/m^2$)** |
| **Very soft extremely low strength CLAY (1 location – WS103)** | 3.00-3.45 | 4.35 | 8.94 |
| **Soft very low strength CLAY (1 location – WS105)** | 2.00-2.45 | 18.27 | 37.56 |
| **Firm Low Strength CLAY** | 1.00-2.45 | 30-36 | 62-75 |
| **Stiff medium strength CLAY** | 1.00-3.45 | 40-73 | 82-150 |
| **Very stiff high strength CLAY** | 1.00-4.00 | 75-123 | 155-253 |
| **Very stiff very high strength CLAY** | 2.00-6.00 | 204-228 | 421-469 |

Based on the assessment of the relative undrained shear strength, relative in-situ densities and corresponding safe net allowable bearing pressure, the suitable target founding stratum has been identified as the underlying stiff to very stiff glacial clays and medium dense to dense sands.

However, given topographical variances on the site, and underground obstructions present on site, prior to the detailed design of suitable foundations solutions, a programme of remediation and enabling works will be required to remove the extensive buried obstructions and cut/fill the site to provide suitable development platform levels.

A site wide process of remediation and enabling works will be required, to lift, sort and process the Made Ground in order to remove unacceptable material (timber, glass, plastic wood and organic materials) and process relict obstructions within the former development areas to create a suitable redevelopment platform.

Within the historical deposited materials areas, pockets of Made Ground which are found to contain any putrescible content which will degrade and induce consolidation and potential subsidence at the surface will be unsuitable for retention and reuse within the context of a residential development and will therefore require removal as it is not possible to model or predict the potential for future consolidation, therefore such material cannot remain beneath areas of adopted highway, drives, garden or service infrastructure. It is likely that due to the gas generation potential of this material it will not be suitable beneath plots in the event a plot structure was piled.

It is anticipated that on completion of the proposed site remediation the ground will generally comprise circa 0.50 to <5.00m of Made Ground overlying CLAY or Granular soils or weathered bedrock.

Therefore, upon completion of these enabling works, it is likely that the most cost effective option for the majority of the site would be a combination of shallow strip foundations, mass trench foundations and to re-engineer the Made Ground using vibro stone columns (VSCs) to support a doubly reinforced shallow strip spread foundation.

Localised areas of the site have been noted to have soft low strength CLAYs: TP116, TP129, TP131, TP133, TP141, TP146, TP157, TP163, TP171, TP185, TP197, TP1103, TP1116, TP1123, WS103 and WS105. Where the Cu is <30kPa, the use of VSC will not be permitted as the materials would provide limited lateral support for the construction of VSC. As such, there will be a requirement to utilise a driven piled foundation; alternatively the materials may be removed and replaced with suitable granular fill to allow the use of VSC. Driven piled foundations may be required in areas of infilled ponds should these remain.

To determine if VSC is viable at the subject site, E3P has completed a Ground Improvement Design Risk Matrix that is summarised in Table 10.2.

TABLE 10.2 GROUND IMPROVEMENT DESIGN RISK MATRIX

| RISK ITEM | COMMENT | PASS/FAIL |
|---|---|---|
| **Soft clays with an undrained shear strength less than 30 kN/m$^2$** | CLAY soils are generally firm to stiff with Cu > 40 kN. Isolated areas of softer clay soils were encountered with a Cu < 30 kN/m$^2$; however, it is considered that these will either be piled or soft material excavated and replaced with granular materials. | **PASS** |
| **Ground with peat layers close to foundation level or the base of the stone column, or where intermediate layers of peat are thicker than 200 mm, either as a single layer or the sum of the thicknesses of individual layers throughout the length of the stone column** | None identified. | **PASS** |

| RISK ITEM | COMMENT | PASS/FAIL |
|---|---|---|
| **Voided filled ground, e.g. old water tanks, pottery, glass bottles, concrete rubble or brick fill of unsuitable grading** | Made Ground beneath the western and central sectors will require processing to render the site suitable for VSC. The existing buildings substructure will also require excavation and processing into a graded aggregate suitable for vibro treatment. | **PASS – on completion of enabling works** |
| **Loose or non-engineered fill not previously subject to rising or fluctuating water levels saturation** | None identified. | **PASS** |
| **Filled ground still settling or expected to settle under its own weight or due to the effects of surcharging/upfilling where there is a high organic content or where decay is continuing** | None identified. | **PASS** |
| **Fill, containing degradable material where organic material forms more than 15% of fill by volume** | None identified. | **PASS** |
| **Clays with a plasticity index greater than 40%** | None identified. | **PASS** |
| **Highly sensitive soils liable to collapse or remoulding** | None identified. | **PASS** |
| **Cohesive soils with trees in influencing distance** | Plots within tree influence will require modelling and will either be subject to a piled or mass trench-fill solution. | **PASS** |
| **Overall Risk Rating and Suitability for Vibratory Ground Improvement** | | **PASS** |

Foundation depths should take account of the presence of existing and proposed trees, with foundations deepened locally to mitigate the potential for volumetric instability attributed to fluctuations in moisture content, in accordance with the requirements of NHBC standards.

It is recommended that at working drawing stage a foundation schedule is prepared for the development, taking account of the physical change of natural clay soils and the current/proposed locations of trees.

At this time it is not possible to accurately define the foundation types due to the absence of a detailed tree survey and final development levels; however, based on our extensive experience of similar sites, we would anticipate that the final foundation solution would be a combination of the following:

- Shallow strip foundations bearing on firm to very stiff gravelly CLAY or SANDs at circa 1 m bgl; and
- Trench fill to support reinforced strip foundations in areas of variable ground and/or potential tree influence.
- Re-engineer of Made Ground for use of VSC to support a doubly reinforced shallow strip

foundation.

- Driven piled foundation in areas of former ponds should they retain and areas of soft CLAYs.

A depth to founding and conceptual foundation zoning plan is included as Drawing 15-280-008 and 15-280-009 in Appendix III.

It is recommended that, at working drawing stage, a foundation schedule is prepared for the development taking account of the physical change of natural clay soils and the current/proposed locations of trees.

## 10.5. GROUND FLOOR SLABS

Current building control regulations require that where infilled ground is present to depths in excess of 600 mm, or where the substratum is variable in terms of the structure and settlement potential, or where clay soils are present within the influence of existing or proposed trees, a suspended floor slab is required.

In this instance, it is considered that for the majority of substructures, the underlying stratum would have in excess of 600 mm of infill and, as such, a suspended floor slab will be required.

Where a cast in-situ suspended slab is utilised with no subfloor void, appropriate compressible material (heave precautions) will be required in the construction of the substructure.

## 10.6. HEAVE PRECAUTIONS

The site has been proven to be underlain by clay soils, which are susceptible to volumetric instability due to fluctuations in moisture content, particularly within influencing distance of trees as per the NHBC/LABC conjectured zones of influence.

The site has been noted to be underlain by low to medium volume change potential clays. A conservative approach should be followed and the site should be deemed to be of medium volume change potential therefore heave precautions are required to the internal face of the external load-bearing walls (within tree influence).

If a ground beam is to be constructed within the zone of tree influence, heave precautions are required to the underside of this and edge beams.

If the ground floor slab is to be constructed with a beam and block floor, a minimum subfloor void of 250 mm is required within any structures located in the zone of conjectured tree influence.

If the ground floor slab is constructed with a cast in-situ suspended floor slab, then heave precautions that can tolerate 50 mm of clay swelling are required within any part of the floor slab to be located within the zone of influence of a tree.

A summary of heave precautions is presented in Table 10.3.

TABLE 10.3 SUMMARY OF HEAVE PRECAUTIONS

| | | MINIMUM VOID DIMENSION FOR FOUNDATIONS, GROUND BEAMS AND SUSPENDED IN-SITU CONCRETE GROUND FLOORS | | MINIMUM VOID DIMENSIONS UNDER PRECAST CONCRETE AND SUSPENDED TIMBER FLOORS |
|---|---|---|---|---|
| **Plasticity Index of Soil** | **Required Foundation Depth (m)** | **Thickness of Void Former Against Side of Foundation or Ground Beam (mm)** | **Thickness of Void Former on Underside of Edge Beam and Floor Slab (mm)** | **Void Dimension (mm)** |
| **High Plasticity (> 40)** | > 2.5 | Engineer Design | | Engineer Design |
| | 2.0–2.5 | 35 | 150 | 300 |
| | 1.5–2.0 | 25 | 75 | |
| **Moderate Plasticity (20–40)** | > 2.5 | Engineer Design | | Engineer Design |
| | 2.0–2.5 | 25 | 100 | 250 |
| | 1.5–2.0 | 25 | 50 | |
| **Low Plasticity (< 20)** | 2.0–2.5 | N/A | 50 | 200 |
| | > 2.0 | No Special Precautions | | |

## 10.7. HIGHWAYS CONSTRUCTION

A programme of remediation and enabling works will be required to remediate the proposed road due to the presence of variable Made Ground with extensive obstructions and potentially deleterious / putrescible material represents a risk associated with long term total and differential settlement, it will therefore be necessary to lift and sort all Made Ground, remove unsuitable materials prior to replacement and subsequent engineering to a geotechnical design standard in accordance with in accordance with the requirements of the Manual of Contract Documents for Highway Works Volume 1 Specification For Highway Works (Series 600-Earthworks) for a method compaction.

Compressible Made Ground represents a significant risk associated with consolidation inducing unacceptable total and differential settlement to roads and infrastructure. This material, if encountered, will require removal in its entirety from beneath all proposed roads, private drives and external hardstanding within the development area.

## 10.8. DRAINAGE

Eleven BRE365 Soakaway tests have been completed within granular and cohesive deposits across the site. The results for all soakaways indicate poor permeability as an infiltration rate could not be calculated.

However, the application of soakaway drainage will ultimately be dependent on the specific requirements of the development. All soakaways should be designed in accordance with BRE Special Digest 365 – Soakaway Design. Infiltration drainage should not be used within areas of deep Made Ground.

## 10.9. CONCRETE DURABILITY

Chemical analyses for pH and soluble sulphate content contained in Appendix VI (summarised in Table 8.16), shows that the soils at the site generally meet Class DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1s in accordance with BRE *Special Digest 1* (2005).

Elevated sulphate concentrations meeting Class DS-2, AC-1s were noted within the Made Ground deposits in TP117 at 0.70 m. Elevated sulphate concentrations meeting Class DS-3, AC-2s were noted within the Made Ground deposits in TP118 at 0.50m and TP1101 at 0.90m.

## 10.10. EXCAVATIONS

Trial pits were generally stable in both granular Made Ground and natural strata however instability of trial pits and window sample probeholes was noted within some SAND deposits and areas of deeper Made Ground. It is considered that near-surface excavations will be feasible.

Site observations indicated that excavations should be feasible in the near surface with normal plant; however, obstructions were identified in the near surface, including former foundations and former floor slabs. It is anticipated that any obstructions will be grubbed out during the reduced-level dig for the substructure works.

However, due to the depth and variability of the Made Ground and likelihood of trench collapse, it is considered that all excavations are supported or battered back in accordance with guidance contained in CIRIA R97.

If local pumping of groundwater is required during the advancement of excavations for the proposed foundations then consideration should be given to the potential for dewatering gravels in the surrounding areas that may cause structural damage to building substructures in close proximity to the site.

TABLE 10.4 CIVIL ENGINEERING EXCAVATION RISK MATRIX

| RISK ITEM | PRESENT | COMMENT |
|---|---|---|
| **Running Sands** | Yes | Running sand has been identified in TP1116 present at 1.70m bgl. |
| **Minor Water Ingress** | Yes | Minor water ingress will require localised dewatering/sump pumping during the construction of site drainage infrastructure.<br><br>Ingress of water into foundation excavation will potentially flood foundation excavations, limiting the viability of spread foundations to be constructed. |
| **Shallow Bedrock** | No | Shallow bedrock has been encountered within window sample probeholes. The presence of bedrock will impede excavation for drainage infrastructure using traditional excavation plant and equipment. |

## 10.11. SLOPE STABILITY

The north-western boundary of the site significantly slopes down to Valley Road . As and when detailed topographic information is available and in due consideration of the proposed development design, structural and infrastructure loading, a detailed slope stability model may be required. This model will seek to determine the potential for newly imposed loadings to generate a risk of instability or failure within the off-site embankment and the need for any mitigation measures such as piled foundations to transfer loadings below the base of the slope.

## 10.12. CONSTRUCTION ACTIVITY AND INSPECTION

The following activities and inspections should be incorporated in to the site works:

- Due to the variability of the soils at the site, it is recommended that sufficient allowance is made for the inspection of formations and subformations to foundations and pavement construction.
- Excavations where access is required should be subject to a risk assessment from a competent person and, where appropriate, mitigation measures such as benching back the sides or use of support systems in accordance with CIRIA R97 should be utilised.
- It is considered that dewatering may be required, especially following periods of heavy rainfall. Removal of surface water and water within trenches should be possible with conventional sump pumping. Discharge of any water should be agreed with the relevant regulatory body and be undertaken under a trade effluent discharge, where required. Measures to remove silt and suspended solids may be required and consideration should be given to provision of space for settling tanks or an attenuation pond.
- Where access to confined spaces is required, appropriate mitigation measures should be addressed within the construction stage health and safety plan. Particular account should be taken of the gas results.
- The presence of potential contamination and mitigation measures should be addressed as part of the construction stage health and safety plan and should include measures to design out the risks, reduce their impact and, finally, to include the use of personnel protective equipment (PPE).

## 10.13. GEOTECHNICAL RISK REGISTER

| POTENTIAL ABNORMAL CONSTRAINT | LOCATION ON SITE | ESTIMATED AREA OF SITE AT RISK (%) | ASSESSMENT AND MITIGATION |
|---|---|---|---|
| **Remediation of contaminated soils** | On site | TBC | Made Ground will require processing to remove any deleterious materials considered to be unsuitable for re-use as part of the proposed development. Chemical analysis has identified a number of hotspots across the site which will require delineation, removal and consideration as to whether the materials can remain on site in an area of low sensitivity or will require removal from the site.<br><br>The resulting void from the hotspot removals will require backfilling and should significant backfill be needed deeper or specialist foundations may be required in those areas. |
| **Bedrock** | On-site | N/A | Shallow weathered bedrock has ben identified from circa 1.50mbgl. within areas of the site with window sample probeholes noted to refuse from circa. 2.00mbgl on weathered bedrock. Deeper cable percussive boreholes noted bedrock at 4.70m bgl within CP/RB103. |
| **Obstructions** | N/A | N/A | Underground obstructions have been noted in the north and south-east of the site associated with former development. These will require removal in their entirety in order to provide a development platform. Further obstructions are anticipated underneath the present Knowsley Community College structure and within the immediate surrounding areas. |
| **Artificially levelled and filled platforms** | N/A | N/A | The site is considered to have undergone phases of cut/fill works previously in order to create the current platform; additionally Made Ground materials have been noted to be present across the site which are indicative of former infilling works. |
| **Retaining walls** | N/A | N/A | No retaining walls have been observed on site. |

| POTENTIAL ABNORMAL CONSTRAINT | LOCATION ON SITE | ESTIMATED AREA OF SITE AT RISK (%) | ASSESSMENT AND MITIGATION |
|---|---|---|---|
| **Trench collapse** | All | On-site | Trial pits were generally stable in both granular Made Ground and natural strata however instability of trial pits and window sample probeholes was noted within some SAND deposits and areas of deeper Made Ground, particularaly towards the north west of the site. It is anticipated that trench collapse is likely therefore mitigation measures such as benching back the sides or use of support systems in accordance with CIRIA R97 should be utilised. |
| **Mature trees** | On site | TBC | Mature trees and hedgerows are present along the site boundary, with trees in the centre of the site. Furthermore, dense mature trees were identified surrounding the pond and landscaping areas within the north western parcel during the supplementry investigation. Arboriculture survey required to determine areas of potential tree influence. |
| **Volume change potential clay** | On site | 80 | Cohesive soils have been identified on site which have been proven to be of medium volume change potential. |
| **Peat** | N/A | N/A | Not encountered. |
| **Running sands** | On site | N/A | Running sand has been identified in TP1116 present at 1.70m bgl . Data searches indicate low risk. |
| **Ground dissolution** | N/A | N/A | Data searches indicate no hazard. |
| **Concrete design** | On site | 100 | The soils generally meet class DS-1, AC-1s.<br><br>Elevated sulphate concentrations meeting Class DS-2, AC-1s were noted within the Made Ground deposits in TP117 at 0.70 m. Elevated sulphate concentrations meeting Class DS-3, AC-2s were noted within the Made Ground deposits in TP118 at 0.50m and TP1101 at 0.90m. |
| **Low-permeability ground** | On site | 100 | Permeability tests completed on site have indicated soakaways unlikely to be suitable. |
| **Services/sensitive structures** | On-site | 20 | A review of online services has identified a number of services within the site boundary. Piling may not be possible within close proximity to any sensitive |



| POTENTIAL ABNORMAL CONSTRAINT | LOCATION ON SITE | ESTIMATED AREA OF SITE AT RISK (%) | ASSESSMENT AND MITIGATION |
|---|---|---|---|
| | | | infrastructure. It is considered likely service infrastructure currently within the site boundary will be terminated and removed as part of enabling works. |
| **Abnormal foundation solutions** | All | All | Ground investigation has indicated that a combination of shallow strip, mass trench, VSC and driven piled foundation solutions are likely on site. Within the vicinity of the current pond at the north west of the site, driven pile is likely required. |
| **Surface water features** | N/A | N/A | None identified |
| **Current ponds to be filled** | North West | <5% | A pond was identified within the north western most parcel of the site, adjacent to the managed soft cover and former Knowsley Community College. This will require delineation and removal of all associated organic material prior to the construction of the proposed dwellings. |
| **Historically infilled pond** | On-site | 1 | Historic pond located within the south west and north-east of the site will require delineation. |
| **Slope** | On site | 10 | A slope is present to the north-west of the site towards Valley Road which will require consideration. |

## 10.14. FURTHER WORKS

Based on the findings of the intrusive site investigation, the following additional works are recommended to be completed in due course:

- Further investigation and validation of tanks associated with former petrol filling station;
- Post demolition sampling for PCBs in the vicinity of the former substations;
- Plot-specific foundation schedule (upon receipt of the final development levels);
- Arboriculture survey;
- CL:AIRE DoW CoP Materials management plan;
- Pre-commencement geotechnical materials testing to confirm earthworks design;
- Geotechnical earthworks strategy (infrastructure);
- Remediation and enabling works strategy;
- Full three-dimensional earthworks cut/fill model;
- Settlement Analysis for earthworks design; and,
- Build Phase Mitigation Plan and design of specialist ground gas mitigation measures.

# 11. CONCLUSIONS AND RECOMMENDATIONS

## 11.1. CONTAMINATED LAND ASSESSMENT

| | |
|---|---|
| **Human Health** | Elevated concentrations of heavy metals, mercury, non-volatile PAHs, naphthalene, asbestos and SVOCs have been identified within the soil analysis completed to date.<br><br>Heavy metals and non-volatile PAHs are considered to pose a risk to future end-users through dermal contact and ingestion. The risk can be mitigated through the installation of a cover system within garden and landscaping areas.<br><br>Mercury, naphthalene and Dibutyl phthalate have been noted to be elevated in isolated locations across the site, and present a vapour risk to future end-users. It is recommended that a hotspot removal is completed and the materials either placed in an area of low sensitivity or removed from the site.<br><br>Within the soils analysis, no elevated concentrations of TPH or BTEX in the area of the former petrol filling station were identified to date. A hydrocarbon odour was identified within WS142 in this vicinity within SAND deposits underlying Made Ground. The tanks are understood to still be in-situ and the presence of contamination cannot be ruled out at this stage.<br><br>Exceedances of Total Petroleum Hydrocarbons C21 – C35 Aromatic hydrocarbons have been encountered within the Made Ground deposits in TP202 at 1.00 mbgl, to the south of the supplementary site investigation in the northwestern parcel of the site. It is recommended that a watching brief is completed during earthworks in this location, with delineation and further sampling to determine the extent of contamination present. This will be confirmed within a detailed remediation strategy.<br><br>Asbestos, quantified between <0.001% and 0.009% has been identified within locations at the site. As only trace fibres have been encountered, impacted soils and Made Ground will need to be placed in accordance with the asbestos conceptual site model with a suitable cover system placed in all garden and landscaped areas to prevent exposure to future site users. A hotspot removal should be completed in areas in which asbestos quantification is greater than 0.001%. |
| **Controlled Waters** | The assessment prepared in consideration of the developed CSM has not identified any potentially complete pollutant linkage or risk to controlled waters. Elevated TPHs against EQS screening values were identified in groundwater samples from WS142 in close proximity to the former petrol filling station, however, concentrations did not exceed the DWS screening value in relation to the underlying principal aquifer which is considered to be the primary receptor in this instance. Elevated TPHs (C12-C16) were also found within WS202 exceeding the EQS threshold, but similarly, did not exceed the DWS threshold. Therefore, the risk to the identified receptors is considered to be low. |

| | |
|---|---|
| **Ground Gas** | Ground gas monitoring has characterised the majority of the site as CS1, with areas of deep Made Ground and noted areas adjacent to the landfill adhering to a CS2 classification.<br><br>Migration from the adjacent landfill has been identified, however a minimal flow has been recorded in the monitoring wells surrounding it, and therefore it is likely that the lateral migration of ground gases from the landfill is limited. As the landfill is uncapped, the majority of gases encapsulated within the landfill will be released to the atmosphere, however lows in barometric pressure may cause a swelling of the ground gas encroaching onto the site.<br><br>High methane concentrations have been identified within WS201 to the northwest of site, likely associated with a combination of encountered hydrocarbons in this area as well as the adjacent landfill to the south. Following suggested further investigation of the area, precautions may be increased or reduced based upon findings.<br><br>It is considered that a ground gas zoning plan is created for the site based on the sources identified, where precautionary CS2 protection measures are to be included within all of these areas. |
| **Potable Water** | This will need to be confirmed following the completion of a UKWIR risk assessment. Post-remediation and enabling works ground conditions may be different from those identified during this site investigation however it is anticipated that barrier pipe would be required. |

## 11.2. GEOTECHNICAL ASSESSMENT

A site wide process of remediation and enabling works will be required, to lift, sort and process the Made Ground in order to remove unsuitable material (timber, glass, plastic wood and organic materials) and process extensive relict obstructions within the vicinity of historic buildings to create a suitable redevelopment platform.

It is anticipated that on completion of the proposed site remediation the ground will generally comprise circa 0.50 to <5.00m of Made Ground clay deposits or granular soils and areas of weathered bedrock.

It is anticipated that the proposed development can be constructed on a combination of shallow strip, mass trench and the re-engineer of Made Ground for the use of vibro stone columns to support a doubly reinforced shallow strip foundation. A driven piled foundation solution may be required in areas of soft clays and in the vicinity of former/present ponds.

Foundation depths should take account of the presence of existing and proposed trees, with foundations deepened locally to mitigate the potential for volumetric instability attributed to fluctuations in moisture content, in accordance with the requirements of NHBC standards.

It is recommended that at working drawing stage a foundation schedule is prepared for the development, taking account of the physical change of natural clay soils and the current/proposed locations of trees.

# END OF REPORT

# APPENDIX I
# LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the client as indicated in Section 1.3.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover, reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover, no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and do not constitute or replace full and proper surveys.

8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

9. E3P cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by E3P is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by E3P in this connection without their explicit written agreement there to by E3P.

10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

# APPENDIX II
# GLOSSARY

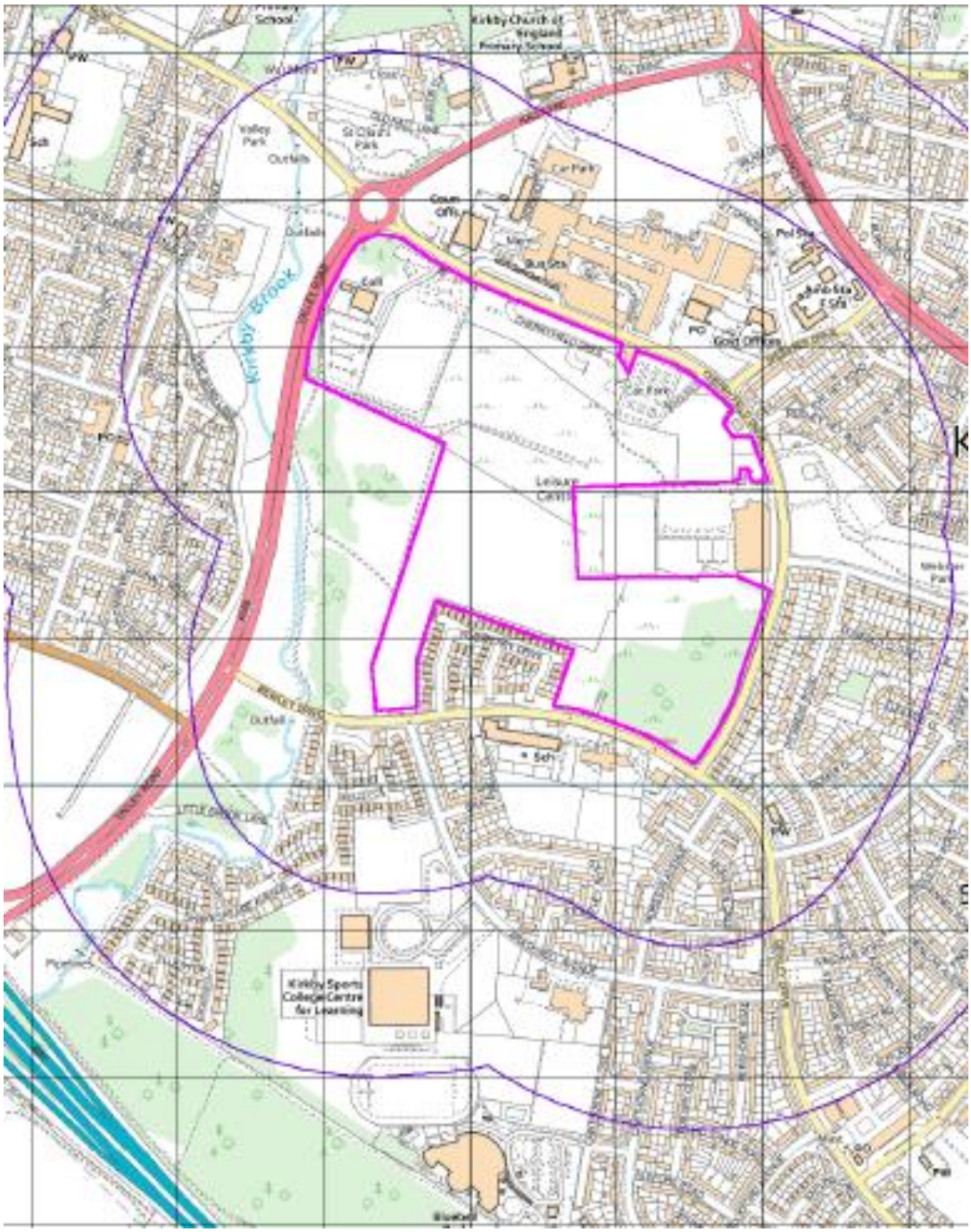
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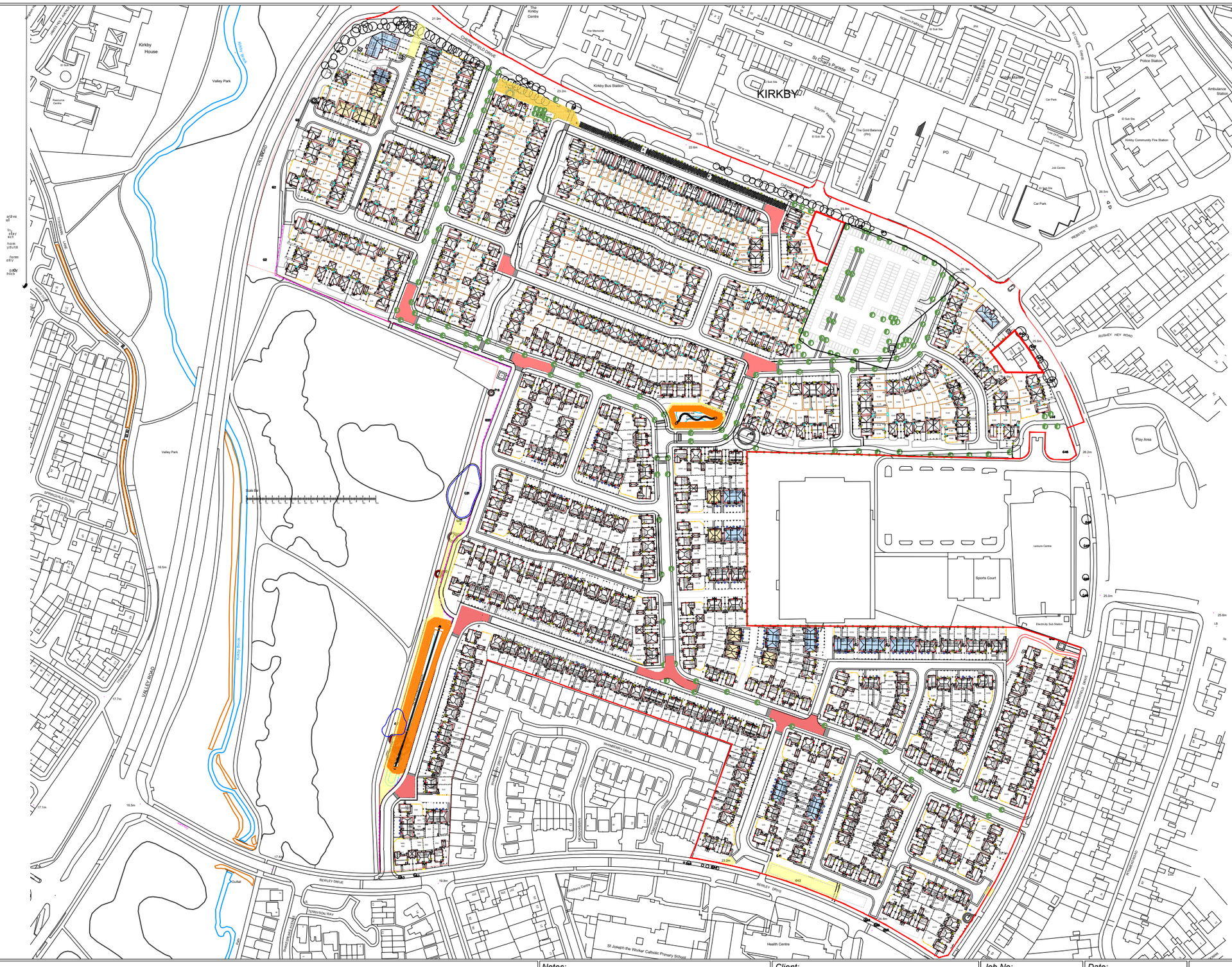
| | | | |
|---|---|---|---|
| **ACM** | Asbestos-containing material | **MMP** | Materials management plan |
| **ADS** | Acoustic design statement | **ND** | Not detected |
| **AST** | Above-ground storage tank | **NDP** | Nuclear density probe |
| **BGS** | British Geological Survey | **NMP** | Noise management plan |
| **BSI** | British Standards Institute | **NPSE** | Noise policy statement for England |
| **BTEX** | Benzene, toluene, ethylbenzene, xylenes | **NR** | Not recorded |
| **CA** | Coal Authority | **PAH** | Polycyclic aromatic hydrocarbon |
| **CBR** | California bearing ratio | **PCB** | Polychlorinated biphenyl |
| **CIEH** | Chartered Institute of Environmental Health | **PI** | Plasticity index |
| **CIRIA** | Construction Industry Research Association | **PID** | Photo ionisation detector |
| **CLEA** | Contaminated land exposure assessment | **POS** | Public open space |
| **CML** | Council of Mortgage Lenders | **PPE** | Personnel protective equipment |
| **CoC** | Contaminants of concern | **ProPG** | Professional practice guidance |
| **CSM** | Conceptual site model | **QA** | Quality assurance |
| **DNAPL** | Dense non-aqueous phase liquid (chlorinated solvents, PCB) | **SGV** | Soil guideline value |
| **DWS** | Drinking water standard | **SPH** | Separate-phase hydrocarbon |
| **EA** | Environment Agency | **SPT** | Standard penetration test |
| **EQS** | Environmental quality standard | **SVOC** | Semi-volatile organic compound |
| **FFL** | Finished floor level | **TPH** | Total and speciated petroleum hydrocarbon |
| **GAC** | General assessment criteria | **TPH CWG** | Total Petroleum Hydrocarbon (Criteria Working Group) |
| **GL** | Ground level | **UKWIR** | United Kingdom Water Infrastructure Risk |
| **GSV** | Gas screening value | **UST** | Underground storage tank |
| **HCV** | Health criteria value | **VCC** | Vibro-concrete column |
| **ICSM** | Initial conceptual site model | **VOC** | Volatile organic compound |
| **LEL** | Lower explosive limit | **VRSC** | Vibro-replacement stone columns |
| **LMRL** | Lower method reporting limit | **VSC** | Vibro-stone columns |
| **LNAPL** | Light non-aqueous phase liquid (petrol, diesel, kerosene) | **WHO** | World Health Organisation |
| **MCV** | Moisture condition value | **WRAP** | Waste and Resources Action Programme |

| | | | |
|---|---|---|---|
| **MIBK** | Methyl isobutyl ketone | **WTE** | Water table elevation |
| **m** | Metres | **ppm** | Parts per million |
| **km** | Kilometres | **mg/m$^3$** | Milligram per metre cubed |
| **% v/v** | Percent volume in air | **m bgl bgl** | Metres below ground level |
| **mb** | Millibars (atmospheric pressure) | **m bcl** | Metre below cover level |
| **l/hr** | Litres per hour | **mAOD** | Metres above ordnance datum (sea level) |
| **µg/l** | Micrograms per litre (parts per billion) | **kN/m$^2$** | Kilonewtons per metre squared |
| **ppb** | Parts per billion | **µm** | Micrometre |
| **mg/kg** | Milligrams per kilogram (parts per million) | **SSRT** | Site Specific Remediation Target |
| **PSD** | Particle Size Distribution | **DD** | Dry Density |
| **CL:AIRE** | Contaminated Land: Applications in Real Environments | **Mc** | Moisture Content |
| **ρ** | Bulk Density | **GPR** | Ground Penetrating Radar |
| **NDP** | Nuclear Density Probe | **FFL** | Finished Floor Level |
| **LEL** | Lower Explosive Limit | **UKWIR** | UK Water Industry Research |
| **CIRIA** | Construction Industry Research and Information Association | **LOD** | Limit of Detection |

# APPENDIX III
# DRAWINGS

## DRAWING 15-280-001 – SITE LOCATION PLAN






| | | | | |
|---|---|---|---|---|
| *Notes:* | | | | |
| P1 | REVC | 03.05.2024 | OW | BH |
| P1 | REVB | 04.12.2022 | LM | BH |
| P1 | REVA | 20.04.2022 | LM | BH |
| Phase | Issue | Date | Drawn | Checked |

*Client:* DWH

*Job No:* 15-280

*Date:* 03.05.2024

*Drawing No:* 002

*Scale:* NTS @ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Proposed Development Plan


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*Historical Features*

- Former Residential Buildings
- Former School / College Buildings
- Former Buildings
- Former Tennis Courts
- Former Running Track
- Former Footpath
- Former Car Park
- Former Woodland
- Former Pond
- Former Garage / Petrol Filling Station
- Substations
- Former Track
- Former Embankment
- Former Tennis Courts
- Former Gravel Pit

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVD | 25.04.2022 | LM | RH |
| P1 | REVC | 22.04.2022 | LM | RH |
| P1 | REVB | 07.12.2021 | LM | RH |
| P1 | REVA | 02.12.2021 | LM | JB |

*Client:* DWH

*Job No:* 15-280

*Date:* 25.04.2022

*Drawing No:* 003

*Scale:* 1:1000 @ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Historical Features Plan

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*Historical Features*

- Overgrown Vegetation
- Short grass
- Trees
- Dense Trees (Recently Removed)
- Dense Trees
- Road
- Car Parks
- Hardstanding
- Knowsley Community College
- Seven Underground Storage Tanks
- Covid-19 walkthrough testing site
- Gas Substation Buildings
- Bollards
- Electrical Substations
- Fly Tipped Material
- Brambles
- Former Housing Slabs
- Wooden Fence
- Pallisade Fencing
- Footapth
- Metal Fencing
- Gate
- Locked Gate
- Slope

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVC | 25.04.2022 | LM | BH |
| P1 | REVB | 21.04.2022 | LM | BH |
| P1 | REVA | 20.04.2022 | LM | BH |

*Client:* DWH

*Job No:* 15-280

*Date:* 25.04.2022

*Drawing No:* 004

*Scale:* 1:1000 @ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Site Features Plan


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*Location Symbols*

- WS101 — Approximate Window Sample Probehole Location
- TP101 — Approximate Trial Pit Location
- RB101 — Approximate Rotary Borehole Location

*Notes:*

| | | | | |
|---|---|---|---|---|
| P1 | REVN | 13.03.2024 | EB | PW |
| P1 | REVM | 30.01.2024 | EB | ID |
| P1 | REVL | 08.01.2024 | OW | ID |
| P1 | REVK | 25.04.2022 | LM | RH |
| P1 | REVJ | 22.04.2022 | LM | RH |
| P1 | REVI | 20.04.2022 | LM | JB |
| P1 | REVH | 04.03.2022 | LM | NG |
| P1 | REVG | 24.02.2022 | LM | NG |
| P1 | REVF | 03.02.2022 | LM | JB |
| P1 | REVE | 28.01.2022 | LM | NG |
| P1 | REVD | 26.01.2022 | LM | NG |
| P1 | REVC | 19.01.2022 | LM | NG |
| P1 | REVB | 07.01.2022 | EB | EB |
| P1 | REVA | 07.12.2021 | LM | JB |
| Phase | Issue | Date | Drawn | Checked |

*Client:* DWH

*Job No:* 15-280

*Date:* 13.03.2024

*Drawing No:* 005

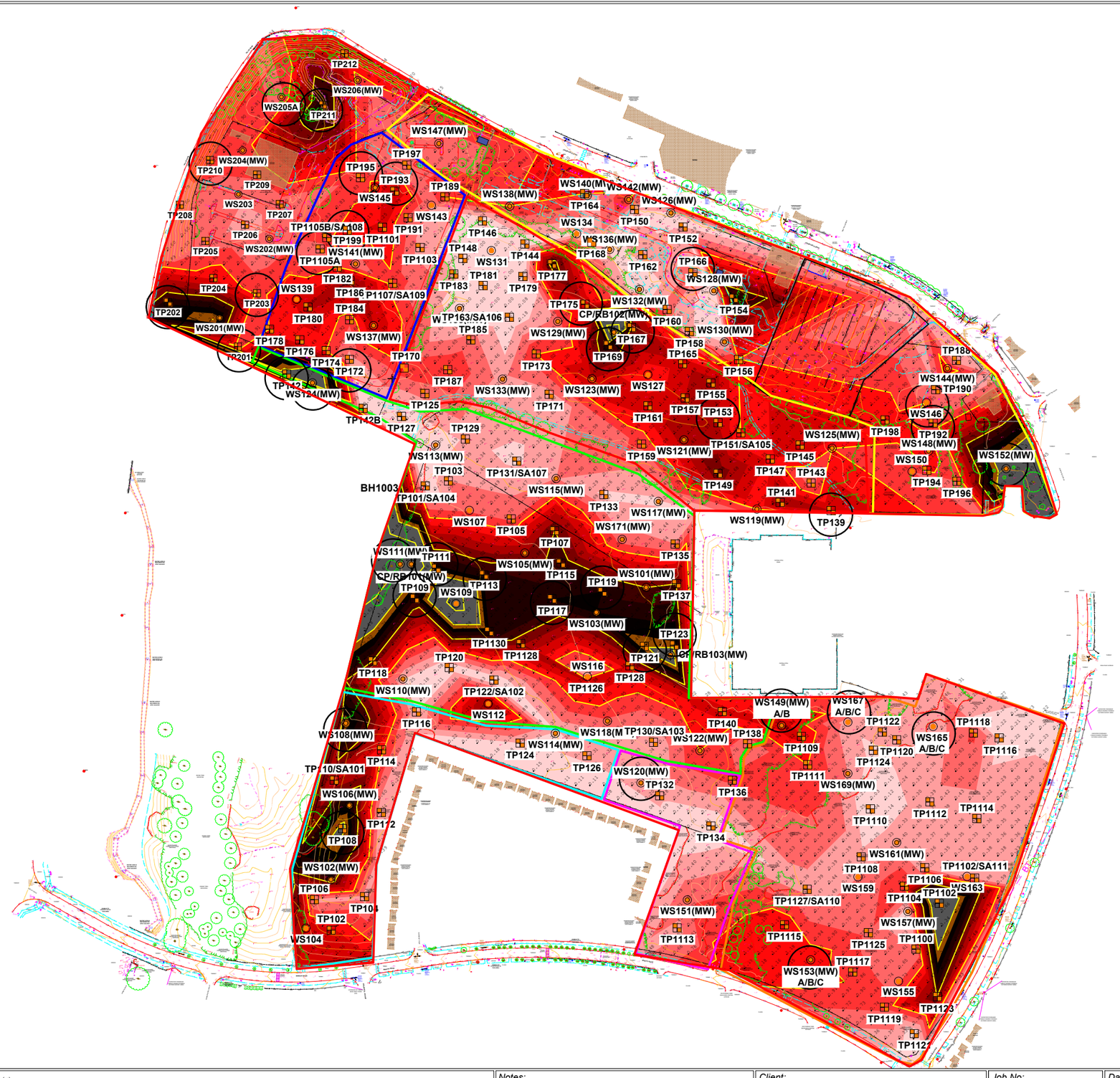
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*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Exploratory Hole Location Plan

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*Location Symbols*

- Approximate Window Sample Probehole Location
- Approximate Trial Pit Location
- Approximate Rotary Borehole Location
- Full Extent of Made Ground Not Encountered

*Made Ground Depth (m)*

- Depth of Made Ground 0.00
- Depth of Made Ground 0.01 - 0.49m
- Depth of Made Ground 0.50 - 0.99m
- Depth of Made Ground 1.00 - 1.49m
- Depth of Made Ground 1.50 - 1.99m
- Depth of Made Ground 2.00 - 2.49m
- Depth of Made Ground 2.50 - 2.99m
- Depth of Made Ground 3.00 - 3.49m
- Depth of Made Ground 3.50 - 3.99m
- Depth of Made Ground 4.00 - 4.49m
- Depth of Made Ground 4.50 - 4.99m
- Depth of Made Ground >5.00m

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVE | 28.02.2024 | EB | PW |
| P1 | REVD | 30.01.2024 | EB | ID |
| P1 | REVC | 09.01.2024 | OW | ID |
| P1 | REVB | 25.04.2022 | LM | BH |
| P1 | REVA | 27.01.2022 | LM | NG |

*Client:* DWH

*Job No:* 15-280

*Date:* 28.02.2024

*Drawing No:* 006

*Scale:* NTS @ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Depth of Made Ground Plan

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*Location Symbols*

- Approximate Window Sample Probehole Location
- Approximate Trial Pit Location
- Approximate Rotary Borehole Location

*Natural Topsoil Depth (m)*

- Depth of Natural Topsoil 0.00
- Depth of Natural Topsoil 0.01 - 0.09m
- Depth of Natural Topsoil 0.10 - 0.19m
- Depth of Natural Topsoil 0.20 - 0.29m
- Depth of Natural Topsoil 0.30 - 0.39m
- Depth of Natural Topsoil >0.40

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVE | 01.03.2024 | EB | PW |
| P1 | REVD | 28.02.2024 | EB | PW |
| P1 | REVC | 30.01.2024 | EB | ID |
| P1 | REVB | 25.04.2022 | LM | JB |
| P1 | REVA | 31.01.2022 | LM | NG |

*Client:* DWH

*Job No:* 15-280

*Date:* 01.03.2024

*Drawing No:* 007

*Scale:* NTS @ A3

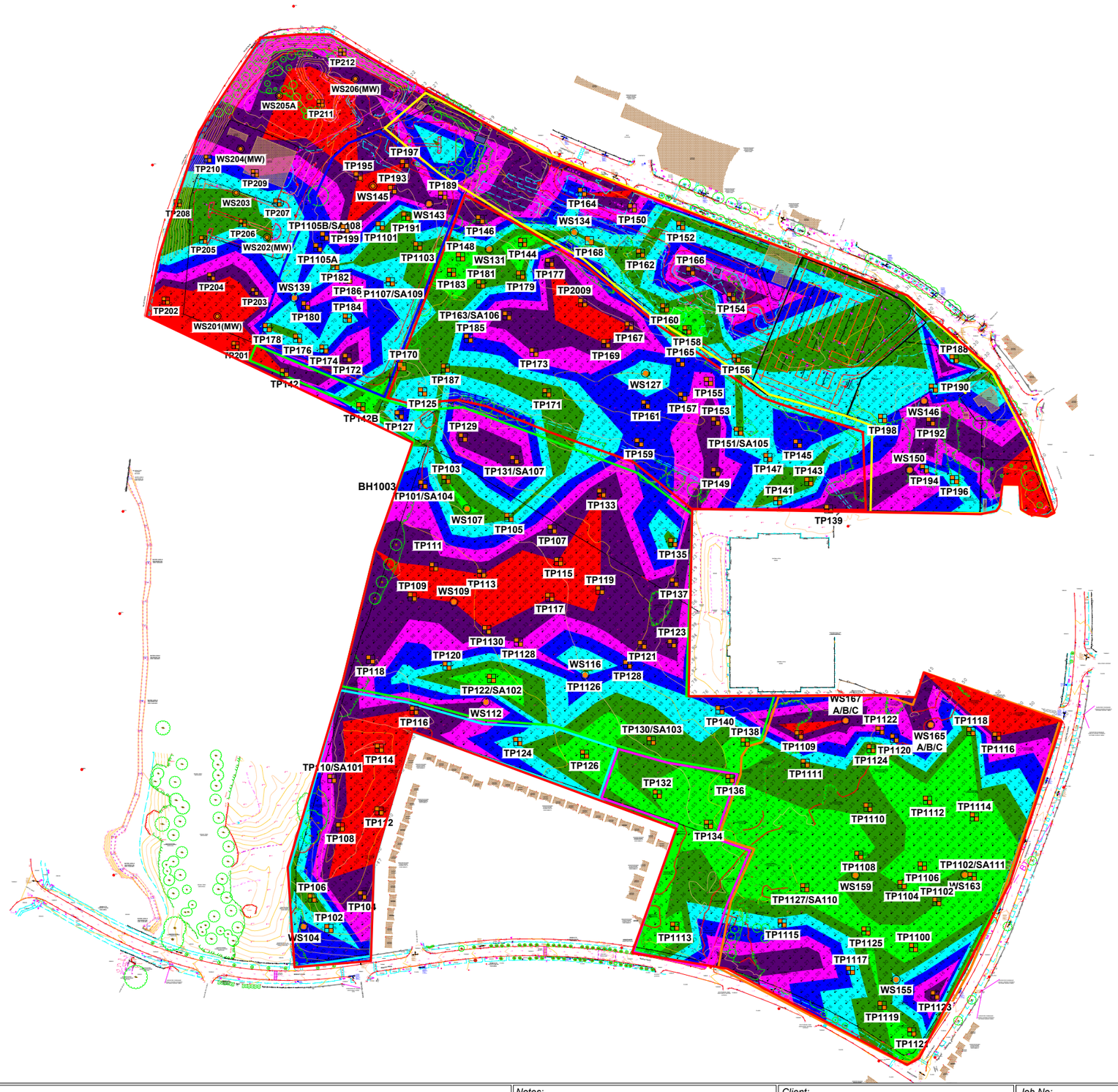
*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Depth of Natural Topsoil Plan


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*Location Symbols*

- WS101 — Approximate Window Sample Probehole Location
- TP101 — Approximate Trial Pit Location
- RB101 — Approximate Rotary Borehole Location

*Shallow Spread Footings*

- Depth to Founding Strata 0.00 - 1.24m
- Depth to Founding Strata 1.25 - 1.49m

*Mass Trench Fill Footings*

- Depth to Founding Strata 1.50 - 1.74m
- Depth to Founding Strata 1.75 - 1.99m
- Depth to Founding Strata 2.00 - 2.24m

*Engineered Footings*

- Depth to Founding Strata 2.25 - 2.49m
- Depth to Founding Strata >2.50m

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVE | 28.02.2024 | EB | PW |
| P1 | REVD | 30.01.2024 | EB | ID |
| P1 | REVC | 09.01.2024 | OW | ID |
| P1 | REVB | 25.04.2022 | LM | BH |
| P1 | REVA | 21.04.2022 | LM | BH |

*Client:* DWH

*Job No:* 15-280

*Date:* 28.02.2024

*Drawing No:* 008

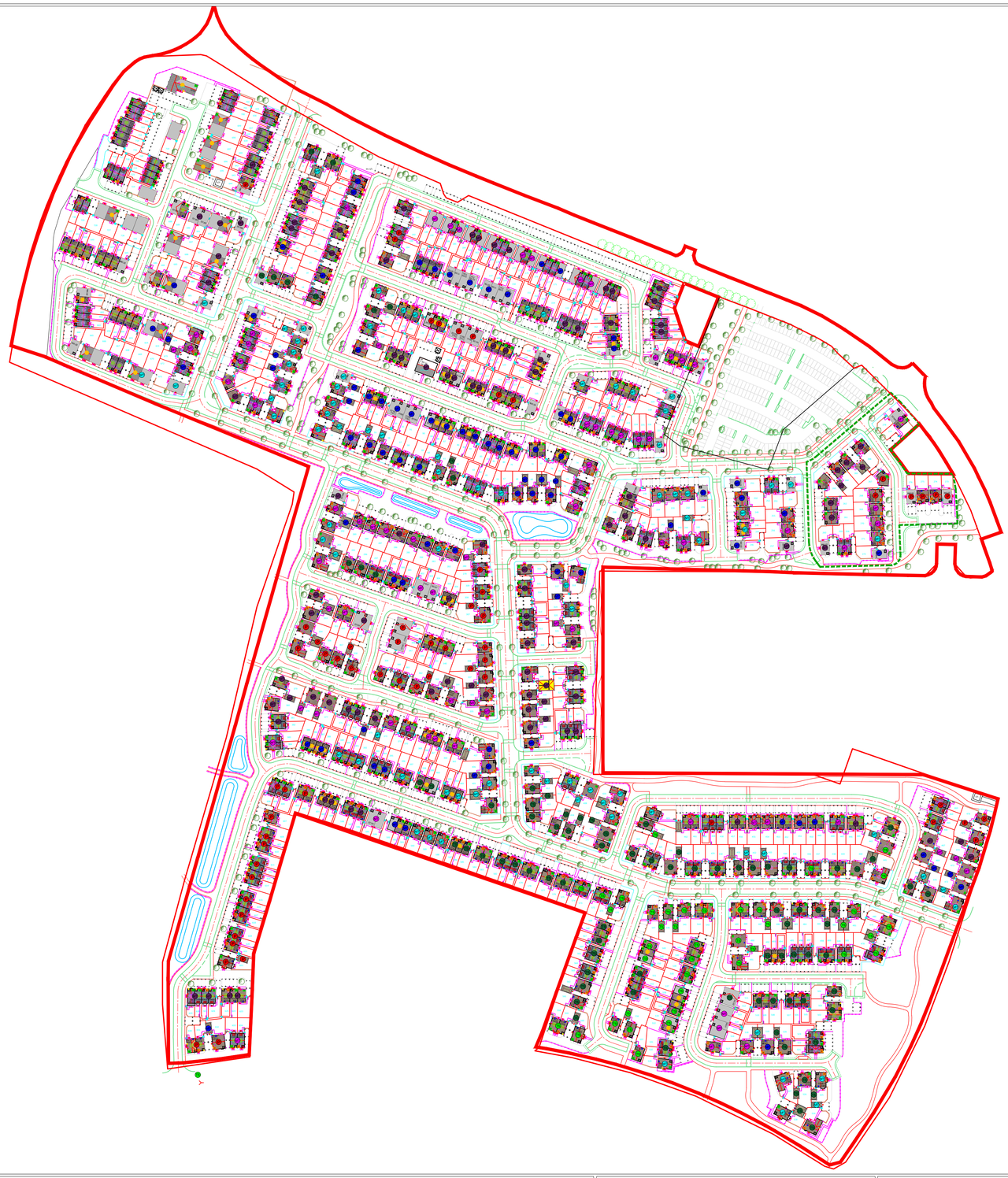
*Scale:* NTS @ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Depth to Founding Strata Plan

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## Summary of Heave Precaution Requirements

| *Volume Change Potential* | *Required Foundation Depth (m)* | *Minimum Void Dimensions for Foundations, Ground Beams & Suspended In-Situ Concrete Ground Floors* | | *Minimum Void Dimensions Under Pre-Cast Concrete & Suspended Timber Floors* |
|---|---|---|---|---|
| | | *Thickness of Void Former Against Side of Foundation of Ground Beam (mm)* | *Thickness of Void Former on Underside of Edge Beam & Floor Slab (mm)* | *Void Dimension (mm)* |
| Low Volume Change Potential (<20%) | >2.00 | No Special Precautions | | 200 |
| | 2.00-2.50 | - | 50 | |
| Medium Volume Change Potential (20-40%) | 1.50-2.00 | 25 | 50 | 250 |
| | 2.00-2.50 | 25 | 100 | |
| | >2.50 | Engineer Design | | Engineer Design |
| High Volume Change Potential (>40%) | 1.50-2.00 | 25 | 75 | 300 |
| | 2.00-2.50 | 35 | 150 | |
| | >2.50 | Engineer Design | | Engineer Design |

## Minimum Width of Strip Footings

| *Type of Ground (Including Engineered Fill)* | | *Condition of Ground* | *Total Load of Load-Bearing Walling more than (kN/linear metre)* | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 20 | 30 | 40 | 50 | 60 | 70 |
| | | | Minimum Width of Strip Foundation (mm) | | | | | |
| Gravel | Sand | Medium Dense to Dense | 250 | 300 | 400 | 500 | 600 | 650 |
| Clay | Sandy Clay | Stiff | 250 | 300 | 400 | 500 | 600 | 650 |
| Clay | Sandy Clay | Firm | 300 | 350 | 450 | 600 | 750 | 850 |

## Items Considered

| | |
|---|---|
| Bearing Capacity | TBC |
| Trees | TBC |
| Historical | TBC |
| Groundwater Table | TBC |
| FFL | TBC |
| Contamination | TBC |
| Remediation | TBC |
| Volume Change Potential | TBC |
| Root Protection Areas | TBC |

## Residual Risks

| *Foreseeable Risks That Cannot be Avoided* | *Applicable (Y/N)* | *Action to Reduce Risk* | Justification for Design Decision |
|---|---|---|---|
| Deep Excavations | Y | Identify locations on drawing and depths on schedule | Lesser risk than other alternatives |
| Trench Collapse | Y | Risk highlighted on drawing | Lesser risk than other alternatives |
| Use of Working Platform for Pile/Vibro Operations | Y | Compliance with working platform directive required | Pile/Vibro foundation less risky than other alternatives |

*Anticipated Foundation Types*

- TS — Traditional Strip Foundations
  Minimum depth 900mm below proposed Final Finished Level.
  Maximum safe bearing pressure limited to 150kN/m2.
- MT — Mass Trench Fill Foundations
  Minimum depth 1250mm below proposed Final Finished Level.
  Maximum safe bearing pressure limited to 150kN/m2.
- V — Vibro Stone Ground Compaction
  In accordance with NHBC Chapter 4.2
- P — Piled Foundations
  Where the maximum foundation depth exceeds 2.50m a piled foundation option rather than a trench fill / deep reinforced strip foundations may be adopted. Column or line loads supported by ground beams.
- R — Raft Foundations
  Maximum safe bearing pressure limited to 50kN/m2 on approved engineered granular fill. Raft foundations to be designed by a structural engineer in accordance with Chapter 4.5 of NHBC 2013. Raft foundations are considered suitable to mitigate against potential influence of clay heave / desiccation in accordance with Section 4.2, sub section D7E.
- TB — Traditional Strip / Trench Block Foundations
  Traditional strip founded at 450mm below current level with build up in Trench Block and subsequent backfill to development level.
- Colours on Plot Corners to be Used When Referring to Foundation Schedule.
  (Pending Final Layout & Levels)

*Depth to Target Founding Strata*

- Footings 0.75 - 0.90m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2
- Footings 0.90 - 1.25m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2
- Footings 1.25 - 1.50m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2
- Footings 1.50 - 1.75m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2
- Footings 1.75 - 2.00m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2
- Footings 2.00 - 2.25m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2
- Footings 2.25 - 2.50m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2

*Engineered Foundation Solutions*

- Footings >2.50m Deep — From Final Finished Level. In accordance with NHBC Chapter 4.2
- Vibro
- Low Volume Change Potential Clay — Heave precautions required to underside of cast in-situ floor slab (with no sub-floor void) within conjected zone of tree influence. Heave precautions not required to foundation.

*Tree Influence (Retained / Removed)*

- 0.90 - 1.25m
- 1.25 - 1.50m
- 1.50 - 1.75m
- 1.75 - 2.00m
- 2.00 - 2.25m
- 2.25 - 2.50m
- >2.50m

*Notes:*

*Client:* DWH

*Job No:* 15-280

*Date:* 14.12.2022

*Drawing No:* 009

*Scale:* NTS@ A1

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVB | 14.12.2022 | EB | BH |
| P1 | REVA | 25.04.2022 | LM | BH |

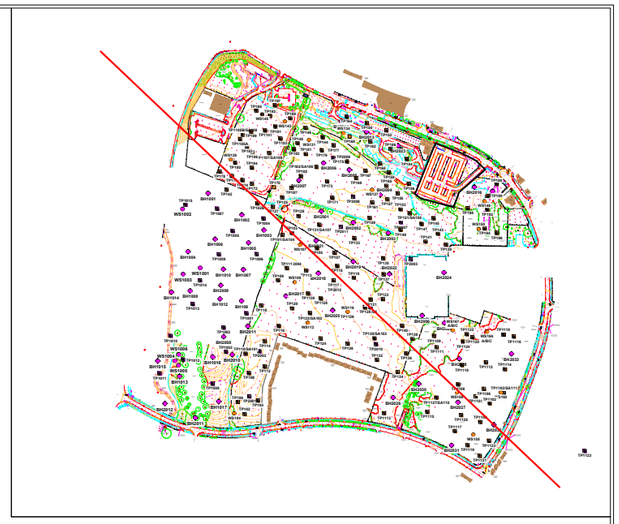
*Job Title:* Cherryfield Drive, Kirkby

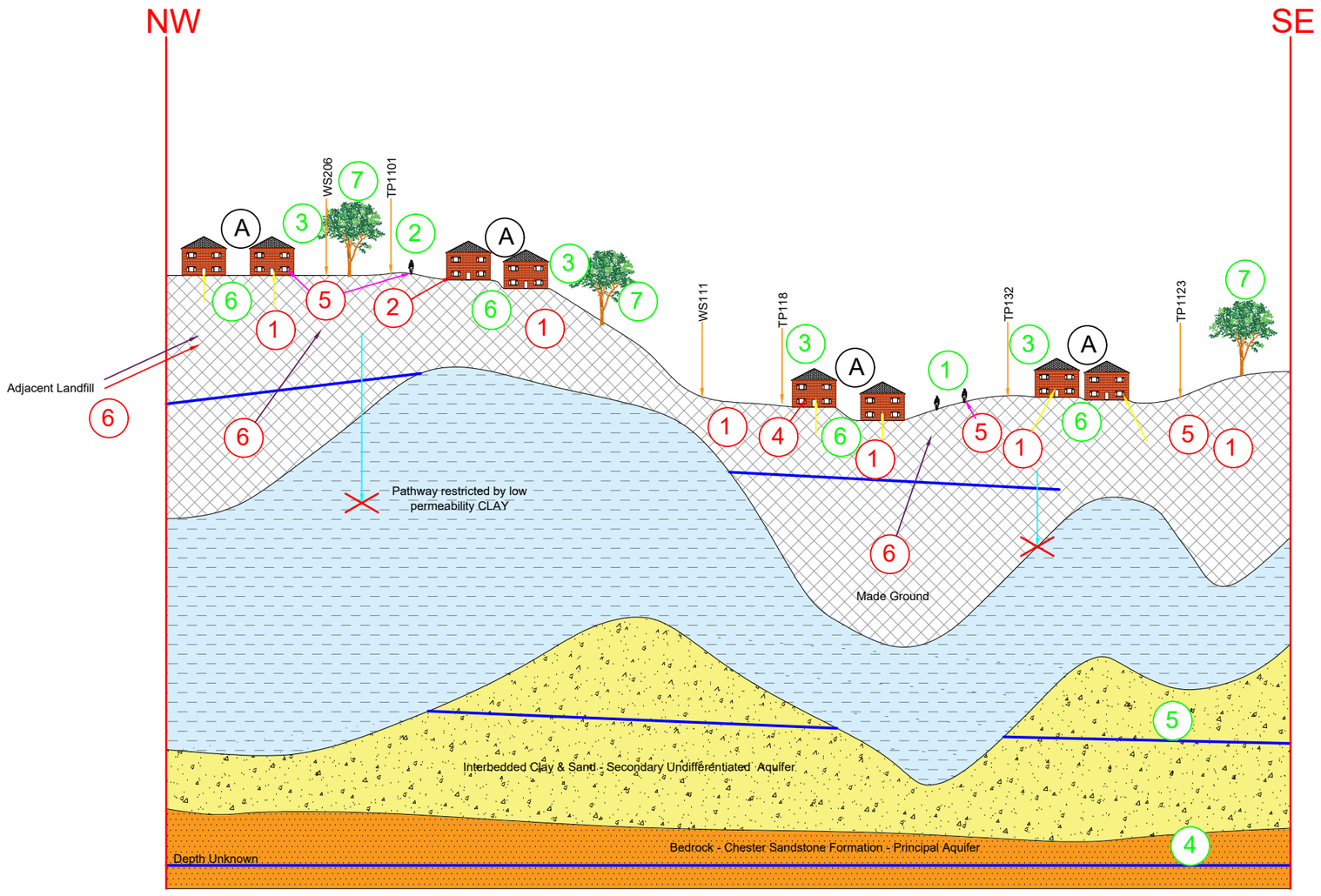
*Drawing Title:* Concept Foundation Zoning Plan

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| Polutant Linkage | Contaminant (Source) | Pathway | Receptor |
|---|---|---|---|
| PL1 PL2 | Heavy Metals, Non Volatile PAH (Made Ground) | Dermal Contact | Future Site Users |
| | | Dermal Contact and Ingestion | Off-site Receptors |
| PL3 | ACM in Made Ground | Inhalation of Dust | Future Site and Off-site Users |
| | | | Buildings |
| PL4 | Volatile Contaminants such as Mercury (Made Ground) | Inhalation of Vapours | Future Site Users |
| | | Migration through permeable strata and preferential pathways | Off-site Receptors |
| PL5 | Methane, Carbon Dioxide (Made Ground) | Inhalation of Gas | Future Site Users |
| | | Migration through permeable strata and preferential pathways | Buildings |
| | | Explosion in Confined Spaces | Off-site Land Users |
| PL6 | Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds (Made Ground) | Surface Runoff | Groundwater (Principal Aquifer) |
| | | Migration through permeable strata and preferential pathways | |
| | | Perched waters migration | |
| PL7 | Sulphate (potential ash within Made Ground) | Sulphate attack on concrete | Building Structure |
| PL8 | Organic contaminants such as hydrocarbons, solvents (Made Ground) | Ingestion of tainted water supply | Future Site Users |
| | | | Water Pipes |
| PL9 | Phytotoxic Contaminants (Made Ground) | Direct Contact (Plant Uptake) | Flora |






*Geology Key*
- Made Ground
- Clay
- Interbedded Clay & Sand
- Bedrock
- Groundwater

*Sources*
1. Heavy Metals, Non volatile PAH
2. Napathalene
3. TPH
4. Mercury
5. Asbestos
6. Ground Gases (Methane / CO2)

*Receptors*
1. Future End Users
2. Construction Works
3. Construction Materials
4. Groundwater (Bedrock)
5. Groundwater (Drift)
6. Water Pipelines
7. Flora / Fauna

*Pathways*
- Inhalation / Accumulation
- Dermal Contact / Ingestion
- Plant Uptake
- Tainted Water Supply
- Vertical Migration
- Horizontal Migration
- Sulphate Attack on Concrete

*Site Features*
1. Proposed Residential Development

*Notes:*

| | | | | |
|---|---|---|---|---|
| P1 | REVD | 11.03.2024 | EB | PW |
| P1 | REVC | 28.02.2024 | EB | PW |
| P1 | REVB | 25.04.2022 | LM | JB |
| P1 | REVA | 16.03.2022 | EB | NG |
| Phase | Issue | Date | Drawn | Checked |

*Client:* DWH

*Job No:* 15-280

*Date:* 11.03.2024

*Drawing No:* 010

*Scale:* NTS@ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Conceptual Site Model


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*Location Symbols*

DCP## Approximate Dynamic Cone Penetrometer Test Location

*Notes:*

| | | | | |
|---|---|---|---|---|
| P1 | REVA | 25.02.2022 | EB | NG |
| Phase | Issue | Date | Drawn | Checked |

*Client:* DWH

*Job No:* 15-280

*Date:* 25.02.2022

*Drawing No:* 017

*Scale:* NTS@ A3

*Job Title:* Cherryfield Drive, Kirkby

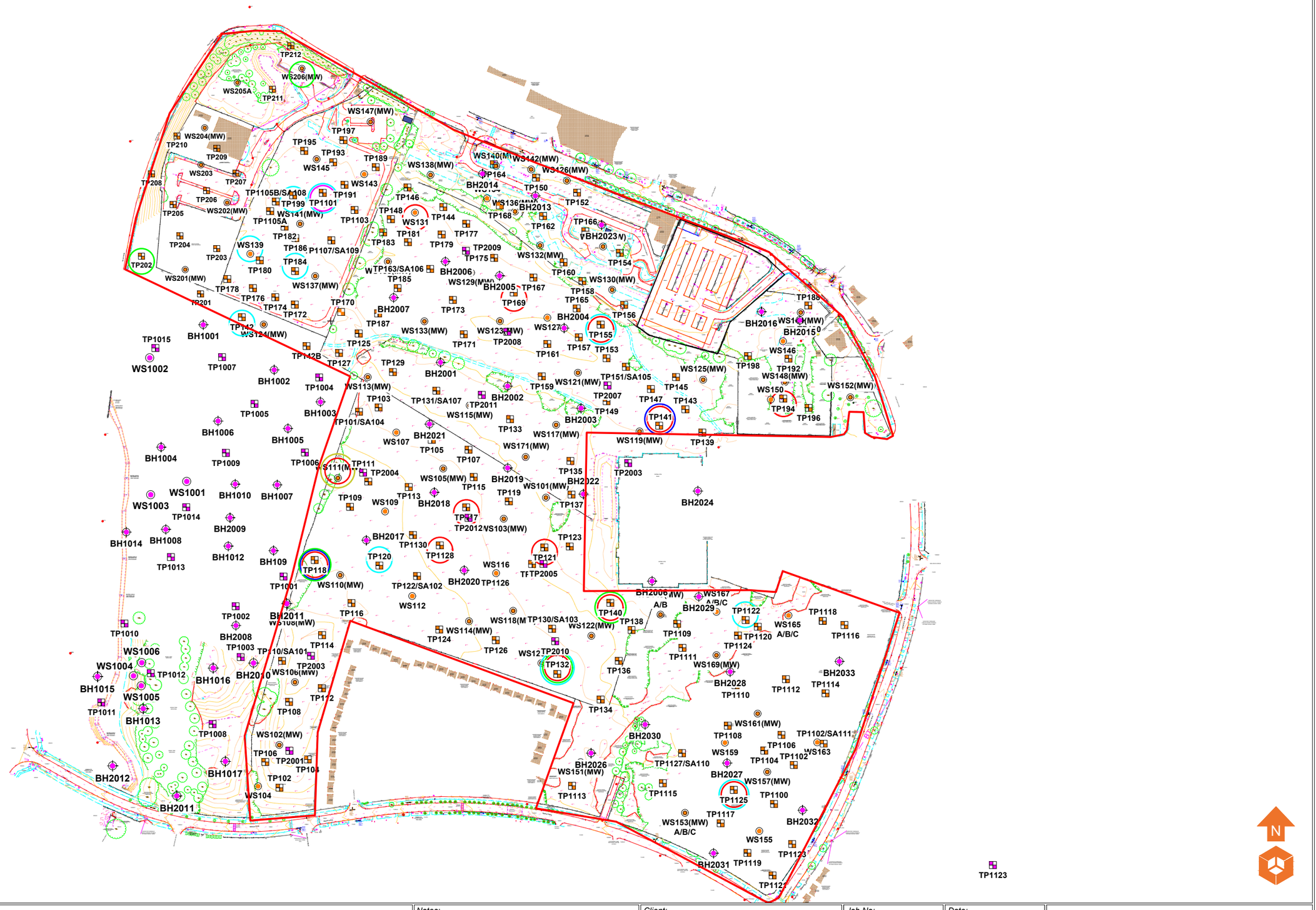
*Drawing Title:* DCP Location Plan


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*Location Symbols*

- WS101 — Approximate Window Sample Probehole Location
- TP101 — Approximate Trial Pit Location
- RB101 — Approximate Rotary Borehole Location

*Contamination Exceedances*

- Heavy Metals
- Mercury
- Asbestos
- Naphthalene
- PAHs
- Dibutyl phthalete

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVB | 30.01.2024 | EB | ID |
| P1 | REVA | 20.04.2022 | LM | BH |

*Client:* DWH

*Job No:* 15-280

*Date:* 30.01.2024

*Drawing No:* 018

*Scale:* NTS@ A3

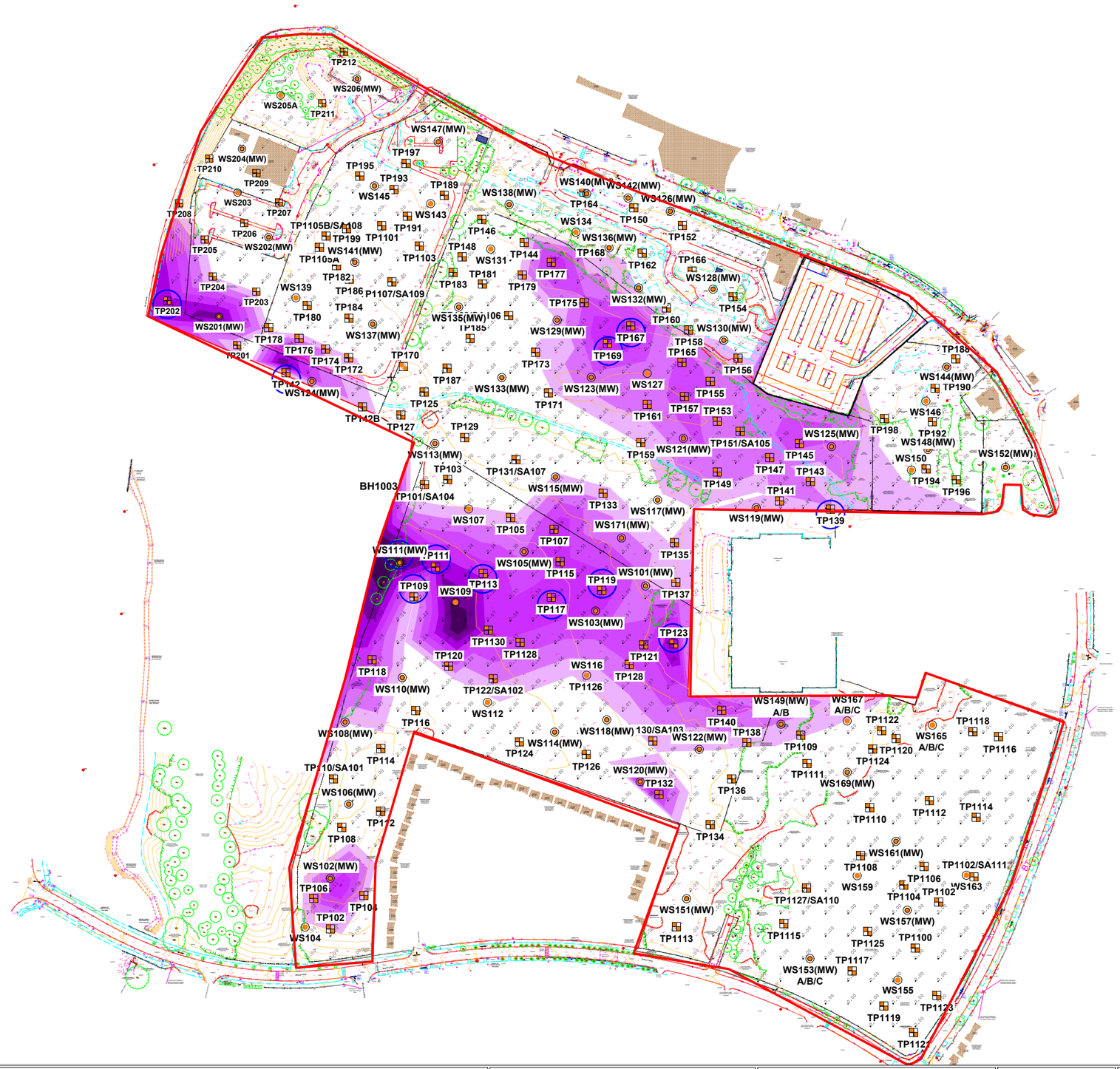
*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Contamination Exceedances Plan


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*Location Symbols*

- WS101 — Approximate Window Sample Probehole Location
- TP101 — Approximate Trial Pit Location
- RB101 — Approximate Rotary Borehole Location

*Landfill Thickness (m)*

- Thickness of Landfill 0.00
- Thickness of Landfill 0.01 - 0.49m
- Thickness of Landfill 0.50 - 0.99m
- Thickness of Landfill 1.00 - 1.49m
- Thickness of Landfill 1.50 - 1.99m
- Thickness of Landfill 2.00 - 2.49m
- Thickness of Landfill 2.50 - 2.99m
- Thickness of Landfill >3.00

*Landfill Depth (m)*

- 0.00 — Depth of Landfill

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVE | 02.04.2024 | EB | PW |
| P1 | REVD | 25.04.2022 | LM | BH |
| P1 | REVC | 03.02.2022 | LM | JB |
| P1 | REVB | 31.01.2022 | LM | NG |
| P1 | REVA | 28.01.2022 | LM | NG |

*Client:* DWH

*Job No:* 15-280

*Date:* 02.04.2024

*Drawing No:* 023

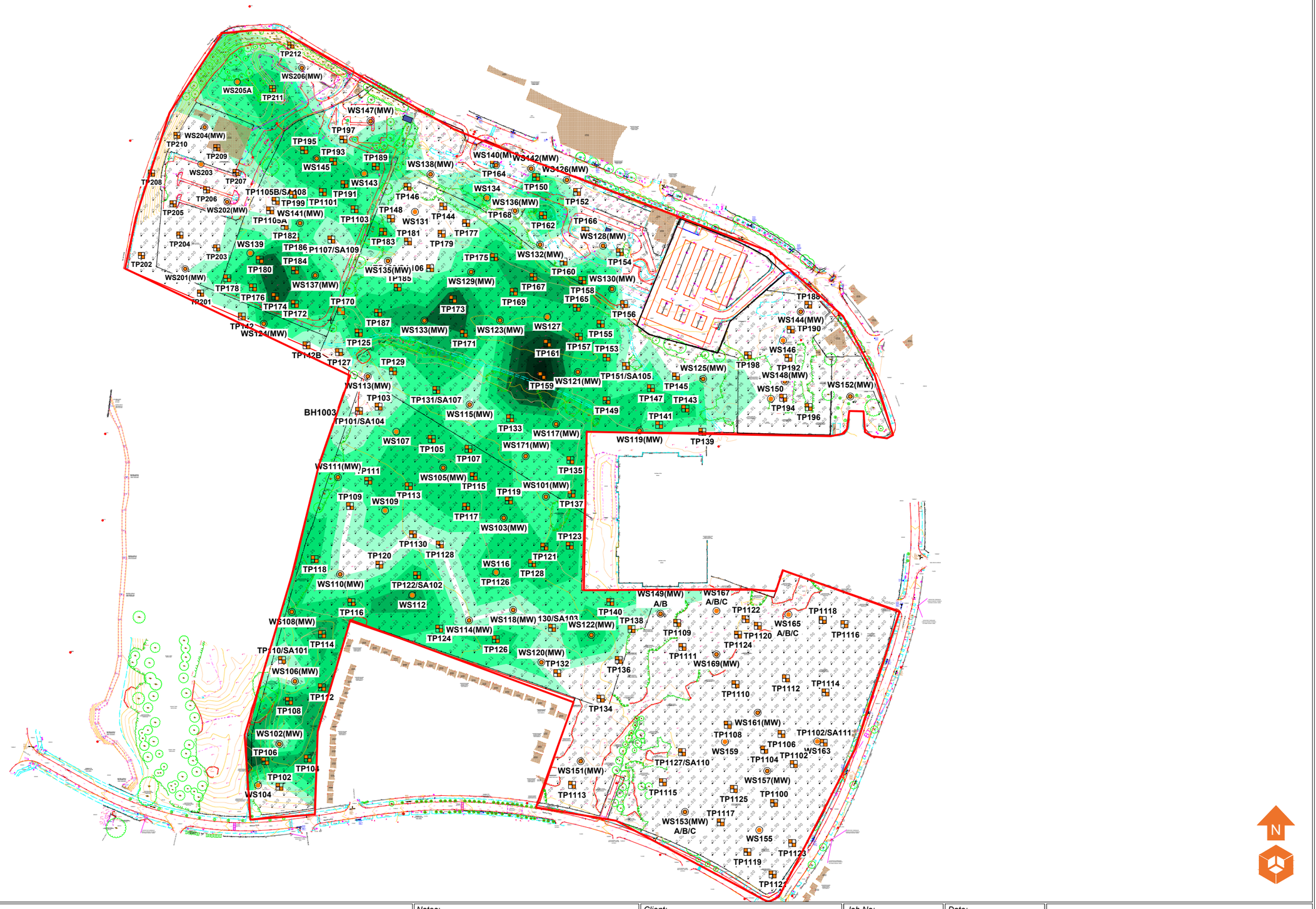
*Scale:* NTS@ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Depth and Thickness of Historically Deposited Made Ground Materials Plan

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*Location Symbols*

- WS101 — Approximate Window Sample Probehole Location
- TP101 — Approximate Trial Pit Location
- RB101 — Approximate Rotary Borehole Location

*Made Ground Topsoil Depth (m)*

- Depth of Made Ground Topsoil 0.00
- Depth of Made Ground Topsoil 0.01 - 0.09m
- Depth of Made Ground Topsoil 0.10 - 0.19m
- Depth of Made Ground Topsoil 0.20 - 0.29m
- Depth of Made Ground Topsoil 0.30 - 0.39m
- Depth of Made Ground Topsoil 0.40 - 0.49m
- Depth of Made Ground Topsoil 0.50 - 0.59m
- Depth of Made Ground Topsoil 0.60 - 0.69m
- Depth of Made Ground Topsoil >0.70

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVB | 02.04.2024 | EB | PW |
| P1 | REVA | 31.01.2022 | LM | NG |

*Client:* DWH

*Job No:* 15-280

*Date:* 02.04.2024

*Drawing No:* 024

*Scale:* NTS@ A3

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* Depth of Made Ground Topsoil Plan

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*Location Symbols*

- Window Sample with Monitoring Well
- Cable Percussive / Rotary Boreholes Location

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVE | 02.04.2024 | EB | PW |
| P1 | REVD | 18.08.2022 | EB | BH |
| P1 | REVC | 04.03.2022 | LM | BH |
| P1 | REVB | 09.02.2022 | LM | BH |
| P1 | REVA | 08.02.2022 | LM | BH |

*Client:* DWH

*Job No:* 15-280

*Date:* 02.04.2024

*Drawing No:* 027

*Scale:* NTS@ A3

*Job Title:* Cherryfield Drive, Kirkby

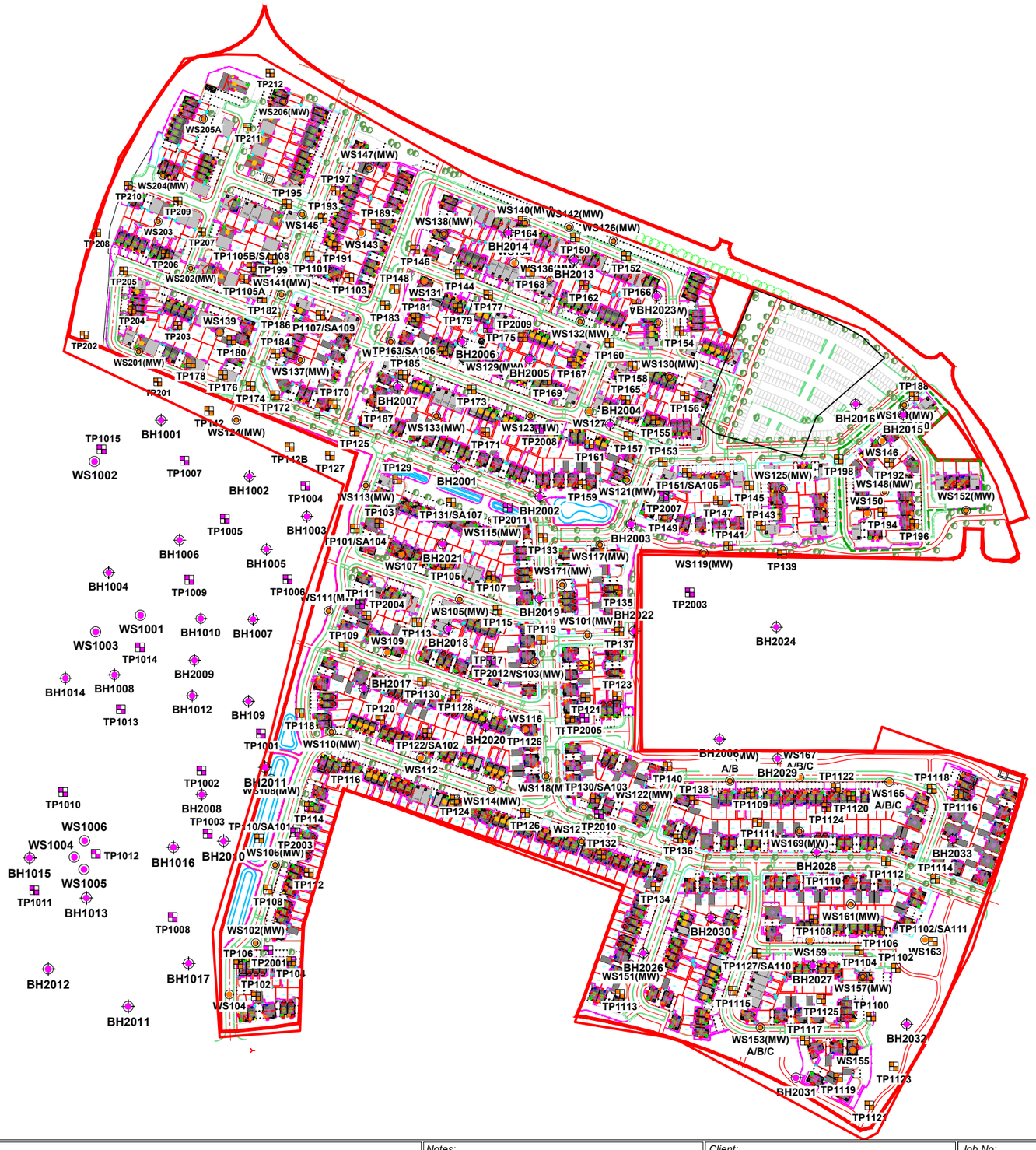
*Drawing Title:* Window Sample with Monitoring Well Location Plan


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*Location Symbols*

- Approximate Window Sample Probehole Location
- Approximate Trial Pit Location
- Approximate Rotary Borehole Location
- Approximate Trial Pit Location (Soil Mechanics)
- Approximate Window Sample Probehole Location with Install (Soil Mechanics)
- Approximate Borehole Location (Soil Mechanics)

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVB | 31.01.2024 | EB | ID |
| P1 | REVA | 03.03.2023 | OW | BH |

*Client:* DWH

*Job No:* 15-280

*Date:* 30.01.2024

*Drawing No:* 029

*Scale:* NTS@ A3

*Job Title:* Cherryfield Drive, Kirkby

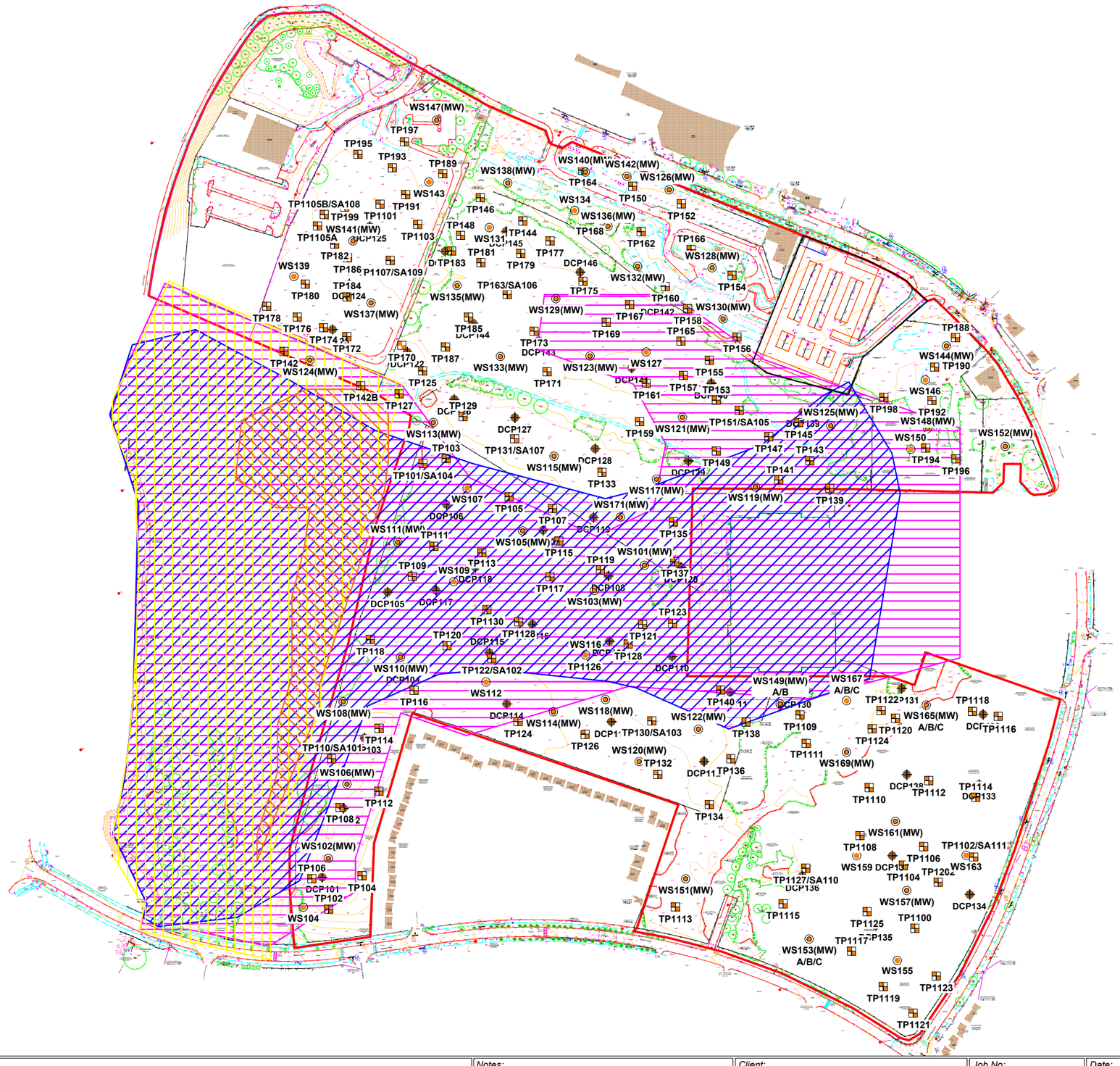
*Drawing Title:* EHLP with Previous Site Investigation Boreholes


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*Location Symbols*

- Approximate Window Sample Probehole Location
- Approximate Trial Pit Location
- Approximate Rotary Borehole Location

*Possible Extent of Landfill*

- Former Sand / Gravel Pit
- GDO205 Landfill Records
- Buro Happold Landfill Delineation
- WSP Landfill Delineation

*Notes:*

*Client:* DWH

*Job No:* 15-280

*Date:* 10.01.2022

*Drawing No:* 030

*Scale:* NTS@ A3

| | | | | |
|---|---|---|---|---|
| P1 | REVA | 10.01.2021 | HM | BH |
| Phase | Issue | Date | Drawn | Checked |

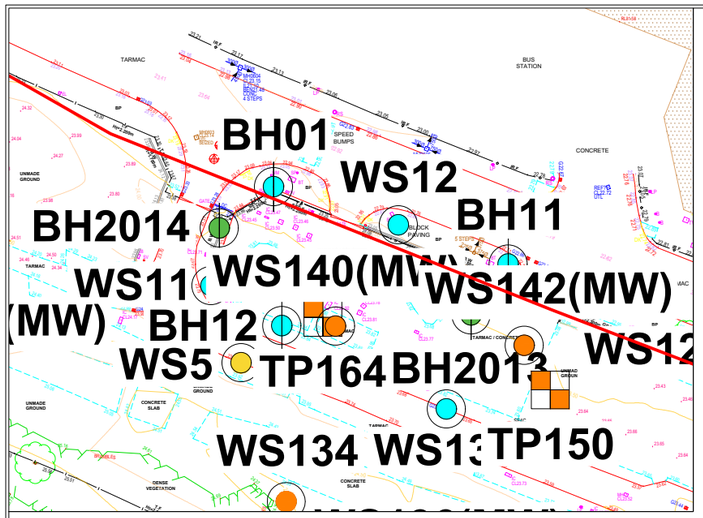
*Job Title:* Cherryfield Drive, Kirkby

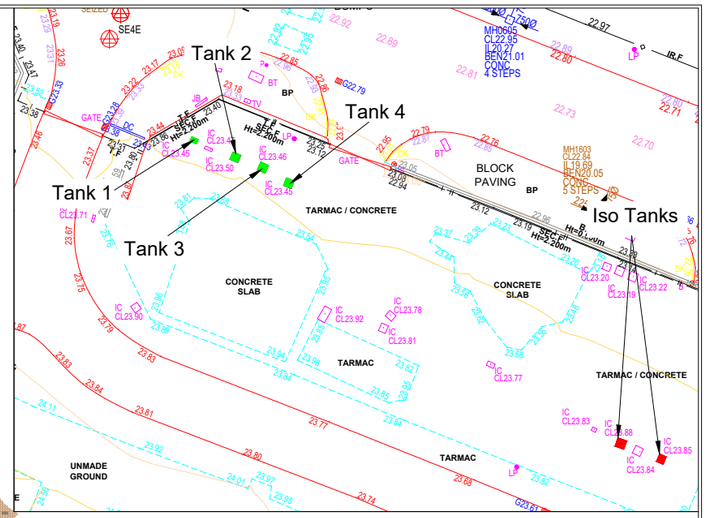
*Drawing Title:* Possible Landfill Extent Plan

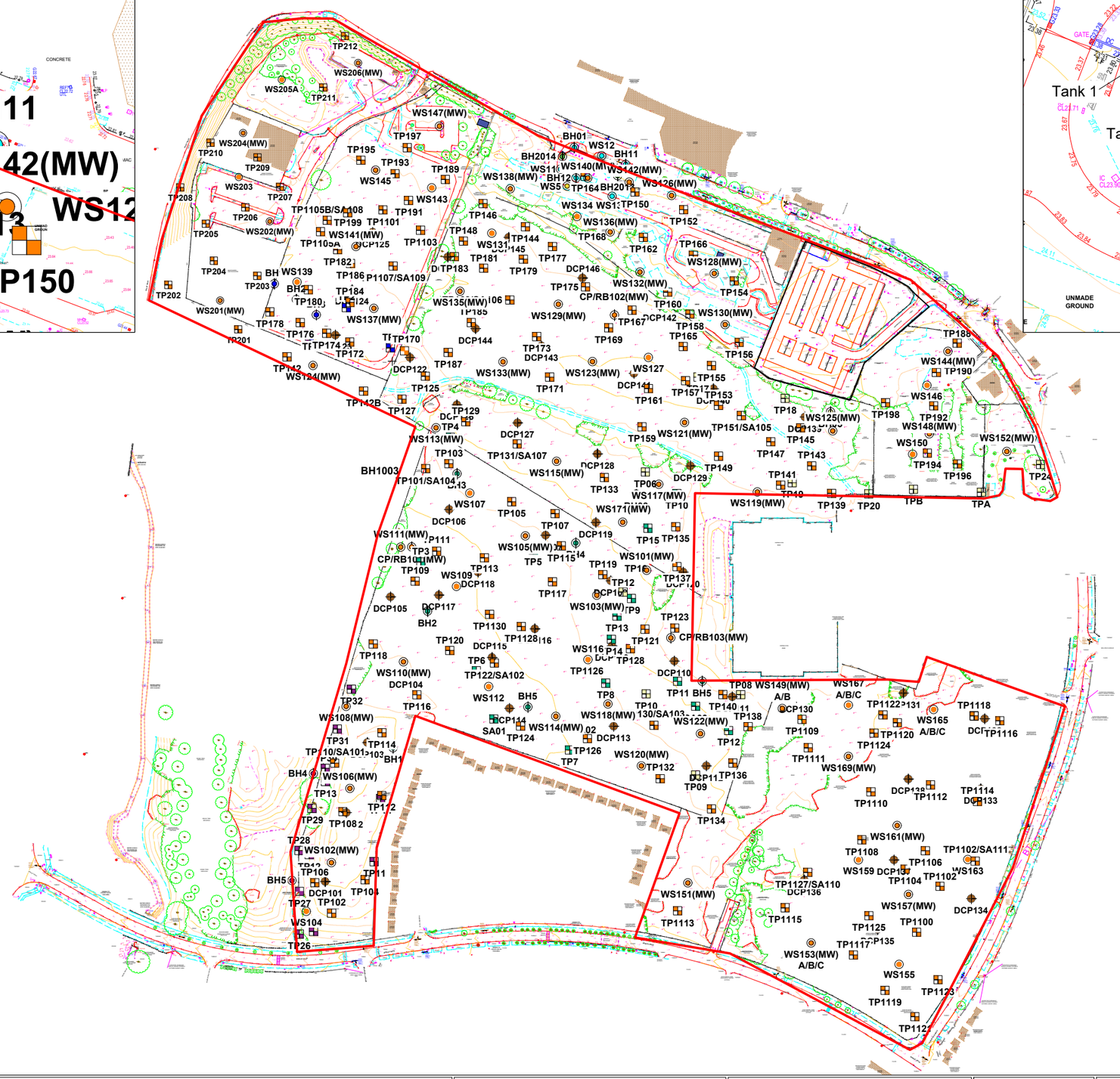

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*Location Symbols*

- Approximate Window Sample Probehole Location
- Approximate Trial Pit Location
- Approximate Rotary Borehole Location
- Approximate Trial Pit Location (Knowsley Community College 1995)
- Approximate Rotary Borehole Location (Knowsley Community College 1997)
- Approximate Trial Pit Location (Cooper Associates 1998-2002)
- Approximate Rotary Borehole Location (Cooper Associates 1998-2002)
- Approximate Trial Pit Location (Waterman 2002-2004 (no logs available))
- Approximate Window Sample Probehole Location (Waterman 2002-2004 (no logs available))
- Approximate Rotary Borehole Location (Abatec 2006)
- Approximate Trial Pit Location (Abatec 2006)
- Approximate Rotary Borehole Location (Atkins Rotary holes)
- Approximate Window Sample Probehole Location (Atkins Rotary holes)
- Approximate Window Sample Probehole Location (Clancy Consulting)
- Approximate Rotary Borehole Location (Baro Happold Boreholes)

*Tanks*

- Tanks
- Iso Tank

*Notes:*

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVB | 02.04.2024 | EB | PW |
| P1 | REVA | 25.04.2022 | LM | BH |

*Client:* DWH

*Job No:* 15-280

*Date:* 02.04.2024

*Drawing No:* 031

*Scale:* NTS@ A3

*Job Title:* Cherryfield Drive, Kirkby

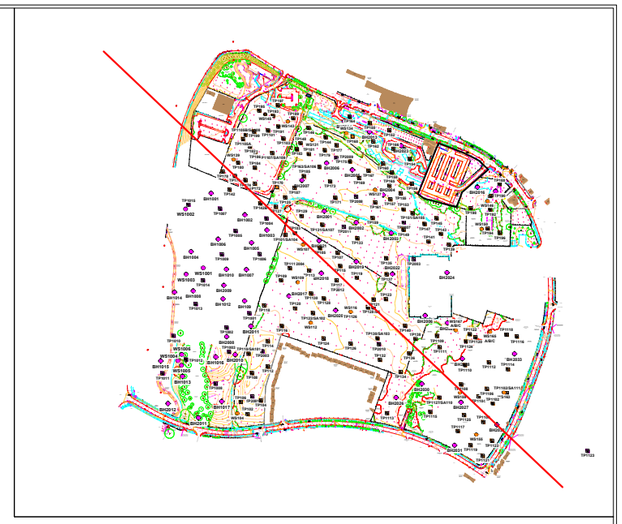
*Drawing Title:* Garage and Petrol Filling Station Area Plan

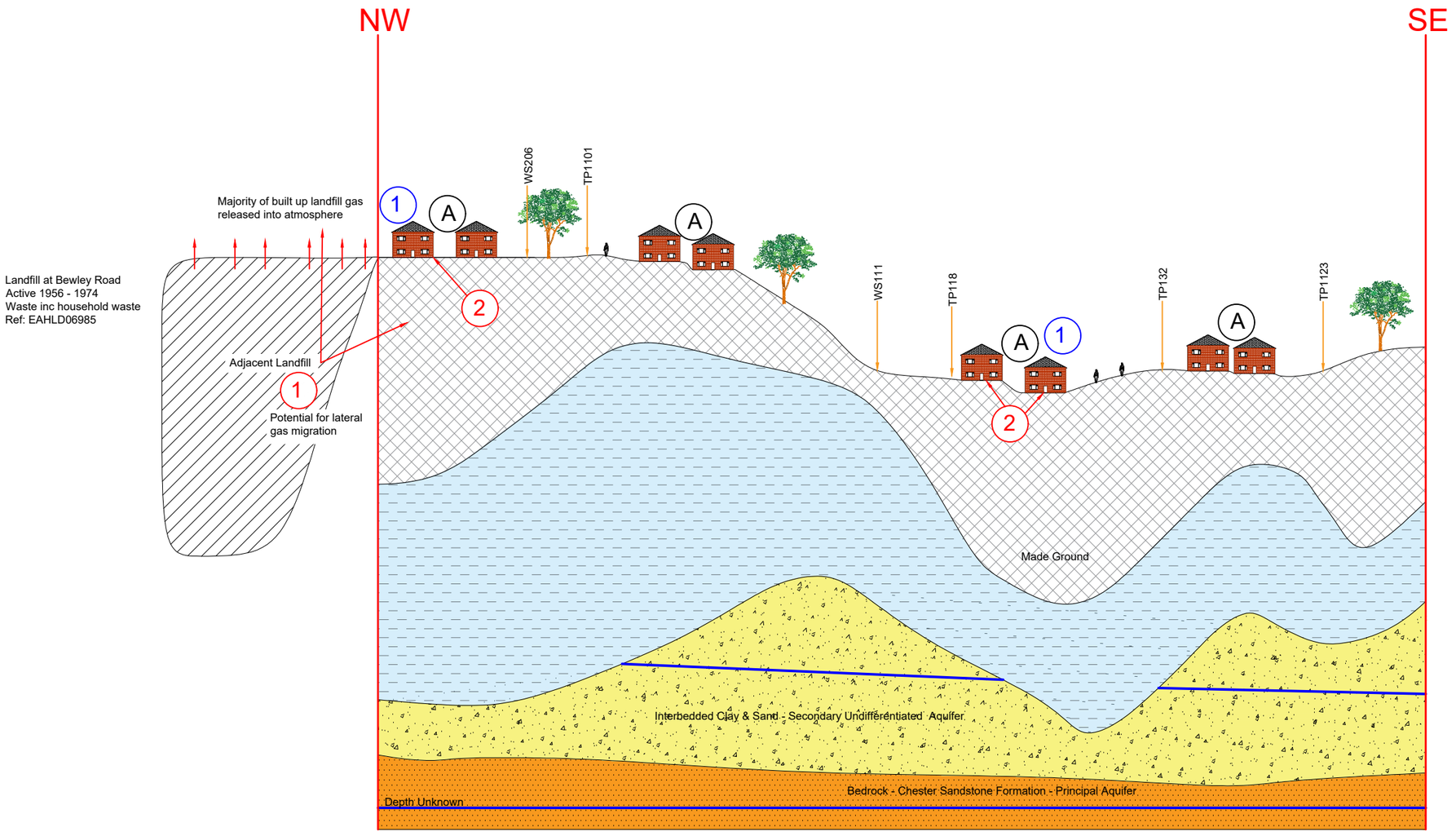

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| Polutant Linkage | Contaminant (Source) | Pathway | Receptor |
|---|---|---|---|
| PL1 PL2 | Heavy Metals, Non Volatile PAH (Made Ground) | Dermal Contact | Future Site Users |
| | | Dermal Contact and Ingestion | Off-site Receptors |
| PL3 | ACM in Made Ground | Inhalation of Dust | Future Site and Off-site Users |
| | | | Buildings |
| PL4 | Volatile Contaminants such as Mercury (Made Ground) | Inhalation of Vapours | Future Site Users |
| | | Migration through permeable strata and preferential pathways | Off-site Receptors |
| PL5 | Methane, Carbon Dioxide (Made Ground) | Inhalation of Gas | Future Site Users |
| | | Migration through permeable strata and preferential pathways | Buildings |
| | | Explosion in Confined Spaces | Off-site Land Users |
| PL6 | Mobile contaminants such as metals, PAHs, hydrocarbons, volatile compounds (Made Ground) | Surface Runoff | Groundwater (Principal Aquifer) |
| | | Migration through permeable strata and preferential pathways | |
| | | Perched waters migration | |
| PL7 | Sulphate (potential ash within Made Ground) | Sulphate attack on concrete | Building Structure |
| PL8 | Organic contaminants such as hydrocarbons, solvents (Made Ground) | Ingestion of tainted water supply | Future Site Users |
| | | | Water Pipes |
| PL9 | Phytotoxic Contaminants (Made Ground) | Direct Contact (Plant Uptake) | Flora |






Geology Key
- Made Ground
- Clay
- Interbedded Clay & Sand
- Bedrock
- Groundwater

Sources
1. Landfill Gases (CO2 / Methane)
2. Gases from Volatiles in Made Ground

Receptors
1. Accumulation of Gases in Buildings

Pathways
- Inhalation / Accumulation
- Dermal Contact / Ingestion
- Plant Uptake
- Tainted Water Supply
- Vertical Migration
- Horizontal Migration
- Sulphate Attack on Concrete

Site Features
1. Proposed Residential Development

Notes:

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVA | 11.03.2024 | EB | PW |

Client: DWH

Job No: 15-280

Date: 11.03.2024

Drawing No: 011

Scale: NTS@ A3

Job Title: Cherryfield Drive, Kirkby

Drawing Title: Gas Conceptual Site Model


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# APPENDIX IV
# PHOTOGRAPHS

PLATE 1 – OVERGROWN GRASSLAND



PLATE 2 – MAINTAINED GRASSLAND IN SOUTH OF SITE



PLATE 3 – FUEL TANKS




PLATE 4 – GAS GOVERNOR IN SOUTH OF SITE



PLATE 5 – VAPOUR ISOLATION TANKS



PLATE 6 – NORTH EASTERN PARCEL



PLATE 7 – NORTHERN SECTOR OF SITE



PLATE 8 – OVERGROWN GRASSLAND IN NORTH OF SITE



PLATE 9 – ELECTRICITY SUBSTATION



PLATE 10 – RECENTLY CLEARED TREES IN SOUTH-EAST OF SITE



PLATE 11 – VIEW OF PRESENT STRUCTURE (NORTH WEST PARCEL)



PLATE 12 –VIEW OF POND AT NORTH WESTERN CORNER (NORTH WEST PARCEL)



PLATE 13 – SITE ENTERANCE OFF CHERRYFIELD DRIVE (FACING NORTH)



PLATE 14 –



# APPENDIX V
# E3P EXPLORATORY HOLE LOGS

# Trial Pit Log

TrialPit No TP101/ SA104
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340963.09 - 398432.88<br>Level: 23.95 | Date 10/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.60 | 2.00 × 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 23.65 | | Brown slightly sandy CLAY with rootlets and roots. (TOPSOIL). |
| | 1.50 | HVP | 90 | 2.00 | 21.95 | | Stiff high strength reddish brown slightly gravelly slightly sandy CLAY. Gravel is fine sub angular to sub rounded of mudstone and sandstone. |
| ▼ 2.60 | | | | 2.60 | 21.35 | | Red gravelly fine to medium SAND. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. (Weathered bedrock). |
| | | | | | | | End of Pit at 2.60m |

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## Trial Pit Photographs



TP101



TP101 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 2.60 m bgl. 3. Soakaway test complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP102 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340896.26 - 398117.23 Level: 21.80 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.20 x 1.20 Depth 3.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.20 | 21.60 | | MADE GROUND: Dark grey very clayey fine to medium sand with frequent rootlets. (Topsoil) |
| | | | | 0.50 | 21.30 | | MADE GROUND: Brown slightly gravelly clay. Gravel is fine to coarse, angular to subrounded of brick. |
| | | | | | | | MADE GROUND: Dark grey slightly gravelly sandy clay. Gravel is fine to coarse angular to subrounded of brick. |
| | | | | 1.30 | 20.50 | | Red very clayey fine to medium SAND. |
| | | | | 3.10 | 18.70 | | End of Pit at 3.10m |

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## Trial Pit Photographs



TP102



TP102 SPOIL

Remarks: 1. Complete

Stability: Unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP103 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340979.52 - 398436.42 Level: 24.10 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 23.90 | | MADE GROUND: Reddish brown slightly gravelly sandy clay with rootlets. Gravel is fine sub angular to sub rounded of sandstone and mudstone. (Topsoil). |
| | 0.40 | ES | | 0.50 | 23.60 | | MADE GROUND: Reddish brown gravelly sandy clay. Gravel is fine to medium angular to sub rounded of mudstone, sandstone, brick and ceramic. |
| | 0.60 | HVP | 53 | 0.80 | 23.30 | | Firm medium strength light brown slightly sandy gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | 1.00 | HVP | 76 | | | | Stiff high strength circa. 1.50 m becomes firm medium strength reddish brown slightly gravelly CLAY. Gravel is fine sub angular to sub rounded of mudstone. |
| | 1.50 | HVP | 65 | 1.80 | 22.30 | | Red slightly gravelly fine to medium SAND. Gravel is fine to medium sub angular to sub rounded of sandstone. (Weathered bedrock). |
| ▼ 2.60 | | | | 2.60 | 21.50 | | End of Pit at 2.60m |

1 2 3 4

## Trial Pit Photographs



TP103



TP103 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 2.60 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP104
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340919.97 - 398140.99<br>Level: 22.23 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.60 x 0.60<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| 0.40 | | | | 0.40 | 21.83 | | MADE GROUND: Dark grey gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse angular to subrounded of brick. (Topsoil) |
| | 0.60 | HVP | 61 | | | | Firm medium strength brown slightly gravelly sandy CLAY. Gravel is fine to coarse angular to subrounded of sandstone. |
| | 0.80 | HVP | 54 | | | | |
| | 1.00 | ES | | | | | |
| | 1.00 | HVP | 71 | | | | |
| | | | | 1.30 | 20.93 | | Reddish brown slightly gravelly very clayey fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. (Weathered bedrock). |
| | | | | 2.80 | 19.43 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP104



TP104 SPOIL

Remarks: 1. Complete. 2. Water seepage at 0.40 m bgl. (Water Strike).

Stability: Stable

# Trial Pit Log

TrialPit No: TP105
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341024.19 - 398409.39<br>Level: 24.17 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 23.87 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | 0.50 | ES | | | | | |
| | | | | 0.70 | 23.47 | | MADE GROUND: Dark brown sandy gravelly clay. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic, glass and clinker. |
| | 0.80<br>0.80 | B<br>HVP | 89 | | | | Stiff high strength light brown mottled orange slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | | | | 1.00 | 23.17 | | Firm medium strength red mottled white slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | 1.50 | HVP | 55 | | | | |
| | | | | 1.80 | 22.37 | | Red fine to medium SAND. |
| | | | | 2.40 | 21.77 | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP105



TP105 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP106
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340884.33 - 398138.87<br>Level: 21.75 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.50 x 0.60<br>Depth 3.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.40 | 21.35 | | MADE GROUND: Brown gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | 0.80 | HVP | 52 | | | | Firm medium strength dark grey slightly gravelly sandy CLAY. Gravel is fine subrounded to rounded of sandstone. |
| | 1.20 | HVP | 60 | | | | |
| 1.40 | 1.40 | HVP | 66 | 1.40 | 20.35 | | Reddish brown slightly clayey silty fine to medium SAND. |
| | | | | 3.20 | 18.55 | | End of Pit at 3.20m |

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## Trial Pit Photographs



TP106



TP106 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.40 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP107
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341055.02 - 398400.99<br>Level: 24.33 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 24.13 | | MADE GROUND: Brown clayey fine to medium sand with rootlets. (Topsoil). |
| | | | | 0.60 | 23.73 | | MADE GROUND: Dark brown sandy very gravelly clay. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic, glass and clinker. |
| | 0.70 | ES | | 0.80 | 23.53 | | MADE GROUND: Firm black slightly gravelly clay. Gravel is fine sub angular to sub rounded of mudstone, ash and brick with slight hydrocarbon odour at 0.70 m bgl. |
| | 1.50<br>1.50 | B<br>HVP | 58 | 1.70 | 22.63 | | MADE GROUND: Firm medium strength red mottled white slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| ▼ 2.00 | | | | 2.00 | 22.33 | | MADE GROUND: Red fine to medium SAND. |
| | | | | 2.10 | 22.23 | | Red fine to medium SAND. (Weathered bedrock).<br>End of Pit at 2.10m |

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## Trial Pit Photographs



TP107



TP107 SPOIL

Remarks: 1. Complete. 2. Slight hydrocarbon odour at 0.70 m bgl. 3. Water strike at 2.00 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP108 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340904.31 - 398189.33 Level: 23.93 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.50 x 0.70 Depth 3.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | | | | 0.35 | 23.58 | | MADE GROUND: Brown slightly gravelly sandy clay with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | 0.50 | ES | | | | | MADE GROUND: Dark grey to brown gravelly sandy clay. Gravel is fine to coarse angular to subrounded of brick, clinker, glass bottles, metal, pipe, ash and wood. |
| | 0.80 | ES | | | | | |
| | | | | 3.20 | 20.72 | | End of Pit at 3.20m |

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## Trial Pit Photographs



TP108



TP108 SPOIL

Remarks: 1. Complete

Stability: Unstable

# Trial Pit Log

TrialPit No: TP109
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340955.56 - 398352.97<br>Level: 23.29 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 23.09 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | 0.50 | 22.79 | | MADE GROUND: Light brown slightly sandy gravelly clay. Gravel is fine to medium sub angular to sub rounded of mudstone, brick and glass. |
| | 0.80 | ES | | | | | MADE GROUND: Black clayey very gravelly fine to coarse sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, glass, ceramic, textiles and clinker. Cobbles are sub angular of brick. |
| | 1.50 | B | | | | | |
| ▼ 2.30 | | | | 2.30 | 20.99 | | End of Pit at 2.30m |

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## Trial Pit Photographs



TP109



TP109 SPOIL

Remarks: 1. Complete. 2. Water strike at 2.30 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP110/ SA101 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340898.40 - 398223.79 Level: 22.87 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 × 0.70 Depth 3.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.30 | 22.57 | | MADE GROUND: Dark grey slightly clayey fine to medium sand with frequent rootlets. (Topsoil) |
| | | | | | | | MADE GROUND: Dark grey slightly gravelly sandy clay with pipe, brick, and metal. |
| ▼ 1.80 | | | | 1.50 | 21.37 | | Red slightly clayey fine to medium SAND. (Weathered bedrock). |
| | | | | 3.20 | 19.67 | | End of Pit at 3.20m |

1 2 3 4

## Trial Pit Photographs



TP110



TP110 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.80 m bgl. 3. Soakaway test complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP111 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340970.87 - 398374.27 Level: 23.40 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 23.20 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | 0.40 | 23.00 | | MADE GROUND: Soft light brown slightly sandy gravelly clay. Gravel is fine to medium angular to sub rounded of mudstone and brick. |
| 2.40 | 2.40 | ES | | | | | MADE GROUND: Black slightly clayey very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass, plastic and textile. |
| | | | | 2.60 | 20.80 | | End of Pit at 2.60m |

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## Trial Pit Photographs



TP111



TP111 SPOIL

Remarks: 1. Terminated due to instability. 2. Fast water ingress at 2.40 m bgl.

Stability: Unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP112 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340931.90 - 398200.78 Level: 23.02 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.90 × 0.70 Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.25 | 22.77 | | MADE GROUND: Dark grey slightly gravelly clayey medium to coarse sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | | | | | | | Reddish brown slightly clayey silty fine to medium SAND. |
| | | | | 2.80 | 20.22 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP112



TP112 SPOIL

Remarks: 1. Complete on weathered bedrock at 2.80m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP113 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341004.81 - 398369.65 Level: 23.52 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 23.32 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | 0.50 | 23.02 | | MADE GROUND: Light brown gravelly clayey fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. |
| | 0.80 | ES | | | | | MADE GROUND: Black clayey very sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, brick, glass, ceramic, plastic and textiles. Cobbles are sub angular to sub rounded of brick and glass. |
| ▼ 1.80 | 1.80 | ES | | | | | |
| | | | | 2.40 | 21.12 | | End of Pit at 2.40m |

1 2 3 4

## Trial Pit Photographs



TP113



TP113 SPOIL

Remarks: 1. Terminated due to instability. 2. Fast water ingress at 1.80 m bgl. (Strike)

Stability: Unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP114 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340932.02 - 398245.37 Level: 24.14 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.60 x 0.70 Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.35 | 23.79 | | MADE GROUND: Dark grey slightly gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | 0.60 | ES | | | | | MADE GROUND: Firm medium strength brown slightly gravelly slightly sandy clay. Gravel is fine to coarse, angular to subrounded of brick. |
| | | | | 1.10 | 23.04 | | Brown slightly gravelly clayey fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| ▼ 2.80 | | | | 2.90 | 21.24 | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP114



TP114 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 2.80 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP115 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341059.47 - 398378.02 Level: 24.18 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | 0.10 | ES | | | | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | 0.30 | 23.88 | | MADE GROUND: Light brown very sandy very gravelly clay. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. |
| | | | | 0.60 | 23.58 | | MADE GROUND: Black clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, ash, sandstone, brick, ceramic, glass, metal, plastic and textiles. |
| | 2.20 | HVP | 72 | 2.20 | 21.98 | | Firm medium strength red slightly gravelly CLAY. Gravel is fine sub angular to sub rounded of mudstone. |
| | | | | 2.50 | 21.68 | | Red fine to medium SAND. (Weathered bedrock). |
| | | | | 2.80 | 21.38 | | End of Pit at 2.80m |

1 2 3 4

## Trial Pit Photographs



TP115



TP115 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP116
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340956.81 - 398272.26<br>Level: 23.03 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 0.80<br>Depth 1.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.25 | HVP | 23 | 0.25 | 22.78 | | MADE GROUND: Dark grey gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of clinker and textiles. (Topsoil) |
| 0.40 | 0.45<br>0.50<br>0.60 | HVP<br>D<br>ES | 30 | 0.70 | 22.33 | | Soft low strength brown slightly sandy CLAY. |
| | | | | 1.80 | 21.23 | | Reddish brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | | | | | | End of Pit at 1.80m |

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## Trial Pit Photographs



TP116



TP116 SPOIL

Remarks: 1. Complete. 2. Fast water ingress at 0.40 m bgl. (Water strike).

Stability: Unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP117 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341053.21 - 398352.63 Level: 23.94 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 23.64 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | 0.60 | 23.34 | | MADE GROUND: Reddish light brown gravelly very sandy clay. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | 0.70 | ES | | | | | MADE GROUND: Brownish black clayey sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, ash, sandstone, brick, ceramic, glass, cardboard and plastic. |
| | 1.00 | B | | | | | |
| 2.40 | 2.40 | ES | | 2.50 | 21.44 | | End of Pit at 2.50m |

1 2 3 4

## Trial Pit Photographs



TP117



TP117 SPOIL

Remarks: 1. Terminated due to instability. 2. Fast water ingress at 2.40 m bgl. (Water strike).

Stability: Unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP118 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340925.81 - 398308.40 Level: 22.96 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 × 0.80 Depth 2.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.25 | 22.71 | | MADE GROUND: Dark grey slightly gravelly sandy clay with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | 0.50 | ES | | | | | MADE GROUND: Black clayey sandy gravel (ashy). Gravel is fine to coarse angular to subrounded of brick, clinker, glass bottles, ash, metal, pipe, wood. |
| | 1.00 | B | | | | | |
| ▼ 2.00 | | | | 2.00 | 20.96 | | Firm, medium strength reddish brown sandy CLAY. |
| | 2.30 | HVP | 54 | | | | |
| | | | | 2.60 | 20.36 | | End of Pit at 2.60m |

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## Trial Pit Photographs



TP118



TP118 SPOIL

Remarks: 1. Complete. 2. Water strike at 2.00 m bgl.

Stability: Slightly unstable

# Trial Pit Log

TrialPit No: TP119
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341088.95 - 398357.62<br>Level: 24.26 | Date 10/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.50 | 2.00 × 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 24.06 | | MADE GROUND: Brown very sandy clay with rootlets. (Topsoil). |
| | | | | 0.70 | 23.56 | | MADE GROUND: Brown clayey gravelly fine to medium sand. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. |
| ▼ 2.40 | | | | 2.50 | 21.76 | | MADE GROUND: Brownish black clayey very gravelly fine to coarse sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, ash, sandstone, brick, glass, ceramic, plastic, textiles, timber and paper. Cobbles are sub angular to sub rounded of brick and glass. |
| | | | | | | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP119



TP119 SPOIL

Remarks: 1. Terminated due to instability and water ingress. 2. Water strike at 2.40 m bgl.

Stability: Unstable

# Trial Pit Log

TrialPit No: TP120
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340980.18 - 398303.79<br>Level: 23.30 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.60 × 0.70<br>Depth 3.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.15 | 23.15 | | Dark grey sandy CLAY with frequent rootlets. (TOPSOIL) |
| | 0.30 | HVP | 68 | | | | Firm medium strength dark grey sandy CLAY |
| | | | | 0.50 | 22.80 | | Reddish brown slightly gravelly clayey fine to medium SAND. Gravel is fine to coarse, angular to subrounded of sandstone. |
| ▼ 2.00 | | | | | | | |
| | | | | 3.10 | 20.20 | | End of Pit at 3.10m |

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## Trial Pit Photographs



TP120 SPOIL

Remarks: 1. Complete. 2. Fast water ingress at 2.00 m bgl (water strike).

Stability: Unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP121 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341118.82 - 398318.90 Level: 24.49 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 24.29 | | MADE GROUND: Brown very sandy clay with rootlets. (Topsoil). |
| | | | | 0.80 | 23.69 | | MADE GROUND: Brown gravelly clayey fine to medium sand. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. |
| | 1.00 | ES | | | | | MADE GROUND: Blackish brown clayey sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, brick, ceramic, glass and textiles. Cobbles are angular to sub angular of brick and glass. |
| | | | | 2.30 | 22.19 | | MADE GROUND: Dark brown gravelly clay. Gravel is fine to medium angular to sub rounded of mudstone, sandstone, brick and ceramic. |
| | | | | 2.90 | 21.59 | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP121



TP121 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP122/ SA102
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341011.86 - 398294.89<br>Level: 23.31 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.60 x 0.80<br>Depth 2.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.30 | 23.01 | | Dark grey sandy CLAY with frequent rootlets. (TOPSOIL) |
| | 0.50 | HVP | 70 | | | | Firm medium strength dark greyish brown slightly sandy CLAY. |
| | 1.00 | HVP | 65 | 1.20 | 22.11 | | Reddish brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | | | 2.60 | 20.71 | | End of Pit at 2.60m |

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## Trial Pit Photographs



TP122



TP122 SPOIL

Remarks: 1. Complete. 2. Soakaway test complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP123 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341140.09 - 398319.79 Level: 25.12 | Date 10/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 24.82 | | MADE GROUND: Brown sandy clay with rootlets and rare roots. (Topsoil). |
| | 2.00 | ES | | | | | MADE GROUND: Reddish black clayey gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass, timber, plastic. Cobbles are angular to sub angular of sandstone, brick and glass. |
| 2.40 | 2.40 | ES | | | | | |
| | | | | 2.80 | 22.32 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP123



TP123 SPOIL

Remarks: 1. Terminated due to instability and water ingress. 2. Fast water ingress at 2.40 m bgl (water strike).

Stability: Unstable

# Trial Pit Log

TrialPit No: TP124
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341030.51 - 398250.10<br>Level: 23.25 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.20 x 0.80<br>Depth 2.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 23.05 | | MADE GROUND: Dark grey sandy clay with frequent rootlets with plastic drainage pipes (Topsoil) |
| | 0.40<br>0.50 | HVP<br>ES | 64 | | | | Firm medium strength brown slightly sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of sandstone. |
| 0.65 | 0.70 | HVP | 58 | 0.70 | 22.55 | | Reddish brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | | | 2.30 | 20.95 | | End of Pit at 2.30m |

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## Trial Pit Photographs



TP124



TP124 SPOIL

Remarks: 1. Complete on bedrock 2.30 m bgl. 2. Very slow water ingress at 0.65 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP125
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340962.85 - 398498.57<br>Level: 26.19 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.88 | | MADE GROUND: Dark brown slightly gravelly slightly sandy clay with rootlets. Gravel is fine sub angular to sub rounded of mudstone. (Topsoil). |
| | | | | 0.60 | 25.58 | | MADE GROUND: Brown gravelly sandy clay. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. |
| | | | | 1.80 | 24.38 | | Reddish grey very silty sandy CLAY. |
| | | | | 2.50 | 23.68 | | Reddish grey slightly clayey fine to medium SAND. (Weathered bedrock). |
| | | | | | | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP125



TP125 SPOIL

Remarks: 1. Complete. 2. Unable to complete hand shear vain tests due to high sand content in CLAY.

Stability: Stable

# Trial Pit Log

TrialPit No: TP126
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341078.00 - 398241.13<br>Level: 23.70 | Date 11/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 1.35 | 2.70 × 0.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 23.40 | | MADE GROUND: Dark grey slightly gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | 0.50 | HVP | 70 | | | | Firm medium strength brown slightly gravelly sandy CLAY. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | 1.00 | HVP | 73 | 1.35 | 22.35 | | End of Pit at 1.35m |

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## Trial Pit Photographs



TP126



TP126 SPOIL

Remarks: 1. Complete on bedrock at 1.35 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP127
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340946.23 - 398482.26<br>Level: 25.87 | Date 11/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.40 | 2.00 × 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | 25.77 | | Brown sandy CLAY with rootlets. (TOPSOIL). |
| | 0.50<br>0.50 | B<br>ES | | | | | Red gravelly sandy CLAY with rare cobbles. Gravel is fine to coarse angular to sub rounded of mudstone and sandstone. Cobbles are sub angular of sandstone. |
| | | | | 0.70 | 25.17 | | Greyish dark brown gravelly clayey fine to medium SAND. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | 1.50 | HVP | 83 | 1.40 | 24.47 | | Stiff high strength greyish brown slightly gravelly CLAY. Gravel is fine sub angular to sub rounded of mudstone. |
| | | | | 2.40 | 23.47 | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP127



TP127 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP128
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341108.53 - 398304.99<br>Level: 24.25 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 × 0.70<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 23.95 | | MADE GROUND: Dark grey slightly gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | 0.70 | ES | | | | | MADE GROUND: Black clayey gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to subrounded of brick, glass, ash and clinker. Cobbles are angular to sub angular of brick, glass, bottles, metal, pipe and wood. |
| | 0.80 | B | | | | | |
| 1.40 | 1.40 | HVP | 73 | 1.40 | 22.85 | | Firm medium strength reddish brown slightly sandy CLAY. Circa 2.00 m bgl becomes stiff high strength circa 2.30 m bgl becomes firm medium strength circa 2.50 m bgl becomes stiff high strength. |
| | 2.00 | HVP | 91 | | | | |
| | 2.30 | HVP | 74 | | | | |
| | 2.50 | HVP | 104 | 2.50 | 21.75 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP128



TP128 SPOIL

Remarks: 1. Complete. 2. Rapid water ingress at 0.65 m bgl (water strike).

Stability: Unstable

# Trial Pit Log

TrialPit No: TP129
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340991.57 - 398466.18<br>Level: 24.62 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.10 | 24.52 | | MADE GROUND: Brown slightly gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| | | | | 0.30 | 24.32 | | MADE GROUND: Brown gravelly sandy clay. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. |
| | | | | 0.60 | 24.02 | | Yellowish white mottled red slightly gravelly fine to medium SAND. Gravel is fine sub rounded of sandstone. |
| | 0.80 | HVP | 61 | | | | Firm medium strength reddish brown slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. Becoming soft low strength at 1.50 m bgl. |
| ▼ 1.50 | 1.50 | HVP | 29 | | | | |
| | | | | 2.10 | 22.52 | | Red fine to medium SAND. (Weathered bedrock). |
| | | | | 2.50 | 22.12 | | End of Pit at 2.50m |

## Trial Pit Photographs



TP129



TP129 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 1.50 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP130/ SA103 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341125.30 - 398250.68 Level: 24.19 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 0.70 Depth 2.23 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | | | | 0.08 | 24.11 | | MADE GROUND: Dark grey slightly gravelly clayey coarse sand with frequent rootlets. Gravel is fine, angular to subrounded of brick. (Topsoil) |
| | 0.20 | ES | | 0.25 | 23.94 | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse sub rounded of clinker and brick. |
| | 0.50 | HVP | 64 | | | | Firm medium strength reddish brown slightly sandy CLAY. |
| ▼ 0.80 | | | | 0.80 | 23.39 | | Reddish brown clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. (Lens of CLAY between 1.00m - 1.10m bgl) |
| | 1.00 | D | | | | | |
| | | | | 2.23 | 21.96 | | End of Pit at 2.23m |

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## Trial Pit Photographs



TP130



TP130 SPOIL

Remarks: 1. Complete on bedrock at 2.23 m bgl. 2. Very slow water ingress at 0.80 m bgl (seepage). 3. Soakaway test complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP131/ SA107
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341028.12 - 398450.45<br>Level: 24.61 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 × 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 24.41 | | MADE GROUND: Brown slightly gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| | 0.50 | HVP | 111 | 0.70 | 23.91 | | Stiff high strength reddish brown mottled grey slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | 0.80 | ES | | | | | Soft low strength red slightly gravelly silty CLAY. Gravel is fine to coarse angular to sub rounded of mudstone and sandstone. |
| | 1.00 | B | | | | | |
| | 1.00 | HVP | 28 | 2.10 | 22.51 | | Red slightly gravelly fine to medium SAND. Gravel is fine to medium sub angular to sub rounded of sandstone and mudstone. (Weathered bedrock). |
| | | | | 2.50 | 22.11 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP131



TP131 SPOIL

Remarks: 1. Complete. 2. Soakaway test completed.

Stability: Stable

# Trial Pit Log

TrialPit No: TP132
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341129.64 - 398212.68<br>Level: 23.73 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 x 0.80<br>Depth 2.45 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.05 | 23.68 | | MADE GROUND: Dark grey sandy clay with frequent rootlets. (Topsoil) |
| | 0.20 | ES | | 0.30 | 23.43 | | MADE GROUND: Black gravel. Gravel is fine to coarse angular to subrounded of brick, ash and clinker |
| | 0.50 | HVP | 83 | | | | Stiff high strength brown slightly sandy CLAY (becoming more sandy at 0.60m bgl). Circa 1.00 m bgl becomes firm medium strength circa 1.20 m bgl becomes stiff high strength. |
| | 1.00 | HVP | 70 | | | | |
| | 1.20 | HVP | 100 | 1.20 | 22.53 | | Reddish brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | | | 2.45 | 21.28 | | End of Pit at 2.45m |

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## Trial Pit Photographs



TP132



TP132 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP133
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341089.98 - 398426.67<br>Level: 24.76 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 24.56 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | 0.40 | HVP | 107 | 0.60 | 24.16 | | Stiff high strength greyish red slightly gravelly slightly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | 1.00 | HVP | 34 | 1.40 | 23.36 | | Soft low strength red slightly gravelly silty CLAY. Gravel is fine to coarse angular to sub rounded of mudstone and sandstone. |
| | | | | 2.40 | 22.36 | | Brownish red slightly gravelly very sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | | | | | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP133



TP133 SPOIL

Remarks: 1. Complete. 2. Unable to complete hand shear vain tests due to high sand content in CLAY.

Stability: Stable

# Trial Pit Log

TrialPit No: TP134
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341166.11 - 398191.28<br>Level: 24.39 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 × 0.70<br>Depth 2.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.40 | 23.99 | | Dark grey sandy CLAY with frequent rootlets. (TOPSOIL). |
| | | | | | | | Light brown sandy CLAY. |
| | 0.70 | HVP | 54 | 0.70 | 23.69 | | Firm medium strength dark grey slightly gravelly sandy CLAY. Gravel is fine subrounded of sandstone. Circa 0.90 m bgl becomes stiff high strength. |
| | 0.90 | HVP | 76 | | | | |
| | 1.00 | ES | | | | | |
| | 1.10 | HVP | 90 | | | | |
| | 1.30 | HVP | 85 | 1.30 | 23.09 | | Reddish brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| ▼ 2.00 | | | | | | | |
| | | | | 2.30 | 22.09 | | End of Pit at 2.30m |

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## Trial Pit Photographs



TP134



TP134 SPOIL

Remarks: 1. Complete on bedrock at 2.30 m bgl. 2. Slow water ingress at 2.00 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP135
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341140.71 - 398391.58<br>Level: 24.84 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 24.64 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | 0.40 | ES | | 0.50 | 24.34 | | MADE GROUND: Brown gravelly sandy clay. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. |
| | 0.70 | HVP | 112 | | | | Stiff high strength red mottled grey gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | 0.80 | B | | 0.90 | 23.94 | | |
| | 1.20 | HVP | 52 | | | | Firm medium strength red slightly gravelly silty CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| ▼ 1.40 | | | | 2.20 | 22.64 | | Brownish red gravelly sandy CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | | | | 2.70 | 22.14 | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP135



TP135 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 1.40 m bgl. 3. Unable to complete HSV test 2.20-2.70 m bgl due to high sand content in clay.

Stability: Stable

# Trial Pit Log

TrialPit No: TP136
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341181.35 - 398223.79<br>Level: 24.74 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): Depth 2.00, 2.80 × 0.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.15 | 24.59 | | MADE GROUND: Dark grey sandy clay with frequent rootlets. (Topsoil) |
| | | | | | | | MADE GROUND: Slightly gravelly sandy clay with occasional cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. |
| 0.80 | | | | 0.80 | 23.94 | | |
| | 0.90 | HVP | 96 | | | | Stiff, high strength light brown slightly sandy CLAY. |
| | 1.00 | HVP | 105 | | | | |
| | 1.50 | HVP | 107 | | | | |
| | 2.00 | HVP | 89 | 2.00 | 22.74 | | End of Pit at 2.00m |

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## Trial Pit Photographs



TP136



TP136 SPOIL

Remarks: 1. Complete. 2. Very slow water ingress at 0.80 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP137
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341141.61 - 398363.34<br>Level: 25.25 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 24.95 | | MADE GROUND: Brown gravelly sandy clay with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. (Topsoil). |
| | | | | 0.80 | 24.45 | | MADE GROUND: Dark brownish black clayey very gravelly fine to medium sand. Gravel is fine to coarse angular to sub angular of mudstone, sandstone, brick, ash, ceramic, glass and textiles. |
| | | | | 1.50 | 23.75 | | MADE GROUND: Brownish red sandy very gravelly clay with cobbles. Gravel is fine to coarse angular to sub rounded of brick, mudstone, sandstone, glass, ceramic. Cobbles are angular to sub angular of sandstone, brick and glass. |
| | | | | 1.60 | 23.65 | | MADE GROUND: Concrete. |
| | | | | 2.00 | 23.25 | | MADE GROUND: Brown clayey very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic and timber. Cobbles are angular to sub angular of brick and timber. |
| 2.30 | 2.30 | ES | | 2.50 | 22.75 | | Brown gravelly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | | | | | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP137



TP137 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 2.30 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP138
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341192.11 - 398249.66<br>Level: 24.77 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 x 0.70<br>Depth 3.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.25 | 24.52 | | MADE GROUND: Dark grey sandy clay with frequent rootlets. (Topsoil) |
| | | | | 0.60 | 24.17 | | MADE GROUND: Brown slightly gravelly sandy clay. Gravel is fine to coarse, angular to subrounded of brick. |
| | 0.80 | D | | | | | Firm medium strength reddish brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to rounded of sandstone. |
| | 0.80 | HVP | 58 | | | | |
| | 1.00 | ES | | | | | |
| | 1.20 | HVP | 72 | | | | |
| | 1.50 | HVP | 66 | | | | |
| | 2.00 | HVP | 60 | | | | |
| | | | | 3.10 | 21.67 | | End of Pit at 3.10m |

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## Trial Pit Photographs



TP138



TP138 SPOIL

Remarks: 1. Complete on bedrock at 3.10 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP139
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341251.48 - 398414.20<br>Level: 26.07 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 × 0.60<br>Depth 1.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.15 | 25.92 | | MADE GROUND: Brown gravelly sandy clay with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | 0.50 | 25.57 | | MADE GROUND: Brown slightly sandy gravelly clay. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. |
| | | | | | | | MADE GROUND: Black slightly clayey gravelly fine to medium sand. Gravel is angular to sub rounded of mudstone, sandstone, brick, ash, glass, textiles, ceramic and wood. |
| ▼ 1.30 | 1.30 | ES | | 1.20 | 24.87 | | MADE GROUND: Greyish black slightly sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, glass and ceramic. Slight hydrocarbon odour. |
| | | | | 1.50 | 24.57 | | End of Pit at 1.50m |

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## Trial Pit Photographs



TP139



TP139 SPOIL

Remarks: 1. Terminated due to land drain. 2. Land drain encountered at 1.30 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP140
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341174.18 - 398272.47<br>Level: 24.70 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 × 0.70<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.15 | 24.55 | | MADE GROUND: Dark grey slightly gravelly clayey coarse sand with frequent rootlets. Gravel is fine, angular to subrounded of brick. (Topsoil) |
| | 0.50 | B | | | | | MADE GROUND: Dark grey clayey very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to subrounded of brick, glass, ash and clinker. Cobbles are angular to sub angular of glass, bottles, brick, metal, pipe and wood. |
| ▼ 1.20 | 1.30 | HVP | 86 | 1.30 | 23.40 | | Stiff high strength reddish brown sandy CLAY. Circa 2.00 m bgl becomes firm medium strength |
| | 1.60 | HVP | 84 | | | | |
| | 1.80 | HVP | 81 | | | | |
| | 2.00 | HVP | 70 | | | | |
| | | | | 2.80 | 21.90 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP140



TP140 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.2 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP141
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341215.28 - 398421.21<br>Level: 26.01 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.15 | 25.86 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | 0.70 | 25.31 | | MADE GROUND: Brown gravelly sandy clay. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. |
| 1.00 | 1.00 | ES | | | | | MADE GROUND: Brownish black slightly clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, glass and ceramic. |
| | 2.00 | ES | | 1.80 | 24.21 | | Soft greyish brown silty CLAY. |
| | | | | 2.40 | 23.61 | | End of Pit at 2.40m |

1 2 3 4

## Trial Pit Photographs



TP141



TP141 SPOIL

Remarks: 1. Complete. 2. Water strike at 1.00 m bgl (perched water within Made Ground).

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP142 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340864.60 - 398512.30 Level: 25.84 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.90 x 0.80 Depth 3.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.64 | | MADE GROUND: Dark grey sandy with clay frequent rootlets. (Topsoil) |
| 0.40 | | | | 0.40 | 25.44 | | MADE GROUND: Firm, medium strength reddish brown slightly gravelly sandy clay. Gravel is fine to coarse, angular to subrounded of brick. |
| | 1.00 | ES | | | | | MADE GROUND: Black slightly clayey gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick and ash. |
| | | | | 3.30 | 22.54 | | End of Pit at 3.30m |

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## Trial Pit Photographs



TP142



TP142 SPOIL

Remarks: 1. Complete. 2. Perched water at 0.4 m bgl.

Stability: Slightly unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP142B Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340918.97 - 398488.00 Level: 26.00 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 x 0.70 Depth 3.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 25.80 | | Dark grey sandy CLAY with frequent rootlets. (TOPSOIL). |
| | 0.50 | HVP | 66 | 0.45 | 25.55 | | Reddish brown sandy CLAY. |
| | 1.00 | HVP | 74 | | | | Firm medium strength grey to brown slightly gravelly very sandy CLAY. Gravel is fine to coarse, subrounded to rounded of sandstone (Lens of fine to medium SAND between 2.85-3.00m bgl). Circa 3.00 m bgl becomes stiff high strength. |
| | 2.00 | HVP | 64 | | | | |
| | 2.50 | HVP | 74 | | | | |
| | 3.00 | HVP | 99 | 3.10 | 22.90 | | End of Pit at 3.10m |

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## Trial Pit Photographs



TP142B



TP142B SPOIL

Remarks: 1. Complete.

Stability: Unstable

# Trial Pit Log

TrialPit No: TP143
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341237.29 - 398434.90<br>Level: 26.16 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.86 | | MADE GROUND: Brown clayey fine to medium sand with rootlets. (Topsoil). |
| | | | | 0.60 | 25.56 | | MADE GROUND: Black slightly clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, glass, ash, brick, ceramic and plastic. |
| | 0.80 | HVP | 113 | | | | Stiff high strength greyish red gravelly CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | | | | 1.50 | 24.66 | | Stiff greyish red silty CLAY. |
| 2.00 | | | | | | | |
| | | | | 2.50 | 23.66 | | Reddish brown slightly clayey fine to medium SAND. (Weathered bedrock). |
| | | | | 2.90 | 23.26 | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP143



TP143 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 2.00 m bgl. 3. Unable to complete HSV tests in clay 1.50 to 2.50.

Stability: Stable

# Trial Pit Log

TrialPit No: TP144
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341033.90 - 398604.73<br>Level: 25.76 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.90 x 0.70<br>Depth 2.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.56 | | Dark grey sandy CLAY with frequent rootlets. (TOPSOIL). |
| | 0.40 | HVP | 52 | | | | Firm medium strength brown very sandy CLAY. |
| | 0.60 | HVP | 56 | | | | |
| | 1.00 | ES | | | | | |
| ▼ 1.20 | 1.00 | HVP | 58 | 1.20 | 24.56 | | Brown very clayey fine to medium SAND. (Lens of CLAY between 1.80-1.90m bg.) |
| | | | | 2.00 | 23.76 | | End of Pit at 2.00m |

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## Trial Pit Photographs



TP144



TP144 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.20 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP145 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341229.44 - 398461.90 Level: 26.15 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 × 0.60 Depth 3.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 25.85 | | MADE GROUND: Brown slightly clayey slightly gravelly fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| 0.60 | 0.80 | ES | | | | | MADE GROUND: Black slightly clayey sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, glass, ceramic, timber and ash. Cobbles are sub angular of brick, glass and timber. |
| | | | | 1.50 | 24.65 | | Stiff high strength reddish grey gravelly CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | 1.80 | HVP | 109 | | | | |
| | | | | 3.10 | 23.05 | | End of Pit at 3.10m |

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## Trial Pit Photographs



TP145



TP145 SPOIL

Remarks: 1. Complete. 2. Water ingress at 0.60 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP146
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341003.77 - 398621.18<br>Level: 25.97 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.90 x 0.70<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | | | | Dark grey sandy CLAY with frequent rootlets. (TOPSOIL). |
| | 0.20 | HVP | 39 | 0.20 | 25.77 | | Soft low strength brown very sandy CLAY. Circa 0.40 m bgl becomes firm medium strength circa 0.60 m bgl becomes soft low strength. |
| | 0.40 | HVP | 52 | | | | |
| | 0.50 | D | | | | | |
| | 0.60 | HVP | 39 | 0.60 | 25.37 | | Brown slightly gravelly very clayey fine to medium SAND. Gravel is fine to coarse, subrounded to rounded sandstone. (Lens of CLAY between 2.20-2.40m bgl). |
| 1.40 | | | | | | | |
| | | | | 2.40 | 23.57 | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP146



TP146 SPOIL

Remarks: 1. Complete. 2. Very slow water ingress at 0.80 m bgl (seepage).

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP147 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341208.26 - 398451.97 Level: 26.35 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 26.15 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | 0.50 | 25.85 | | MADE GROUND: Brown gravelly clayey fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. |
| | | | | 1.20 | 25.15 | | MADE GROUND: Black slightly clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic and glass. |
| | 1.50 | HVP | 128 | 2.70 | 23.65 | | Stiff high strength light brownish red gravelly CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | | | | | | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP147



TP147 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP148
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340989.83 - 398594.54<br>Level: 26.31 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 × 0.70<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | 26.21 | | Dark grey sandy CLAY with frequent rootlets. (TOPSOIL). |
| | | | | 0.35 | 25.96 | | Brown clayey fine to medium SAND. |
| 0.50 | 0.50 | HVP | 78 | | | | Stiff high strength brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to rounded of sandstone. |
| | 1.00 | ES | | | | | |
| | 1.00 | HVP | 81 | | | | |
| | 1.30 | HVP | 85 | 1.30 | 25.01 | | Brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse subrounded to rounded of sandstone. |
| | 1.40 | B | | | | | |
| | | | | 2.80 | 23.51 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP148



TP148 SPOIL

Remarks: 1. Complete. 2. Fast water ingress at 0.50 m bgl (water strike).

Stability: Stable

# Trial Pit Log

TrialPit No: TP149
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341171.10 - 398441.75<br>Level: 26.17 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.97 | | MADE GROUND: Brown clayey fine to medium sand with rootlets. (Topsoil). |
| | | | | 1.00 | 25.17 | | MADE GROUND: Brown gravelly clayey fine to medium sand. Gravel is fine to coarse of mudstone, sandstone and brick. |
| 1.20 | 1.20 | ES | | | | | MADE GROUND: Black slightly clayey sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, glass, ceramic, ash, textiles and timber. Cobbles are angular to sub angular of brick and glass. |
| | 2.00<br>2.00 | ES<br>HVP | 71 | 1.90 | 24.27 | | Firm medium strength light brown to red slightly gravelly silty CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | | | | 2.50 | 23.67 | | End of Pit at 2.50m |

1 2 3 4

## Trial Pit Photographs



TP149



TP149 SPOIL

Remarks: 1. Complete. 2. Water strike at 1.20 m bgl. Fast ingress.

Stability: Stable

# Trial Pit Log

TrialPit No: TP150
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341111.79 - 398629.32<br>Level: 23.68 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 x 0.70<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.25 | 23.43 | | MADE GROUND: Dark grey slightly clayey gravelly sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | | | | 0.30 | 23.38 | | Reddish brown gravelly fine to medium SAND. Gravel is fine to medium sub rounded of mudstone and sandstone. |
| | | | | | | | Greyish dark brown slightly gravelly clayey fine to medium SAND. Gravel is fine to medium sub rounded of mudstone and sandstone. |
| | | | | 1.50 | 22.18 | | Stiff high strength brown sandy CLAY. |
| | 1.60 | HVP | 108 | | | | |
| | 1.70 | HVP | 116 | | | | |
| | | | | 1.80 | 21.88 | | Brown slightly gravelly fine to medium SAND. |
| | | | | 2.80 | 20.88 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP150



TP150 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP151/ SA105
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341187.38 - 398470.60<br>Level: 26.45 | Date 11/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 × 0.60<br>Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 26.25 | | MADE GROUND: Brown slightly gravelly very sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| | | | | 1.00 | 25.45 | | MADE GROUND: Blackish brown slightly clayey gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, ash, sandstone, brick, glass and metal. |
| | 1.20 | HVP | 60 | | | | Firm medium strength reddish grey slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | | | 2.20 | 24.25 | | Reddish grey fine to coarse SAND. (Weathered bedrock). |
| | | | | 2.70 | 23.75 | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP151



TP151 SPOIL

Remarks: 1. Complete. 2. Soakaway test complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP152
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341145.86 - 398616.37<br>Level: 23.87 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 0.80<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.25 | 23.62 | | MADE GROUND: Dark grey slightly clayey very gravelly fine to medium sand with cobbles. Gravel is fine to coarse, angular to subrounded of brick. Cobbles are sub angular of brick. |
| | 0.50 | B | | | | | Brown gravelly fine to medium SAND with frequent and occasional cobbles. Gravel is fine to coarse, subrounded to rounded of sandstone. Cobbles are sub rounded of sandstone. |
| | 0.80 | ES | | | | | |
| | | | | 2.10 | 21.77 | | Reddish brown clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| ▼ 2.40 | | | | 2.40 | 21.47 | | Firm medium strength light brown sandy CLAY. |
| | | | | 2.60 | 21.27 | | Reddish brown clayey gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | | | 3.00 | 20.87 | | End of Pit at 3.00m |

1 2 3 4

## Trial Pit Photographs



TP152



TP152 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 2.40 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP153
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341171.08 - 398477.80<br>Level: 26.36 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 26.16 | | MADE GROUND: Dark brown slightly gravelly clayey fine to medium sand with rootlets. (Topsoil). |
| ▼ 0.50 | | | | 0.80 | 25.56 | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. |
| | | | | 1.50 | 24.86 | | MADE GROUND: Brownish black slightly clayey sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, brick, glass, plastic, metal and ceramic. Cobbles are angular to sub angular brick and glass. |
| | 2.00 | HVP | 29 | 2.70 | 23.66 | | Reddish grey slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. Slight organic odour. |
| | | | | | | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP153



TP153 SPOIL

Remarks: 1. Complete. 2. Water strike at 0.50 m bgl. Fast ingress.

Stability: Unstable

# Trial Pit Log

TrialPit No: TP154
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341182.27 - 398566.21<br>Level: 25.03 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.60 × 0.70<br>Depth 3.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 24.83 | | MADE GROUND: Dark grey slightly clayey gravelly fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. |
| | | | | 0.50 | 24.53 | | MADE GROUND: Grey gravel. Gravel is fine sub rounded to rounded of limestone (sub-base). |
| | 0.70 | ES | | | | | MADE GROUND: Brown gravelly clayey fine to medium sand. Gravel is fine to coarse, angular to rounded of brick glass, bottles metal and sandstone. |
| | | | | 2.40 | 22.63 | | Brown slightly gravelly clayey fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| 2.90 ▼ | 3.00 | HVP | 69 | 3.00 | 22.03 | | Firm medium strength greyish brown sandy CLAY |
| | 3.20 | HVP | 70 | | | | |
| | | | | 3.40 | 21.63 | | End of Pit at 3.40m |

1 2 3 4

## Trial Pit Photographs



TP154



TP154 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 2.90 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP155
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341166.12 - 398506.04<br>Level: 26.15 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.95 | | MADE GROUND: Dark brown slightly gravelly clayey fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| | | | | | | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. |
| 0.80 | | | | 0.80 | 25.35 | | |
| | 1.00 | ES | | | | | MADE GROUND: Brownish black slightly clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, glass, ceramic, plastic and metal. |
| | 1.70 | HVP | 103 | 1.70 | 24.45 | | Stiff high strength reddish brown slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | 2.10 | HVP | 119 | | | | |
| | | | | 2.50 | 23.65 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP155



TP155 SPOIL

Remarks: 1. Terminated due to instability. 2. Fast water strike at 0.80 m bgl.

Stability: Unstable

# Trial Pit Log

TrialPit No: TP156
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341185.77 - 398522.59<br>Level: 25.46 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 × 0.70<br>Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.16 | | MADE GROUND: Dark grey gravelly fine to medium sand with frequent rootlets. Gravel is fine, angular to subrounded of brick. (Topsoil) |
| | | | | 1.00 | 24.46 | | MADE GROUND: Dark grey slightly clayey gravelly fine to medium sand. Gravel is fine to coarse, angular to rounded of brick, glass, bottles, pipe and metal |
| | 1.30 | HVP | 103 | | | | Stiff high strength light brown slightly sandy CLAY. |
| | 1.80 | HVP | 115 | | | | |
| | 2.20 | HVP | 103 | | | | |
| ▼ 2.70 | | | | 2.70 | 22.76 | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP156



TP156 SPOIL

Remarks: 1. Complete. 2. Very slow water ingress at 2.70 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP157
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341147.77 - 398495.38<br>Level: 26.42 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 26.12 | | MADE GROUND: Dark brown gravelly clayey fine to medium sand with rootlets. Gravel is fine to medium angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | | | MADE GROUND: Brownish black slightly clayey sandy gravel with cobbles. Gravel is fine to coarse angular to sub angular of mudstone, sandstone, brick, ash, glass, ceramic and plastic. Cobbles are angular to sub angular of glass and brick. |
| | 1.70<br>1.70 | ES<br>HVP | 73 | 1.50 | 24.92 | | Firm medium strength grey slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | | | 2.10 | 24.32 | | Soft reddish grey slightly gravelly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | | | 2.50 | 23.92 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP157



TP157 SPOIL

Remarks: 1. Complete. 2. Unable to complete hand shear vain tests due to high sand content in CLAY 2.10-2.50 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP158 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341149.17 - 398545.99 Level: 25.06 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.70 Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | | | | 0.30 | 24.76 | | MADE GROUND: Dark grey gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | 0.50<br>0.60 | HVP<br>ES | 86 | | | | Stiff high strength brown slightly sandy CLAY. |
| | 1.00 | HVP | 99 | | | | |
| | 1.50 | HVP | 82 | | | | |
| | 2.00 | HVP | 79 | | | | |
| | | | | 2.10 | 22.96 | | Stiff high strength brown slightly gravelly sandy CLAY. |
| | 2.50 | HVP | 100 | | | | |
| | | | | 2.90 | 22.16 | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP158



TP158 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP159
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341116.73 - 398462.62<br>Level: 26.20 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | | | | MADE GROUND: Brown slightly gravelly clayey fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and ceramic. (Topsoil). |
| | | | | 0.80 | 25.40 | | Greyish light brown very sandy CLAY. |
| | 1.50<br>1.50 | B<br>HVP | 122 | 1.40 | 24.80 | | Stiff high strength grey mottled orange slightly sandy CLAY with sand lenses. |
| | | | | 2.50 | 23.70 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP159



TP159 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP160 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341134.97 - 398558.27 Level: 24.87 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.80 Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.30 | ES | | 0.40 | 24.46 | | MADE GROUND: Dark grey gravelly fine to medium sand. Gravel is fine to coarse, angular to rounded of brick, glass, bottles, metal and concrete. (Topsoil). |
| ▼ 0.50 | | | | 0.60 | 24.26 | | MADE GROUND: Grey gravel. Gravel is fine angular to subrounded gravel of limestone. |
| | 0.80 | HVP | 53 | | | | Firm, medium strength brown slightly sandy CLAY. |
| | 1.50 | HVP | 54 | | | | |
| | 2.00 | HVP | 63 | | | | |
| | | | | 2.90 | 21.96 | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP160



TP160 SPOIL

Remarks: 1. Complete. 2. Rapid water ingress at 0.50 m bgl (perched water within Made Ground).

Stability: Stable

# Trial Pit Log

TrialPit No: TP161
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341121.34 - 398489.77<br>Level: 26.59 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.60 | 25.98 | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and ceramic. (Topsoil). |
| | 0.80 | ES | | | | | MADE GROUND: Brownish black sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, glass, ash, ceramic, timber. Cobbles are angular to sub angular of brick and glass. |
| ▼ 1.50 | 1.40 | HVP | 138 | 1.40 | 25.18 | | Stiff high strength grey mottled orange sandy CLAY. Becoming firm medium strength at 2.00 m bgl. |
| | 2.00 | HVP | 69 | 2.20 | 24.38 | | Grey mottled orange very clayey fine to medium SAND. |
| | | | | 2.80 | 23.78 | | Light brown slightly clayey fine to medium SAND. |
| | | | | 3.00 | 23.58 | | End of Pit at 3.00m |

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## Trial Pit Photographs



TP161



TP161 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 1.50 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP162 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341117.71 - 398597.19 Level: 24.46 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.70 Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | 0.10 | ES | | | | | MADE GROUND: Dark brown gravelly clayey fine to medium sand with frequent rootlets and cobbles. Gravel is fine to coarse, angular to rounded of brick and concrete. Cobbles are sub angular of brick and concrete. (Topsoil). |
| | 0.50 | HVP | 85 | 0.30 | 24.16 | | Stiff medium strength brown slightly sandy gravelly CLAY. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | 1.20 | HVP | 75 | 0.90 | 23.56 | | Stiff medium strength reddish brown slightly sandy CLAY. |
| | | | | 2.50 | 21.96 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP162



TP162 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP163/ SA106
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341022.86 - 398552.70<br>Level: 26.18 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 × 0.60<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | | | | Brown clayey fine to medium SAND with rootlets. (TOPSOIL). |
| | | | | 0.50 | 25.68 | | Brown very sandy CLAY. |
| | 1.10 | HVP | 84 | 1.10 | 25.08 | | Stiff high strength brownish red mottled grey sandy CLAY. |
| | 1.40 | B | | 1.40 | 24.78 | | Orangish light brown slightly gravelly slightly clayey fine to medium SAND. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | 2.00 | HVP | 31 | 2.00 | 24.18 | | Soft low strength grey mottled orange slightly sandy CLAY with black fine to medium sand lenses. |
| | 2.40 | HVP | 35 | 2.40 | 23.78 | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP163



TP163 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 2 m bgl. 3. Soakaway test completed.

Stability: Stable

# Trial Pit Log

TrialPit No: TP164
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341076.36 - 398640.61<br>Level: 23.94 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 x 0.70<br>Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.05 | 23.89 | | MADE GROUND: Asphalt |
| | | | | | | | MADE GROUND: Concrete |
| | | | | 0.20 | 23.74 | | |
| | 0.30 | ES | | 0.30 | 23.64 | | MADE GROUND: Orange gravel. Gravel is fine to coarse angular to subrounded gravel of brick. Brown fine to medium SAND. |
| | | | | 1.30 | 22.64 | | Firm medium strength reddish brown sandy CLAY. |
| | 1.50 | HVP | 46 | | | | |
| | 2.20 | HVP | 63 | | | | |
| | | | | 2.90 | 21.04 | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP164



TP164 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP165
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341146.03 - 398519.63<br>Level: 26.08 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.50 | ES | | 0.30 | 25.78 | | MADE GROUND: Brown slightly gravelly slightly clayey fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | | | MADE GROUND: Black slightly clayey sandy gravel with cobbles. Gravel is fine to coarse of mudstone, sandstone, brick, glass, ash, ceramic, plastic and metal. Cobbles are angular to sub angular of glass and brick. |
| | 1.40 | HVP | 75 | 1.40 | 24.68 | | Firm medium strength reddish grey sandy CLAY. Becoming stiff high strength at 1.80 m bgl. |
| | 1.80 | HVP | 106 | | | | |
| | 2.30 | HVP | 104 | | | | |
| | | | | 2.40 | 23.68 | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP165



TP165 spoil

Remarks: 1. Complete. 2. Slow water ingress at 1.50 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP166
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341153.22 - 398584.42<br>Level: 24.67 | Date 12/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 0.60 | 2.80 / 0.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.40 | ES | | 0.20 | 24.47 | | MADE GROUND: Brown gravel with cobbles. Gravel is fine to coarse angular to subrounded of brick and concrete, rebar and plastic. Cobbles are sub angular of concrete. (Topsoil). |
| | | | | 0.60 | 24.07 | | MADE GROUND: Dark brown sandy gravel. Gravel is fine to coarse angular to subrounded of brick and concrete. |
| | | | | | | | End of Pit at 0.60m |

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Remarks: 1. Terminated due to obstruction.

Stability: Stable

# Trial Pit Log

TrialPit No: TP167
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341109.65 - 398545.48<br>Level: 25.88 | Date 12/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.00 | 2.50 × 0.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.40 | 25.48 | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | 0.80 | B | | | | | MADE GROUND: Brownish black sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass, plastic and metal. Cobbles are angular to sub rounded of brick, glass and ceramic. |
| ▼ 1.50 | 1.50 | ES | | 2.00 | 23.88 | | End of Pit at 2.00m |

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## Trial Pit Photographs



TP167



TP167 SPOIL

Remarks: 1. Terminated due to instability. 2. Slow water ingress at 1.50 m bgl (perched water in Made Ground).

Stability: Unstable

# Trial Pit Log

TrialPit No: TP168
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341081.40 - 398606.07<br>Level: 24.60 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.90<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.03 | 24.57 | | MADE GROUND: Ceramic tiles. Recovered as gravel. Gravel is fine to coarse angular of ceramic. |
| | | | | 0.15 | 24.45 | | MADE GROUND: Concrete |
| | | | | 0.30 | 24.30 | | MADE GROUND: Reddish brown gravelly fine to coarse sand. Gravel is fine to coarse, angular to subrounded of brick. |
| | 0.50 | ES | | | | | Brown slightly clayey gravelly medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | 1.00 | HVP | 84 | 1.00 | 23.60 | | Stiff, high strength brown sandy CLAY. |
| | 1.50 | HVP | 85 | | | | |
| | 2.00 | HVP | 96 | | | | |
| | 2.50 | HVP | 92 | | | | |
| | 3.00 | HVP | 90 | 3.00 | 21.60 | | End of Pit at 3.00m |

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## Trial Pit Photographs



TP168



TP168 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP169
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341093.04 - 398532.93<br>Level: 26.19 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 25.89 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | 0.80 | ES | | | | | MADE GROUND: Brownish black sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass, plastic and metal. |
| ▼ 1.80 | | | | | | | |
| | | | | 2.40 | 23.79 | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP169



TP169 SPOIL

Remarks: 1. Terminated due to instability. 2. Fast water ingress at 1.50 m bgl (water strike).

Stability: Unstable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP170 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340948.07 - 398516.59 Level: 25.90 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.80 Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.70 | | MADE GROUND: Dark brown slightly clayey sandy gravel with frequent rootlets. Gravel is fine to coarse, subangular to subrounded of sandstone and brick. (Topsoil) |
| | 0.50 | ES | | | | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick, sandstone, glass, bottles, ash, metal, pipe, clinker and wood. |
| ▼ 0.90 | 1.00 | HVP | 55 | 0.90 | 25.00 | | Firm medium strength reddish brown slightly sandy CLAY. |
| | | | | 2.50 | 23.40 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP170



TP170 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 0.90 m bgl (seepage).

Stability: Unstable

# Trial Pit Log

TrialPit No: TP171
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341051.15 - 398497.94<br>Level: 26.42 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): Depth 2.50, 2.00 × 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.40 | 26.02 | | MADE GROUND: Brown slightly gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | 0.60 | HVP | 24 | | | | Soft low strength brown very sandy CLAY. |
| | 0.80 | HVP | 93 | 0.80 | 25.62 | | Stiff high strength grey mottled red sandy CLAY. Becoming firm medium strength 1.80 m bgl. |
| | 1.80 | HVP | 64 | | | | |
| | 2.00 | B | | | | | |
| | | | | 2.50 | 23.92 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP171



TP171 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP172 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340909.17 - 398522.81 Level: 25.76 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.00 x 0.80 Depth 0.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.46 | | MADE GROUND: Dark brown clayey sandy gravel with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick, sandstone, glass, bottles, metal, pipe, clinker and wood. (Topsoil) |
| | | | | 0.40 | 25.36 | | MADE GROUND: Concrete |
| | | | | | | | End of Pit at 0.40m |

## Trial Pit Photographs



TP172



TP172 SPOIL

Remarks: 1. Terminated due to concrete obstruction.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP173 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341041.96 - 398526.66 Level: 26.35 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 2.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | 0.50 | HVP | 62 | 0.50 | 25.85 | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic and glass. (Topsoil). |
| | 0.80 | ES | | 1.00 | 25.35 | | MADE GROUND: Firm brownish red slightly gravelly sandy clay. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. Lens of made ground at 1.00 m bgl. |
| | 1.80 | HVP | 48 | 2.00 | 24.35 | | Firm medium strength brownish red slightly gravelly sandy clay. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | | | | | | End of Pit at 2.00m |

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## Trial Pit Photographs



TP173



TP173 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP174
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340892.68 - 398529.05<br>Level: 25.87 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.00 x 0.80<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.50 | 25.37 | | MADE GROUND: Dark brown clayey gravelly medium to coarse sand with frequent rootlets. Gravel is fine to coarse angular to subrounded of brick, sandstone, glass, bottles, metal, pipe, clinker, ash and wood. (Topsoil) |
| | | | | 0.70 | 25.17 | | MADE GROUND: Concrete Slab |
| ▼ 0.90 | 0.90 | ES | | 1.00 | 24.87 | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick, sandstone, glass, bottles, ash, metal, pipe, clinker and wood. |
| | 1.20 | HVP | 103 | | | | Stiff, high strength brown sandy CLAY. |
| | | | | 2.50 | 23.37 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP174



TP174 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 0.90 m bgl (seepage).

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP175 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341076.62 - 398561.97 Level: 26.13 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60 Depth 1.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.83 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. |
| | | | | | | | MADE GROUND: Brownish black slightly clayey sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, glass, ceramic and plastic. Cobbles are angular to sub angular of brick and glass. |
| | | | | 1.30 | 24.83 | | MADE GROUND: Concrete. |
| | | | | 1.40 | 24.73 | | End of Pit at 1.40m |

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## Trial Pit Photographs



TP175



TP175 SPOIL

Remarks: 1. Terminated due to concrete obstruction.

Stability: Stable

# Trial Pit Log

TrialPit No: TP176
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340873.94 - 398536.63<br>Level: 25.93 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.20 x 0.80<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 25.72 | | MADE GROUND: Dark brown slightly clayey gravelly sand with frequent rootlets. Gravel is fine to coarse, subangular to subrounded of brick. (Topsoil) |
| | | | | 0.50 | 25.42 | | MADE GROUND: Dark brown slightly clayey sandy gravel. Gravel is fine to coarse, angular to subrounded of brick, sandstone, glass, bottles, ash, metal, pipe, clinker and wood. |
| | | | | 0.70 | 25.22 | | MADE GROUND: Concrete Slab |
| | | | | 1.00 | 24.92 | | MADE GROUND: Dark brown slightly clayey sandy gravel. Gravel is fine to coarse, angular to subrounded of brick, sandstone, glass, bottles, ash, metal, pipe, clinker and wood. |
| | 1.50 | HVP | 94 | | | | Stiff high strength dark brown sandy CLAY. |
| | | | | 2.50 | 23.42 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP176



TP176 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP177
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341053.18 - 398590.61<br>Level: 25.80 | Date 12/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.60 | 2.00 × 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 25.50 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | | | MADE GROUND: Blackish brown sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass and plastic. |
| ▼ 2.00 | 2.00 | ES | | | | | |
| | 2.20 | ES | | 2.20 | 23.60 | | Firm medium strength dark brown very sandy CLAY. |
| | 2.30 | HVP | 46 | | | | |
| | | | | 2.60 | 23.20 | | End of Pit at 2.60m |

1 2 3 4

## Trial Pit Photographs



TP177



TP177 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 2.00 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP178
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340852.41 - 398544.25<br>Level: 25.81 | Date 13/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.50 | 2.90 × 0.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.61 | | MADE GROUND: Dark brown slightly gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to rounded of brick. (Topsoil) |
| | 0.60 | ES | | | | | MADE GROUND: Dark brown slightly sandy clayey gravel. Gravel is of fine to coarse angular to subrounded of brick, glass, brick, metal, pipe, wood and concrete. |
| ▼ 1.20 | 1.20 | HVP | 99 | 1.00 | 24.81 | | Stiff, high strength dark brown slightly sandy CLAY |
| | | | | 2.50 | 23.31 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP178



TP178 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.20 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP179
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341032.49 - 398581.67<br>Level: 26.24 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 26.04 | | Brown sandy CLAY with rootlets. (TOPSOIL). |
| | 0.80 | HVP | 82 | 0.80 | 25.44 | | Greyish red clayey fine to medium SAND. |
| 1.60 | 1.40 | HVP | 196 | | | | Stiff high strength brownish red sandy CLAY. Circa 1.40 m bgl becomes very stiff very high strength. Circa 1.80 m bgl becomes stiff high strength. |
| | 1.80 | HVP | 85 | | | | |
| | | | | 2.20 | 24.04 | | End of Pit at 2.20m |

1 2 3 4

## Trial Pit Photographs



TP179



TP179 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 1.60 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP180 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340879.73 - 398560.00 Level: 26.02 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.20 x 0.80 Depth 1.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.50 | 25.52 | | MADE GROUND: Dark brown slightly clayey gravelly fine to coarse sand with frequent rootlets. Gravel is of fine to coarse, angular to subrounded of brick, concrete, glass, bottles, ash, metal, polystyrene, pipe, clinker and wood. |
| | | | | | | | MADE GROUND: Brown clayey gravel. Gravel is of fine to coarse, angular to subrounded of brick, glass, bottles, ash, metal, pipe, clinker and wood. |
| | 1.50 | ES | | 1.60 | 24.42 | | |
| ▼ 1.70 | 1.70 | HVP | 96 | | | | Stiff, high strength reddish brown slightly sandy CLAY. |
| | | | | 1.80 | 24.22 | | End of Pit at 1.80m |

1 2 3 4

## Trial Pit Photographs



TP180



TP180 SPOIL

Remarks: 1. Terminated due to water at 1.70 m bgl. 2. Water strike at 1.70 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP181
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341004.21 - 398575.26<br>Level: 26.44 | Date 12/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 26.14 | | Brown sandy CLAY with rootlets. (TOPSOIL). |
| | 0.50 | HVP | 51 | | | | Firm medium strength greyish red very sandy CLAY. |
| | 1.00 | HVP | 136 | 0.90 | 25.54 | | Stiff high strength reddish brown slightly sandy CLAY. Becoming firm medium strength at 2.00 m bgl. |
| | 1.20 | ES | | | | | |
| | 1.50 | HVP | 103 | | | | |
| ▼ 1.80 | | | | | | | |
| | 2.00 | HVP | 57 | | | | |
| | | | | 2.10 | 24.34 | | End of Pit at 2.10m |

## Trial Pit Photographs



TP181



TP181 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 1.80 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP182 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340900.53 - 398588.36 Level: 26.10 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.00 x 0.80 Depth 2.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.30 | ES | | | | | MADE GROUND: Dark brown slightly clayey gravelly sand with frequent rootlets. Gravel is of fine to coarse angular to subrounded of brick, concrete, glass, bottles, ash, metal, polystyrene, pipe, clinker and wood. |
| | | | | 0.60 | 25.50 | | MADE GROUND: Brown gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of brick. |
| ▼ 1.00 | | | | 1.00 | 25.10 | | Stiff high strength reddish brown slightly sandy CLAY. |
| | 1.20 | HVP | 95 | | | | |
| | | | | 2.10 | 24.00 | | End of Pit at 2.10m |

1 2 3 4

## Trial Pit Photographs



TP182



TP182 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.00 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP183
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340983.39 - 398583.46<br>Level: 26.32 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 0.50<br>Depth 2.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 26.02 | | MADE GROUND: Brown gravelly clayey fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | 0.40 | HVP | 112 | | | | Stiff high strength brownish grey slightly gravelly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. Becoming firm medium strength at 0.90 m bgl. |
| | 0.90 | HVP | 57 | | | | |
| 1.40 ▼ | | | | 1.30 | 25.02 | | Firm very sandy CLAY with lenses of fine to medium sand. |
| | | | | 2.10 | 24.22 | | End of Pit at 2.10m |

1 2 3 4

## Trial Pit Photographs



TP183



TP183 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 1.40 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP184
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340909.33 - 398550.94<br>Level: 26.04 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.70 x 0.70<br>Depth 1.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.50 | ES | | 0.60 | 25.44 | | MADE GROUND: Dark brown slightly clayey gravelly fine to coarse sand with frequent rootlets. Gravel is of fine to coarse, angular to subrounded of brick and concrete. (Topsoil) |
| ▼ 0.80 | | | | 0.80 | 25.24 | | MADE GROUND: Grey gravel. Gravel is fine to coarse subrounded to rounded of concrete. (Concrete foundation slab between 0.70-0.80m bgl.) |
| | 1.00 | B | | 1.10 | 24.94 | | Reddish brown sandy CLAY. |
| | 1.40 | HVP | 105 | | | | Stiff high strength dark brown slightly sandy CLAY. |
| | | | | 1.80 | 24.24 | | End of Pit at 1.80m |

## Trial Pit Photographs



TP184



TP184 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 0.80 m bgl (seepage). 3. Concrete foundation encountered 0.70-0.80 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP185
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340995.46 - 398536.66<br>Level: 26.34 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 26.14 | | MADE GROUND: Dark brown gravelly clayey fine to medium sand with rootlets. Gravel is fine to medium angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | 0.60 | 25.74 | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, glass and ceramic. |
| ▼ 0.70 | 0.70 | ES | | 1.00 | 25.34 | | Very soft brownish grey slightly gravelly very sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | | | 1.50 | 24.84 | | Brownish grey clayey fine to medium SAND. |
| | 1.80 | HVP | 43 | 2.50 | 23.84 | | Firm medium strength very sandy CLAY. |
| | | | | | | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP185



TP185 SPOIL

Remarks: 1. Complete. 2. Water strike at 0.70 m bgl. Fast ingress. 3. Unable to complete HSV test 0.60-1.00 and 1.80-2.50 m bgl due to high sand content in clay.

Stability: Unstable

# Trial Pit Log

TrialPit No: TP186
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340909.64 - 398578.62<br>Level: 26.07 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.00<br>Depth 2.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.87 | | MADE GROUND: Dark brown slightly clayey gravelly fine to coarse sand with frequent rootlets. Gravel is of fine to coarse, angular to subrounded of brick and concrete. |
| | 0.60 | ES | | | | | MADE GROUND: Dark brown slightly clayey gravelly fine to coarse sand with frequent rootlets. Gravel is of fine to coarse, angular to subrounded of brick, concrete glass, bottles, ash, metal, polystyrene, pipe, clinker and wood. |
| | | | | 1.20 | 24.87 | | MADE GROUND: Stiff reddish brown slightly sandy CLAY. Field drain encountered at 1.80 m bgl. |
| | 1.40 | HVP | 94 | | | | |
| ▼ 1.80 | 1.80 | HVP | 99 | 1.80 | 24.27 | | Stiff high strength reddish brown slightly sandy CLAY. |
| | | | | 2.00 | 24.07 | | End of Pit at 2.00m |

## Trial Pit Photographs



TP186



TP186 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.80 m bgl due to field drain encountered at 1.80 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP187
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340979.08 - 398515.47<br>Level: 26.10 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.80 | | MADE GROUND: Dark brown very gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and ceramic. (Topsoil). |
| | | | | | | | MADE GROUND: Brownish black sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic and glass. |
| | 1.00 | HVP | 76 | 1.00 | 25.10 | | Stiff high strength brown slightly gravelly sandy CLAY with lens of fine to coarse sand at 1.00 m bgl. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| ▼ 1.40 | | | | | | | |
| | 1.80 | HVP | 75 | 1.80 | 24.30 | | Stiff high strength greyish red slightly sandy CLAY. Circa 2.10 m bgl becomes firm medium strength. |
| | 2.10 | HVP | 62 | | | | |
| | | | | 2.80 | 23.30 | | End of Pit at 2.80m |

1 2 3 4

## Trial Pit Photographs



TP187



TP187 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 1.40 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP188
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341340.61 - 398522.08<br>Level: 25.70 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.65<br>Depth 3.45 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.05 | 25.65 | | MADE GROUND: Asphalt |
| | 0.20 | ES | | 0.30 | 25.40 | | MADE GROUND: Brown very sandy gravel. Gravel is fine to coarse angular to subrounded of sandstone and brick. |
| | | | | 0.85 | 24.85 | | Light brownish grey slightly gravelly fine to medium SAND. Gravel is fine to coarse, angular to subrounded of sandstone. |
| | 1.00 | HVP | 81 | | | | Stiff high strength brown slightly gravelly sandy CLAY. Circa 1.50 m bgl becomes firm medium strength. |
| | 1.50 | HVP | 72 | | | | |
| | 2.00 | HVP | 72 | | | | |
| | 2.50 | HVP | 69 | | | | |
| ▼ 3.00 | | | | 2.90 | 22.80 | | Brown slightly gravelly fine to medium SAND. Gravel is fine to medium, angular to rounded of sandstone. |
| | | | | 3.45 | 22.25 | | End of Pit at 3.45m |

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## Trial Pit Photographs



TP188



TP188 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 3.00 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP189
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340977.10 - 398638.28<br>Level: 26.10 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.80 | | MADE GROUND: Brown gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | 1.00 | 25.10 | | MADE GROUND: Brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. Cobbles are sub angular to sub rounded of brick. |
| | 1.80 | B | | 2.30 | 23.80 | | Greyish brown slightly gravelly slightly clayey fine to medium SAND. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | | | | | | | End of Pit at 2.30m |

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## Trial Pit Photographs



TP189



TP189 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP190
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341325.85 - 398501.25<br>Level: 25.94 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.20 x 0.60<br>Depth 3.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.15 | 25.78 | | MADE GROUND: Concrete with rebar. |
| | 0.30 | ES | | 0.50 | 25.44 | | MADE GROUND: Dark brownish black very gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick, sandstone, glass, bottles, metal, pipe, ash, clinker and wood. |
| | | | | 1.10 | 24.84 | | Dark brown slightly gravelly fine to medium SAND. |
| | 1.50 | HVP | 74 | | | | Firm medium strength brown slightly gravelly sandy CLAY. Gravel is fine to medium sub rounded of mudstone. Circa 2.00 m bgl becomes stiff high strength. |
| | 2.00 | HVP | 76 | | | | |
| | 2.50 | HVP | 82 | | | | |
| | | | | 3.20 | 22.74 | | End of Pit at 3.20m |

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## Trial Pit Photographs



TP190 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP191
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340950.91 - 398623.41<br>Level: 26.33 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 26.02 | | MADE GROUND: Brown gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| 0.80 | 0.70<br>0.70 | ES<br>HVP | 73 | 0.70 | 25.62 | | MADE GROUND: Brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. Cobbles are sub angular to sub rounded of brick. |
| | 1.30 | HVP | 84 | | | | Firm medium strength brown slightly gravelly sandy CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. Becoming stiff high strength at 1.30 m bgl. |
| | 2.00 | HVP | 75 | 2.10 | 24.22 | | End of Pit at 2.10m |

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## Trial Pit Photographs



TP191



TP191 SPOIL

Remarks: 1. Complete. 2. Slow water seepage at 0.8 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP192 East
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341323.97 - 398477.53<br>Level: 25.88 | Date 24/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 0.80 | 2.50 / 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.68 | | MADE GROUND: Concrete |
| | | | | 0.21 | 25.67 | | MADE GROUND: Geomembrane |
| | 0.50 | ES | | | | | MADE GROUND: Reddish brown sandy gravel with frequent cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. |
| | | | | 0.60 | 25.28 | | MADE GROUND: Concrete with rebar. |
| | | | | 0.80 | 25.08 | | End of Pit at 0.80m |

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Remarks: 1. Terminated due to refusal on concrete obstruction at 0.80 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No TP192 West
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341323.97 - 398477.53<br>Level: 25.88 | Date 24/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 0.80 | 2.50 / 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 25.68 | | MADE GROUND: Concrete |
| | | | | 0.21 | 25.67 | | MADE GROUND: Geomembrane |
| | | | | 0.60 | 25.28 | | MADE GROUND: Reddish brown sandy gravel with frequent cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. |
| | | | | 0.80 | 25.08 | | MADE GROUND: Brownish black gravelly fine to medium sand. Gravel is fine to coarse sub angular to sub rounded of brick. |
| | | | | | | | End of Pit at 0.80m |

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Remarks: 1. Terminated due to refusal on concrete obstruction at 0.80 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP193
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340938.23 - 398639.36<br>Level: 26.15 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 1.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.50<br>0.50 | B<br>ES | | 0.25 | 25.90 | | MADE GROUND: Brown gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | | | MADE GROUND: Brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. Cobbles are sub angular to sub rounded of brick. |
| ▼ 1.00 | | | | 1.00 | 25.15 | | MADE GROUND: Brown sandy gravel with frequent cobbles. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. Cobbles are sub angular to sub rounded of sandstone and brick. |
| | | | | 1.50 | 24.65 | | End of Pit at 1.50m |

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## Trial Pit Photographs



TP193



TP193 SPOIL

Remarks: 1. Terminated due to instability and fast water ingress 2. Water strike at 1.00 m bgl (perched water within Made Ground).

Stability: Unstable

# Trial Pit Log

TrialPit No: TP194
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341319.50 - 398443.95<br>Level: 25.97 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60, Depth 3.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.15 | 25.82 | | MADE GROUND: Concrete |
| | | | | 0.16 | 25.81 | | MADE GROUND: Geomembrane |
| | | | | | | | MADE GROUND: Reddish black very sandy gravel. Gravel is fine to coarse angular to subrounded of brick, clinker, glass, metal, ash and pipe. |
| | | | | 0.60 | 25.37 | | MADE GROUND: Black very sandy gravel. Gravel is fine to coarse angular to subrounded of brick, clinker, glass, bottles, metal, ash, pipe and concrete |
| | 0.80 | ES | | | | | |
| | | | | 1.10 | 24.87 | | Stiff high strength slightly gravelly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of sandstone. Circa 2.20 m bgl becomes firm medium strength. |
| | 1.30 | HVP | 84 | | | | |
| | 1.80 | HVP | 82 | | | | |
| | 2.20 | HVP | 72 | | | | |
| | 2.80 | HVP | 53 | | | | |
| | 3.20 | HVP | 53 | | | | |
| | | | | 3.30 | 22.67 | | End of Pit at 3.30m |

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## Trial Pit Photographs



TP194 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP195
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340917.03 - 398651.92<br>Level: 26.09 | Date 13/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 0.80 | 2.00 × 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 25.79 | | MADE GROUND: Brown slightly clayey very gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, plastic and ceramic. (Topsoil). |
| | | | | 0.80 | 25.29 | | MADE GROUND: Brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic, plastic and metal. Cobbles are sub angular of brick. |
| | | | | | | | End of Pit at 0.80m |

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## Trial Pit Photographs



TP195



TP195 SPOIL

Remarks: 1. Terminated as electrical cable encountered at 0.60 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP196
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341340.87 - 398436.20<br>Level: 25.89 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.30 x 0.60<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.15 | 25.74 | | MADE GROUND: Asphalt |
| | | | | 0.70 | 25.19 | | MADE GROUND: Dark grey very gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick, concrete and sandstone |
| ▼ 1.10 | 1.10 | ES | | 1.10 | 24.79 | | Brown slightly gravelly fine to medium SAND. |
| | 1.50 | HVP | 76 | | | | Stiff high strength brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to rounded of sandstone. Circa 2.50 m bgl becomes firm medium strength. |
| | 2.00 | HVP | 76 | | | | |
| | 2.50 | HVP | 72 | | | | |
| | | | | 2.80 | 23.09 | | Brown fine to medium SAND. |
| | | | | 3.00 | 22.89 | | End of Pit at 3.00m |

1 2 3 4

## Trial Pit Photographs



TP196



TP196 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 1.10 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP197
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340950.03 - 398660.82<br>Level: 25.67 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 1.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | 25.57 | | MADE GROUND: Asphalt. |
| | | | | | | | MADE GROUND: Concrete. |
| | | | | 0.50 | 25.17 | | Light brown fine to medium SAND. |
| | 0.80 | ES | | | | | |
| | | | | 1.10 | 24.57 | | Light brown mottled grey clayey fine to medium SAND. |
| | | | | 1.20 | 24.47 | | Soft grey sandy CLAY. |
| | | | | 1.80 | 23.87 | | End of Pit at 1.80m |

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## Trial Pit Photographs



TP197



TP197 SPOIL

Remarks: 1. Complete. 2. Unable to complete HSV test in clay due to high sand content.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP198 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341289.79 - 398479.71 Level: 26.02 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.60 x 0.60 Depth 3.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | | | | MADE GROUND: Dark grey slightly gravelly fine to medium sand with frequent rootlets. Gravel is fine subrounded of brick. (Topsoil) |
| | | | | 1.20 | 24.82 | | Stiff high strength brown sandy CLAY. Circa 2.00 m bgl becomes firm medium strength. |
| | 1.50 | HVP | 85 | | | | |
| | 2.00 | HVP | 75 | | | | |
| | 2.50 | HVP | 66 | | | | |
| ▼ 3.00 | | | | 3.00 | 23.02 | | Brown slightly clayey fine to medium SAND |
| | | | | 3.20 | 22.82 | | End of Pit at 3.20m |

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## Trial Pit Photographs



TP198



TP198 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 3.0 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP199
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340907.68 - 398614.56<br>Level: 26.20 | Date 13/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 1.20 | 2.00 / 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.15 | 26.05 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| | | | | 0.30 | 25.90 | | MADE GROUND: Grey slightly clayey slightly sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and concrete. |
| ▼ 1.00 | | | | | | | MADE GROUND: Soft greyish brown very sandy clay with pocket of gravel at 0.50 to 1.00 m bgl. Gravel is fine to coarse angular to sub angular of ceramic. |
| | | | | 1.20 | 25.00 | | End of Pit at 1.20m |

1 2 3 4

## Trial Pit Photographs



TP199



TP199 SPOIL

Remarks: 1. Terminated as land drain encountered at 1.00 m bgl. 2. Fast water ingress at 1.00 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1100
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341311.78 - 398103.69<br>Level: 25.09 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | | | | MADE GROUND: Dark grey slightly gravelly fine to coarse sand with frequent rootlets and wood. Gravel is fine to coarse angular to subrounded of brick (Topsoil) |
| | 0.50 | HVP | 62 | 0.50 | 24.59 | | Firm medium strength brown gravelly sandy CLAY. Gravel is fine to medium sub rounded of mudstone and sandstone. |
| | 1.00 | HVP | 72 | | | | |
| | 1.50 | HVP | 72 | | | | |
| ▼ 2.00 | | | | 2.00 | 23.09 | | Reddish brown slightly gravelly clayey fine to medium SAND. Gravel is fine to medium subrounded to rounded of sandstone. (Weathered bedrock). |
| | | | | 2.80 | 22.29 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP1100



TP1100 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 2.0 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No: TP1101
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340932.69 - 398616.63<br>Level: 26.38 | Date 13/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.60<br>Depth 2.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 26.18 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and ceramic. (Topsoil). |
| | | | | | | | MADE GROUND: Brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. Cobbles are sub angular to sub rounded of brick. |
| 0.90 | 0.90 | ES | | 0.90 | 25.48 | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to sub rounded of timber, ash, textiles and plastic. Very strong hydrogen sulphide odour (buried bag). |
| | 1.30 | ES | | 1.30 | 25.08 | | Light brown slightly clayey fine to medium SAND. |
| | | | | 2.30 | 24.08 | | End of Pit at 2.30m |

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## Trial Pit Photographs



TP1101



TP1101 SPOIL

Remarks: 1. Complete. 2. Perched water at 0.90 m bgl. 3. Very strong hydrogen sulphide odour at 0.90 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No TP1102/ SA111
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341328.38 - 398136.33<br>Level: 24.82 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.90 × 0.60<br>Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.40 | 24.42 | | MADE GROUND: Dark grey slightly gravelly fine to medium sand with frequent rootlets, wood and cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. (Topsoil). |
| | 0.50 | HVP | 59 | | | | Firm medium strength brown gravelly sandy CLAY. Gravel is fine to medium sub rounded of mudstone and sandstone. |
| | 0.80 | ES | | | | | |
| | 1.00 | HVP | 63 | | | | |
| | 1.50 | HVP | 64 | 1.50 | 23.32 | | Reddish brown slightly gravelly clayey fine to medium SAND. Gravel is fine to medium, subrounded to rounded of sandstone. (Weathered bedrock). |
| | | | | 2.50 | 22.32 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP1102



TP1102 SPOIL

Remarks: 1. Complete. 2. Soakaway test complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1103
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340959.41 - 398602.24 | Date 13/01/2022 |
| Location: Kirkby | | Level: 26.30 | Scale 1:30 |
| Client: BDW Trading | | Dimensions (m): Depth 2.00 (0.60 x 2.00) | Logged J.Beer |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | 0.10 | ES | | 0.20 | 26.10 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone, brick and glass. (Topsoil). |
| | | | | 0.30 | 26.00 | | MADE GROUND: Brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. Cobbles are sub angular to sub rounded of brick. |
| | | | | 0.40 | 25.90 | | MADE GROUND: Concrete. |
| | 0.80 | B | | | | | Soft brownish grey very sandy CLAY. |
| | | | | 1.00 | 25.30 | | Stiff high strength brown sandy CLAY. Becoming firm medium strength at 1.50 m bgl. |
| | 1.20 | HVP | 76 | | | | |
| | 1.50 | HVP | 63 | | | | |
| | | | | 2.00 | 24.30 | | End of Pit at 2.00m |

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## Trial Pit Photographs



TP1103 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP1104 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341303.64 - 398148.44 Level: 24.92 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60 Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.50 | ES | | | | | MADE GROUND: Dark grey gravelly very sandy clay with frequent rootlets, wood and cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. (Topsoil) |
| | 0.80 | B | | | | | |
| | 1.00 | HVP | 49 | 1.00 | 23.92 | | Firm medium strength brown gravelly sandy CLAY. Gravel is fine to medium sub rounded of mudstone and sandstone. |
| | | | | 1.30 | 23.62 | | Reddish brown slightly clayey gravelly fine to medium SAND. Gravel is fine to medium, subrounded to rounded of sandstone. (Weathered bedrock). |
| | | | | 3.00 | 21.92 | | End of Pit at 3.00m |

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## Trial Pit Photographs



TP1104



TP1104 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP1105A Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340888.38 - 398601.24 Level: 25.96 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20 Depth 1.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.40 | 25.56 | | MADE GROUND: Brown slightly gravelly very sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | 0.60 | 25.36 | | MADE GROUND: Greyish red gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of sandstone and brick. |
| | | | | 1.40 | 24.56 | | MADE GROUND: Greyish brown slightly gravelly very sandy clay. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | | | | | | | End of Pit at 1.40m |

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## Trial Pit Photographs



TP1105A



TP1105A SPOIL

Remarks: 1.Terminated due to land drain encountered on side of pit at 1.40 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1105B/SA108
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340893.12 - 398609.28<br>Level: 26.27 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.90 x 1.20<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.40 | 25.87 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of brick. (Topsoil). |
| | | | | 0.90 | 25.37 | | Light brown gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of sandstone, brick and concrete. Cobbles are sub angular of concrete. |
| | 1.40 | HVP | 60 | 1.40 | 24.87 | | Reddish light brown slightly clayey fine to medium SAND. |
| | 2.00 | HVP | 88 | 2.40 | 23.87 | | Firm medium strength greyish red sandy CLAY. Becoming stiff high strength at 2.00 m bgl. |
| | | | | | | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP1105B



TP1105B SPOIL

Remarks: 1. Complete. 2. Soakaway test completed.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1106
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341318.04 - 398161.55<br>Level: 25.25 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 × 0.60<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.35 | 24.90 | | MADE GROUND: Dark grey gravelly very sandy clay with frequent rootlets, wood and cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. (Topsoil) |
| | 0.50 | HVP | 59 | | | | Firm medium strength brown gravelly sandy CLAY. Gravel is fine to medium sub rounded of mudstone and sandstone. |
| | 1.00 | HVP | 57 | | | | |
| | 1.50 | HVP | 60 | 1.50 | 23.75 | | Brown slightly gravelly clayey fine to medium SAND. Gravel is fine to medium sub rounded of sandstone. |
| ▼ 2.00 | | | | 2.30 | 22.95 | | Reddish brown slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse subrounded to rounded of sandstone. (Weathered bedrock). |
| | | | | 3.00 | 22.25 | | End of Pit at 3.00m |

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## Trial Pit Photographs



TP1106



TP1106 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 2.0 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No TP1107/ SA109
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340939.92 - 398576.81<br>Level: 26.37 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.10 x 1.20<br>Depth 2.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | | | | 0.30 | 26.07 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of brick. (Topsoil). |
| | 0.60 | ES | | 0.70 | 25.67 | | MADE GROUND: Red gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and ceramic. |
| | | | | 0.90 | 25.47 | | MADE GROUND: Very stiff black slightly gravelly slightly sandy clay. Gravel is fine of ash |
| | 1.20 | HVP | 50 | 1.20 | 25.17 | | Greyish brown slightly clayey fine to medium SAND. |
| | 1.60 | HVP | 119 | | | | Firm medium strength greyish red slightly sandy CLAY. Becoming stiff high strength at 1.60 m bgl. |
| | 2.00 | HVP | 103 | | | | |
| | | | | 2.20 | 24.17 | | End of Pit at 2.20m |

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## Trial Pit Photographs



TP1107



TP1107 SPOIL

Remarks: 1. Complete. 2. Soakaway test completed.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP1108 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341272.90 - 398169.30 Level: 24.83 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60 Depth 2.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.25 | 24.58 | | MADE GROUND: Dark grey sandy clay with frequent rootlets. (Topsoil) |
| | | | | 0.30 | 24.53 | | MADE GROUND: Brown slightly gravelly sandy clay. Gravel is fine to medium sub rounded of mudstone. |
| | | | | 0.60 | 24.23 | | Firm medium strength brown slightly gravelly sandy CLAY. Gravel is fine to medium sub rounded of mudstone. |
| | 1.00 | HVP | 51 | | | | Firm medium strength brown sandy CLAY. |
| | 1.20 | B | | 1.20 | 23.63 | | Reddish brown slightly gravelly fine to medium SAND. Gravel is fine to coarse subrounded to rounded of sandstone. (Weathered bedrock). |
| | 1.20 | ES | | | | | |
| | | | | 2.60 | 22.23 | | End of Pit at 2.60m |

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## Trial Pit Photographs



TP1108



TP1108 SPOIL

Remarks: 1. Complete. 2. Redundant water pipe encountered at 0.30 m bgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1109
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341230.40 - 398254.87<br>Level: 24.83 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20<br>Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.40 | 24.43 | | MADE GROUND: Dark brown gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub round of mudstone and sandstone. (Topsoil). |
| | | | | 1.30 | 23.53 | | MADE GROUND: Dark brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and ceramic. Cobbles are sub angular to sub rounded of sandstone. |
| | | | | 2.30 | 22.53 | | Greyish brown very sandy CLAY. |
| | 2.50<br>2.50 | B<br>HVP | 114 | 2.90 | 21.93 | | Stiff high strength red sandy CLAY. |
| | | | | | | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP1109



TP1109 SPOIL

Remarks: 1. Complete. 2. Clay at 1.30 to 2.30 m bgl too sandy to complete hand shear vane test.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1110
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341279.40 - 398203.38<br>Level: 24.92 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.30 | ES | | 0.30 | 24.62 | | Brown slightly gravelly clayey SAND with frequent rootlets. Gravel is fine sub rounded of mudstone. (TOPSOIL) |
| | | | | 0.40 | 24.52 | | Firm reddish brown sandy CLAY. |
| | | | | 0.80 | 24.12 | | Dark grey slightly gravelly clayey fine to medium SAND with occasional cobbles. Gravel is fine to coarse subrounded to rounded of sandstone. Cobbles are sub rounded of sandstone. |
| | 1.00 | HVP | 53 | | | | Firm medium strength reddish brown slightly gravelly sandy CLAY. Gravel is fine to coarse subrounded to rounded of sandstone |
| | 1.50 | HVP | 56 | | | | |
| | 2.00 | HVP | 62 | | | | |
| | | | | 2.50 | 22.42 | | Reddish brown gravelly fine to medium SAND. Gravel is fine to coarse subrounded to rounded of sandstone. (Weathered bedrock). |
| | | | | 3.00 | 21.92 | | End of Pit at 3.00m |

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## Trial Pit Photographs



TP1110



TP1110 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1111
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341234.83 - 398234.67<br>Level: 24.93 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20<br>Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 24.73 | | MADE GROUND: Dark brown slightly gravelly very sandy CLAY with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| | 0.80 | ES | | | | | MADE GROUND: Brown sightly clayey gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic and concrete. Cobbles are sub angular of concrete. |
| | | | | 1.00 | 23.93 | | |
| | 1.20 | HVP | 112 | | | | Stiff high strength reddish brown mottled grey slightly gravelly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. Circa. 1.80 m bgl becomes firm medium strength. Circa. 2.50 m bgl becomes stiff high strength. |
| | 1.80 | HVP | 56 | | | | |
| | 2.50 | HVP | 119 | | | | |
| | | | | 2.70 | 22.23 | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP1111



TP1111 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP1112
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341321.69 - 398208.32<br>Level: 24.60 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.20 x 0.60<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.15 | 24.45 | | MADE GROUND: Dark grey clayey medium to coarse sand with frequent rootlets. (Topsoil) |
| | | | | 0.40 | 24.20 | | MADE GROUND: Dark grey slightly gravelly clayey fine to medium sand. Gravel is fine to coarse subrounded to rounded of sandstone and brick. |
| | 0.50 | HVP | 55 | | | | Firm medium strength yellowish brown sandy CLAY. |
| | 1.00 | ES | | | | | |
| | 1.00 | HVP | 56 | | | | |
| | | | | 1.25 | 23.35 | | Reddish brown gravelly fine to medium SAND. Gravel is fine to coarse, subrounded to rounded of sandstone. (Weathered bedrock). |
| | | | | 3.00 | 21.60 | | End of Pit at 3.00m |

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## Trial Pit Photographs



TP1112



TP1112 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1113
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341142.09 - 398118.84<br>Level: 23.89 | Date 24/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.50 | 1.20 × 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.40 | 23.49 | | MADE GROUND: Dark brown very gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone and brick. (Topsoil). |
| | 0.70 | HVP | 77 | 1.20 | 22.69 | | Stiff high strength light brown mottled grey sandy CLAY. |
| | | | | 2.50 | 21.39 | | Red fine to medium SAND. (Weathered bedrock). |
| | | | | | | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP1113



TP1113 SPOIL

Remarks: 1. Complete

Stability: Stable

# Trial Pit Log

TrialPit No: TP1114
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341355.06 - 398196.51<br>Level: 24.69 | Date 25/01/2022 |
| Location: Kirkby | Dimensions (m): Depth 2.80 | 3.50 / 0.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.35 | 24.34 | | MADE GROUND: Dark grey slightly sandy gravelly clay with frequent rootlets and cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. (Topsoil) |
| | 0.50 | HVP | 58 | | | | Firm medium strength brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | 1.00 | HVP | 62 | | | | |
| | 1.50 | HVP | 61 | | | | |
| | 2.00 | HVP | 61 | | | | |
| ▼ 2.60 | 2.50 | HVP | 60 | 2.80 | 21.89 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP1114



TP1114 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 2.6 m bgl (seepage).

Stability: Stable

# Trial Pit Log

TrialPit No TP1115
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341218.37 - 398121.03<br>Level: 24.42 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20<br>Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 24.12 | | MADE GROUND: Brown slightly clayey fine to medium sand with rootlets and roots. (Topsoil). |
| ▼ 0.60 | | | | | | | MADE GROUND: Brown gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of sandstone, brick, plastic and concrete. Cobbles are sub angular of brick. |
| | | | | 1.20 | 23.22 | | Firm medium strength brown mottled grey sandy CLAY. |
| | 1.50<br>1.50 | ES<br>HVP | 59 | 1.60 | 22.82 | | Red gravelly fine to medium SAND. Gravel is fine to medium sub angular to sub rounded of mudstone. (Weathered bedrock). |
| | | | | 2.70 | 21.72 | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP1115



TP1115 SPOIL

Remarks: 1. Complete. 2. Water strike at 0.60 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP1116 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341370.91 - 398253.82 Level: 24.31 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 3.00 x 0.65 Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.15 | ES | | 0.10<br>0.20 | 24.21<br>24.11 | | MADE GROUND: Dark grey gravelly fine to medium sand with frequent rootlets. Gravel is fine to coarse angular to subrounded of brick and clinker. (Topsoil) |
| | | | | | | | MADE GROUND: Black sandy gravel. Gravel is fine to medium angular to subrounded gravel of ash and brick |
| 0.60 | | | | 0.60 | 23.71 | | Light brown slightly gravelly fine to medium SAND. Gravel is fine to coarse, angular to subrounded of sandstone. |
| | 0.80 | HVP | 41 | | | | Firm medium strength brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. Circa 1.70 m bgl becomes soft low strength. |
| | 1.30 | HVP | 49 | | | | |
| 1.70 | 1.70 | HVP | 37 | 1.70 | 22.61 | | Brown slightly gravelly clayey fine to medium SAND. Gravel is fine to medium sub rounded of sandstone. |
| | | | | 2.50 | 21.81 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP1116



TP1116 SPOIL

Remarks: 1. Complete. 2. Perched water encountered at 0.60 bgl 3. Slow water ingress at 1.7 m bgl due to running sand present at 1.70m bgl

Stability: Unstable within sand

# Trial Pit Log

TrialPit No: TP1117
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341266.89 - 398087.47<br>Level: 24.23 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20<br>Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | 24.03 | | MADE GROUND: Brown slightly gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone. (Topsoil). |
| | 0.40 | ES | | | | | MADE GROUND: Reddish light brown gravelly sandy clay with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. Cobbles are sub angular of brick. |
| | 0.80 | HVP | 75 | 0.80 | 23.43 | | Stiff high strength reddish grey slightly gravelly sandy CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone. |
| | 1.10 | HVP | 84 | | | | |
| | | | | 1.20 | 23.03 | | Red fine to medium SAND. (Weathered bedrock). |
| | 1.50 | B | | | | | |
| | | | | 2.40 | 21.83 | | End of Pit at 2.40m |

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## Trial Pit Photographs



TP1117



TP1117 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1118
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341352.64 - 398257.28<br>Level: 24.22 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | 24.12 | | MADE GROUND: Dark grey slightly clayey fine to medium sand with frequent rootlets. (Topsoil) |
| | | | | 0.15 | 24.07 | | MADE GROUND: Reddish brown sandy gravel with frequent cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. |
| | | | | 0.35 | 23.87 | | MADE GROUND: Dark grey slightly clayey gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick. |
| | 0.70 | ES | | | | | |
| | 0.80 | HVP | 57 | 0.80 | 23.42 | | MADE GROUND: Dark grey slightly clayey gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick. |
| | | | | | | | Firm medium strength brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | 1.50 | HVP | 62 | | | | |
| | 2.00 | HVP | 64 | | | | |
| | 2.50 | HVP | 62 | | | | |
| | | | | 2.80 | 21.42 | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP1118



TP1118 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1119
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341289.43 - 398062.46 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20 | Scale 1:30 |
| Client: BDW Trading | | Depth 2.60 | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.20 | 24.23 | | MADE GROUND: Brown gravelly sandy clay with rootlets and roots. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | 0.80 | 23.63 | | MADE GROUND: Light brown slightly clayey gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and concrete. Cobbles are sub angular of brick. |
| | 1.00<br>1.00 | B<br>HVP | 61 | | | | Firm medium strength reddish light brown very sandy CLAY. |
| | 1.50 | HVP | 44 | | | | |
| ▼ 1.80 | | | | 1.70 | 22.73 | | Red fine to medium SAND. (Weathered bedrock). |
| | | | | 2.60 | 21.83 | | End of Pit at 2.60m |

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## Trial Pit Photographs



TP1119



TP1119 SPOIL

Remarks: 1. Complete. 2. Water strike at 1.80 m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP1120 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341298.14 - 398252.44 Level: 24.41 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60 Depth 2.50 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.10 | 24.31 | | MADE GROUND: Dark brown slightly clayey gravelly sand with frequent rootlets. Gravel is fine to coarse angular to subrounded of brick (Topsoil) |
| | | | | 0.15 | 24.26 | | |
| | | | | 0.30 | 24.11 | | MADE GROUND: Orangish brown fine to medium sand. |
| | | | | 0.40 | 24.01 | | MADE GROUND: Dark brown sandy gravel with cobbles. Gravel is fine to coarse angular to subrounded of brick, mudstone and plastic. Cobbles are sub angular of brick. |
| | | | | | | | MADE GROUND: Concrete |
| | | | | | | | Yellowish light brown fine to medium SAND |
| | | | | 1.40 | 23.01 | | |
| | 1.50 | HVP | 50 | | | | Firm medium strength slightly sandy CLAY. Circa 2.50 m bgl becomes stiff high strength. |
| | 2.00 | HVP | 64 | | | | |
| | 2.50 | HVP | 86 | 2.50 | 21.91 | | End of Pit at 2.50m |

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## Trial Pit Photographs



TP1120



TP1120 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP1121 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341310.57 - 398043.69 Level: 24.90 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20 Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | 0.10 | ES | | | | | Dark brown slightly clayey fine to medium SAND with rootlets. (Topsoil). |
| | | | | 0.70 | 24.20 | | |
| | 1.00 | HVP | 67 | | | | Firm medium strength reddish brown sandy CLAY. Becoming stiff high strength circa. 1.50 m bgl. |
| | 1.50 | HVP | 77 | | | | |
| | | | | 1.80 | 23.10 | | Red fine to medium SAND. (Weathered bedrock). |
| | | | | 3.00 | 21.90 | | End of Pit at 3.00m |

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## Trial Pit Photographs



TP1121



TP1121 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1122
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341287.91 - 398258.01<br>Level: 24.41 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60<br>Depth 2.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.20 | ES | | 0.15 | 24.26 | | MADE GROUND: Reddish brown gravelly fine to medium sand with frequent rootlets. Gravel is fine to coarse subangular to subrounded of brick and mudstone. (Topsoil) |
| | | | | 0.50 | 23.91 | | MADE GROUND: Dark brown gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to subrounded of brick, concrete, clinker and plastic. Cobbles are angular to sub angular of brick and concrete. Orangish brown fine to medium SAND. |
| | 1.60 | HVP | 80 | 1.60 | 22.81 | | Firm medium strength reddish brown slightly sandy CLAY. |
| | 2.00 | HVP | 68 | | | | |
| | 2.40 | HVP | 45 | 2.40 | 22.01 | | Firm medium strength reddish brown sandy CLAY. |
| 2.80 ▼ | | | | 2.90 | 21.51 | | End of Pit at 2.90m |

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## Trial Pit Photographs



TP1122



TP1122 SPOIL

Remarks: 1. Complete. 2. Slow water ingress at 2.8 m bgl (seepage). 3. Unable to complete HSV 2.40-2.90 m bgl due to high sand content in clay.

Stability: Stable

# Trial Pit Log

TrialPit No TP1123
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341327.02 - 398069.92<br>Level: 25.04 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20<br>Depth 2.60 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.30 | 24.74 | | MADE GROUND: Brown slightly gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and brick. (Topsoil). |
| | | | | | | | MADE GROUND: Brown gravelly very sandy clay. Gravel is fine to coarse sub angular to sub rounded of mudstone and brick. |
| | 1.00 | ES | | 0.90 | 24.14 | | MADE GROUND: Very stiff black slightly gravelly clay. Gravel is sub angular of ash and brick. |
| | | | | 1.20 | 23.84 | | MADE GROUND: Very soft dark grey very sandy clay. |
| ▼ 2.00 | 2.00 | ES | | 2.00 | 23.04 | | Very soft dark grey very sandy CLAY. |
| | | | | 2.60 | 22.44 | | End of Pit at 2.60m |

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## Trial Pit Photographs



TP1123



TP1123 SPOIL

Remarks: 1. Terminated due to land drain encountered at 2.00 m bgl. 3. Clay at 1.20 m to 2.60 m bgl too sandy to complete hand shear vane test.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1124
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341281.56 - 398245.04<br>Level: 24.59 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 × 0.60<br>Depth 3.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged N.Gregory |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | 24.49 | | MADE GROUND: Dark grey slightly clayey gravelly fine to medium sand with frequent rootlets and wood. Gravel is fine to coarse subangular to subrounded of brick. (Topsoil) |
| | | | | 0.15 | 24.44 | | MADE GROUND: Red gravel. Gravel is fine to coarse angular to subrounded of brick. |
| ▼ 0.70 | 0.80 | HVP | 45 | 0.70 | 23.89 | | Dark grey slightly gravelly clayey fine to medium SAND. Gravel is fine to medium sub rounded of sandstone. |
| | 1.20 | ES | | | | | Firm medium strength brown slightly gravelly sandy CLAY |
| ▼ 1.70 | | | | 1.70 | 22.89 | | Light grey slightly clayey gravelly fine to medium SAND. Gravel is fine to coarse subangular to subrounded of sandstone. |
| | | | | 2.20 | 22.39 | | Red gravelly fine to medium SAND. Gravel is fine to coarse subrounded to rounded of sandstone. |
| | | | | 3.20 | 21.39 | | End of Pit at 3.20m |

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## Trial Pit Photographs



TP1124



TP1124 SPOIL

Remarks: 1. Complete. 2. perched water encountered at 0.70 bgl 3. Slow water ingress at 1.7 m bgl.

Stability: Slightly unstable

# Trial Pit Log

TrialPit No: TP1125
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341277.98 - 398115.45<br>Level: 24.53 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.50 x 1.20<br>Depth 2.70 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.10 | 24.43 | | MADE GROUND: Brownish black sandy gravel with woodchips. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone, brick and ceramic. (Topsoil). |
| | | | | 0.30 | 24.23 | | MADE GROUND: MADE GROUND: Brick layer. Recovered and sub rounded cobble of brick. |
| | | | | 0.70 | 23.83 | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone, brick, ash and concrete. |
| | 0.80 | HVP | 91 | | | | Stiff high strength reddish brown slightly sandy CLAY. |
| | 1.20 | HVP | 75 | | | | |
| | | | | 1.40 | 23.13 | | Red fine to medium SAND. |
| | | | | 2.70 | 21.83 | | End of Pit at 2.70m |

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## Trial Pit Photographs



TP1125



TP1125 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP1126
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341077.53 - 398293.89<br>Level: 24.00 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | 23.70 | | MADE GROUND: Brown clayey fine to medium sand with frequent rootlets. (Topsoil) |
| | | | | 0.90 | 23.10 | | MADE GROUND: Firm reddish brown gravelly sandy clay. Gravel is fine to coarse, angular to subrounded of mudstone, brick and glass. |
| | 1.50 | HVP | 53 | 1.50 | 22.50 | | MADE GROUND: Firm black slightly gravelly sandy clay. Gravel is fine sub angular to sub rounded of ash. |
| | | | | 2.00 | 22.00 | | Firm medium strength reddish brown sandy CLAY. |
| | | | | 2.80 | 21.20 | | Reddish brown clayey fine to medium SAND. (Weathered bedrock). |
| | | | | | | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP1126



TP1126 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

TrialPit No TP1127/ SA110
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341234.50 - 398146.26<br>Level: 24.58 | Date 24/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.20 x 1.20<br>Depth 2.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | 0.30<br>0.30 | B<br>ES | | 0.10 | 24.48 | | MADE GROUND: Brownish black sandy gravel with woodchips. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone, brick and ceramic. (Topsoil). |
| | 0.80 | HVP | 56 | 0.40 | 24.18 | | MADE GROUND: Dark brown slightly clayey gravelly fine to medium sand. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick.<br>Firm medium strength greyish light brown sandy CLAY. |
| | 1.30 | HVP | 94 | 1.20 | 23.38 | | Stiff high strength red slightly sandy CLAY. |
| | | | | 1.50 | 23.08 | | Red fine to medium SAND. (Weathered bedrock). |
| | | | | 2.20 | 22.38 | | End of Pit at 2.20m |

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## Trial Pit Photographs



TP1127



TP1127 SPOIL

Remarks: 1. Complete. 2. Soakaway test completed.

Stability: Stable

# Trial Pit Log

TrialPit No: TP1128
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341030.99 - 398320.74<br>Level: 23.72 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60<br>Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | 23.62 | | MADE GROUND: Brown gravelly very sandy clay with frequent rootlets. Gravel is fine to medium subrounded of brick. (Topsoil) |
| | 0.50 | ES | | 0.50 | 23.22 | | MADE GROUND: Greyish brown gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of mudstone, brick and ceramic. |
| | 1.80 | HVP | 55 | 1.80 | 21.92 | | MADE GROUND: Black sandy gravel with cobbles. Gravel is fine to coarse, angular to subrounded of mudstone, ash, brick, glass, ceramic, metal, clinker and plastic. Cobbles are angular to subangular of brick. Strong hydrocarbon odour at 0.80 m bgl. |
| | | | | 2.30 | 21.42 | | Firm medium strength brownish grey sandy CLAY. |
| | | | | 2.70 | 21.02 | | Firm reddish brown sandy CLAY. |
| | | | | 3.00 | 20.72 | | Reddish brown clayey fine to medium SAND. (Weathered bedrock). |
| | | | | | | | End of Pit at 3.00m |

1 2 3 4

## Trial Pit Photographs



TP1128



TP1128 SPOIL

Remarks: 1. Complete. 2. Very strong hydrocarbon odour at 0.80m bgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP1130 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341008.48 - 398329.46 Level: 23.54 | Date 25/01/2022 |
| Location: Kirkby | | Dimensions (m): 2.80 x 0.60 Depth 3.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged J.Beer |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | | | | 0.10 | 23.44 | | MADE GROUND: Brown slightly gravelly sandy clay with frequent rootlets. Gravel is fine to medium subrounded of brick. (Topsoil) |
| | | | | 0.70 | 22.84 | | MADE GROUND: Orangish brown slightly clayey slightly gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of mudstone, brick and ceramic. |
| | 2.60 | ES | | 2.50 | 21.04 | | MADE GROUND: Black sandy gravel with cobbles. Gravel is fine to coarse, angular to subrounded of mudstone, brick, ash, glass, ceramic, metal, clinker and plastic. Cobbles are angular to subangular of brick. |
| | | | | 3.00 | 20.54 | | Reddish brown very clayey fine to medium SAND. (Weathered bedrock). |
| | | | | | | | End of Pit at 3.00m |

1 2 3 4

## Trial Pit Photographs



TP1130



TP1130 SPOIL

Remarks: 1. Complete.

Stability: Stable

# Borehole Log

Borehole No. **WS101**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341120E - 398361N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.56 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.10 | 24.56 | | MADE GROUND: Brown slightly gravelly clayey fine to medium sand with rootlets. Gravel is fine sub angular to sub rounded of mudstone. (Topsoil). |
| | | 0.50 | ES | | | | | MADE GROUND: Black gravelly clayey fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, brick, ceramic and glass. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=1 (1,1/0,0,0,1) | | | | |
| | | | | | 1.50 | 24.46 | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to sub angular of mudstone, ash, brick and clinker. |
| | | 2.00 | D | | 2.00 | 23.06 | | Medium dense orangish grey clayey fine to medium SAND. |
| | | 2.00 | SPT | N=16 (2,3/3,4,4,5) | | | | |
| | | | | | 2.50 | 22.56 | | Firm reddish brown sandy CLAY. |
| | | 2.80 | PP | 29.43 | | | | |
| | | 3.00 | D | | 3.00 | 22.06 | | Dense red fine to medium SAND. (Weathered bedrock). |
| | | 3.00 | SPT | 50 (3,3/50 for 295mm) | | | | |
| | | | | | 3.30 | 21.56 | | End of Borehole at 3.30m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.3 m bgl. 2. Monitoring well installed. Response zone 0.50 to 2.00 m bgl.

# Borehole Log

Borehole No. **WS102**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340896E - 398153N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.51 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.15 | 23.51 | | MADE GROUND: Dark grey very sandy clay with frequent rootlets. (Topsoil) |
| | | | | | 0.50 | 23.36 | | MADE GROUND: Firm brown sandy gravelly clay. Gravel is fine to coarse angular to sub rounded of brick, metal, ash, clinker and wood. |
| | | 0.80 | ES | | | | | MADE GROUND: Firm brown slightly gravelly sandy clay. Gravel is fine, angular to subrounded of brick. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=4 (1,1/1,1,1,1) | | | | |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=7 (1,1/1,2,2,2) | 2.20 | 23.01 | | MADE GROUND: Dark brown to black gravelly clay. Gravel fine to coarse, subrounded to rounded of clinker. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | N=12 (2,2/3,3,3,3) | 3.10 | 21.31 | | Stiff medium strength reddish brown slightly sandy CLAY. Circa 4.00 m bgl becomes very stiff very high strength. (Weathered bedrock). |
| | | 4.00 | D | | | | | |
| | | 4.00 | SPT | N=50 (6,6/12,12,14,12) | | | | |
| | | | | | 4.45 | 20.41 | | End of Borehole at 4.45m |

Remarks

1. Terminated due to refusal on weathered bedrock at 4.45 m bgl. 2. Monitoring well installed. Response zone 1.00 to 3.00 m bgl.

# Borehole Log

Borehole No. **WS103**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341085E - 398343N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.10 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.20 | 24.10 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | | 0.60 | 23.90 | | MADE GROUND: Brown slightly gravelly sandy clay. Gravel is fine sub angular to sub rounded of mudstone and brick. |
| | | 0.80 | ES | | | | | |
| | | 1.00 | SPT | N=18 (1,2/5,5,4,4) | | | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, brick, ash, glass, ceramic and plastic. |
| | | | | | 1.70 | 23.50 | | MADE GROUND: Light brown mottled black gravelly clayey fine to medium sand. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | 2.00 | SPT | N=1 (0,0/0,0,0,1) | | | | |
| | | | | | 2.50 | 22.40 | | Very soft extremely low strength light brown gravelly sandy CLAY with timber. Gravel is fine to coarse angular to sub rounded of mudstone. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | N=0 (0,0/0,0,0,0) | | | | |
| | | | | | 3.50 | 21.60 | | Reddish brown sandy CLAY. |
| | | 4.00 | D | | 4.00 | 20.60 | | Loose dark brown fine to medium SAND. |
| | | 4.00 | SPT | N=5 (1,1/1,1,1,2) | | | | |
| | | | | | 4.50 | 20.10 | | Brown slightly sandy CLAY. |
| | | 4.80 | SPT | 50 (25 for 70mm/50 for 70mm) | 4.80 | 19.60 | | Dense red fine to medium SAND. (Weathered bedrock). |
| | | | | | 4.94 | 19.30 | | End of Borehole at 4.94m |

Remarks

1. Terminated due to refusal on weathered bedrock at 4.94 m bgl. 2. Collapse of well at 3.00 m bgl. 3. Monitoring well installed. Response zone 2.50 to 3.00 m bgl.

# Borehole Log

Borehole No. **WS104**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340878E - 398118N | Hole Type WS |
| Location: | Kirkby | | Level: | 20.78 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | ES | | 0.20 | 20.78 | | MADE GROUND: Dark grey very sandy clay with frequent rootlets. (Topsoil) |
| | | 1.00 | SPT | N=9 (2,2/2,2,3,2) | | | | MADE GROUND: Brown slightly gravelly clay. Gravel is fine to coarse, angular to subrounded of brick. |
| | | 2.00 | SPT | 50 (9,10/50 for 230mm) | 1.50 | 20.58 | | Dense brown very clayey fine to medium SAND. |
| | | | | | 2.38 | 19.28 | | End of Borehole at 2.38m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.38 m bgl.

# Borehole Log

Borehole No. **WS105**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341034E - 398385N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.96 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 23.96 | | MADE GROUND: Brown clayey fine to medium sand with rootlets. (Topsoil). |
| | | | | | 0.30 | 23.76 | | MADE GROUND: Grey gravel. Gravel is fine sub angular to sub rounded of limestone. |
| | | | | | 0.50 | 23.66 | | MADE GROUND: Brown gravelly sandy clay. Gravel is fine to coarse angular to sub rounded of mudstone, brick and plastic. |
| | | 1.00 | D | | | | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic and glass. |
| | | 1.00 | SPT | N=5 (1,1/0,2,2,1) | | | | |
| | | 1.50 | ES | | | | | |
| | | 1.80 | PP | 36.79 | 1.70 | 23.46 | | Soft very low strength reddish brown slightly gravelly CLAY. Gravel is fine sub angular to sub rounded of mudstone. |
| | 2.20 | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=4 (1,2/1,1,1,1) | | | | |
| | | | | | 2.70 | 22.26 | | Dense red fine to medium SAND. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | 50 (6,10/50 for 140mm) | | | | |
| | | | | | 3.29 | 21.26 | | End of Borehole at 3.29m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on weathered bedrock at 3.29 m bgl. 2. Monitoring well installed. Response zone 0.50 to 2.50 m bgl. 3. Water strike at 2.20 m bgl.

# Borehole Log

Borehole No. **WS106**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340909E - 398206N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.41 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.41 | | MADE GROUND: Dark grey clayey fine to medium sand with frequent rootlets. (Topsoil) |
| | | 0.50 | ES | | | | | MADE GROUND: Brown gravelly sandy clay. Gravel is fine to coarse, angular to subrounded of brick. |
| | | 1.00 | SPT | N=8 (2,2/2,2,2,2) | | | | |
| | | 2.00 | SPT | N=11 (1,2/3,3,3,2) | | | | |
| | | | | | 2.50 | 24.21 | | Stiff, medium strength brown sandy CLAY. |
| | | 3.00 | U | | | | | |
| | | 3.00 | SPT | N=13 (3,3/3,3,3,4) | | | | |
| | | | | | 3.70 | 21.91 | | Dense brown clayey fine to medium SAND. |
| | | 3.80 | SPT | 50 (10,11/50 for 155mm) | | | | |
| | | | | | 4.11 | 20.71 | | End of Borehole at 4.11m |

Remarks

1. Terminated due to refusal on dense sand at 4.11 m bgl. 2. Monitoring well installed. Response zone 1.00 to 3.00 m bgl.

# Borehole Log

Borehole No. **WS107**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340994E - 398415N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.11 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.11 | | MADE GROUND: Brown very sandy clay with rootlets. (Topsoil). |
| | | 0.50 | ES | | | | | MADE GROUND: Soft brown slightly gravelly sandy clay. Gravel is fine sub angular to sub rounded of mudstone and brick. |
| | | 0.80 | PP | 44.14 | 0.70 | 23.91 | | Stiff medium strength reddish brown slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=11 (1,2/3,2,3,3) | | | | |
| | | 1.50 | PP | 22.07 | | | | |
| | | | | | 1.60 | 23.41 | | Dense red fine to medium SAND. |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | 50 (6,7/50 for 290mm) | | | | |
| | | | | | 2.44 | 22.51 | | End of Borehole at 2.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.44 m bgl.

# Borehole Log

Borehole No. **WS108**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340907E - 398264N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.22 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.25 | 23.22 | | MADE GROUND: Dark grey sandy clay with frequent rootlets (Topsoil). |
| | | 1.00<br>1.00<br>1.20 | D<br>SPT<br>ES | N=20 (2,3/6,4,5,5) | | | | MADE GROUND: Brownish black gravelly sandy clay. Gravel is fine to coarse, angular to subrounded of brick, ash and clinker. |
| | 2.20 | 2.00<br>2.00 | D<br>SPT | N=0 (1,1/0,0,0,0) | | | | |
| | | 2.80<br>2.80 | D<br>SPT | 50 (25 for 75mm/50 for 30mm) | 2.91 | 22.98 | | End of Borehole at 2.91m |

Remarks

1. Terminated due to refusal within Made Ground at 2.91 m bgl. 2. Monitoring well installed. Response zone 0.80 to 2.80 m bgl. 3. Slow water strike at 2.20 m bgl.

# Borehole Log

Borehole No. **WS109**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340985E - 398349N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.38 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.20 | 23.38 | | MADE GROUND: Brown very sandy clay with rootlets. (Topsoil). |
| | | 0.80 | PP | 29.43 | | | | MADE GROUND: Reddish brown gravelly sandy clay. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. |
| | | 1.00 | SPT | N=6 (1,1/1,1,2,2) | 1.00 | 23.18 | | MADE GROUND: Brownish black slightly clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, glass and ceramic. Becoming very loose at 2.00 m bgl. |
| | | 2.00 | SPT | N=1 (0,0/1,0,0,0) | | | | |
| | | 3.00 | SPT | N=4 (1,1/1,1,1,1) | | | | |
| | 4.00 | 4.00 | SPT | N=1 (1,1/0,1,0,0) | | | | |
| | | | | | 4.50 | 22.38 | | Medium dense reddish brown slightly clayey fine to medium SAND. |
| | | 5.00 | D | | | | | |
| | | 5.00 | SPT | N=18 (2,4/4,4,5,5) | | | | |
| | | | | | 5.45 | 18.88 | | End of Borehole at 5.45m |

Remarks

1. Complete. 2. Water strike at 4.00 m bgl (perched water within Made Ground).

# Borehole Log

Borehole No. **WS110**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340947E - 398296N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.03 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.25 | 23.03 | | MADE GROUND: Dark grey sandy CLAY with frequent rootlets. (Topsoil) |
| | | 1.00<br>1.00<br>1.20 | D<br>SPT<br>ES | N=23 (1,2/6,5,5,7) | | | | Brown slightly gravelly sandy CLAY. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | | | | 1.25 | 22.78 | | Medium dense reddish brown silty fine to medium SAND. Circa 2.00 m bgl becomes dense. |
| | | 2.00 | SPT | 50 (6,9/50 for 230mm) | | | | |
| | | | | | 2.38 | 21.78 | | End of Borehole at 2.38m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.38 m bgl. 2. Monitoring well installed. Response zone 1.00 to 2.00 m bgl.

# Borehole Log

Borehole No. **WS111**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340945E - 398377N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.13 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.15 | 23.13 | | MADE GROUND: Brown sandy clay with rootlets. (Topsoil). |
| | | | | | 0.60 | 22.98 | | MADE GROUND: Reddish brown clayey gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, brick, ceramic and glass. |
| | | 1.00 | SPT | N=6 (1,1/1,1,2,2) | | | | MADE GROUND: Black clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, ash, sandstone, brick, ceramic, glass and metal. Poor recovery 0.60-2.00 m bgl. |
| | | 2.00 | SPT | N=5 (2,2/1,1,2,1) | | | | |
| | | 2.50 | ES | | | | | |
| | | 3.00 | SPT | N=23 (4,6/6,5,6,6) | | | | |
| | | 4.00 | SPT | N=4 (1,1/1,1,1,1) | | | | |
| | | 5.00 | SPT | N=19 (4,4/4,5,5,5) | | | | |
| | | | | | 5.45 | 22.53 | | End of Borehole at 5.45m |

Remarks

1. Complete. 2. Monitoring well installed. Response zone 0.50 to 3.00 m bgl.

# Borehole Log

Borehole No. **WS112**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341008E - 398278N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.26 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | ES | | 0.40 | 23.26 | | MADE GROUND: Dark grey slightly gravelly clayey medium to coarse sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of ash and clinker. (Topsoil) |
| | | 1.00<br>1.00 | D<br>SPT | N=4 (1,1/1,1,1,1) | | | | MADE GROUND: Black very gravelly clay. Gravel is fine to coarse, angular to subrounded of brick, ash and clinker. |
| | | 2.00<br>2.00 | D<br>SPT | N=12 (4,4/3,4,2,3) | 1.80 | 22.86 | | Stiff medium strength dark brown sandy CLAY. |
| | | 3.00 | SPT | 50 (8,13/50 for 160mm) | 2.30<br>3.10 | 21.46<br>20.96 | | Dense reddish brown clayey fine to medium SAND<br>End of Borehole at 3.10m |

Remarks

1. Terminated due to refusal on dense SAND at 3.1 m bgl.

# Borehole Log

Borehole No. **WS113**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340970E - 398462N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.43 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.15 | 24.43 | | Brown slightly sandy CLAY with rootlets. (TOPSOIL). |
| | | 0.50 | PP | 53.96 | | | | Stiff medium strength brownish red slightly gravelly CLAY. Gravel is fine sub rounded of mudstone. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=12 (2,3/2,4,3,3) | | | | |
| | | 1.50 | U | | | | | |
| | | 2.00 | D | | 2.00 | 24.28 | | Dense red fine to medium SAND. |
| | | 2.00 | SPT | 50 (3,4/50 for 290mm) | | | | |
| | | | | | 2.44 | 22.43 | | End of Borehole at 2.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.44 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.00 m bgl.

# Borehole Log

Borehole No. **WS114**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341056E - 398257N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.53 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 10/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | ES | | 0.20 | 23.53 | | MADE GROUND: Dark grey sandy clay with frequent rootlets. (Topsoil)<br>Brown sandy CLAY. |
| | | 1.00 | SPT | N=15 (2,2/3,3,4,5) | 1.10 | 23.33 | | Medium dense reddish brown clayey fine to medium SAND. Circa 2.00 m bgl becomes dense. |
| | | 2.00 | SPT | 50 (8,7/50 for 160mm) | 2.31 | 22.43 | | End of Borehole at 2.31m |

Remarks

1. Terminated due to refusal on dense sand at 2.31 m bgl. 2. Monitoring well installed. Response zone 1.00 to 2.00 m bgl.

# Borehole Log

Borehole No. **WS115**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341056E - 398438N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.65 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | U | | 0.50 | 24.65 | | Brown sandy CLAY with rootlets. (Topsoil). |
| | | 1.00 | D | | 1.00 | 24.15 | | Firm reddish brown slightly gravelly CLAY. Gravel is fine sub rounded of mudstone. |
| | | 1.00 | SPT | N=8 (2,2/2,2,2,2) | | | | Stiff medium strength brown silty CLAY. |
| | | 1.20 | PP | 17.17 | | | | |
| | | 1.50 | ES | | | | | |
| | | 2.00 | SPT | 50 (5,8/50 for 235mm) | 2.00 | 23.65 | | Dense red fine to medium SAND. |
| | | | | | 2.39 | 22.65 | | End of Borehole at 2.39m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.39 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.00 m bgl.

# Borehole Log

Borehole No. **WS116**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341078E - 398297N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.08 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.30 | 24.08 | | MADE GROUND: Dark grey slightly gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of brick. (Topsoil) |
| | | 0.50 | U | | | | | Firm medium strength light brown sandy CLAY. |
| | ▼ 1.00 | 1.00 | SPT | N=25 (2,3/4,8,8,5) | 1.00 | 23.78 | | Medium dense reddish brown clayey fine to medium SAND. Circa 2.00 m bgl becomes dense. |
| | | 2.00 | SPT | N=50 (4,5/12,13,14,11) | | | | |
| | | | | | 2.45 | 23.08 | | End of Borehole at 2.45m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on dense sand at 2.45 m bgl. 2. Slow water ingress at 1.00 m bgl (seepage).

# Borehole Log

Borehole No. **WS117**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341129E - 398422N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.89 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.20 | 24.89 | | MADE GROUND: Brown slightly gravelly sandy clay with rootlets. Gravel is fine sub angular to sub rounded of mudstone, sandstone and brick (Topsoil). |
| | | 0.80 | PP | 90.74 | | | | Very stiff high strength reddish brown mottled grey slightly gravelly CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=16 (3,3/4,4,4,4) | 1.40 | 24.69 | | Stiff medium strength reddish brown slightly gravelly silty CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | 2.00 | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=16 (2,3/3,4,4,5) | | | | |
| | | 2.20 | PP | 22.07 | 2.50 | 23.49 | | Firm slightly sandy gravelly CLAY. Gravel is fine to coarse sub angular to sub rounded of mudstone and sandstone. |
| | | 3.00 | SPT | 50 (10,10/50 for 280mm) | 2.80 | 22.39 | | Dense red fine to medium SAND. |
| | | | | | 3.43 | 22.09 | | End of Borehole at 3.43m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.43 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.50 m bgl. 3. Water strike at 2.00 m bgl.

# Borehole Log

Borehole No. **WS118**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341093E - 398266N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.94 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 23.94 | | MADE GROUND: Dark grey sandy clay with frequent rootlets. (Topsoil) |
| | | 0.60 | ES | | 0.70 | 23.74 | | MADE GROUND: Brown slightly sandy slightly gravelly clay. Gravel is fine to coarse, angular to subrounded of brick. |
| | | 1.00 | SPT | N=8 (1,1/2,2,2,2) | | | | Stiff medium strength reddish brown slightly sandy CLAY. Circa 2.00m bgl becomes very stiff very high strength. |
| | | 2.00 | SPT | 50 (2,3/50 for 155mm) | | | | |
| | | | | | 2.31 | 23.24 | | End of Borehole at 2.31m |

Remarks

1. Terminated due to refusal on very stiff, high strength clay at 2.31 m bgl. 2. Monitoring well installed. Response zone 1.00 to 2.00 m bgl.

# Borehole Log

Borehole No. **WS119**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341199E - 398416N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.02 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing Depth (m) | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | 0.10 | ES | | 0.20 | 26.02 | | MADE GROUND: Brown slightly gravelly sandy clay with rootlets. Gravel is fine sub angular to sub rounded of mudstone, sandstone and brick (Topsoil). |
| | | 1.00 | D | | 1.00 | 25.82 | | MADE GROUND: Reddish brown gravelly clay. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Poor recovery 0.70-1.00 m bgl). |
| | | 1.00 | SPT | N=17 (3,4/4,5,4,4) | | | | Very stiff high strength reddish brown slightly gravelly silty CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=25 (3,5/5,7,6,7) | | | | |
| | | 2.50 | PP | 34.34 | | | | |
| | 2.80 | | | | 2.80 | 25.02 | | Brown slightly clayey fine to medium SAND. |
| | | 3.00 | D | | 3.00 | 23.22 | | Stiff medium strength brown silty CLAY. |
| | | 3.00 | SPT | N=16 (2,3/3,4,4,5) | | | | |
| | | 4.00 | D | | 4.00 | 23.02 | | Dense reddish brown fine to medium SAND. (Weathered bedrock). |
| | | 4.00 | SPT | 50 (3,5/50 for 290mm) | | | | |
| | | | | | 4.44 | 22.02 | | End of Borehole at 4.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 4.44 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 3.50 m bgl.

# Borehole Log

Borehole No. **WS120**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341116E - 398222N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.74 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.20 | ES | | 0.30 | 23.74 | | MADE GROUND: Dark grey slightly clayey medium to coarse sand with frequent rootlets. (Topsoil) |
| | | | | | 0.50 | 23.44 | | MADE GROUND: Brown slightly gravelly clay. Gravel is fine to coarse, angular to subrounded of brick. Reddish brown clayey fine to medium SAND. |
| | | 1.00 | SPT | N=10 (1,1/2,2,2,4) | | | | |
| | | 2.00 | SPT | N=50 (18,7/10,12,13,15) | | | | |
| | | | | | 2.45 | 23.24 | | End of Borehole at 2.45m |

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2
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10

Remarks

1. Terminated due to refusal on dense sand at 2.45 m bgl. 2. Monitoring well installed. Response zone 1.00 to 2.00 m bgl.

# Borehole Log

Borehole No. **WS121**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341147E - 398466N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.39 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 26.39 | | MADE GROUND: Dark brown clayey fine to medium sand with rootlets. (Topsoil). |
| | | | | | 0.50 | 26.19 | | MADE GROUND: Dark brown clayey gravelly fine to medium sand. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. |
| | | 0.80 | ES | | | | | MADE GROUND: Black slightly clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, brick, ceramic and glass. |
| | | 1.00 | SPT | N=1 (0,1/0,1,0,0) | | | | |
| | | | | | 1.60 | 25.89 | | Very stiff high strength reddish grey slightly gravelly silty CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=17 (1,2/3,4,4,6) | | | | |
| | | | | | 2.80 | 24.79 | | Dense red fine to medium SAND. |
| | | 3.00 | SPT | 50 (5,6/50 for 280mm) | | | | |
| | | | | | 3.43 | 23.59 | | End of Borehole at 3.43m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on weathered bedrock at 3.43 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 1.50 m bgl.

# Borehole Log

Borehole No. **WS122**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341158E - 398245N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.45 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | ES | | 0.30 | 24.45 | | MADE GROUND: Dark grey gravelly clayey fine to coarse sand with frequent rootlets. Gravel is fine to coarse, angular to subrounded of ash and clinker. (Topsoil) |
| | | 1.00<br>1.00 | D<br>SPT | N=7 (2,2/1,2,2,2) | 1.00 | 24.15 | | MADE GROUND: Brown slightly gravelly sandy clay. Gravel is fine, angular to subrounded of brick. |
| | | 2.00<br>2.00 | D<br>SPT | N=50 (4,4/10,12,15,13) | | | | Firm low strength reddish brown sandy CLAY. (Becoming very stiff, very high strength at 2.00m bgl) |
| | | | | | 2.45 | 23.45 | | End of Borehole at 2.45m |

Remarks

1. Terminated due to refusal on very stiff, high strength clay at 2.305 m bgl. 2. Monitoring well installed. Response zone 0.50 to 1.50 m bgl.

# Borehole Log

Borehole No. **WS123**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341082E - 398509N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.53 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 26.53 | | MADE GROUND: Dark brown clayey fine to medium sand with rootlets. (Topsoil). |
| | | | | | 0.60 | 26.33 | | MADE GROUND: Dark brown clayey gravelly fine to medium sand. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. |
| | | 1.00<br>1.00 | D<br>SPT | N=0 (1,1/0,0,0,0) | | | | MADE GROUND: Very loose black slightly clayey sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic and glass. |
| | | 1.60 | ES | | 1.50 | 25.93 | | Stiff medium strength brownish red mottled grey slightly sandy silty CLAY. |
| | | 2.00<br>2.00 | D<br>SPT | N=12 (2,2/2,3,3,4) | | | | |
| | | 3.00 | SPT | 50 (4,4/50 for 290mm) | 2.60 | 25.03 | | Dense red fine to medium SAND. |
| | | | | | 3.44 | 23.93 | | End of Borehole at 3.44m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on weathered bedrock at 3.44 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 3.00 m bgl.

# Borehole Log

Borehole No. **WS124**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340883E - 398506N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.97 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.30 | 25.97 | | MADE GROUND: Dark grey sandy clay with frequent rootlets. (Topsoil) |
| | | | | | | | | MADE GROUND: Brown slightly gravelly sandy clay. Gravel is fine to coarse, angular to subrounded of brick, ash and clinker. |
| | | 1.00 | SPT | N=7 (1,1/1,2,2,2) | 1.10 | 25.67 | | |
| | | | | | 1.30 | 24.87 | | MADE GROUND: Dark grey slightly gravelly clayey fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick, ash and clinker. |
| | | | | | 1.70 | 24.67 | | MADE GROUND: Reddish brown slightly gravelly clayey fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick, ash and clinker. |
| | | 1.90 | ES | | | | | |
| | | 2.00 | SPT | N=8 (1,1/1,2,2,3) | | | | MADE GROUND: Black slightly gravelly slightly clayey fine to medium sand (ashy). Gravel is fine of ash. |
| | | | | | 2.30 | 24.27 | | MADE GROUND: Grey slightly gravelly clayey fine to medium sand. Gravel is fine to coarse, angular to subrounded of brick and ash. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | N=11 (3,4/5,2,2,2) | 3.20 | 23.67 | | MADE GROUND: Reddish brown slightly gravelly sandy clay. Gravel is fine, angular to subrounded of brick. |
| | | 4.00 | D | | | | | |
| | | 4.00 | SPT | 50 (25 for 75mm/50 for 30mm) | 4.10 | 22.77 | | End of Borehole at 4.10m |

Remarks

1. Terminated due to refusal within Made Ground at 4.10 m bgl. 2. Monitoring well installed. Response zone 1.00 to 4.00 m bgl.

# Borehole Log

Borehole No. **WS125**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341252E - 398460N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.92 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By H.Mason |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.10 | 25.92 | | MADE GROUND: Dark brown slightly sandy clay with frequent rootlets. (Topsoil). |
| | | 0.30 | ES | | | | | MADE GROUND: Dark brown clayey gravel. Gravel is fine to coarse sub angular to sub rounded of sandstone, brick, ash, glass and ceramic. |
| | | 1.00 | D | | 1.00 | 25.82 | | Stiff medium strength brown mottled grey slightly gravelly slightly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of sandstone. |
| | | 1.00 | ES | | | | | |
| | | 1.00 | SPT | N=12 (1,2/2,3,4,3) | | | | |
| | | 2.00 | D | | 2.00 | 24.92 | | Very stiff high strength brown sandy CLAY. Becoming very stiff very high strength at 2.50 m bgl. |
| | | 2.00 | ES | | | | | |
| | | 2.00 | SPT | N=18 (2,2/3,5,5,5) | | | | |
| | | 2.50 | D | | | | | |
| | | 2.50 | SPT | N=50 (7,9/13,13,13,11) | | | | |
| | | | | | 2.95 | 23.92 | | End of Borehole at 2.95m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.95 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 1.00 m bgl.

# Borehole Log

Borehole No. **WS126**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341136E - 398628N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.56 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.30 | ES | | 0.20 | 23.56 | | MADE GROUND: Dark brown slightly clayey fine to medium with frequent rootlets. (Topsoil) |
| | | | | | 0.40 | 23.36 | | Brown slightly clayey fine to medium SAND. |
| | | | | | 0.70 | 23.16 | | Brown slightly clayey fine to medium SAND with organic matter. |
| | | 1.00 | SPT | N=10 (1,2/2,3,3,2) | | | | Medium dense brown slightly clayey gravelly fine to medium SAND. Gravel is fine to medium, subrounded to rounded of sandstone. Circa 2.00 m bgl becomes dense. |
| | | 2.00 | SPT | N=50 (4,7/10,13,16,11) | | | | |
| | | | | | 2.45 | 22.86 | | End of Borehole at 2.45m |

Remarks

1. Terminated due to refusal on dense sand at 2.45 m bgl. 2. Monitoring well installed. Response zone 0.60 to 1.60 m bgl.

# Borehole Log

Borehole No. **WS127**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341121E - 398512N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.43 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 26.43 | | MADE GROUND: Dark brown slightly sandy clay with frequent rootlets. (Topsoil). |
| | | 0.60 | ES | | | | | MADE GROUND: Dark brown slightly sandy clayey gravel. Gravel is fine to coarse sub angular to sub rounded of brick, sandstone, ash, metal and glass. |
| | | 1.00<br>1.00 | D<br>SPT | N=6 (0,1/0,1,2,3) | 1.00 | 26.23 | | Firm low strength brown slightly sandy gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of sandstone. Becoming very stiff high strength at 2.00 m bgl. |
| | | 2.00<br>2.00 | D<br>SPT | N=18 (3,3/4,4,5,5) | | | | |
| | | 3.00 | SPT | N=17 (3,5/4,4,3,6) | 3.00 | 25.43 | | Medium dense brown clayey fine to medium SAND. |
| | | 4.00 | SPT | N=18 (2,2/4,4,4,6) | | | | |
| | | | | | 4.45 | 23.43 | | End of Borehole at 4.45m |

Remarks

1. Terminated due to collapse of well at 4.00m to 3.50 bgl.

# Borehole Log

Borehole No. **WS128**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341168E - 398571N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.02 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.15 | 25.02 | | Dark brown clayey fine to medium SAND with frequent rootlets (Topsoil) |
| | | 0.80 | ES | | | | | Stiff medium strength brown slightly gravelly sandy CLAY. Gravel is fine to coarse angular to rounded of sandstone. Circa 2.00 m bgl becomes firm low strength. Circa 3.00 m bgl becomes stiff medium strength. Circa 3.70 m bgl becomes very stiff very high strength. |
| | | 1.00<br>1.00 | D<br>SPT | N=8 (3,2/2,2,2,2) | | | | |
| | | 1.50 | PP | 12.26 | | | | |
| | | 2.00<br>2.00 | D<br>SPT | N=7 (1,2/2,2,1,2) | | | | |
| | | 3.00<br>3.00 | D<br>SPT | N=13 (2,2/3,2,3,5) | | | | |
| | | 3.70<br>3.70 | D<br>SPT | 50 (11,13/50 for 165mm) | | | | |
| | | | | | 4.02 | 24.87 | | End of Borehole at 4.02m |

Remarks

1. Terminated due to refusal on gravelly clay at 4.02 m bgl. 2. Monitoring well installed. Response zone 1.00 to 3.00 m bgl.

# Borehole Log

Borehole No. **WS129**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341057E - 398550N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.33 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 26.33 | | MADE GROUND: Brown gravelly slightly clayey fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | 0.50 | ES | | 0.60 | 26.13 | | MADE GROUND: Blackish brown sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, brick and ceramic. |
| | | 1.00 | D | | | | | Very stiff high strength grey very sandy CLAY with lenses of grey fine to medium sand. Becoming stiff medium strength at 2.00 m bgl. |
| | | 1.00 | SPT | N=15 (1,3/3,4,4,4) | | | | |
| | | 1.50 | PP | 36.79 | | | | |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=16 (2,2/3,4,4,5) | | | | |
| | 2.50 | | | | 2.80 | 25.73 | | Loose grey slightly clayey fine to medium SAND. |
| | | 3.00 | SPT | N=10 (2,3/2,2,3,3) | | | | |
| | | 4.00 | SPT | N=22 (4,4/5,6,5,6) | 4.00 | 23.53 | | Medium dense red fine to coarse SAND. (Weathered bedrock). |
| | | | | | 4.45 | 22.33 | | End of Borehole at 4.45m |

Remarks

1. Terminated due to collapse of well at 3.50 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 3.50 m bgl. 3. Water strike at 2.50 m bgl.

# Borehole Log

Borehole No. **WS130**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341176E - 398535N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.33 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 25.33 | | MADE GROUND: Dark brown slightly clayey sandy gravel with frequent rootlets and cobbles. Gravel is fine to coarse, angular to subrounded of brick and sandstone. Cobbles are sub angular of brick. (Topsoil) |
| | | 0.50 | ES | | 0.60 | 25.13 | | Orangish brownish grey slightly gravelly sandy CLAY. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | 1.00 | D | | 1.00 | 24.73 | | Brown slightly gravelly clayey fine to medium SAND with pockets of grey clay. Gravel is fine to coarse, subrounded to rounded of sandstone. |
| | | 1.00 | SPT | N=7 (1,2/2,1,2,2) | | | | Firm low strength reddish brown slightly gravelly CLAY. Gravel is fine to medium, subrounded to rounded of sandstone. |
| | | 1.50 | U | | | | | |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=7 (1,1/1,2,2,2) | 2.20 | 24.33 | | Firm low strength reddish brown slightly gravelly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of sandstone. Circa 2.00m becomes stiff medium strength. Circa 3.50 m bgl becomes very stiff very high strength. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | N=14 (2,3/3,3,4,4) | | | | |
| | | 3.50 | D | | | | | |
| | | 3.50 | SPT | 50 (6,6/50 for 230mm) | | | | |
| | | | | | 3.88 | 23.13 | | End of Borehole at 3.88m |

Remarks

1. Terminated due to refusal on very stiff, high strength CLAY at 3.88 m bgl. 2. Monitoring well installed. Response zone 1.00 to 3.00 m bgl.

# Borehole Log

Borehole No. **WS131**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341010E - 398600N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.13 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.20 | 26.13 | | Brown clayey fine to medium SAND with rootlets (Topsoil). |
| | | 0.50 | PP | 17.17 | | | | Very stiff high strength slightly gravelly sandy CLAY. Gravel is fine sub angular to sub rounded of mudstone and sandstone. Becoming very stiff very high strength at 2.00 m bgl. |
| | | 1.00<br>1.00 | D<br>SPT | N=21 (3,4/4,6,5,6) | | | | |
| | | 1.50 | PP | 88.29 | | | | |
| | | 2.00<br>2.00 | D<br>SPT | 50 (4,7/50 for 285mm) | | | | |
| | | | | | 2.44 | 25.93 | | End of Borehole at 2.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.44 m bgl.

# Borehole Log

Borehole No. **WS132**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341115E - 398572N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.70 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.70 | | MADE GROUND: Dark brown slightly clayey fine to medium sand with frequent rootlets. (Topsoil) Reddish brown sandy CLAY. |
| | | 0.50 - 1.00 | U | | | | | |
| | | 1.00<br>1.00<br>1.20 | D<br>SPT<br>ES | N=8 (2,2/2,2,2,2) | 1.00 | 24.50 | | Stiff, medium strength reddish brown slightly gravelly sandy CLAY. Gravel is fine to medium, subrounded to rounded of sandstone. Circa 3.80 m bgl becomes very stiff very high strength. |
| | | 2.00<br>2.00 | D<br>SPT | N=16 (2,3/3,4,4,5) | | | | |
| | | 3.00<br>3.00 | D<br>SPT | N=16 (3,2/3,6,4,3) | | | | |
| | | 3.80<br>3.80 | D<br>SPT | 50 (9,12/50 for 155mm) | 4.11 | 23.70 | | End of Borehole at 4.11m |

Remarks

1. Terminated due to refusal on stiff, medium strength clay at 3.88 m bgl. 2. Monitoring well installed. Response zone 1.00 to 4.00 m bgl.

# Borehole Log

Borehole No. **WS133**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341018E - 398509N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.39 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing Depth (m) | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | 0.10 | ES | | 0.40 | 26.39 | | MADE GROUND: Brown gravelly slightly clayey fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick. (Topsoil). |
| | | 1.00 | SPT | N=15 (3,3/3,4,3,5) | | | | Medium dense brownish clayey fine to medium SAND. |
| | | 1.80 | PP | 36.79 | | | | |
| | | 2.00 | D | | 2.00 | 25.99 | | |
| | | 2.00 | SPT | N=12 (2,2/3,3,3,3) | | | | Stiff medium strength grey sandy CLAY. (Poor recovery). |
| | 3.00 | 3.00 | D | | 3.00 | 24.39 | | |
| | | 3.00 | SPT | N=18 (2,2/5,4,4,5) | | | | Very stiff high strength reddish brown very sandy CLAY. (Poor recovery). |
| | | 3.90 | SPT | 50 (9,12/50 for 215mm) | 4.00 | 23.39 | | Very dense red fine to medium SAND. (Weathered bedrock). |
| | | | | | 4.27 | 22.39 | | End of Borehole at 4.27m |

Remarks

1. Terminated due to refusal on weathered bedrock at 4.27 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 3.90 m bgl. 3. Water strike at 3.00 m bgl.

# Borehole Log

Borehole No. **WS134**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341071E - 398612N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.43 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.43 | | MADE GROUND: Dark brown slightly gravelly clayey fine to medium sand with frequent rootlets. Gravel is fine to coarse, angular to rounded of brick. (Topsoil) |
| | | 0.50<br>0.50 | ES<br>U | | | | | Stiff, medium strength brown slightly sandy gravelly CLAY. Gravel is fine to medium, subrounded to rounded of sandstone and mudstone. |
| | | 1.00<br>1.00 | D<br>SPT | N=11 (3,2/2,2,3,4) | | | | |
| | | | | | 1.80 | 24.23 | | Very stiff high strength reddish brown sandy CLAY. Circa 3.00 m bgl becomes very stiff very high strength. |
| | | 2.00<br>2.00 | D<br>SPT | N=18 (3,3/4,4,5,5) | | | | |
| | | 3.00<br>3.00 | D<br>SPT | N=50 (3,3/3,13,14,20) | | | | |
| | | | | | 3.45 | 22.63 | | End of Borehole at 3.45m |

Remarks

1. Terminated due to refusal on very stiff, high strength CLAY at 3.45 m bgl.

# Borehole Log

Borehole No. **WS135**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340987E - 398559N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.46 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 26.46 | | Brown slightly clayey fine to medium SAND with rootlets. (Topsoil). |
| | | 0.80 | ES | | | | | Medium dense brownish grey slightly clayey fine to medium SAND. |
| | | 1.00 | SPT | N=11 (1,3/3,2,3,3) | | | | |
| | | | | | 1.90 | 26.26 | | |
| | | 2.00 | D | | | | | Grey sandy CLAY. |
| | | 2.00 | SPT | N=21 (1,4/5,4,6,6) | 2.20 | 24.56 | | Very stiff high strength grey sandy CLAY. |
| | | | | | 2.70 | 24.26 | | Very stiff very high strength grey sandy CLAY. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | 50 (4,5/50 for 280mm) | | | | |
| | | | | | 3.43 | 23.76 | | End of Borehole at 3.43m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.43 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 3.00 m bgl.

# Borehole Log

Borehole No. **WS136**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341094E - 398601N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.47 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.47 | | MADE GROUND: Dark brown slightly clayey fine to medium sand with frequent rootlets. (Topsoil) |
| | | 0.50 | U | | | | | Stiff, medium strength brown slightly sandy CLAY. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=12 (1,2/3,3,3,3) | | | | |
| | | 1.20 | ES | | | | | |
| | | 1.50 | U | | | | | |
| | | 2.00 | D | | 2.00 | 24.27 | | |
| | | 2.00 | SPT | N=15 (2,3/4,4,3,4) | | | | Very stiff high strength reddish brown slightly gravelly sandy CLAY. Gravel is fine to medium, subrounded to rounded of sandstone. Circa 3.50 m bgl becomes very stiff very high strength. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | N=21 (2,3/4,5,6,6) | | | | |
| | ▼ 3.50 | 3.50 | D | | | | | |
| | | 3.50 | SPT | 50 (25 for 75mm/50 for 30mm) | 3.61 | 22.47 | | End of Borehole at 3.61m |

Remarks

1. Terminated due to refusal on very stiff, high strength clay at 3.61 m bgl. 2. Monitoring well installed. Response zone 0.50 to 3.50 m bgl. 3. Slow water ingress at 3.50 m bgl (seepage).

# Borehole Log

Borehole No. **WS137**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340926E - 398547N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.96 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.25 | 25.96 | | MADE GROUND: Brown gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of brick, mudstone and sandstone. (Topsoil). |
| | | 0.80 | ES | | 0.70 | 25.71 | | MADE GROUND: Stiff brown gravelly sandy clay. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. |
| | | 1.00 | SPT | N=6 (2,1/2,1,1,2) | 1.00 | 25.26 | | MADE GROUND: Black gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, glass and ceramic. |
| | | | | | 1.50 | 24.96 | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to sub rounded of brick, mudstone, sandstone and ceramic. |
| | | 1.80 | PP | 12.26 | | | | Firm low strength reddish brown very sandy CLAY. |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=8 (1,1/2,1,2,3) | | | | |
| | | | | | 2.50 | 24.46 | | Dense red fine to medium SAND. (Weathered bedrock). |
| | | 3.00 | SPT | 50 (11,12/50 for 125mm) | | | | |
| | | | | | 3.28 | 23.46 | | End of Borehole at 3.28m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.28 m bgl. 2. Monitoring well installed. Response zone 2.00 m to 3.00 m bgl.

# Borehole Log

Borehole No. **WS138**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341023E - 398632N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.93 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 12/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | ES | | | | | MADE GROUND: Dark brown slightly clayey sandy GRAVEL. Gravel is fine to medium, angular to subrounded of brick, sandstone and concrete. |
| | | 1.00 | D | | 1.00 | 24.93 | | |
| | | 1.00 | SPT | N=7 (1,1/2,2,1,2) | | | | Firm low strength brown slightly gravelly sandy CLAY. Gravel is fine to medium, angular to subrounded of sandstone. |
| | | 2.00 | SPT | N=10 (2,2/2,2,3,3) | 1.80 | 23.93 | | Loose brown slightly clayey fine to medium SAND. |
| | | 3.00 | SPT | N=17 (3,3/4,4,4,5) | 3.00 | 23.13 | | Medium dense brown fine to medium SAND. |
| | | 4.00 | SPT | N=50 (3,4/3,10,15,22) | 3.80 | 21.93 | | Dense brown reddish fine to medium SAND. (Weathered bedrock). |
| | | | | | 4.45 | 21.13 | | End of Borehole at 4.45m |

Remarks

1. Terminated due to refusal on dense sand at 4.45 m bgl. 2. Monitoring well installed. Response zone 1.00 to 4.00 m bgl.

# Borehole Log

Borehole No. **WS139**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340872E - 398565N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.90 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.20 | 25.90 | | MADE GROUND: Brown slightly gravelly fine to medium sand with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone, brick. (Topsoil). |
| | | 1.00 | SPT | N=22 (5,7/15,4,2,1) | | | | MADE GROUND: Reddish brown sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass and concrete. |
| | | | | | 1.30 | 25.70 | | Stiff medium strength brown slightly gravelly slightly sandy CLAY. Gravel is fine sub angular to sub rounded of mudstone and sandstone. |
| | | 1.80 | PP | 12.26 | | | | |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=13 (3,2/3,3,3,4) | | | | |
| | | 2.50 - 3.00 | U | | | | | |
| | | 3.00 | SPT | 50 (11,13/50 for 100mm) | 3.00 | 24.60 | | Dense red fine to coarse SAND. (Weathered bedrock). |
| | | | | | 3.25 | 22.90 | | End of Borehole at 3.25m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.25 m bgl.

# Borehole Log

Borehole No. **WS140**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341078E - 398639N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.05 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | ES | | | | | MADE GROUND: Brown gravel. Gravel is fine to coarse angular to subrounded of concrete and brick. |
| | | 1.00 | SPT | N=5 (1,1/1,2,1,1) | 1.00 | 24.05 | | Loose brown slightly clayey gravelly fine to medium SAND. Gravel is fine to medium, subrounded to rounded of sandstone. |
| | | 1.50 | U | | 1.40 | 23.05 | | Firm, low strength brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium, subrounded to rounded of sandstone. |
| | | 2.00 | D | | 2.00 | 22.65 | | Firm, low strength brown slightly gravelly sandy CLAY. Gravel is fine to medium, subrounded to rounded of sandstone. |
| | | 2.00 | SPT | N=8 (2,2/2,2,2,2) | 2.40 | 22.05 | | Very stiff, very high strength reddish brown slightly gravelly sandy CLAY. Gravel is fine to medium, subrounded to rounded of sandstone. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | N=50 (13,5/10,14,15,11) | 3.45 | 21.65 | | End of Borehole at 3.45m |

Remarks

1. Terminated due to refusal on very stiff, high strength clay at 3.45 m bgl. 2. Monitoring well installed. Response zone 1.00 to 3.00 m bgl.

# Borehole Log

Borehole No. **WS141**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340914E - 398591N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.19 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.20 | ES | | 0.20 | 26.19 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets and suspected asbestos sheeting. Gravel is fine to medium sub angular to sub rounded of mudstone. (Topsoil). |
| | | | | | 0.60 | 25.99 | | MADE GROUND: Brown sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic, ash, glass and concrete. |
| | | 1.00 | D | | 1.00 | 25.59 | | Brown slightly clayey fine to medium SAND. |
| | | 1.00 | SPT | N=11 (1,2/2,3,3,3) | | | | Stiff medium strength brown slightly sandy CLAY. |
| | | 1.60 | PP | 71.12 | | | | |
| | | 1.80 | ES | | | | | |
| | | 2.00 | D | | 2.00 | 25.19 | | Very stiff high strength reddish brown gravelly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | 2.00 | SPT | N=27 (3,5/5,7,6,9) | | | | |
| | | 2.60 | PP | 76.03 | | | | |
| | | 3.00 | SPT | 50 (4,6/50 for 290mm) | 3.00 | 24.19 | | Dense red fine to medium SAND.(Weathered bedrock). |
| | | | | | 3.44 | 23.19 | | End of Borehole at 3.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.44 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 3.00 m bgl.

# Borehole Log

Borehole No. **WS142**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341108E - 398636N | Hole Type WS |
| Location: | Kirkby | | Level: | 23.59 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | | | | MADE GROUND: Brown slightly sandy gravel. Gravel is fine to coarse angular to subrounded concrete and brick. |
| | | 1.00 | SPT | N=15 (1,2/2,4,4,5) | 1.00 | 23.59 | | |
| | | 1.60 | ES | | | | | Medium dense brown slightly clayey gravelly fine to medium SAND. Gravel is fine to medium, subrounded to rounded of sandstone. Hydrocarbon odour 1.00-2.40 m bgl. Circa 2.00 m bgl becomes loose. |
| | | 2.00 | SPT | N=6 (1,2/2,1,1,2) | | | | |
| | | | | | 2.40 | 22.59 | | Very stiff, very high strength brown slightly gravelly sandy CLAY. Gravel is fine to medium, subrounded to rounded of sandstone. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | 50 (25 for 80mm/50 for 30mm) | 3.11 | 21.19 | | End of Borehole at 3.11m |

Remarks

1. Terminated due to refusal on very stiff, high strength clay at 3.11m bgl. 2. Monitoring well installed. Response zone 1.00 to 3.00 m bgl. 3. Hydrocarbon odour between 1.00 to 2.40 m bgl.

# Borehole Log

Borehole No. **WS143**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340967E - 398632N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.04 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 26.04 | | MADE GROUND: Brown gravelly fine to medium sand with rootlets. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | 0.40<br>0.50 | ES<br>U | | 0.50 | 25.84 | | MADE GROUND: Brown very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and glass. Cobbles are sub angular to sub rounded of brick. |
| | | 1.00<br>1.00 | D<br>SPT | N=12 (1,4/4,3,2,3) | | | | Stiff medium strength greyish brown slightly sandy CLAY. |
| | | | | | 1.40 | 25.54 | | Reddish brown fine to medium SAND. |
| | | | | | 1.70 | 24.64 | | Dense brown slightly clayey fine to medium SAND. (Weathered bedrock). |
| | | 2.00 | SPT | 51 (1,2/51 for 290mm) | | | | |
| | | | | | 2.44 | 24.34 | | End of Borehole at 2.44m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on weathered bedrock at 2.44 m bgl.

# Borehole Log

Borehole No. **WS144**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341334E - 398516N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.87 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.40 | 25.87 | | MADE GROUND: Concrete with rebar |
| | | 1.00 | SPT | N=6 (2,2/1,2,1,2) | | | | MADE GROUND: Grey gravel. Gravel is fine to coarse angular to subrounded of concrete and metal |
| | | 1.40 | ES | | 1.20 | 25.47 | | Loose brown slightly gravelly fine to medium SAND. Gravel is fine to medium, subrounded to rounded of sandstone. |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | N=15 (3,3/3,4,4,4) | 2.10 | 24.67 | | Stiff medium strength brown slightly sandy CLAY. |
| | 3.00 | 3.00 | D | | 3.00 | 23.77 | | Dense brown very sandy gravel. Gravel is fine to coarse angular to subrounded of sandstone. |
| | | 3.00 | SPT | 50 (6,9/50 for 295mm) | | | | |
| | | | | | 3.44 | 22.87 | | End of Borehole at 3.44m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on SAND and GRAVEL at 3.44m bgl. 2. Monitoring well installed. Response zone 1.00 to 3.00 m bgl. 3. Slow water ingress at 3.00 m bgl (seepage).

# Borehole Log

Borehole No. **WS145**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340928E - 398645N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.22 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.30 | 26.22 | | MADE GROUND: Brown slightly clayey gravelly fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. (Topsoil). |
| | 1.00 | 1.00 | ES | | | | | MADE GROUND: Medium dense brown sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ceramic, glass and concrete. |
| | | 1.00 | SPT | N=12 (1,2/2,1,4,5) | 1.20 | 25.92 | | Medium dense brown slightly clayey fine to medium SAND. Circa 2.00 m bgl becomes dense. (Weathered bedrock). |
| | | 2.00 | SPT | 50 (3,5/50 for 290mm) | | | | |
| | | | | | 2.44 | 25.02 | | End of Borehole at 2.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.44 m bgl. 2. Water strike at 1.00 m bgl (perched water in Made Ground).

# Borehole Log

Borehole No. **WS146**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341319E - 398492N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.83 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.40 | ES | | 0.15 | 25.83 | | MADE GROUND: Concrete |
| | | | | | 0.50 | 25.68 | | MADE GROUND: Black very gravelly fine to medium SAND. Gravel is fine to coarse angular to subrounded of ash, concrete and brick. |
| | | | | | 1.00 | 25.33 | | MADE GROUND: Light brown to reddish brown sandy GRAVEL with frequent cobbles. Gravel is fine to coarse angular to subrounded of brick. Cobbles are sub angular of brick. |
| | | | | | | | | End of Borehole at 1.00m |

Remarks

1. Terminated due to refusal on concrete obstruction at 1.00 m bgl.

# Borehole Log

Borehole No. **WS147**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340973E - 398676N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.09 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 13/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.15 | 25.09 | | MADE GROUND: Asphalt. |
| | | | | | 0.30 | 24.94 | | MADE GROUND: Concrete. |
| | | | | | 0.50 | 24.79 | | MADE GROUND: Reddish brown sandy gravel. Gravel is fine to coarse angular to sub rounded of brick, mudstone and ceramic. |
| | | 0.80 | PP | 53.96 | | | | Stiff medium strength grey sandy CLAY. Becoming very stiff very high strength at 2.00 m bgl. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=14 (2,2/3,3,3,5) | | | | |
| | | 1.80 | ES | | | | | |
| | | 1.80 | PP | 41.69 | | | | |
| | | 2.00 | D | | | | | |
| | | 2.00 | SPT | 50 (3,4/50 for 270mm) | | | | |
| | | | | | 2.42 | 24.59 | | End of Borehole at 2.42m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.42 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.00 m bgl.

# Borehole Log

Borehole No. **WS148**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341321E - 398458N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.98 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.15 | 25.98 | | MADE GROUND: Concrete with rebar |
| | | | | | 0.30 | 25.83 | | MADE GROUND: Grey fine to coarse, angular to subrounded of concrete. |
| | | 0.80 | ES | | | | | MADE GROUND: Dark greyish black slightly gravelly fine to medium SAND. Gravel is fine sub angular to sub rounded of ash. |
| | | 1.00 | SPT | N=10 (2,2/2,3,2,3) | | | | |
| | | | | | 1.20 | 25.68 | | Stiff medium strength brown slightly sandy CLAY |
| | | 2.00 | SPT | N=16 (2,3/4,4,4,4) | 2.00 | 24.78 | | Medium dense brown slightly clayey fine to medium SAND. Circa 3.00m bgl becomes loose circa 4.00m bgl becomes medium dense. |
| | 3.00 | 3.00 | SPT | N=11 (3,2/2,3,3,3) | | | | |
| | | 4.00 | SPT | N=14 (3,2/3,3,4,4) | | | | |
| | | 5.00 | SPT | N=15 (4,3/3,4,4,4) | | | | |
| | | | | | 5.45 | 23.98 | | End of Borehole at 5.45m |

Remarks

1. Completed 2. Monitoring well installed. Response zone 1.00 to 4.00 m bgl. 3. Slow water ingress at 3.00 m bgl (seepage).

# Borehole Log

Borehole No. **WS149A**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341216E - 398263N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.97 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.10 | 24.97 | | MADE GROUND: Brown slightly clayey slightly gravelly fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | 0.30 | 24.87 | | |
| | | | | | 0.50 | 24.67 | | MADE GROUND: Brown gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and concrete. |
| | | 1.00 | SPT | 50 (8,10/50 for 205mm) | 0.90 | 24.47 | | MADE GROUND: Light brown sandy gravel. Gravel is fine to coarse angular to sub rounded sandstone and concrete. |
| | | | | | 1.36 | 24.07 | | MADE GROUND: Red gravel with cobbles. Gravel is fine to coarse angular to sub rounded of brick. Cobbles are sub rounded of brick. |
| | | | | | | | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 1.36m |

Remarks

1. Terminated due to refusal on concrete obstruction at 1.36 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 1.00 m bgl.

# Borehole Log

Borehole No. **WS149B**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341216E - 398263N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.97 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.10 | 24.97 | | MADE GROUND: Brown slightly clayey slightly gravelly fine to medium sand with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | 0.40 | 24.87 | | MADE GROUND: Brown gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and concrete. |
| | | | | | 0.50 | 24.57 | | MADE GROUND: Light brown sandy gravel. Gravel is fine to coarse angular to sub rounded sandstone and concrete. |
| | | 1.00 | SPT | 50 (11,8/50 for 215mm) | 0.90 | 24.47 | | MADE GROUND: Red gravel with cobble. Gravel is fine to coarse angular to sub rounded of brick. Cobble is sub rounded of brick. |
| | | | | | 1.37 | 24.07 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 1.37m |

Remarks

1. Terminated due to refusal on concrete obstruction at 1.37 m bgl.

# Borehole Log

Borehole No. **WS150**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341309E - 398443N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.91 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.03 | 25.91 | | MADE GROUND: Asphalt |
| | | | | | 0.20 | 25.88 | | MADE GROUND: Black gravel. Gravel is fine to coarse angular to subrounded of concrete and asphalt. |
| | | 0.40 | ES | | | | | |
| | | | | | 0.75 | 25.71 | | MADE GROUND: Orangish brown slightly gravelly fine to medium sand. Gravel is fine to medium angular to subrounded of clinker and brick. |
| | | 1.00 | SPT | N=6 (2,1/1,1,2,2) | | | | Loose light brown clayey fine to medium SAND |
| | | | | | 1.50 | 25.16 | | Medium dense light brown fine to medium SAND |
| | ▼ 2.00 | 2.00 | U | | | | | |
| | | 2.00 | SPT | N=17 (3,4/3,5,4,5) | | | | |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | N=21 (4,5/4,5,6,6) | | | | |
| | | | | | 3.30 | 24.41 | | Very stiff high strength brown very sandy CLAY |
| | | 4.00 | D | | | | | |
| | | 4.00 | SPT | 50 (7,10/50 for 290mm) | | | | |
| | | | | | 4.44 | 22.61 | | End of Borehole at 4.44m |

Remarks

1. Terminated due to refusal on sandy CLAY at 4.44m bgl. 2. Slow water ingress at 2.00 m bgl (seepage).

# Borehole Log

Borehole No. **WS151**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341149E - 398139N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.03 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.10 | 24.03 | | MADE GROUND: Light brown slightly gravelly sandy clay. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone and brick. |
| | | 0.40 | ES | | 0.50 | 23.93 | | MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, ash, brick and glass. |
| | | 1.00 | D | | 0.70 | 23.53 | | MADE GROUND: Black slightly gravelly slightly clayey fine to medium sand. Gravel is fine to medium sub angular to sub rounded of sandstone ash and brick. |
| | | 1.00 | SPT | N=14 (2,2/3,3,3,5) | | | | Stiff medium strength reddish light brown slightly gravelly slightly sandy CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | | 1.50 | U | | | | | |
| | | 2.00 | SPT | 50 (4,10/50 for 290mm) | 2.00 | 23.33 | | Dense red fine to medium SAND. (Weathered bedrock). |
| | | | | | 2.44 | 22.03 | | End of Borehole at 2.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.44 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.00 m bgl.

# Borehole Log

Borehole No. **WS152**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341378E - 398444N | Hole Type WS |
| Location: | Kirkby | | Level: | 26.62 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By N.Gregory |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.50 | ES | | 0.40 | 26.62 | | MADE GROUND: Dark grey gravelly sandy clay with frequent rootlets. Gravel is fine subrounded of brick (Topsoil) |
| | | 1.00 | SPT | N=6 (1,1/2,1,2,1) | 1.10 | 26.22 | | MADE GROUND: Dark grey slightly gravelly clay. Gravel is fine subrounded of brick. |
| | | 1.50 | ES | | | | | MADE GROUND: Black gravelly fine to medium sand. Gravel is fine to coarse, angular to subrounded of ash, clinker and brick. |
| | 2.00 | 2.00 | SPT | N=0 (0,0/0,0,0,0) | | | | |
| | | | | | 2.50 | 25.52 | | MADE GROUND: Brownish black slightly gravelly slightly sandy clay. Gravel is fine sub angular to sub rounded of ash |
| | | 3.00 | SPT | N=50 (2,2/12,12,13,13) | | | | |
| | | | | | 3.45 | 24.12 | | End of Borehole at 3.45m |

Remarks

1. Terminated due to refusal in Made Ground at 3.45m bgl. 2. Monitoring well installed. Response zone 0.50 to 2.50 m bgl. 3. Slow water ingress at 2.00 m bgl.

# Borehole Log

Borehole No. **WS153A**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341237E - 398096N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.19 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.19 | | MADE GROUND: Blackish brown gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone, ash and brick. (Topsoil). |
| | | | | | | | | MADE GROUND: Reddish brown slightly gravelly sandy clay. Gravel is fine to medium angular to sub rounded of mudstone, sandstone, brick. |
| | | 1.00 | SPT | 50 (25 for 70mm/50 for 100mm) | 0.90<br>0.95<br>1.17 | 23.99<br>23.29<br>23.24 | | MADE GROUND: Brick layer. Recovered as sub rounded cobble of brick. |
| | | | | | | | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 1.17m |

Remarks

1. Terminated due to refusal on concrete obstruction at 1.17 m bgl. 2. Monitoring well installed. Response zone 0.50 to 1.00 m bgl.

# Borehole Log

Borehole No. **WS153B**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341237E - 398096N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.19 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.15 | 24.19 | | MADE GROUND: Blackish brown gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone, ash and brick. (Topsoil). |
| | | | | | 0.80 | 24.04 | | MADE GROUND: Reddish brown slightly gravelly sandy clay. Gravel is fine to medium angular to sub rounded of mudstone, sandstone, brick. |
| | | 1.00 | SPT | 50 (25 for 45mm/50 for 25mm) | 0.85 | 23.39 | | MADE GROUND: Brick layer. Recovered as sub rounded cobble of brick. |
| | | | | | 1.07 | 23.34 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 1.07m |

Remarks

1. Terminated due to refusal on concrete obstruction at 1.07 m bgl.

# Borehole Log

Borehole No. **WS153C**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341237E - 398096N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.19 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.15 | 24.19 | | MADE GROUND: Blackish brown gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone, ash and brick. (Topsoil). |
| | | | | | 0.85 | 24.04 | | MADE GROUND: Reddish brown slightly gravelly sandy clay. Gravel is fine to medium angular to sub rounded of mudstone, sandstone, brick. |
| | | 1.00 | SPT | 50 (25 for 60mm/50 for 110mm) | 1.17 | 23.34 | | MADE GROUND: Brick layer. Recovered as sub rounded cobble of brick. |
| | | | | | | | | End of Borehole at 1.17m |

Remarks

1. Terminated due to refusal on concrete obstruction at 1.17 m bgl.

# Borehole Log

Borehole No. **WS155**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341299E - 398081N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.46 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.46 | | MADE GROUND: Black gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone, sandstone, ash and brick. (Topsoil). |
| | | | | | 0.70 | 24.26 | | MADE GROUND: Black sandy gravelly clay. Gravel is fine to medium sub angular to sub rounded of mudstone, ash and brick. |
| | ▼ 1.20 | 1.00<br>1.00<br>1.20 | D<br>SPT<br>ES | N=13 (3,2/2,4,3,4) | 1.20 | 23.76 | | Firm reddish grey very sandy CLAY. |
| | | | | | 1.60 | 23.26 | | Medium dense brownish grey slightly clayey fine to medium SAND. |
| | | 2.00 | SPT | 50 (7,16/50 for 135mm) | 2.29 | 22.86 | | Dense red fine to medium SAND. (Weathered bedrock). |
| | | | | | | | | End of Borehole at 2.29m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.29 m bgl. 2. Water strike at 1.20 m bgl.

# Borehole Log

Borehole No. **WS157**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341306E - 398130N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.86 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.10 | 24.86 | | MADE GROUND: Light brown slightly gravelly sandy clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and brick. (Topsoil). |
| | | 0.30 | PP | 49.05 | | | | |
| | | 0.50 | U | | | | | |
| | | | | | 0.80 | 24.76 | | Firm greyish light brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=12 (2,1/2,3,3,4) | | | | Stiff medium strength red slightly sandy CLAY |
| | | 1.50 | PP | 58.86 | | | | |
| | | | | | 1.60 | 24.06 | | Dense red fine to medium SAND. (Weathered bedrock). |
| | | 2.00 | SPT | 50 (5,19/50 for 65mm) | | | | |
| | | | | | 2.22 | 23.26 | | End of Borehole at 2.22m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.22 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.00 m bgl.

# Borehole Log

Borehole No. **WS159**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341271E - 398155N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.12 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 24/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.20 | ES | | 0.10 | 25.12 | | MADE GROUND: Dark Brown sandy gravel with woodchips. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone, brick and ceramic. (Topsoil). |
| | | 0.50 | U | | 0.50 | 25.02 | | MADE GROUND: Reddish brown gravelly fine to medium sand. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and ceramic. |
| | | 1.00 | D | | | | | |
| | | 1.00 | SPT | N=11 (1,3/2,3,3,3) | | | | Stiff medium strength brownish red mottled grey slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | | 1.50 | PP | 24.52 | | | | |
| | | | | | 1.70 | 24.62 | | Dense red fine to medium SAND. (Weathered bedrock). |
| | | 2.00 | SPT | 50 (3,9/50 for 215mm) | | | | |
| | | | | | 2.37 | 23.42 | | End of Borehole at 2.37m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.37 m bgl.

# Borehole Log

Borehole No. **WS161**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341298E - 398180N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.78 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.10 | 24.78 | | MADE GROUND: Black gravelly sandy clay. Gravel is fine to coarse sub angular to sub rounded of mudstone, ash, brick and concrete. (Topsoil). |
| | | 0.50 | U | | 0.40 | 24.68 | | MADE GROUND: Black slightly gravelly clayey fine to medium sand. Gravel is fine of ash. |
| | | 1.00 | D | | | | | Firm brown slightly sandy CLAY. |
| | | 1.00 | SPT | N=20 (2,2/2,5,5,8) | 1.00 | 24.38 | | Very stiff high strength brown mottled grey slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone. |
| | | 1.50 | ES | | | | | |
| | | 1.70 | SPT | 50 (8,13/50 for 205mm) | 1.60 | 23.78 | | Dense light brown fine to medium SAND. |
| | | | | | 2.00 | 23.18 | | Dense reddish brown fine to medium SAND. |
| | | | | | 2.06 | 22.78 | | End of Borehole at 2.06m |

Remarks

1. Terminated due to refusal on weathered bedrock at 2.06 m bgl. 2. Monitoring well installed. Response zone 0.50 m to 1.50 m bgl.

# Borehole Log

Borehole No. **WS163**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341348E - 398155N | Hole Type WS |
| Location: | Kirkby | | Level: | 25.47 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.30 | 25.47 | | MADE GROUND: Brown slightly gravelly slightly clayey fine to medium sand with rootlets. Gravel is fine to medium sub angular of brick. Light brown fine to medium SAND. |
| | | 1.00 | SPT | N=17 (2,3/4,4,4,5) | 1.00 | 25.17 | | Medium dense grey mottled black clayey fine to medium SAND. Slight organic odour. |
| | ▼ 1.30 | 1.30 | ES | | 1.40 | 24.47 | | Grey slightly clayey fine to medium SAND with pocket of grey clay at 1.80 m bgl. |
| | | 2.00 | D | | 2.00 | 24.07 | | Stiff medium strength grey slightly sandy CLAY. |
| | | 2.00 | SPT | N=12 (2,1/3,3,3,3) | 2.40 | 23.47 | | Very stiff very high strength greyish brown sandy CLAY. |
| | | 3.00 | D | | | | | |
| | | 3.00 | SPT | 50 (2,3/50 for 290mm) | 3.44 | 23.07 | | End of Borehole at 3.44m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.44 m bgl. 2. Water strike at 1.30 m bgl. 3. Slight organic odour 1.00-1.40 m bgl.

# Borehole Log

Borehole No. **WS165A**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341320E - 398262N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.19 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.30 | 24.19 | | MADE GROUND: Brown slightly clayey gravelly clay with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | 0.30 | SPT | 50 (25 for 25mm/50 for 15mm) | 0.34 | 23.89 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 0.34m |

Remarks

1. Terminated due to refusal on concrete obstruction at 0.34 m bgl.

# Borehole Log

Borehole No. **WS165B**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341320E - 398262N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.19 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | 24.19 | | MADE GROUND: Brown slightly clayey gravelly clay with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | 0.25 | 23.99 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 0.25m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on concrete obstruction at 0.25 m bgl.

# Borehole Log

Borehole No. **WS165C**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341320E - 398262N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.19 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.30 | 24.19 | | MADE GROUND: Brown slightly clayey gravelly clay with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | 0.35 | 23.89 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 0.35m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Terminated due to refusal on concrete obstruction at 0.35 m bgl.

# Borehole Log

Borehole No. **WS167A**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341263E - 398265N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.85 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.30 | SPT | 50 (25 for 25mm/50 for 25mm) | 0.10 | 24.85 | | MADE GROUND: Brown slightly clayey gravelly clay with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | 0.30 | 24.75 | | MADE GROUND: Brownish red sandy gravel. Gravel is fine to coarse angular to sub angular of sandstone and brick. |
| | | | | | 0.35 | 24.55 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 0.35m |

Remarks

1. Terminated due to refusal on concrete obstruction at 0.34 m bgl.

# Borehole Log

Borehole No. **WS167B**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341263E - 398265N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.85 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.20 | ES | | 0.10 | 24.85 | | MADE GROUND: Brown slightly clayey gravelly clay with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil).. |
| | | | | | 0.25 | 24.75 | | MADE GROUND: Brownish red sandy gravel. Gravel is fine to coarse angular to sub angular of sandstone and brick. |
| | | | | | 0.30 | 24.60 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 0.30m |

Remarks

1. Terminated due to refusal on concrete obstruction at 0.30 m bgl.

# Borehole Log

Borehole No. **WS167C**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341263E - 398265N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.85 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.10 | 24.85 | | MADE GROUND: Brown slightly clayey gravelly clay with rootlets. Gravel is fine to coarse sub angular to sub rounded of mudstone, sandstone and brick. (Topsoil). |
| | | | | | 0.25 | 24.75 | | MADE GROUND: Brownish red sandy gravel. Gravel is fine to coarse angular to sub angular of sandstone and brick. |
| | | | | | 0.30 | 24.60 | | MADE GROUND: Concrete. |
| | | | | | | | | End of Borehole at 0.30m |

Remarks

1. Terminated due to refusal on concrete obstruction at 0.30 m bgl.

# Borehole Log

Borehole No. **WS169**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341263E - 398228N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.79 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.10 | 24.79 | | MADE GROUND: Brown slightly sandy gravelly clay with rootlets. Gravel is fine to medium sub angular to sub rounded of mudstone and brick. (Topsoil). |
| | | | | | 0.30 | 24.69 | | MADE GROUND: Black red brown slightly sandy gravel. Gravel is fine to coarse angular to sub rounded of brick, ash, concrete and mudstone. |
| | | | | | 0.50 | 24.49 | | MADE GROUND: Reddish brown slightly sandy gravelly clay. Gravel is fine to coarse sub angular to sub rounded of mudstone and brick. |
| | | 0.80 | ES | | | | | Greyish brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium sub angular to sub rounded of mudstone and sandstone. |
| | | 0.80 | PP | 61.31 | | | | Stiff medium strength reddish grey slightly sandy CLAY |
| | | 1.00 | D | | 1.00 | 24.29 | | Dense red slightly clayey fine to medium SAND. (Weathered bedrock). |
| | | 1.00 | SPT | N=13 (2,3/2,4,3,4) | | | | End of Borehole at 2.44m |
| | | 1.50 | U | | | | | |
| | | 1.50 | PP | 44.14 | | | | |
| | | 2.00 | SPT | 50 (1,3/50 for 290mm) | 2.00 | 23.79 | | |
| | | | | | 2.44 | 22.79 | | |

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Remarks

1. Terminated due to refusal on weathered bedrock at 2.44m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.00 m bgl.

# Borehole Log

Borehole No. **WS171**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 341103E - 398395N | Hole Type WS |
| Location: | Kirkby | | Level: | 24.72 m AOD | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 25/01/2022 | Logged By J.Beer |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.30 | ES | | 0.20 | 24.72 | | MADE GROUND: Brown slightly clayey fine to medium sand with rootlets. (Topsoil). |
| | | 0.60 | U | | 0.60 | 24.52 | | MADE GROUND: Brown gravelly very sandy clay. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick and ceramic. |
| | | 1.00 | D | | | | | Stiff medium strength reddish brown slightly gravelly slightly sandy CLAY. Gravel is fine sub angular to sub rounded of mudstone and sandstone. |
| | | 1.00 | SPT | N=12 (2,2/3,3,3,3) | | | | |
| | | 1.70 | PP | 27.00 | | | | |
| | | 2.00 | SPT | N=40 (5,6/10,10,10,10) | 1.90<br>2.00 | 24.12<br>22.82 | | Brown slightly clayey fine to medium SAND. Dense red fine to medium SAND. (Weathered bedrock). |
| | | 2.60 | SPT | 50 (5,8/50 for 260mm) | | | | |
| | | | | | 3.01 | 22.72 | | End of Borehole at 3.01m |

Remarks

1. Terminated due to refusal on weathered bedrock at 3.01 m bgl. 2. Monitoring well installed. Response zone 1.00 m to 2.50 m bgl.

# Rotary Core Log

Borehole No. **CP/RB101**

Sheet 1 of 3

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340952.00 - 398398.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 23.26mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 08/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 0.20 | 23.06 | | MADE GROUND: Dark grey very clayey fine to medium sand with frequent rootlets. (Topsoil). |
| | | 1.00<br>1.00 - 1.45 | SPD | | | | N=2 (1,0/1,0,1,0) | | | | MADE GROUND: Black slightly clayey very gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass, plastic and textile. Cobbles are sub angular of brick. (Suspected landfill). |
| | | 2.00<br>2.00 - 2.45 | SPD | | | | N=2 (1,0/0,1,0,1) | | | | |
| | | 3.00<br>3.00 - 3.45 | SPD | | | | N=1 (1,0/0,0,0,1) | | | | |
| | | 4.00<br>4.00 - 4.45 | SPD | | | | N=2 (1,0/1,0,1,0) | | | | |
| | | 5.00<br>5.00 - 5.45 | SPD | | | | N=4 (1,0/1,1,1,1) | | | | |
| | | | | | | | | 5.50 | 17.76 | | Very soft, extremely low strength red sandy CLAY. |
| | | 6.00 | SPD | | | | | | | | |

Continued on next sheet

Remarks

1. Complete. 2. Monitoring well installed. Response zone 3.00-5.00 m bgl.

# Rotary Core Log

Borehole No. **CP/RB101**

Sheet 2 of 3

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340952.00 - 398398.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 23.26mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 08/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6.00 - 6.45 | | | | | 50 (10,11/50 for 290mm) | | | | |
| | | 6.50 - 8.00 | C | | | | | 6.50 | 16.76 | | Weak reddish brown fine to medium grained SANDSTONE. |
| | | | | | | | | 6.70 | 16.56 | | Extremely weak reddish brown fine to medium grained SANDSTONE. *6.78m - 7.10m: NON-INTACT* |
| | | 6.50 - 7.50 | | 61 | 40 | 31 | | | | | |
| | | | | | | | | 7.10 | 16.16 | | No Recovery *7.10m - 7.50m: No Recovery* |
| | | | | | | | | 7.50 | 15.76 | | Moderately strong reddish brown fine to medium grained SANDSTONE. *7.50m : 10° planar rough* |
| | | 7.50 - 8.50 | C | 80 | 80 | 70 | | | | | *8.3m : 5° planar rough* *8.30m - 8.50m: AZCL (Assumed Zone of Core Loss)* *8.50m - 8.61m: NON-INTACT* |
| | | 8.50 - 9.50 | | 40 | 26 | 11 | | 8.93 | 14.32 | | No Recovery *8.93m - 9.50m: AZCL* |
| | | 9.50 - 11.00 | C | | | | | 9.50 | 13.76 | | Weak reddish brown fine to medium grained SANDSTONE. *9.50m - 9.56m: NON-INTACT* |
| | | 9.50 - 10.50 | | 84 | 64 | 39 | | | | | *9.95m : 15° planar rough* *9.99m - 10.34m: NON-INTACT* |
| | | | | | | | | 10.34 | 12.92 | | Moderately strong reddish brown fine to medium grained SANDSTONE. |
| | | 10.50 - 12.50 | C | 82 | 65 | 65 | | 10.50 | 12.76 | | Weak to moderately strong reddish brown fine to medium grained SANDSTONE. |
| | | | | | | | | 11.30 | 11.96 | | Moderately strong reddish brown fine to medium grained SANDSTONE. *11.30m - 11.50m: AZCL* |
| | | | | | | | | 12.00 | 11.26 | | Continued on next sheet |

Remarks

1. Complete. 2. Monitoring well installed. Response zone 3.00-5.00 m bgl.

# Rotary Core Log

Borehole No. **CP/RB101**

Sheet 3 of 3

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340952.00 - 398398.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 23.26mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 08/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 11.50 - 12.50 | | 50 | 46 | 46 | | 12.50 | 10.76 | | No Recovery<br>*12.00m - 12.50m: No Recovery*<br>End of borehole at 12.50 m |

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Remarks
1. Complete. 2. Monitoring well installed. Response zone 3.00-5.00 m bgl.

# Rotary Core Log

Borehole No. **CP/RB102**

Sheet 1 of 3

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341087.00 - 398552.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 25.91mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 07/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | MADE GROUND: Dark grey very clayey fine to medium sand with frequent rootlets. (Topsoil). |
| | | | | | | | | 0.40 | 25.51 | | MADE GROUND: Brownish black sandy gravel with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass, plastic and metal. Cobbles are angular to sub rounded of brick, glass and ceramic. (Suspected landfill). |
| | | 1.00<br>1.00 - 1.45 | SPD | | | | N=1 (1,0/0,0,0,1) | | | | |
| | ▼ | 2.00<br>2.00 - 2.45 | SPD | | | | N=1 (1,0/0,0,1,0) | | | | |
| | | 3.00<br>3.00 - 3.45 | SPD | | | | N=3 (0,0/1,1,1,0) | | | | |
| | | 4.00<br>4.00 - 4.45 | SPD | | | | N=3 (1,0/0,1,1,1) | | | | |
| | | | | | | | | 4.90 | 21.01 | | Very soft, extremely low strength red sandy CLAY. |
| | | 5.00<br>5.00 - 5.45 | SPD | | | | 50 (3,10/50 for 154mm) | 5.10 | 20.81 | | Weak reddish brown fine to medium grained SANDSTONE. Recovered as fine to coarse angular to subrounded GRAVEL. |
| | | 6.00 - 7.50 | C | | | | | 6.00 | 19.91 | | |

Continued on next sheet

Remarks

1. Complete. 2. Monitoring well installed. Response zone 3.00-4.00 m bgl.

# Rotary Core Log

Borehole No. **CP/RB102**

Sheet 2 of 3

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341087.00 - 398552.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 25.91mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 07/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 6.00 - 7.00 | | 65 | 63 | 50 | | | | | Moderately strong reddish brown fine to medium grained SANDSTONE. *6.09m: 5° planar rough with medium sand infill* *6.37m - 6.40m: 15° undulating rough, open 30mm* *6.55m - 6.56m: 10° undulating rough, open 10mm* *6.63m - 7.00m: AZCL* |
| | | 7.00 - 8.00 | 2.9 C | 72 | 42 | 13 | | | | | *7.72m - 8.00m: AZCL* |
| | | 8.00 - 9.00 | | 48 | 14 | 14 | | 8.45 | 17.46 | | *8.10m - 8.27m: NON-INTACT* *8.40m - 8.45m: NON-INTACT* No Recovery *8.45m - 9.00m: No Recovery* |
| | | 9.00 - 10.50 | C | | | | | 9.00 | 16.91 | | Extremely weak to weak reddish brown fine to medium grained SANDSTONE. |
| | | 9.00 - 10.00 | | 72 | 60 | 42 | | 9.30 | 16.61 | | Weak to moderately strong reddish brown fine to medium grained SANDSTONE. Recovered as fine to coarse angular to subrounded GRAVEL. |
| | | | | | | | | 9.72 | 16.19 | | No Recovery *9.72m - 10.00m: No Recovery* |
| | | 10.50 - 12.00 | 0.6 C | 82 | 76 | 44 | | 10.00 | 15.91 | | Moderately strong reddish brown fine to medium grained SANDSTONE. *10.70m - 11.00: AZCL* |
| | | 11.00 - 12.00 | | 80 | 72 | 23 | | 11.30 | 14.61 | | Extremely weak reddish brown fine to medium grained SANDSTONE. Recovered as Very Stiff high strength sandy CLAY. |
| | | | | | | | | 11.45 | 14.46 | | No Recovery *11.45m - 11.50m: No Recovery* |
| | | | | | | | | 11.50 | 14.41 | | Weak to moderately strong reddish |
| | | | | | | | | 12.00 | 13.91 | | Continued on next sheet |

Remarks
1. Complete. 2. Monitoring well installed. Response zone 3.00-4.00 m bgl.

# Rotary Core Log

Borehole No.
**CP/RB102**
Sheet 3 of 3

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341087.00 - 398552.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 25.91mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 07/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | brown fine to medium grained SANDSTONE. Recovered as fine to coarse angular to subrounded GRAVEL. |
| | | | | | | | | | | | End of borehole at 12.00 m |

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Remarks
1. Complete. 2. Monitoring well installed. Response zone 3.00-4.00 m bgl.

# Rotary Core Log

Borehole No. **CP/RB103**

Sheet 1 of 2

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341102.00 - 398322.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 25.52mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 08/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 0.10 | 25.42 | | MADE GROUND: Dark grey very clayey fine to medium sand with frequent rootlets. (Topsoil). |
| | | 1.00<br>1.00 - 1.45 | SPD | | | | N=2 (1,0/1,0,1,1,0) | | | | MADE GROUND: Reddish black clayey gravelly fine to medium sand with cobbles. Gravel is fine to coarse angular to sub rounded of mudstone, sandstone, brick, ash, ceramic, glass, timber, plastic. Cobbles are angular to sub angular of sandstone, brick and glass. (Suspected landfill). |
| | | 2.00<br>2.00 - 2.45 | SPD | | | | N=1 (1,0/0,0,1,0) | | | | |
| | | 3.00<br>3.00 - 3.45 | SPD | | | | N=4 (1,0/0,1,1,2) | | | | |
| | | | | | | | | 3.60 | 21.92 | | Very soft, extremely low strength red sandy CLAY. |
| | | 4.00<br>4.00 - 4.45 | SPD | | | | N=20 (1,2/3,4,4,9) | | | | |
| | | ~~5.00~~ | ~~C~~ | | | | 50 (25 for 60mm/50 for 45mm) | 4.70 | 20.82 | | Weak reddish brown fine to medium grained SANDSTONE. Recovered as fine to coarse angular to subrounded GRAVEL. |
| | | 5.00 - 5.15<br>5.00 - 6.50 | SPD | | | | | 5.00 | 20.52 | | Moderately strong reddish brown fine to medium grained SANDSTONE. |
| | | 5.00 - 6.00 | 5.71 | 66 | 62 | 52 | | 5.31 | 20.21 | | Weak reddish brown fine to medium grained SANDSTONE. |
| | | | | | | | | 5.66 | 19.86 | | No Recovery<br>*5.66m - 6.00m: No Recovery* |
| | | | | | | | | 6.00 | 19.52 | | |

Continued on next sheet

Remarks

1. Complete. 2. Monitoring well installed. Response zone 3.00-4.00 m bgl.

# Rotary Core Log

Borehole No. **CP/RB103**

Sheet 2 of 2

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 341102.00 - 398322.00 | Hole Type CP+RC |
| Location: Kirkby | | Level: 25.52mbgl Orientation: ° Inclination: ° | Scale 1:30 |
| Client: BDW Trading | | Dates: 08/02/2022 - | Logged By NG |

| Well | Water Strikes | Depth (m) | Type / FI | Coring TCR | Coring SCR | Coring RQD | Results & Information | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Moderately strong reddish brown fine to medium grained SANDSTONE. |
| | | 6.60 - 8.00 | C | 40 | 40 | 23 | | | | | 6.40m - 8.00m: AZCL |
| | | 8.00 - 9.50 | C | | | | | | | | |
| | | 8.00 - 9.00 | | 93 | 71 | 65 | | | | | 8.66m - 8.75m: AZCL<br>8.80m - 8.93m: NON-INTACT<br>8.93m - 9.00m: AZCL |
| | | 9.50 - 10.00 | C | 81 | 66 | 47 | | | | | 9.81m - 10.00m: AZCL |
| | | 10.00 - 11.00 | | 80 | 65 | 60 | | | | | |
| | | | | | | | | 10.71 | 14.81 | | No Recovery<br>10.71m - 10.81m: NON-INTACT<br>10.81m - 11.00m: No Recovery |
| | | | | | | | | 11.00 | 14.52 | | End of borehole at 11.00 m |

Remarks

1. Complete. 2. Monitoring well installed. Response zone 3.00-4.00 m bgl.

# Trial Pit Log

TrialPit No: TP201
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340841.30 - 398544.63<br>Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 2.10 x 0.90<br>Depth 0.85 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.15 | | | MADE GROUND: Asphalt and Macadam. |
| | 0.50<br>0.60 | B<br>ES | | 0.85 | | | MADE GROUND: Light greyish brown and black sandy gravel. Gravel is fine to coarse, subangular to subrounded of limestone, asphalt, sandstone, and mudstone with rare brick (Slight hydrocarbon odour).<br>End of Pit at 0.85m |

## Trial Pit Photographs



TP201 Pit



TP201 Arisings

Remarks: 1. Terminated at 0.85mbgl as unable to break through compacted Made Ground. 2. Very slow hard digging through compacted Made Ground from 0.10 - 0.85mbgl. 3. Slight hydrocarbon odour encountered within Made Ground from 0.15-0.85mbgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP202 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340799.76 - 398564.71 Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.90 x 0.80 Depth 2.40 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | | | MADE GROUND: Asphalt and Macadam. |
| | 1.00 | ES | | | | | MADE GROUND: Black very sandy gravel with frequent cobbles and occasional boulders. Gravel is fine to coarse, angular to subrounded of brick, asphalt, concrete, limestone, sandstone, and mudstone with frequent fragments of plastic, timber, glass, and metal. Cobbles and boulders are very angular to angular of brick, glass, and metal. (Very strong hydrocarbon odour). |
| ▼ 1.80 | | | | | | | |
| | 2.30 | ES | | 2.40 | | | End of Pit at 2.40m |

1 2 3 4

## Trial Pit Photographs



TP202 Pit



TP202 Arisings

Remarks: 1. Complete. 2. Very strong hydrocarbon odour encountered from 0.20 - 2.40mbgl within Made Ground. 3. Perched water strike encountered at 1.80mbgl.

Stability: Unstable from 0.40mbgl.

# Trial Pit Log

TrialPit No: TP203
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340821.97 - 398572.56<br>Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.00 × 0.70<br>Depth 0.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| ▼ 0.30 | 0.70 | ES | | 0.10 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | 0.90 | | | MADE GROUND: Black slightly sandy gravel with frequent cobbles. Gravel is fine to coarse, very angular to subrounded of brick, asphalt, concrete, sandstone, mudstone, with frequent fragments of timber. Cobbles are very angular to angular of brick and timber. (Strong hydrocarbon odour).<br>End of Pit at 0.90m |

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## Trial Pit Photographs



TP203 Pit



TP203 Arisings

Remarks: 1. Terminated at 0.90mbgl as unable to break through compacted Made Ground. 2. Very slow hard digging through compacted Made Ground from 0.10 - 0.90mbgl. 3. Perched water strike encountered at 0.30mbgl. 4. Strong hydrocarbon odour encountered within Made Ground from 0.40-0.90mbgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP204 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340846.42 - 398570.94 Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.40 x 0.70 Depth 2.10 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | | | MADE GROUND: Asphalt and Macadam. |
| ▼ 0.30 | | | | 0.30 | | | MADE GROUND: Black slightly sandy gravel. Gravel is fine to coarse, subangular to subrounded of asphalt and concrete (Slight hydrocarbon odour). |
| | 0.40 | ES | | | | | MADE GROUND: Red and black very sandy gravel with frequent cobbles. Gravel is fine to coarse, angular to subrounded of brick, sandstone, and mudstone. Cobbles are angular to subangular of brick. (Slight hydrocarbon odour). |
| | | | | 1.20 | | | Firm dark greyish brown mottled light brown slightly silty very sandy CLAY. |
| | 1.80 | ES | | | | | |
| | | | | 2.10 | | | End of Pit at 2.10m |

1 2 3 4

## Trial Pit Photographs



TP204 Pit



TP204 Arisings

Remarks: 1. Complete. 2. No Hand Shear Vane Testing was conducted as clay too friable. 3. Moderate ingress water strike noted within Made Ground at 0.30mbgl. 4. Slight hydrocarbon odour encountered from 0.10 - 1.20mbgl within Made Ground.

Stability: Stable

# Trial Pit Log

TrialPit No: TP205
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340814.89 - 398604.86<br>Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.90 × 0.80<br>Depth 2.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | | | MADE GROUND: Asphalt and Macadam. |
| | 0.50 | ES | | 0.60 | | | MADE GROUND: Black slightly sandy gravel. Gravel is fine to coarse, angular to subangular of asphalt and concrete with frequent fragments of plastic (sub base). (Plastic membrane encountered 0.30mbgl). |
| | | | | 1.30 | | | Firm to stiff light brown mottled grey slightly gravelly very sandy CLAY. Gravel is fine to medium, subangular to rounded of sandstone and mudstone. |
| | 1.70 | B | | | | | Stiff reddish brown very sandy very gravelly CLAY. Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. |
| | 2.40 | ES | | 2.50 | | | Light brown slightly gravelly silty very clayey fine to medium SAND. Gravel is fine to medium, subangular to rounded of sandstone and mudstone. |
| | | | | 2.80 | | | End of Pit at 2.80m |

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## Trial Pit Photographs



TP205 Pit



TP205 Arisings

Remarks: 1. Complete. 2. No Hand Shear Vane Testing conducted as clay too friable. 3. Plastic membrane noted at 0.30mbgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP206 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340839.65 - 398604.11 Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.70 x 0.80 Depth 1.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | Depth | Type | Results | | | | |
| | | | | 0.10 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | 0.20 | | | MADE GROUND: Black slightly sandy gravel. Gravel is fine to coarse, subangular to subrounded of asphalt, limestone, and concrete (sub base). |
| | | | | 0.40 | | | MADE GROUND: Red and black very clayey very gravelly sand with occasional cobbles. Gravel is fine to coarse, angular to subrounded of brick, concrete, sandstone, and mudstone with rare fragments of plastic. Cobbles are angular to subangular of brick (Slight Hydrocarbon Odour). |
| | 1.00 | HVP | 57 | | | | Firm reddish brown gravelly very sandy CLAY with pockets of grey clayey fine to medium SAND. Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. |
| | 1.30 | ES | | | | | |
| | 1.40 | HVP | 70 | | | | |
| | | | | 1.90 | | | End of Pit at 1.90m |

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## Trial Pit Photographs



TP206 Pit



TP206 Arisings

Remarks: 1. Complete. 2. Slight hydrocarbon odour encountered from 0.25-0.60mbgl.

Stability: Stable

# Trial Pit Log

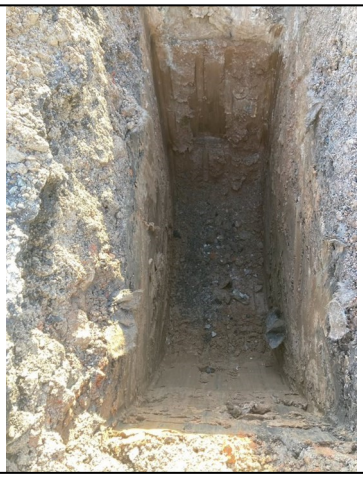
TrialPit No: TP207
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340856.78 - 398628.22<br>Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 2.00 x 0.80<br>Depth 2.30 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | 0.25 | | | MADE GROUND: Black and light grey slightly sandy gravel. Gravel is fine to coarse, subangular to subrounded of asphalt, limestone, and concrete. (sub base). |
| | 0.50 | ES | | 0.60 | | | MADE GROUND: Black and red very sandy gravel with occasional cobbles. Gravel is fine to coarse, subangular to subrounded of brick, concrete, asphalt, sandstone, mudstone, with rare fragments of timber. Cobbles are angular to subangular of brick (Slight hydrocarbon odour). |
| | 1.10 | HVP | 132 | | | | Stiff light brown sandy gravelly CLAY. Gravel is fine to coarse, subangular to rounded of sandstone and mudstone. |
| | | | | 2.30 | | | End of Pit at 2.30m |

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## Trial Pit Photographs



TP207 Pit



TP207 arisings

Remarks: 1. Complete. 2. Slight hydrocarbon odour encountered from 0.25-0.60mbgl.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP208 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340803.05 - 398616.40 Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.70 x 0.70 Depth 2.00 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | | | MADE GROUND: Asphalt and Macadam. |
| | 0.30 | ES | | | | | MADE GROUND: Grey slightly sandy gravel. Gravel is fine to coarse, subangular to subrounded of limestone and mudstone (sub base). |
| | | | | 0.45 | | | |
| | | | | 0.60 | | | MADE GROUND: Black very sandy gravel with frequent cobbles. Gravel is fine to coarse, angular to subrounded of brick, limestone, sandstone and mudstone. Cobbles are angular to subangular of brick. |
| | 0.80 | HVP | 148 | | | | Stiff light reddish brown slightly sandy gravelly CLAY. Gravel is fine to coarse, subangular to rounded of sandstone and mudstone. |
| | 1.20 | ES | | | | | |
| | 1.20 | HVP | 148 | | | | |
| | | | | 2.00 | | | End of Pit at 2.00m |

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## Trial Pit Photographs



TP208 Pit



TP208 Arisings

Remarks: 1. Complete. 2. Clay becoming very friable from 1.40mbgl.

Stability: Stable

# Trial Pit Log

TrialPit No: TP209
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340849.81 - 398636.99 Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 2.30 x 0.60 Depth 1.80 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.10 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | | | | MADE GROUND: Grey slightly sandy gravel. Gravel is fine to coarse, subangular to subrounded of limestone and mudstone (sub base). |
| | | | | 0.80 | | | Firm reddish brown slightly gravelly very clayey fine to medium SAND with rare cobbles. Gravel is fine to coarse, subangular to subrounded of sandstone and mudstone. Cobbles are subangular of sandstone. (Becoming firm to stiff at 1.80mbgl). |
| | 1.60 | HVP | 73 | | | | |
| | 1.80 | HVP | 90 | 1.80 | | | End of Pit at 1.80m |

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## Trial Pit Photographs



TP209 Pit



TP209 arisings

Remarks: 1. Complete.

Stability: Stable

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP210 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340821.16 - 398647.98 Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.60 x 0.60 Depth 0.90 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | 0.50 | | | MADE GROUND: Grey slightly sandy gravel. Gravel is fine to coarse, subangular to subrounded of limestone and mudstone (sub base). |
| | 0.70 | ES | | | | | MADE GROUND: Reddish brown very sandy gravel with frequent cobbles. Gravel is fine to coarse, angular to subrounded of brick, concrete, asphalt, sandstone, and mudstone, with rare fragments of cloth and plastic. |
| | 0.90 | B | | 0.90 | | | End of Pit at 0.90m |

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## Trial Pit Photographs



TP210 Pit



TP210 Arisings

Remarks: 1. Terminated at 0.90mbgl due to water pooling at base of trial pit and unable to break through compacted Made Ground.

Stability: Unstable from 0.80mbgl.

# Trial Pit Log

| | | | |
|---|---|---|---|
| | | | TrialPit No TP211 Sheet 1 of 1 |
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340886.72 - 398686.95 Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): Depth 2.50 (1.70 × 0.70) | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | 0.10 | ES | | 0.30 | | | MADE GROUND: Dark brown very gravelly clay with frequent rootlets. Gravel is fine to medium, subangular to subrounded of brick, sandstone and mudstone (reworked topsoil). |
| | | | | | | | MADE GROUND: Dark brown sandy gravelly clay with occasional cobbles. Gravel is fine to coarse, subangular to subrounded of mudstone, sandstone and rare brick. Cobbles are angular to subangular of brick with rare rebar at 0.60mbgl. (Slight hydrocarbon odour). |
| | | | | 2.50 | | | End of Pit at 2.50m |

1 2 3 4

## Trial Pit Photographs



TP211 Pit



TP211 Arisings

Remarks: 1. Terminated due to instability at base. 2. Slight hydrocarbon odour encountered from 0.30-2.50mbgl.

Stability: Unstable from 1.0mbgl.

# Trial Pit Log

TrialPit No: TP212
Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340899.59 - 398723.73<br>Level: | Date 11/11/2023 |
| Location: Kirkby | | Dimensions (m): 1.60 x 0.60<br>Depth 2.20 | Scale 1:30 |
| Client: BDW Trading | | | Logged I.Diack |

| Water Strike | Samples & In Situ Testing: Depth | Type | Results | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|
| | | | | 0.20 | | | MADE GROUND: Asphalt and Macadam. |
| | 1.20 | ES | | | | | MADE GROUND: Light brown slightly clayey very gravelly fine to medium sand with occasional cobbles. Gravel is fine to coarse, angular to subrounded of brick, sandstone, mudstone, and concrete, with rare fragments of timber, cloth, and plastic. Cobbles are angular to subangular of brick. |
| | 1.60 | HVP | 141 | 1.30 | | | Stiff reddish brown slightly sandy gravelly CLAY. Gravel is fine to coarse, subangular to rounded of sandstone and mudstone. |
| | 2.00<br>2.00 | ES<br>HVP | 131 | 2.20 | | | End of Pit at 2.20m |

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## Trial Pit Photographs



TP212 Pit



TP212 Arisings

Remarks: 1. Complete.

Stability: Stable

# Borehole Log

Borehole No. **WS201**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340822E - 398554N | Hole Type WS |
| Location: | Kirkby | | Level: | | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/11/2023 | Logged By I.Diack |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.30 | | | MADE GROUND: Asphalt and Macadam. |
| | | 1.00 | SPT | N=11 (2,2/2,3,3,3) | 1.00 | | | MADE GROUND: Blackish brown very sandy gravel with occasional cobbles. Gravel is fine to coarse, angular to subrounded of brick, asphalt, concrete, sandstone, and mudstone with rare fragments of plastic, and ashy constituents. Cobbles are angular to subangular of brick (Slight Hydrocarbon Odour). |
| | | 1.50 | ES | | | | | MADE GROUND: Blackish brown slightly silty very gravelly clay with rare cobble. Gravel is fine to coarse, angular to subrounded of brick, concrete, sandstone, and mudstone with rare fragments of plastic, timber and ashy constituents. Cobbles are angular of brick. (Slight hydrocarbon odour). |
| | | 2.00 | SPT | N=9 (2,1/3,2,2,2) | | | | |
| | | | | | 2.45 | | | NO RECOVERY: Anticipated to comprise - Blackish brown slightly silty very gravelly clay with rare cobble. Gravel is fine to coarse, angular to subrounded of brick, conrete, sandstone, and mudstone with rare fragments of plastic, timber, and ashy constituent. Cobbles are angular of brick. |
| | | 3.00 | SPT | N=23 (2,4/5,6,6,6) | 3.00 | | | Medium Dense reddish brown very clayey fine to medium SAND. (Slight hydrocarbon and organic odour). (Becoming dense at 4.00mbgl). |
| | | 3.70 | ES | | | | | |
| | | 4.00 | SPT | 50 (6,9/50 for 275mm) | | | | |
| | | | | | 4.43 | | | End of Borehole at 4.43m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Refusal on dense sand at 4.43mbgl. 2. Environmental monitoring well installed response zone 0.50 - 3.00mgl. 3. Very slow drilling through upper 1.00mbgl of Made Ground. 4. Strong Hydrocarbon odour encountered from 0.30-2.45mbgl. 5. Slight hydrocarbon and strong organic odour encountered from 3.0 - 4.45mbgl.

# Borehole Log

Borehole No. **WS202**

Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340844E - 398591N | Hole Type WS |
| Location: Kirkby | | Level: | Scale 1:50 |
| Client: BDW Trading | | Dates: 11/11/2023 | Logged By I.Diack |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | | 0.40 | | | MADE GROUND: Dark grey silty sandy gravel. Gravel is fine to coarse, angular to subrounded of limestone, concrete, and asphalt. (sub base). |
| | | 0.50 | ES | | 0.60 | | | MADE GROUND: reddish brown slightly silty sandy gravel. Gravel is fine to coarse, subangular to subrounded of sandstone, mudstone, brick, asphalt, and concrete. (Slight Hydrocarbon Odour). |
| | | 0.80 | ES | | | | | |
| | | 1.00 | SPT | N=9 (2,2/2,3,2,2) | | | | Stiff medium strength reddish brown slightly gravelly CLAY. Gravel is fine to coarse, subangular to rounded of sandstone and mudstone. (Slight hydrocarbon odour). |
| | | 1.50 - 2.00 | U | | | | | |
| | | 2.00 | SPT | N=20 (3,4/5,4,5,6) | 2.00 | | | Medium dense reddish brown slightly gravelly very clayey fine to medium SAND. Gravel is fine to medium, subangular to subrounded of sandstone and mudstone. (Becoming dense at 3.00mbgl). |
| | | 3.00 | SPT | 50 (7,10/50 for 285mm) | | | | |
| | | | | | 3.44 | | | End of Borehole at 3.44m |

Remarks

1. Refusal on dense sand at 3.44mbgl. 2. Environmental monitoring well installed response zone 2.00 - 3.00mgl. 3. Slight hydrocarbon odour encountered from 0.40 - 0.70mbgl.

# Borehole Log

Borehole No. **WS203**

Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340836E - 398632N | Hole Type WS |
| Location: Kirkby | | Level: | Scale 1:50 |
| Client: BDW Trading | | Dates: 11/11/2023 | Logged By I.Diack |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.40 | ES | | 0.25 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | | 0.55 | | | MADE GROUND: Dark brown mottled red very sandy very gravelly clay with rare cobble. Gravel is fine to coarse, angular to subrounded of brick, sandstone, concrete, limestone, and mudstone. Cobbles are subangular of brick. |
| | | 1.00 | SPT | N=11 (2,3/2,3,3,3) | | | | Stiff medium strength reddish brown slightly gravelly very sandy CLAY. Gravel is fine to medium, subangular to subrounded of mudstone and sandstone. |
| | | | | | 1.60 | | | Medium dense reddish brown very clayey fine to medium SAND. (Becoming dense at 3.00mbgl). |
| | | 2.00 | SPT | N=29 (3,5/6,8,7,8) | | | | |
| | | 3.00 | SPT | 50 (8,10/50 for 245mm) | | | | |
| | | | | | 3.40 | | | End of Borehole at 3.40m |

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Remarks

1. Refusal on dense sand 3.40mbgl.

# Borehole Log

Borehole No. **WS204**

Sheet 1 of 1

| | | | | | |
|---|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: | 340830E - 398668N | Hole Type WS |
| Location: | Kirkby | | Level: | | Scale 1:50 |
| Client: | BDW Trading | | Dates: | 11/11/2023 | Logged By I.Diack |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.15 | | | MADE GROUND: Asphalt and Macadam. |
| | | 0.40 | ES | | 0.60 | | | MADE GROUND: Grey and reddish black very sandy gravel with frequent cobbles. Gravel is fine to coarse, angular to rounded of brick, concrete, sandstone, and mudstone, with frequent fragments of timber, plastic and cloth. Cobbles are angular to subangular of brick (Slight Hydrocarbon Odour). |
| | 1.00 | 1.20 | SPT | N=7 (1,2/1,2,2,2) | 1.00 | | | MADE GROUND: Dark grey slightly sandy gravel. Gravel is fine to coarse, subangular to rounded of concrete, sandstone and rare brick. |
| | | 1.50 - 2.00 | U | | 1.50 | | | Firm low strength light brown slightly gravelly very sandy CLAY. Gravel is fine to coarse, subangular to rounded of sandstone and mudstone. |
| | | 2.00 | SPT | N=14 (2,4/3,3,4,4) | | | | Medium Dense light brown very clayey fine to medium SAND. (Becoming dense at 3.00mbgl). |
| | | 3.00<br>3.10 | SPT<br>ES | 50 (5,8/50 for 290mm) | 3.44 | | | End of Borehole at 3.44m |

1 2 3 4 5 6 7 8 9 10

Remarks

1. Refusal on dense sand at 3.44mbgl. 2. Environmental monitoring well installed response zone 1.50 - 3.00mbgl. 3. Slight hydrocarbon odour was encountered from 0.15-0.60mbgl within Made Ground. 4. Water strike encountered at 1.00mbgl.

# Borehole Log

Borehole No. **WS205**

Sheet 1 of 1

| | | | | |
|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: 340864E - 398690N | Hole Type WS |
| Location: | Kirkby | | Level: | Scale 1:50 |
| Client: | BDW Trading | | Dates: 11/11/2023 | Logged By I.Diack |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.20 | | | MADE GROUND: Dark brown very gravelly clay with frequent rootlets. Gravel is fine to medium, subangular to subrounded of brick, sandstone and mudstone (reworked topsoil). |
| | | 0.70 | SPT | 50 (25 for 0mm/50 for 0mm) | 0.70 | | | MADE GROUND: Dark brown sandy gravelly clay with occasional cobbles. Gravel is fine to coarse, subangular to subrounded of mudstone, sandstone and rare brick. Cobbles are angular to subangular of brick. |
| | | | | | | | | End of Borehole at 0.70m |

Remarks

1. Refusal on brick obstruction. 2. Moved location.

# Borehole Log

Borehole No. **WS205a**

Sheet 1 of 1

| | | | | |
|---|---|---|---|---|
| Project Name: | Cherryfields | Project No. 15280 | Co-ords: 340864E - 398690N | Hole Type WS |
| Location: | Kirkby | | Level: | Scale 1:50 |
| Client: | BDW Trading | | Dates: 11/11/2023 | Logged By I.Diack |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | 0.10 | ES | | 0.20 | | | MADE GROUND: Dark brown very gravelly clay with frequent rootlets. Gravel is fine to medium, subangular to subrounded of brick, sandstone and mudstone (reworked topsoil). |
| | | 0.70 | SPT | 50 (25 for 0mm/50 for 0mm) | 0.70 | | | MADE GROUND: Dark brown sandy gravelly clay with occasional cobbles. Gravel is fine to coarse, subangular to subrounded of mudstone, sandstone and rare brick. Cobbles are angular to subangular of brick. |
| | | | | | | | | End of Borehole at 0.70m |

Remarks

1. Refusal on brick obstruction at 0.70mbgl.

# Borehole Log

Borehole No. **WS206**

Sheet 1 of 1

| | | | |
|---|---|---|---|
| Project Name: Cherryfields | Project No. 15280 | Co-ords: 340911E - 398721N | Hole Type WS |
| Location: Kirkby | | Level: | Scale 1:50 |
| Client: BDW Trading | | Dates: 11/11/2023 | Logged By I.Diack |

| Well | Water Strikes | Sample and In Situ Testing | | | Depth (m) | Level (m) | Legend | Stratum Description |
|---|---|---|---|---|---|---|---|---|
| | | Depth (m) | Type | Results | | | | |
| | | | | | 0.20 | | | MADE GROUND: Asphalt and Macadam. |
| | | | | | 0.35 | | | MADE GROUND: Light grey slightly sandy gravel. Gravel is fine to coarse, angular to subrounded of limestone, mudstone, and concrete (sub base). |
| | | | | | 0.80 | | | MADE GROUND: Light brown and red slightly clayey very sandy gravel with occasional cobbles. Gravel is fine to coarse, angular to subrounded of sandstone and mudstone. Cobbles are subangular of brick. |
| | | 0.90<br>1.00 | ES<br>SPT | N=7 (2,3/2,1,2,2) | | | | Low strength firm black mottled light brown gravelly very sandy CLAY. Gravel is fine to medium, subangular to subrounded of sandstone and mudstone. (Slight Hydrocarbon odour). (Becoming stiff medium strength at 2.00mbgl). |
| | | 1.70 | ES | | | | | |
| | | 2.00 - 2.45<br>2.00 | U<br>SPT | N=15 (2,5/6,3,3,3) | | | | |
| | | | | | 2.60 | | | Reddish brown slightly clayey fine to medium SAND. |
| | | 3.00 | SPT | 50 (6,8/50 for 290mm) | 3.00 | | | Very Stiff very high strength brown slightly sandy gravelly CLAY. Gravel is fine to coarse, angular to rounded of mudstone and sandstone. |
| | | | | | 3.20 | | | Dense reddish brown slightly clayey fine to medium SAND. |
| | | | | | 3.44 | | | End of Borehole at 3.44m |

Remarks

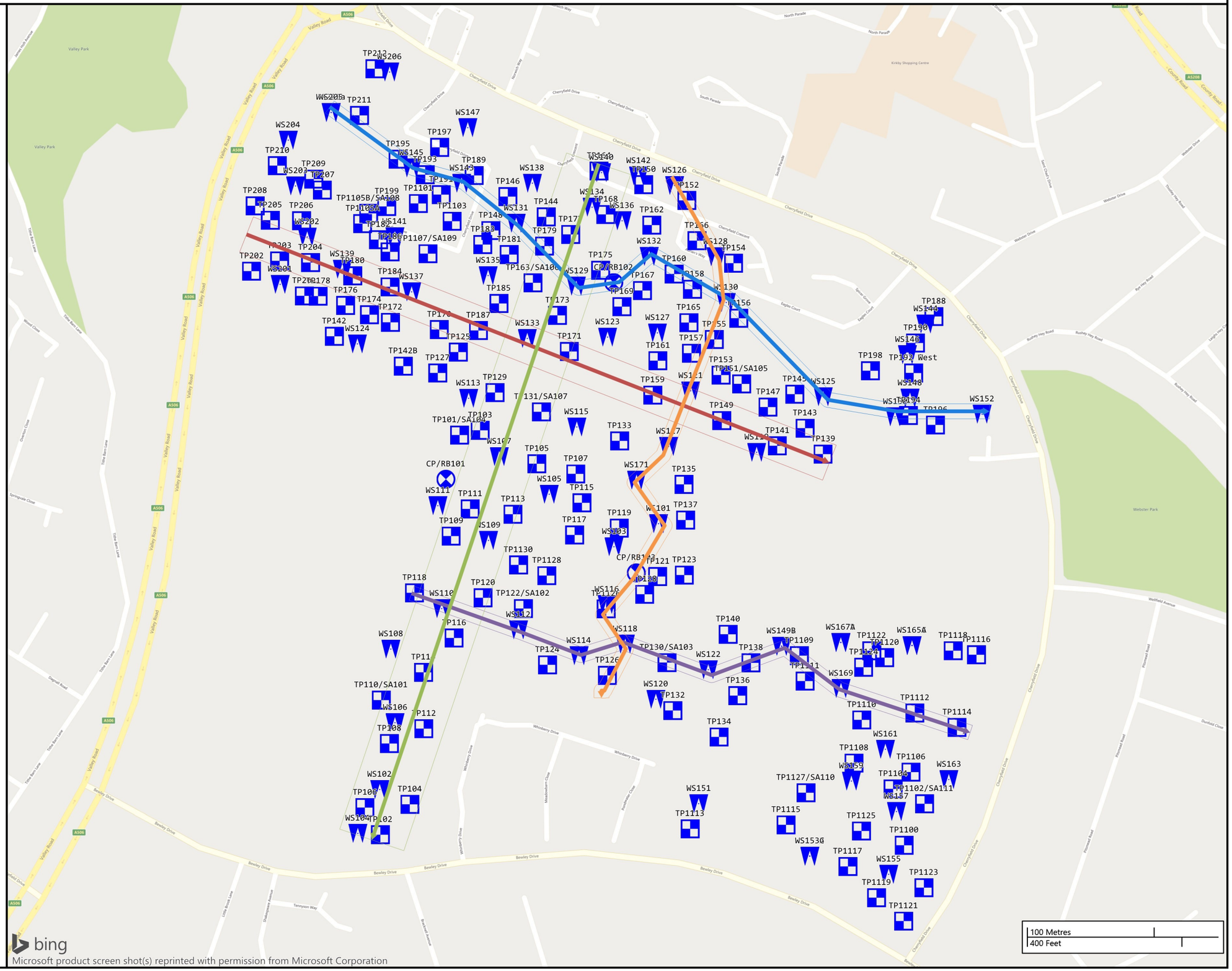
1. Refusal on dense sand at 3.44mbgl. 2. Environmental monitoring well installed response zone 1.00-2.50mbgl. 3. Slight hydrocarbon odour encountered from 0.80-2.60mbgl within clay.

| | | | |
|---|---|---|---|
| Project Id: | 15280 | Title: | Site Plan |
| Project Title: | Cherryfields | Scale: | 1:3000 |
| Location: | Kirkby | Engineer: | |
| Client: | BDW Trading | Contractor: | |

e3p

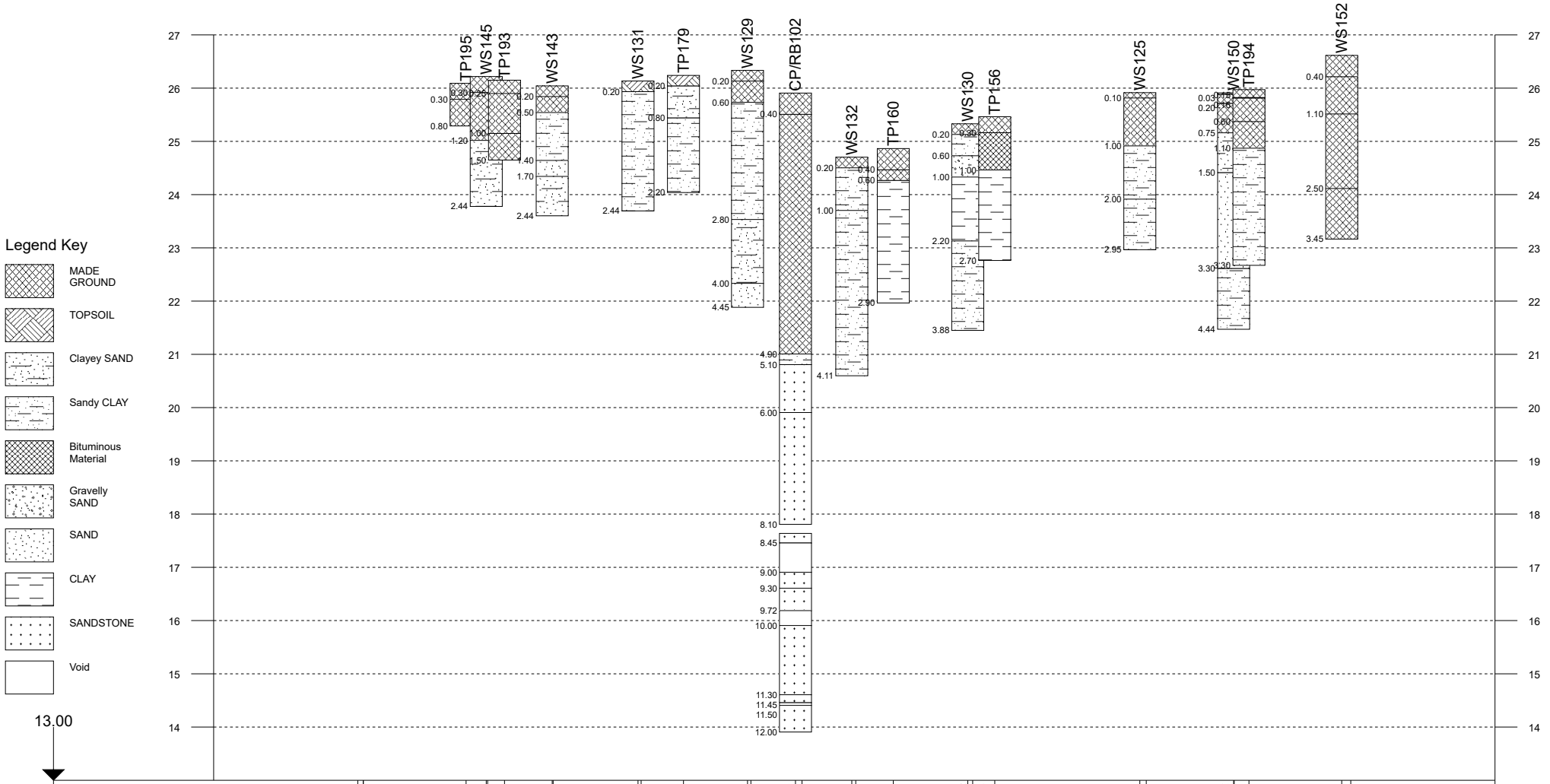
## Legend Key

- Sections - Section line 1
- Sections - Section line 2
- Sections - Section line 3
- Sections - Section line 4
- Sections - Section line 5
- Locations By Type - Empty
- Locations By Type - CP+RC
- Locations By Type - TP
- Locations By Type - WS

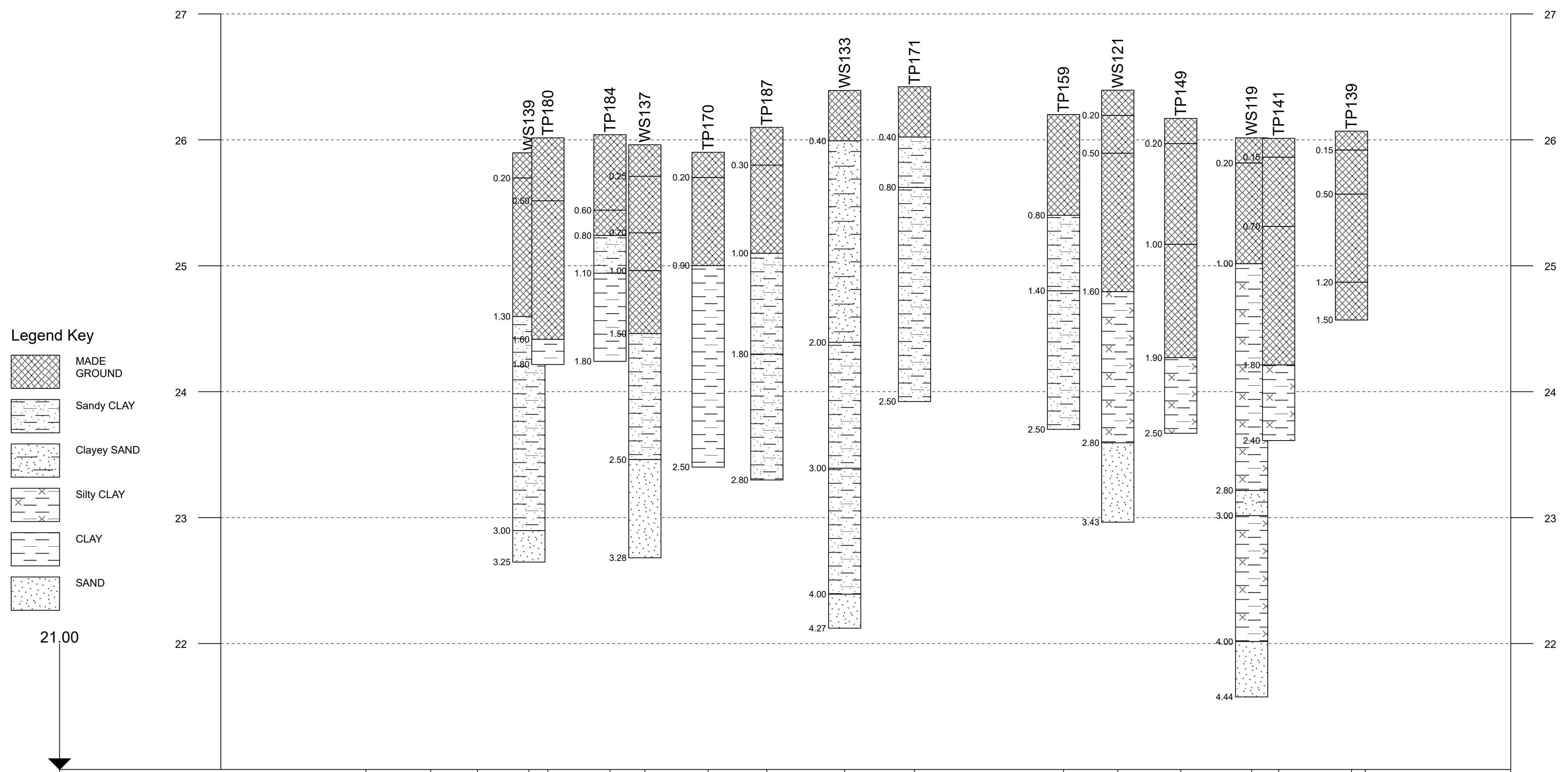



Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

| | |
|---|---|
| Project Id: 15280 | Title: Section line 1 |
| Project Title: Cherryfields | Vertical Scale: 1:108 |
| Location: Kirkby | Horizontal Scale: 1:3626 |
| Client: BDW Trading | Engineer: |

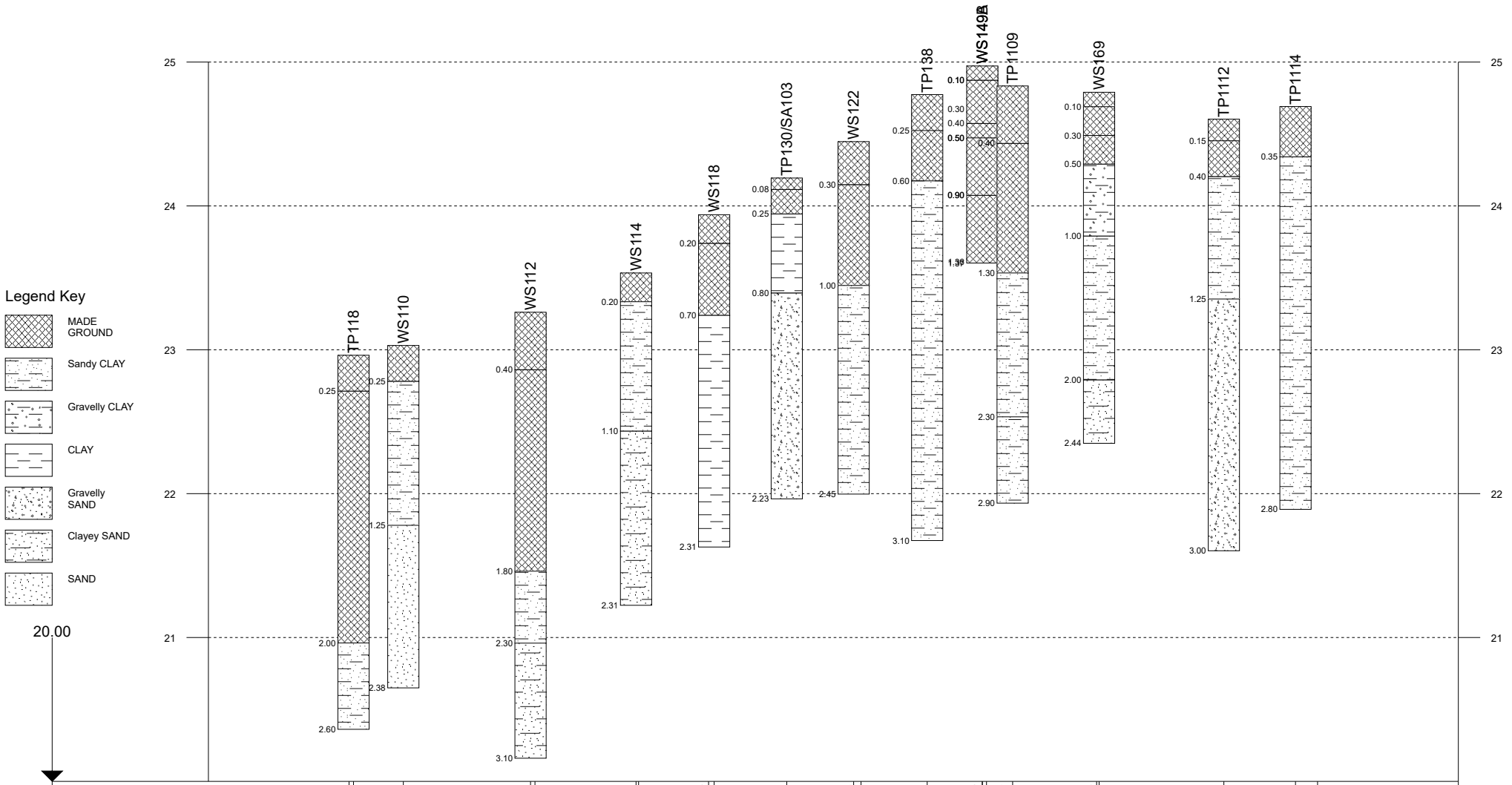


| | |
|---|---|
| Project Id: 15280 | Title: Section line 2 |
| Project Title: Cherryfields | Vertical Scale: 1:46 |
| Location: Kirkby | Horizontal Scale: 1:2877 |
| Client: BDW Trading | Engineer: |



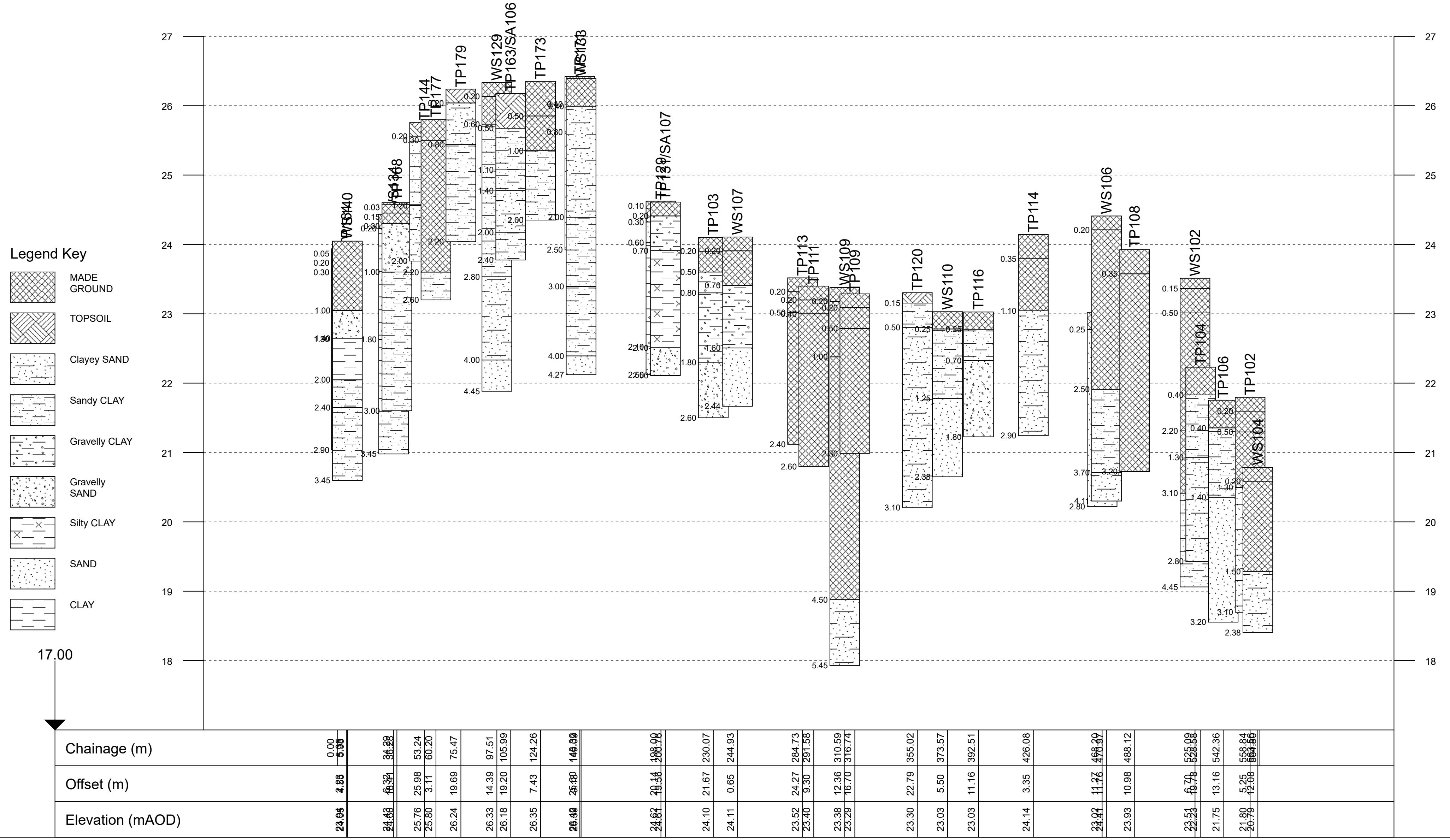

| Chainage (m) | Offset (m) | Elevation (mAOD) |
|---|---|---|
| 0.00 | | |
| 32.17 | 10.09 | |
| 55.44 | 2.41 | |
| 80.98 | 1.92 | 25.90 |
| 90.43 | 0.04 | 26.02 |
| 121.26 | 2.69 | 26.04 |
| 138.61 | 5.16 | 25.96 |
| 170.06 | 14.61 | 25.90 |
| 199.22 | 4.00 | 26.10 |
| 237.90 | 4.38 | 26.39 |
| 272.60 | 6.82 | 26.42 |
| 346.64 | 1.29 | 26.20 |
| 373.59 | 12.86 | 26.39 |
| 404.88 | 0.22 | 26.17 |
| 440.11 | 13.41 | 26.02 |
| 453.53 | 2.67 | 26.01 |
| 489.72 | 4.43 | 26.07 |
| 496.60 | | |

| | |
|---|---|
| Project Id: 15280 | Title: Section line 3 |
| Project Title: Cherryfields | Vertical Scale: 1:39 |
| Location: Kirkby | Horizontal Scale: 1:2772 |
| Client: BDW Trading | Engineer: |

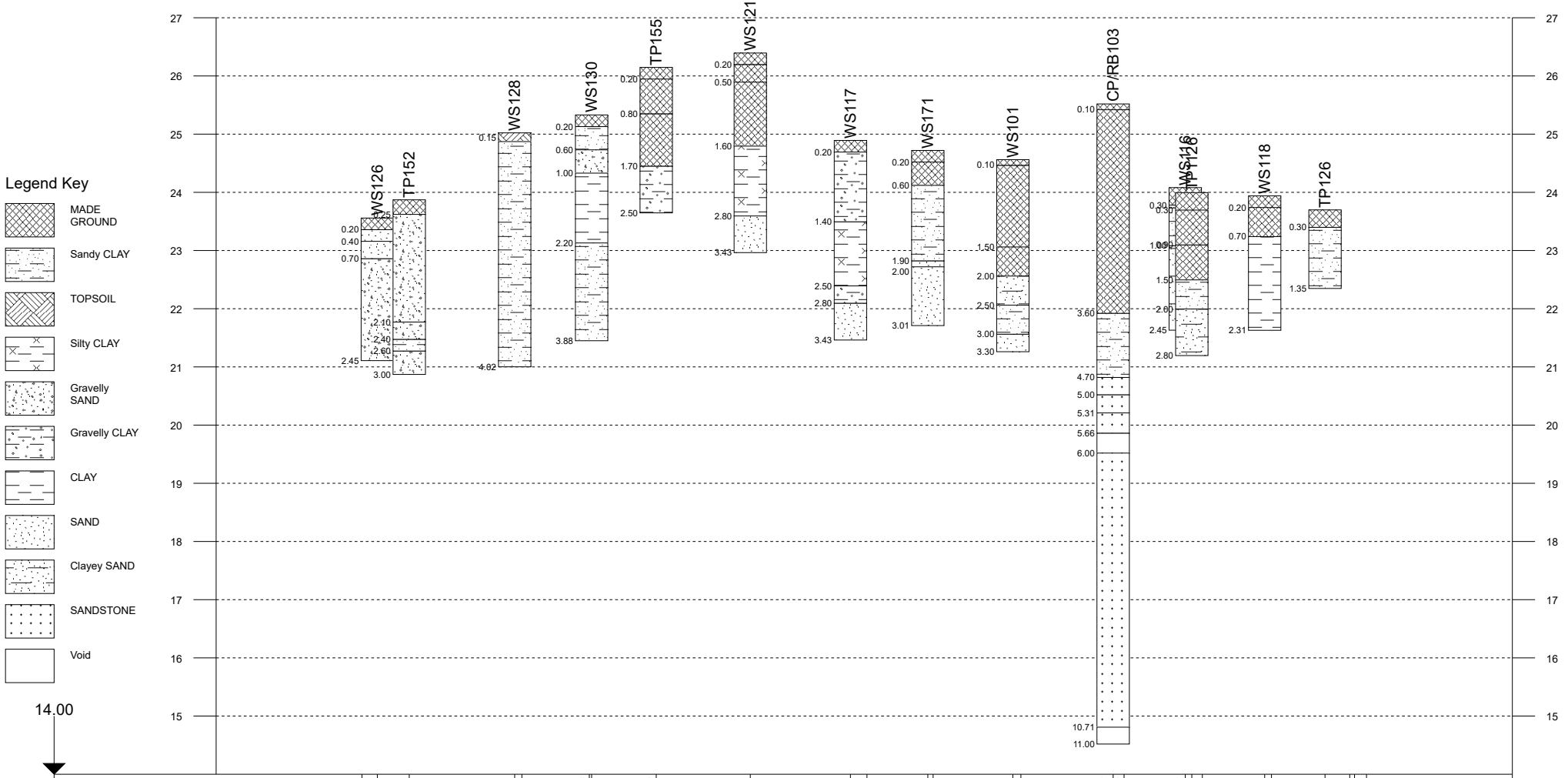



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chainage (m) | 0.00 | 26.83 | 89.68 | 141.86 | 177.65 | 216.28 | 249.32 | 285.66 | 312.98 | 327.87 | 368.88 | 432.23 | 467.62 | 478.52 |
| Offset (m) | 1.00 | 3.52 | 0.93 | 1.23 | 0.88 | 3.16 | 3.06 | 1.92 | 2.03 | 1.89 | 1.06 | 0.91 | 0.55 | |
| Elevation (mAOD) | 22.96 | 23.03 | 23.26 | 23.53 | 23.94 | 24.19 | 24.45 | 24.77 | 24.97 | 24.83 | 24.79 | 24.60 | 24.69 | |

| | |
|---|---|
| Project Id: 15280 | Title: Section line 4 |
| Project Title: Cherryfields | Vertical Scale: 1:77 |
| Location: Kirkby | Horizontal Scale: 1:3272 |
| Client: BDW Trading | Engineer: |



| | |
|---|---|
| Project Id: 15280 | Title: Section line 5 |
| Project Title: Cherryfields | Vertical Scale: 1:100 |
| Location: Kirkby | Horizontal Scale: 1:2761 |
| Client: BDW Trading | Engineer: |



# APPENDIX VI
# CHEMICAL TESTING RESULTS

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# Analytical Report Number : 22-33264

Replaces Analytical Report Number: 22-33264, issue no. 1
Additional analysis undertaken.

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 14/01/2022 |
| **Your job number:** | 15-280 | **Samples instructed on/ Analysis started on:** | 14/01/2022 |
| **Your order number:** | 15280-NG-B | **Analysis completed by:** | 27/01/2022 |
| **Report Issue Number:** | 2 | **Report issued on:** | 27/01/2022 |
| **Samples Analysed:** | 5 leachate samples - 39 soil samples | | |

Izabela Wójcik

**Signed:**

Izabela Wójcik
Technical Reviewer (Reporting Team)
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138294 | 2138295 | 2138296 | 2138297 | 2138298 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP102 | TP104 | WS106 | TP112 | WS110 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 1.00 | 0.50 | 0.20 | 1.20 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 26 | 12 | 16 | 25 | 16 |
| Total mass of sample received | kg | 0.001 | NONE | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | - | Not-detected | Not-detected | - |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | SPU | | SPU | SPU | |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | - | - | 7.4 | - | 7.0 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | - | 300 | - | 390 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | - | - | 0.0088 | - | 0.074 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | - | - | 18 | - | 150 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | - | - | 8.8 | - | 73.7 |
| Sulphide | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | 17 |
| Total Sulphur | mg/kg | 50 | MCERTS | - | - | 170 | - | 350 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | - | - | 1.0 | - | 1.3 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 0.22 | 0.45 | 0.24 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.42 | < 0.05 | 0.42 | 0.80 | 0.34 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.45 | < 0.05 | 0.41 | 0.75 | 0.35 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.38 | < 0.05 | 0.42 | 0.55 | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.29 | < 0.05 | 0.24 | 0.53 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 0.42 | < 0.05 | 0.46 | 0.62 | < 0.05 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 0.23 | < 0.05 | 0.15 | 0.33 | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.41 | < 0.05 | 0.40 | 0.61 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.24 | < 0.05 | < 0.05 | 0.29 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.27 | < 0.05 | < 0.05 | 0.31 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 3.11 | < 0.80 | 2.72 | 5.24 | 0.93 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 9.0 | < 1.0 | 11 | 14 | 10 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 81 | 35 | - | 120 | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.56 | 0.58 | - | 0.94 | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.6 | < 0.2 | - | 0.8 | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | 0.4 | < 0.2 | < 0.2 | 0.7 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 23 | - | 5.2 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138294 | 2138295 | 2138296 | 2138297 | 2138298 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP102 | TP104 | WS106 | TP112 | WS110 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 1.00 | 0.50 | 0.20 | 1.20 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 44 | 14 | 41 | 60 | 1.2 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 75 | 18 | 50 | 140 | 76 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 15 | 11 | 19 | 23 | 39 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 1.6 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 19 | 19 | - | 29 | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 71 | 25 | 60 | 140 | 81 |

**Monoaromatics & Oxygenates**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| p & m-xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| o-xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138294 | 2138295 | 2138296 | 2138297 | 2138298 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP102 | TP104 | WS106 | TP112 | WS110 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.20 | 1.00 | 0.50 | 0.20 | 1.20 |
| Date Sampled | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 7.4 | < 1.0 | < 1.0 | < 1.0 | 4.5 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 30 | < 1.0 | < 1.0 | < 1.0 | 37 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | < 10 | < 10 | 31 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 37 | < 10 | < 10 | < 10 | 72 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chloroethane | µg/kg | 1 | NONE | - | - | - | - | - |
| Bromomethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Vinyl Chloride | µg/kg | 1 | NONE | - | - | - | - | - |
| Trichlorofluoromethane | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tetrachloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Dibromomethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromodichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138294 | 2138295 | 2138296 | 2138297 | 2138298 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP102 | TP104 | WS106 | TP112 | WS110 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.20 | 1.00 | 0.50 | 0.20 | 1.20 |
| Date Sampled | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Tetrachloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| p & m-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Styrene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tribromomethane | µg/kg | 1 | NONE | - | - | - | - | - |
| o-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Isopropylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | - | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | - | - | - | - | - |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138294 | 2138295 | 2138296 | 2138297 | 2138298 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP102 | TP104 | WS106 | TP112 | WS110 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 1.00 | 0.50 | 0.20 | 1.20 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Azobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Anthraquinone | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |

**PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |

**Total PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138299 | 2138300 | 2138301 | 2138302 | 2138303 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP118 | TP120 | WS114 | TP128 | TP132 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.10 | 0.50 | 0.70 | 0.20 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 28 | 19 | 17 | 21 | 24 |
| Total mass of sample received | kg | 0.001 | NONE | 0.40 | 0.30 | 0.30 | 0.30 | 0.30 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | Amosite | - | - | - | Chrysotile & Crocidolite |
| Asbestos in Soil | Type | N/A | ISO 17025 | Detected | Not-detected | - | - | Detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | 0.002 | - | - | - | < 0.001 |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | 0.002 | - | - | - | < 0.001 |
| Asbestos Analyst ID | N/A | N/A | N/A | SPU | SPU | | | SPU |

**General Inorganics**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 6.9 | - | 7.5 | - | 7.3 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 6400 | - | 110 | - | 560 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 2.4 | - | 0.0053 | - | 0.073 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 4700 | - | 11 | - | 150 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 2360 | - | 5.3 | - | 72.8 |
| Sulphide | mg/kg | 1 | MCERTS | 160 | - | < 1.0 | - | 12 |
| Total Sulphur | mg/kg | 50 | MCERTS | 7800 | - | 100 | - | 950 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 3.4 | - | 0.7 | - | 2.1 |

**Total Phenols**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | < 1.0 | - | < 1.0 |

**Speciated PAHs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | 1.3 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | 0.27 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | 0.97 | < 0.05 | < 0.05 | 0.81 |
| Fluorene | mg/kg | 0.05 | MCERTS | - | 0.67 | < 0.05 | < 0.05 | 0.88 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | 4.7 | < 0.05 | 0.50 | 8.6 |
| Anthracene | mg/kg | 0.05 | MCERTS | - | 0.71 | < 0.05 | < 0.05 | 2.2 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | 3.7 | < 0.05 | 0.82 | 11 |
| Pyrene | mg/kg | 0.05 | MCERTS | - | 3.7 | < 0.05 | 0.78 | 9.3 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | 2.4 | < 0.05 | 0.48 | 7.7 |
| Chrysene | mg/kg | 0.05 | MCERTS | - | 1.9 | < 0.05 | 0.51 | 5.0 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | 2.5 | < 0.05 | 0.43 | 6.8 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | 0.58 | < 0.05 | 0.39 | 2.2 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | 2.2 | < 0.05 | 0.54 | 5.7 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | 0.85 | < 0.05 | 0.26 | 2.6 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | 0.32 | < 0.05 | < 0.05 | 0.78 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | 1.1 | < 0.05 | 0.35 | 2.6 |

**Total PAH**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - | 26.2 | < 0.80 | 5.06 | 68.1 |

**Heavy Metals / Metalloids**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 12 | < 1.0 | 10 | 52 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 80 | - | 110 | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - | 0.73 | - | 1.4 | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - | 0.3 | - | 1.5 | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 82 | - | 5.0 | - | 25 |

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138299 | 2138300 | 2138301 | 2138302 | 2138303 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP118 | TP120 | WS114 | TP128 | TP132 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.10 | 0.50 | 0.70 | 0.20 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 320 | 60 | 3.4 | 64 | 200 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 220 | 98 | 2.5 | 85 | 160 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | 2.8 | 0.7 | 0.4 | < 0.3 | 1.1 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 130 | 17 | 1.5 | 24 | 74 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | 3.9 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 23 | - | 33 | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 480 | 84 | < 1.0 | 140 | 94 |

**Monoaromatics & Oxygenates**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| p & m-xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| o-xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138299 | 2138300 | 2138301 | 2138302 | 2138303 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP118 | TP120 | WS114 | TP128 | TP132 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.50 | 0.10 | 0.50 | 0.70 | 0.20 |
| Date Sampled | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | - |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | - |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | - |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | 4.4 | - | - | - | - |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | 35 | - | - | - | - |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | 390 | - | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | 430 | - | - | - | - |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | - |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | - |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | - |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | - | - |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 18 | - | - | - | - |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 190 | - | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | 210 | - | - | - | - |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | - | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | - | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | - | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | - | < 2.0 | < 2.0 | < 2.0 | 12 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | - | < 4.0 | < 4.0 | < 4.0 | 10 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | - | 9.0 | < 1.0 | 7.5 | 19 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | - | 20 | < 1.0 | 21 | 42 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | - | < 10 | < 10 | < 10 | < 10 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | - | 29 | < 10 | 29 | 83 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Chloroethane | µg/kg | 1 | NONE | < 1.0 | - | - | - | - |
| Bromomethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Vinyl Chloride | µg/kg | 1 | NONE | < 1.0 | - | - | - | - |
| Trichlorofluoromethane | µg/kg | 1 | NONE | < 1.0 | - | - | - | - |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | < 1.0 | - | - | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Trichloromethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | < 1.0 | - | - | - | - |
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Tetrachloromethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Trichloroethene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Dibromomethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Bromodichloromethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138299 | 2138300 | 2138301 | 2138302 | 2138303 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP118 | TP120 | WS114 | TP128 | TP132 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.50 | 0.10 | 0.50 | 0.70 | 0.20 |
| Date Sampled | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Tetrachloroethene | µg/kg | 1 | NONE | < 1.0 | - | - | - | - |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| Chlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| p & m-Xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Styrene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Tribromomethane | µg/kg | 1 | NONE | < 1.0 | - | - | - | - |
| o-Xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Isopropylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Bromobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | - |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | < 0.2 | - | - | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | < 0.2 | - | - | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138299 | 2138300 | 2138301 | 2138302 | 2138303 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP118 | TP120 | WS114 | TP128 | TP132 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.10 | 0.50 | 0.70 | 0.20 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | < 0.3 | - | - | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Azobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.48 | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | - |
| Anthraquinone | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.52 | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.51 | - | - | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | < 0.3 | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |

**PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |

**Total PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138304 | 2138305 | 2138306 | 2138307 | 2138308 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP136 | TP140 | WS124 | TP142 | TP154 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.10 | 1.90 | 1.00 | 0.80 |
| **Date Sampled** | | | | 11/01/2022 | 11/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | 21 |
| Moisture Content | % | 0.01 | NONE | 21 | 19 | 17 | 17 | 14 |
| Total mass of sample received | kg | 0.001 | NONE | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | Chrysotile | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Detected | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | 0.005 | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | 0.005 | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | SPU | SPU | SPU | SPU | JSW |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | - | - | 7.4 | - | - |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | 11 | 1.9 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | - | 970 | - | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | - | - | 0.26 | - | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | - | - | 520 | - | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | - | - | 258 | - | - |
| Sulphide | mg/kg | 1 | MCERTS | - | - | 16 | - | - |
| Total Sulphur | mg/kg | 50 | MCERTS | - | - | 990 | - | - |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | - | - | 1.0 | - | - |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | - |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.72 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.67 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.48 | 1.8 | 0.76 | 3.9 | 0.31 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.42 | < 0.05 | 1.4 | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.70 | 3.1 | 1.0 | 7.0 | 0.50 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.69 | 2.6 | 0.87 | 6.3 | 0.44 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.58 | 2.4 | 0.75 | 4.4 | 0.38 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.36 | 1.5 | 0.55 | 2.8 | 0.26 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 0.52 | 2.2 | 0.73 | 3.8 | 0.41 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 0.28 | 0.62 | 0.28 | 1.5 | 0.13 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.50 | 1.5 | 0.61 | 3.6 | 0.34 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.24 | 0.79 | 0.27 | 1.3 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.45 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.30 | 0.82 | 0.37 | 1.7 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 4.65 | 17.8 | 6.19 | 39.4 | 2.77 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 14 | 41 | 11 | 13 | 16 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 330 | - | 110 | 140 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.93 | 1.9 | - | 0.83 | 0.80 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.4 | 0.5 | - | 1.0 | 0.5 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 16 | - | - |

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138304 | 2138305 | 2138306 | 2138307 | 2138308 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP136 | TP140 | WS124 | TP142 | TP154 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.10 | 1.90 | 1.00 | 0.80 |
| **Date Sampled** | | | | 11/01/2022 | 11/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 45 | 230 | 32 | 43 | 46 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 160 | 270 | 190 | 72 | 60 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | 0.4 | 1.2 | 0.5 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 23 | 73 | 14 | 25 | 20 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 29 | 44 | - | 30 | 24 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 280 | 120 | 200 | 69 |

**Monoaromatics & Oxygenates**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| p & m-xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| o-xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | - |

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138304 | 2138305 | 2138306 | 2138307 | 2138308 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP136 | TP140 | WS124 | TP142 | TP154 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.10 | 0.10 | 1.90 | 1.00 | 0.80 |
| Date Sampled | | | | 11/01/2022 | 11/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | 4.6 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | 9.7 | < 4.0 | 19 | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | 35 | < 1.0 | 70 | < 1.0 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | 110 | < 1.0 | 170 | < 1.0 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | 36 | < 10 | 60 | < 10 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | 190 | < 10 | 330 | < 10 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chloroethane | µg/kg | 1 | NONE | - | - | - | - | - |
| Bromomethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Vinyl Chloride | µg/kg | 1 | NONE | - | - | - | - | - |
| Trichlorofluoromethane | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tetrachloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Dibromomethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromodichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138304 | 2138305 | 2138306 | 2138307 | 2138308 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP136 | TP140 | WS124 | TP142 | TP154 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.10 | 0.10 | 1.90 | 1.00 | 0.80 |
| Date Sampled | | | | 11/01/2022 | 11/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Tetrachloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| p & m-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Styrene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tribromomethane | µg/kg | 1 | NONE | - | - | - | - | - |
| o-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Isopropylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | - | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | - | - | - | - | - |

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138304 | 2138305 | 2138306 | 2138307 | 2138308 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP136 | TP140 | WS124 | TP142 | TP154 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.10 | 1.90 | 1.00 | 0.80 |
| **Date Sampled** | | | | 11/01/2022 | 11/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Azobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Anthraquinone | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |

**PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - | < 0.001 |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - | < 0.001 |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - | < 0.001 |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - | < 0.001 |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - | < 0.001 |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - | < 0.001 |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - | < 0.001 |

**Total PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - | < 0.007 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138309 | 2138310 | 2138311 | 2138312 | 2138313 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS130 | TP162 | TP164 | TP166 | WS140 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.10 | 0.30 | 0.40 | 0.50 |
| **Date Sampled** | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | 26 | < 0.1 | 22 |
| Moisture Content | % | 0.01 | NONE | 10 | 19 | 8.3 | 9.5 | 7.9 |
| Total mass of sample received | kg | 0.001 | NONE | 0.30 | 0.30 | 0.30 | 1.0 | 0.30 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | Not-detected | Not-detected | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | | JSW | JSW | JSW | JSW |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 6.7 | 8.9 | - | 9.0 | 12.0 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 70 | 440 | - | 180 | 3700 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 0.030 | 0.030 | - | 0.058 | 0.027 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 59 | 59 | - | 120 | 55 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 29.7 | 29.5 | - | 57.6 | 27.4 |
| Sulphide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | 4.3 | 7.0 |
| Total Sulphur | mg/kg | 50 | MCERTS | < 50 | 230 | - | 200 | 3100 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 0.3 | 1.5 | - | 0.7 | 2.4 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.23 | - | < 0.05 | - |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.47 | - | < 0.05 | - |
| Pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.39 | - | < 0.05 | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.29 | - | < 0.05 | - |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.22 | - | < 0.05 | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.31 | - | < 0.05 | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.15 | - | < 0.05 | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.26 | - | < 0.05 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | < 0.05 | - |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | < 0.80 | 2.32 | - | < 0.80 | - |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 14 | 9.7 | 2.0 | 12 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 70 | - | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - | - | 0.47 | - | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - | - | 0.4 | - | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 7.9 | 12 | - | 6.6 | 26 |

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138309 | 2138310 | 2138311 | 2138312 | 2138313 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS130 | TP162 | TP164 | TP166 | WS140 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.10 | 0.30 | 0.40 | 0.50 |
| **Date Sampled** | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 4.9 | 68 | 25 | 10 | 23 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 85 | 36 | 8.9 | 35 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | 0.7 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 11 | 19 | 6.9 | 23 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 21 | - | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 4.9 | 68 | 100 | 21 | 70 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| p & m-xylene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| o-xylene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138309 | 2138310 | 2138311 | 2138312 | 2138313 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | WS130 | TP162 | TP164 | TP166 | WS140 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.50 | 0.10 | 0.30 | 0.40 | 0.50 |
| Date Sampled | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | < 0.001 | - | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | < 0.001 | - | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | < 0.001 | - | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | 2.7 |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | - | - | 3.0 | - | 8.8 |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | 9.1 | - | 13 |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | 59 | - | 44 |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | - | - | 71 | - | 68 |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | < 0.001 | - | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | < 0.001 | - | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | < 0.001 | - | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | - | - | < 2.0 | - | < 2.0 |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | < 10 | - | < 10 |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | 120 | - | 92 |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | 130 | - | 99 |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | - | < 1.0 | - |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | < 0.1 | - |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | < 0.1 | - |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | - | < 2.0 | - |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | - | < 4.0 | - |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 | - |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 | - |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | - | < 10 | - |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | - | < 10 | - |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Chloroethane | µg/kg | 1 | NONE | - | - | < 1.0 | - | < 1.0 |
| Bromomethane | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Vinyl Chloride | µg/kg | 1 | NONE | - | - | < 1.0 | - | < 1.0 |
| Trichlorofluoromethane | µg/kg | 1 | NONE | - | - | < 1.0 | - | < 1.0 |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | - | - | < 1.0 | - | < 1.0 |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Trichloromethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | - | - | < 1.0 | - | < 1.0 |
| Benzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Tetrachloromethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Trichloroethene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Dibromomethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Bromodichloromethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138309 | 2138310 | 2138311 | 2138312 | 2138313 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS130 | TP162 | TP164 | TP166 | WS140 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.10 | 0.30 | 0.40 | 0.50 |
| **Date Sampled** | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Tetrachloroethene | µg/kg | 1 | NONE | - | - | < 1.0 | - | < 1.0 |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| Chlorobenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| p & m-Xylene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Styrene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Tribromomethane | µg/kg | 1 | NONE | - | - | < 1.0 | - | < 1.0 |
| o-Xylene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Isopropylbenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Bromobenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Butylbenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | - | - | < 1.0 | - | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | < 1.0 | - | < 1.0 |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | < 0.1 |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | < 0.2 | - | < 0.2 |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | < 0.2 | - | < 0.2 |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | < 0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | < 0.1 |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138309 | 2138310 | 2138311 | 2138312 | 2138313 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS130 | TP162 | TP164 | TP166 | WS140 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.10 | 0.30 | 0.40 | 0.50 |
| **Date Sampled** | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | < 0.1 |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | < 0.1 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | - | - | < 0.3 | - | < 0.3 |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| Azobenzene | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | 0.25 | - | 0.50 |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | < 0.2 |
| Anthraquinone | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | < 0.3 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | 0.27 | - | 0.48 |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | 0.30 | - | 0.48 |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | - | - | < 0.3 | - | < 0.3 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | 0.32 |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | 0.26 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | 0.24 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | 0.17 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | 0.30 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | < 0.05 |

**PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |

**Total PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138314 | 2138315 | 2138316 | 2138317 | 2138318 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS142 | TP101 | TP107 | TP111 | TP117 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.60 | 0.10 | 0.70 | 0.10 | 0.70 |
| **Date Sampled** | | | | 13/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 12 | 29 | 11 | 27 | 21 |
| Total mass of sample received | kg | 0.001 | NONE | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | Not-detected | - | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | | JSW | | JSW | JSW |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 8.1 | - | 7.2 | - | 7.4 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 79 | - | 290 | - | 2500 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 0.0055 | - | 0.080 | - | 0.77 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 11 | - | 160 | - | 1500 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 5.5 | - | 79.5 | - | 771 |
| Sulphide | mg/kg | 1 | MCERTS | 1.5 | - | 23 | - | 170 |
| Total Sulphur | mg/kg | 50 | MCERTS | 79 | - | 880 | - | 4900 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 0.5 | - | 1.0 | - | 2.4 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | < 1.0 | - | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | 0.86 | < 0.05 | 0.22 | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | 0.75 | 0.27 | 0.44 | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | 0.85 | 0.29 | 0.42 | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | 0.48 | < 0.05 | 0.31 | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | 0.52 | < 0.05 | 0.25 | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | 0.53 | < 0.05 | 0.32 | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | 0.25 | < 0.05 | 0.21 | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | 0.52 | < 0.05 | 0.39 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | 0.25 | < 0.05 | < 0.05 | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | < 0.05 | < 0.05 | < 0.05 | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | 0.28 | < 0.05 | < 0.05 | - |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - | 5.29 | < 0.80 | 2.56 | - |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | 8.9 | < 1.0 | 14 | 86 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 66 | - | 97 | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - | 0.56 | - | 0.80 | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - | 0.4 | - | 0.7 | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | 0.2 | 0.6 | 12 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 4.8 | - | 2.8 | - | 35 |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138314 | 2138315 | 2138316 | 2138317 | 2138318 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS142 | TP101 | TP107 | TP111 | TP117 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.60 | 0.10 | 0.70 | 0.10 | 0.70 |
| **Date Sampled** | | | | 13/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 12 | 32 | 4.4 | 52 | 180 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 8.4 | 69 | 2.1 | 98 | 450 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 2.9 | 16 | < 1.0 | 21 | 56 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 23 | - | 30 | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 11 | 63 | 6.7 | 93 | 330 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| p & m-xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| o-xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138314 | 2138315 | 2138316 | 2138317 | 2138318 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | WS142 | TP101 | TP107 | TP111 | TP117 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 1.60 | 0.10 | 0.70 | 0.10 | 0.70 |
| Date Sampled | | | | 13/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | - | < 2.0 |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | - | < 8.0 |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | - | < 8.0 |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | < 10 | - | - | - | < 10 |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | - | < 2.0 |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | - | < 10 |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | - | < 10 |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | - | < 10 |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | - | < 1.0 | < 1.0 | < 1.0 | - |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | - | < 0.1 | < 0.1 | < 0.1 | - |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | - | < 0.1 | < 0.1 | < 0.1 | - |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | - | < 2.0 | < 2.0 | < 2.0 | - |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | - | < 4.0 | < 4.0 | < 4.0 | - |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | - | < 1.0 | < 1.0 | < 1.0 | - |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | - | < 1.0 | < 1.0 | < 1.0 | - |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | - | < 10 | < 10 | < 10 | - |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | - | < 10 | < 10 | < 10 | - |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Chloroethane | µg/kg | 1 | NONE | < 1.0 | - | - | - | < 1.0 |
| Bromomethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Vinyl Chloride | µg/kg | 1 | NONE | < 1.0 | - | - | - | < 1.0 |
| Trichlorofluoromethane | µg/kg | 1 | NONE | < 1.0 | - | - | - | < 1.0 |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | < 1.0 | - | - | - | < 1.0 |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Trichloromethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | < 1.0 | - | - | - | < 1.0 |
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Tetrachloromethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Trichloroethene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Dibromomethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Bromodichloromethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138314 | 2138315 | 2138316 | 2138317 | 2138318 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | WS142 | TP101 | TP107 | TP111 | TP117 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 1.60 | 0.10 | 0.70 | 0.10 | 0.70 |
| Date Sampled | | | | 13/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Tetrachloroethene | µg/kg | 1 | NONE | < 1.0 | - | - | - | < 1.0 |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| Chlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| p & m-Xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Styrene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Tribromomethane | µg/kg | 1 | NONE | < 1.0 | - | - | - | < 1.0 |
| o-Xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Isopropylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Bromobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 | - | - | - | < 1.0 |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | < 0.1 |
| Phenol | mg/kg | 0.2 | ISO 17025 | < 0.2 | - | - | - | < 0.2 |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| 4-Methylphenol | mg/kg | 0.2 | NONE | < 0.2 | - | - | - | < 0.2 |
| Isophorone | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | < 0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | < 0.1 |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138314 | 2138315 | 2138316 | 2138317 | 2138318 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS142 | TP101 | TP107 | TP111 | TP117 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.60 | 0.10 | 0.70 | 0.10 | 0.70 |
| **Date Sampled** | | | | 13/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 | 10/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | < 0.1 | - | - | - | < 0.1 |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | < 0.1 | - | - | - | < 0.1 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | < 0.3 | - | - | - | < 0.3 |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Azobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.68 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Carbazole | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 | - | - | - | < 0.2 |
| Anthraquinone | mg/kg | 0.3 | MCERTS | < 0.3 | - | - | - | < 0.3 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 1.2 |
| Pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 1.2 |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | < 0.3 | - | - | - | < 0.3 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.77 |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.68 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.68 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.44 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.80 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.42 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | 0.51 |
| **PCBs by GC-MS** | | | | | | | | |
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| **Total PCBs by GC-MS** | | | | | | | | |
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138319 | 2138320 | 2138321 | 2138322 | 2138323 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP121 | WS111 | TP141 | TP141 | TP155 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.00 | 2.50 | 1.00 | 2.00 | 1.00 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | 54 | < 0.1 | 46 |
| Moisture Content | % | 0.01 | NONE | 28 | 25 | 31 | 18 | 46 |
| Total mass of sample received | kg | 0.001 | NONE | 0.30 | 0.30 | 0.80 | 0.30 | 0.80 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | - | Not-detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | JSW | JSW | DBU | | DBU |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | - | 8.4 | 7.6 | 7.2 | 7.4 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 8.5 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | 2300 | 1200 | 200 | 1500 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | - | 0.40 | 0.12 | 0.053 | 0.092 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | - | 800 | 240 | 110 | 180 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | - | 398 | 120 | 53.4 | 92.3 |
| Sulphide | mg/kg | 1 | MCERTS | - | 89 | 6.3 | 18 | 2.2 |
| Total Sulphur | mg/kg | 50 | MCERTS | - | 4600 | 1000 | 2000 | 1300 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | - | 3.2 | 3.2 | 1.4 | 5.5 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 0.22 | < 0.05 | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | - |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 0.87 | < 0.05 | - |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 1.8 | < 0.05 | - |
| Pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 1.6 | < 0.05 | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 1.1 | < 0.05 | - |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 0.91 | < 0.05 | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 0.85 | < 0.05 | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 0.74 | < 0.05 | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 1.0 | < 0.05 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 0.49 | < 0.05 | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | < 0.05 | < 0.05 | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | 0.61 | < 0.05 | - |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | < 0.80 | - | 10.2 | < 0.80 | - |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 96 | 47 | 110 | 5.5 | 96 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 700 | - | - | - | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 5.6 | - | - | - | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 1.6 | - | - | - | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | 13 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 210 | 40 | 1.9 | 49 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138319 | 2138320 | 2138321 | 2138322 | 2138323 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP121 | WS111 | TP141 | TP141 | TP155 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.00 | 2.50 | 1.00 | 2.00 | 1.00 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 850 | 2300 | 350 | < 1.0 | 980 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 1100 | 940 | 410 | < 1.0 | 420 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | 2.0 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 130 | 73 | 110 | < 1.0 | 140 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 140 | - | - | - | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 540 | 2100 | 890 | 7.9 | 1600 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| p & m-xylene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| o-xylene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138319 | 2138320 | 2138321 | 2138322 | 2138323 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP121 | WS111 | TP141 | TP141 | TP155 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 1.00 | 2.50 | 1.00 | 2.00 | 1.00 |
| Date Sampled | | | | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | - | 3.7 | - | - | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | - | 9.6 | - | - | < 2.0 |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | 42 | - | - | < 8.0 |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | 100 | - | - | < 8.0 |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | - | 160 | - | - | < 10 |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | < 0.001 | - | - | < 0.001 |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | - | < 2.0 | - | - | 13 |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | < 10 | - | - | 19 |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | 12 | - | - | 42 |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | 15 | - | - | 74 |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | - | < 1.0 | < 1.0 | - |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | - | < 0.1 | < 0.1 | - |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | - | < 0.1 | < 0.1 | - |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | - | < 2.0 | < 2.0 | - |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | - | < 4.0 | < 4.0 | - |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | 3.3 | < 1.0 | - |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | 11 | < 1.0 | - |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | - | < 10 | < 10 | - |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | - | 14 | < 10 | - |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Chloroethane | µg/kg | 1 | NONE | - | < 1.0 | - | - | < 1.0 |
| Bromomethane | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Vinyl Chloride | µg/kg | 1 | NONE | - | < 1.0 | - | - | < 1.0 |
| Trichlorofluoromethane | µg/kg | 1 | NONE | - | < 1.0 | - | - | < 1.0 |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | - | < 1.0 | - | - | < 1.0 |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Trichloromethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | - | < 1.0 | - | - | < 1.0 |
| Benzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Tetrachloromethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Trichloroethene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Dibromomethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Bromodichloromethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138319 | 2138320 | 2138321 | 2138322 | 2138323 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP121 | WS111 | TP141 | TP141 | TP155 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 1.00 | 2.50 | 1.00 | 2.00 | 1.00 |
| Date Sampled | | | | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Tetrachloroethene | µg/kg | 1 | NONE | - | < 1.0 | - | - | < 1.0 |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| Chlorobenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| p & m-Xylene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Styrene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Tribromomethane | µg/kg | 1 | NONE | - | < 1.0 | - | - | < 1.0 |
| o-Xylene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Isopropylbenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Bromobenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Butylbenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | - | < 1.0 | - | - | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | - | < 1.0 | - | - | < 1.0 |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | < 0.1 | - | - | < 0.1 |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | < 0.2 | - | - | < 0.2 |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | < 0.05 |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | < 0.2 | - | - | < 0.2 |
| Isophorone | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | 0.26 | - | - | 0.53 |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | < 0.1 | - | - | < 0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | < 0.1 | - | - | < 0.1 |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138319 | 2138320 | 2138321 | 2138322 | 2138323 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP121 | WS111 | TP141 | TP141 | TP155 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.00 | 2.50 | 1.00 | 2.00 | 1.00 |
| **Date Sampled** | | | | 10/01/2022 | 10/01/2022 | 11/01/2022 | 11/01/2022 | 12/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | < 0.1 | - | - | < 0.1 |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | - | < 0.1 | - | - | < 0.1 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 0.33 |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | - | < 0.3 | - | - | < 0.3 |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| Fluorene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 0.24 |
| Azobenzene | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | < 0.2 | - | - | < 0.2 |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | 0.21 | - | - | 2.9 |
| Anthracene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 0.51 |
| Carbazole | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | - | 79 | - | - | < 0.2 |
| Anthraquinone | mg/kg | 0.3 | MCERTS | - | < 0.3 | - | - | < 0.3 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | 0.30 | - | - | 4.4 |
| Pyrene | mg/kg | 0.05 | MCERTS | - | 0.33 | - | - | 4.1 |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | - | 2.1 | - | - | < 0.3 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 2.3 |
| Chrysene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 2.3 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 2.1 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 1.1 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 1.9 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 1.0 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 0.36 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | < 0.05 | - | - | 1.3 |
| **PCBs by GC-MS** | | | | | | | | |
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| **Total PCBs by GC-MS** | | | | | | | | |
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138324 | 2138325 | 2138326 | 2138327 | 2138328 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP169 | TP171 | WS131 | TP185 | TP199 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.80 | 0.10 | 0.10 | 0.70 | 0.10 |
| Date Sampled | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 | 13/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 31 | 22 | 24 | 16 | 21 |
| Total mass of sample received | kg | 0.001 | NONE | 0.30 | 0.30 | 0.30 | 0.30 | 0.30 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | - | Not-detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | DBU | DBU | DBU | | DBU |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 6.8 | - | 6.9 | 7.5 | - |
| Total Cyanide | mg/kg | 1 | MCERTS | 1.7 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 4400 | - | 520 | 200 | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 0.83 | - | 0.067 | 0.011 | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 1700 | - | 130 | 22 | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 832 | - | 66.5 | 11.1 | - |
| Sulphide | mg/kg | 1 | MCERTS | 1.4 | - | 2.0 | < 1.0 | - |
| Total Sulphur | mg/kg | 50 | MCERTS | 2200 | - | 320 | 200 | - |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 3.8 | - | 2.4 | 1.1 | - |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | < 1.0 | < 1.0 | - |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.78 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.82 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.50 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.53 | 1.3 | 1.4 | < 0.05 | 5.2 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.29 | 0.23 | < 0.05 | 0.84 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.96 | 2.7 | 2.3 | < 0.05 | 6.4 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.84 | 2.7 | 2.2 | < 0.05 | 6.3 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.74 | 1.6 | 1.2 | < 0.05 | 3.1 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.54 | 1.2 | 1.1 | < 0.05 | 3.1 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 0.87 | 1.6 | 1.0 | < 0.05 | 3.0 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 0.45 | 0.84 | 0.61 | < 0.05 | 1.7 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.61 | 1.6 | 1.1 | < 0.05 | 3.3 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.32 | 0.81 | 0.40 | < 0.05 | 1.2 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.21 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.37 | 0.99 | 0.57 | < 0.05 | 1.8 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 6.23 | 15.8 | 12.0 | < 0.80 | 38.0 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 120 | 14 | 120 | < 1.0 | 13 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 120 | - | - | 180 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - | 0.72 | - | - | 0.66 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - | 0.8 | - | - | 0.6 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | 0.6 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 23 | - | 17 | 3.5 | - |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138324 | 2138325 | 2138326 | 2138327 | 2138328 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP169 | TP171 | WS131 | TP185 | TP199 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.80 | 0.10 | 0.10 | 0.70 | 0.10 |
| **Date Sampled** | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 730 | 88 | 730 | 3.3 | 54 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 1400 | 170 | 1400 | 3.3 | 200 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 210 | 20 | 210 | 3.1 | 17 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 26 | - | - | 22 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 920 | 130 | 910 | < 1.0 | 200 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| p & m-xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| o-xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138324 | 2138325 | 2138326 | 2138327 | 2138328 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP169 | TP171 | WS131 | TP185 | TP199 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.80 | 0.10 | 0.10 | 0.70 | 0.10 |
| Date Sampled | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 | 13/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | 9.2 | < 4.0 | 6.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 3.6 | 10 | 21 | < 1.0 | 27 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 10 | 30 | 54 | < 1.0 | 120 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | 12 | < 10 | 58 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 14 | 40 | 97 | < 10 | 210 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chloroethane | µg/kg | 1 | NONE | - | - | - | - | - |
| Bromomethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Vinyl Chloride | µg/kg | 1 | NONE | - | - | - | - | - |
| Trichlorofluoromethane | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tetrachloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Dibromomethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromodichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138324 | 2138325 | 2138326 | 2138327 | 2138328 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP169 | TP171 | WS131 | TP185 | TP199 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.80 | 0.10 | 0.10 | 0.70 | 0.10 |
| Date Sampled | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 | 13/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Tetrachloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| p & m-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Styrene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tribromomethane | µg/kg | 1 | NONE | - | - | - | - | - |
| o-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Isopropylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | - | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | - | - | - | - | - |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138324 | 2138325 | 2138326 | 2138327 | 2138328 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP169 | TP171 | WS131 | TP185 | TP199 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.80 | 0.10 | 0.10 | 0.70 | 0.10 |
| **Date Sampled** | | | | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Azobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Anthraquinone | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |

**PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - | - |

**Total PCBs by GC-MS**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138329 | 2138330 | 2138331 | 2138332 |
|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP101 | TP101 | WS139 | WS141 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.90 | 1.30 | 0.10 | 1.80 |
| **Date Sampled** | | | | 13/01/2022 | 13/01/2022 | 13/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 29 | 13 | 14 | 13 |
| Total mass of sample received | kg | 0.001 | NONE | 0.80 | 0.30 | 0.30 | 0.30 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | - | Not-detected | - |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | DBU | | DBU | |
| **General Inorganics** | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | 8.2 | 8.4 | 9.0 | 8.1 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 24000 | 340 | 1500 | 73 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 1.8 | 0.16 | 0.080 | 0.0043 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 3700 | 330 | 160 | 8.6 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 1830 | 164 | 80.3 | 4.3 |
| Sulphide | mg/kg | 1 | MCERTS | 74 | < 1.0 | 4.9 | < 1.0 |
| Total Sulphur | mg/kg | 50 | MCERTS | 14000 | 180 | 630 | 66 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 2.7 | 0.5 | 1.7 | 0.3 |
| **Total Phenols** | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | 0.44 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | 0.47 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | 0.38 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | 4.2 | < 0.05 |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | 0.71 | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | 5.5 | < 0.05 |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | 5.2 | < 0.05 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | 3.0 | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | 2.4 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | 2.7 | < 0.05 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | 1.6 | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | 2.9 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | 1.4 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | 0.35 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | 1.8 | < 0.05 |
| **Total PAH** | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - | - | 33.1 | < 0.80 |
| **Heavy Metals / Metalloids** | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 11 | < 1.0 | 14 | 9.1 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | - | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - | - | - | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - | - | - | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | 0.8 | 0.9 | 1.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 17 | 5.0 | 19 | 35 |

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**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| **Lab Sample Number** | | | | 2138329 | 2138330 | 2138331 | 2138332 |
|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP101 | TP101 | WS139 | WS141 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.90 | 1.30 | 0.10 | 1.80 |
| **Date Sampled** | | | | 13/01/2022 | 13/01/2022 | 13/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 100 | 4.5 | 62 | 24 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 120 | < 1.0 | 180 | 14 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | 0.4 | < 0.3 | 0.8 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 21 | < 1.0 | 18 | 37 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | - | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 220 | 7.7 | 200 | 48 |

**Monoaromatics & Oxygenates**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - |
| p & m-xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - |
| o-xylene | µg/kg | 1 | MCERTS | < 1.0 | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | - | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138329 | 2138330 | 2138331 | 2138332 |
|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP101 | TP101 | WS139 | WS141 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.90 | 1.30 | 0.10 | 1.80 |
| Date Sampled | | | | 13/01/2022 | 13/01/2022 | 13/01/2022 | 13/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| **Petroleum Hydrocarbons** | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | 11 | - | - | - |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | 37 | - | - | - |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | 230 | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | MCERTS | 280 | - | - | - |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.001 | MCERTS | < 0.001 | - | - | - |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | 6.9 | - | - | - |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | 42 | - | - | - |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 180 | - | - | - |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 470 | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | MCERTS | 710 | - | - | - |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | - | < 1.0 | < 1.0 | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | - | < 0.1 | < 0.1 | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | - | < 0.1 | < 0.1 | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | - | < 2.0 | < 2.0 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | - | < 4.0 | 14 | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | - | < 1.0 | 49 | < 1.0 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | - | < 1.0 | 160 | < 1.0 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | - | < 10 | 62 | < 10 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | - | < 10 | 290 | < 10 |
| **VOCs** | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Chloroethane | µg/kg | 1 | NONE | < 1.0 | < 1.0 | - | - |
| Bromomethane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Vinyl Chloride | µg/kg | 1 | NONE | < 1.0 | < 1.0 | - | - |
| Trichlorofluoromethane | µg/kg | 1 | NONE | < 1.0 | < 1.0 | - | - |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | < 1.0 | < 1.0 | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Trichloromethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | < 1.0 | < 1.0 | - | - |
| Benzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Tetrachloromethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Trichloroethene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Dibromomethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Bromodichloromethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138329 | 2138330 | 2138331 | 2138332 |
|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP101 | TP101 | WS139 | WS141 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.90 | 1.30 | 0.10 | 1.80 |
| **Date Sampled** | | | | 13/01/2022 | 13/01/2022 | 13/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Tetrachloroethene | µg/kg | 1 | NONE | < 1.0 | < 1.0 | - | - |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| Chlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| p & m-Xylene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Styrene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Tribromomethane | µg/kg | 1 | NONE | < 1.0 | < 1.0 | - | - |
| o-Xylene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Isopropylbenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Bromobenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 | < 1.0 | - | - |

**SVOCs**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | < 0.1 | < 0.1 | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | < 0.2 | < 0.2 | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | < 0.2 | < 0.2 | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | 4.1 | < 0.05 | - | - |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | 1.6 | < 0.1 | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | < 0.1 | < 0.1 | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138329 | 2138330 | 2138331 | 2138332 |
|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP101 | TP101 | WS139 | WS141 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.90 | 1.30 | 0.10 | 1.80 |
| **Date Sampled** | | | | 13/01/2022 | 13/01/2022 | 13/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | 2.3 | < 0.1 | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 6.1 | < 0.05 | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | 3.1 | < 0.2 | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | < 0.3 | < 0.3 | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | 5.1 | < 0.05 | - | - |
| Azobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 33 | < 0.05 | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | 6.7 | < 0.05 | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | 2.5 | < 0.3 | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | - | - |
| Anthraquinone | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 29 | < 0.05 | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | 28 | < 0.05 | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | < 0.3 | < 0.3 | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 14 | < 0.05 | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | 11 | < 0.05 | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 12 | < 0.05 | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 4.7 | < 0.05 | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 12 | < 0.05 | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 4.5 | < 0.05 | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 1.5 | < 0.05 | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 6.2 | < 0.05 | - | - |

**PCBs by GC-MS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PCB Congener 28 | mg/kg | 0.001 | MCERTS | - | - | - | - |
| PCB Congener 52 | mg/kg | 0.001 | MCERTS | - | - | - | - |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | - | - | - | - |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | - | - | - | - |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | - | - | - | - |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | - | - | - | - |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | - | - | - | - |

**Total PCBs by GC-MS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Total PCBs | mg/kg | 0.007 | MCERTS | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

**Analytical Report Number:** 22-33264
**Project / Site name:** Cherryfield Drive
**Your Order No:** 15280-NG-B

# Certificate of Analysis - Asbestos Quantification

## Methods:

### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---|---|---|---|---|---|---|---|
| **2138299** | TP118 | 0.50 | 105 | Loose Fibres | **Amosite** | 0.002 | **0.002** |
| **2138303** | TP132 | 0.20 | 140 | Loose Fibres | **Chrysotile & Crocidolite** | < 0.001 | **< 0.001** |
| **2138305** | TP140 | 0.10 | 155 | Loose Fibrous Debris | **Chrysotile** | 0.005 | **0.005** |

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

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**

**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138333 | 2138334 | 2138335 | 2138336 | 2138337 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP118 | TP166 | TP117 | TP155 | TP101 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 0.40 | 2.40 | 1.00 | 0.90 |
| **Date Sampled** | | | | 10/01/2022 | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Leachate Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **General Inorganics** | | | | | | | | |
| pH (automated) | pH Units | N/A | ISO 17025 | 7.6 | 9.5 | 7.6 | 7.5 | 7.3 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | 2.1 | 7.6 | 6.8 | 7.0 | 7.8 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | 2.0 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | 0.81 | < 0.01 | 1.6 |
| Fluorene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | 0.48 | < 0.01 | 0.72 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | 0.38 | < 0.01 | 0.80 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | NONE | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| **Total PAH** | | | | | | | | |
| Total EPA-16 PAHs | µg/l | 0.2 | NONE | < 0.2 | < 0.2 | 1.7 | < 0.2 | 5.1 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (dissolved) | µg/l | 1 | ISO 17025 | 16 | 14 | 19 | 5.7 | 10 |
| Cadmium (dissolved) | µg/l | 0.08 | ISO 17025 | 0.12 | 0.24 | 0.25 | 0.16 | < 0.08 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 | U/S* | < 5.0 | < 5.0 | < 5.0 |
| Chromium (dissolved) | µg/l | 0.4 | ISO 17025 | 0.8 | 17 | 0.6 | 1.6 | 0.4 |
| Copper (dissolved) | µg/l | 0.7 | ISO 17025 | 6.6 | 12 | < 0.7 | < 0.7 | < 0.7 |
| Lead (dissolved) | µg/l | 1 | ISO 17025 | 2.3 | 4.2 | 3.8 | 4.2 | 1.9 |
| Mercury (dissolved) | µg/l | 0.5 | ISO 17025 | < 0.5 | < 0.5 | < 0.5 | < 0.5 | < 0.5 |
| Nickel (dissolved) | µg/l | 0.3 | ISO 17025 | 5.9 | 6.7 | 7.0 | 3.7 | 9.4 |
| Selenium (dissolved) | µg/l | 4 | ISO 17025 | 5.9 | 8.8 | 6.3 | 4.9 | < 4.0 |
| Zinc (dissolved) | µg/l | 0.4 | ISO 17025 | 7.7 | 10 | 4.9 | 35 | 11 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33264**
**Project / Site name: Cherryfield Drive**

**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138333 | 2138334 | 2138335 | 2138336 | 2138337 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP118 | TP166 | TP117 | TP155 | TP101 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.50 | 0.40 | 2.40 | 1.00 | 0.90 |
| Date Sampled | | | | 10/01/2022 | 12/01/2022 | 12/01/2022 | 12/01/2022 | 13/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Leachate Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH1 (C10 - C40) $_{EH\_1D\_TOTAL\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 $_{HS\_1D\_AL}$ | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 $_{HS\_1D\_AL}$ | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 $_{HS\_1D\_AL}$ | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 $_{EH\_1D\_AL\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) $_{HS+EH\_1D\_AL\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C5 - C7 $_{HS\_1D\_AR}$ | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 $_{HS\_1D\_AR}$ | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 $_{HS\_1D\_AR}$ | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C12 - C16 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C16 - C21 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C21 - C35 $_{EH\_1D\_AR\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic (C5 - C35) $_{HS+EH\_1D\_AR\_\#1\_\#2\_MS}$ | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |

U/S = Unsuitable Sample  I/S = Insufficient Sample
*U/S due to high variances between chromium (hexavalent) and chromium (dissolved) caused by method differences.

**Analytical Report Number : 22-33264**
**Project / Site name: Cherryfield Drive**

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

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

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2138294 | TP102 | None Supplied | 0.2 | Brown loam and clay with vegetation. |
| 2138295 | TP104 | None Supplied | 1 | Brown clay and sand with gravel. |
| 2138296 | WS106 | None Supplied | 0.5 | Brown clay and sand with gravel and vegetation. |
| 2138297 | TP112 | None Supplied | 0.2 | Brown clay and sand with gravel and vegetation. |
| 2138298 | WS110 | None Supplied | 1.2 | Brown clay and sand with vegetation. |
| 2138299 | TP118 | None Supplied | 0.5 | Brown loam and clay with gravel and glass. |
| 2138300 | TP120 | None Supplied | 0.1 | Brown loam and clay with gravel and vegetation. |
| 2138301 | WS114 | None Supplied | 0.5 | Brown clay and sand with vegetation. |
| 2138302 | TP128 | None Supplied | 0.7 | Brown clay and sand with gravel. |
| 2138303 | TP132 | None Supplied | 0.2 | Brown clay and sand with vegetation. |
| 2138304 | TP136 | None Supplied | 0.1 | Brown clay and loam with gravel and vegetation. |
| 2138305 | TP140 | None Supplied | 0.1 | Brown clay and sand with gravel. |
| 2138306 | WS124 | None Supplied | 1.9 | Brown clay and sand with gravel and vegetation. |
| 2138307 | TP142 | None Supplied | 1 | Brown clay and sand with gravel and vegetation. |
| 2138308 | TP154 | None Supplied | 0.8 | Brown clay and sand with stones and vegetation. |
| 2138309 | WS130 | None Supplied | 0.5 | Brown clay and sand. |
| 2138310 | TP162 | None Supplied | 0.1 | Brown loam and clay with vegetation. |
| 2138311 | TP164 | None Supplied | 0.3 | Brown loam and sand with vegetation and stones. |
| 2138312 | TP166 | None Supplied | 0.4 | Brown sand with gravel. |
| 2138313 | WS140 | None Supplied | 0.5 | Brown loam and sand with gravel and stones. |
| 2138314 | WS142 | None Supplied | 1.6 | Brown loam and sand. |
| 2138315 | TP101 | None Supplied | 0.1 | Brown loam and clay with vegetation. |
| 2138316 | TP107 | None Supplied | 0.7 | Brown clay and sand with gravel. |
| 2138317 | TP111 | None Supplied | 0.1 | Brown loam and clay with vegetation. |
| 2138318 | TP117 | None Supplied | 0.7 | Brown loam and clay with vegetation and gravel |
| 2138319 | TP121 | None Supplied | 1 | Brown clay and sand with vegetation and gravel |
| 2138320 | WS111 | None Supplied | 2.5 | Brown clay and sand with vegetation. |
| 2138321 | TP141 | None Supplied | 1 | Brown clay and sand with vegetation and stones. |
| 2138322 | TP141 | None Supplied | 2 | Brown clay and sand. |
| 2138323 | TP155 | None Supplied | 1 | Brown clay and sand with stones and vegetation. |
| 2138324 | TP169 | None Supplied | 0.8 | Brown clay and sand with rubble and glass. |
| 2138325 | TP171 | None Supplied | 0.1 | Brown loam and clay with gravel and vegetation. |
| 2138326 | WS131 | None Supplied | 0.1 | Brown loam and clay with gravel and vegetation. |
| 2138327 | TP185 | None Supplied | 0.7 | Brown sandy clay with gravel. |
| 2138328 | TP199 | None Supplied | 0.1 | Brown loam and clay with gravel and vegetation. |
| 2138329 | TP101 | None Supplied | 0.9 | Brown clay and loam with vegetation and plastic. |
| 2138330 | TP101 | None Supplied | 1.3 | Brown sandy clay with gravel. |
| 2138331 | WS139 | None Supplied | 0.1 | Brown loam and clay with gravel and glass. |
| 2138332 | WS141 | None Supplied | 1.8 | Brown clay with gravel and vegetation. |

**Analytical Report Number : 22-33264**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| BS EN 12457-1 (2:1) Leachate Prep | 2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis. | In-house method based on BSEN12457-1. | L043-PL | W | NONE |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Metals by ICP-OES in leachate | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L039-PL | W | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Hexavalent chromium in leachate | Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | ISO 17025 |
| Hexavalent chromium in soil | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in leachate - LOW LEVEL 1 ug/l | Determination of phenols in leachate by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | ISO 17025 |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in leachate | Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L102B-PL | W | NONE |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| PCB's By GC-MS in soil | Determination of PCB by extraction with acetone and hexane followed by GC-MS. | In-house method based on USEPA 8082 | L027-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| pH at 20oC in leachate (automated) | Determination of pH in leachate by electrometric measurement. | In house method. | L099B | W | ISO 17025 |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |

**Analytical Report Number : 22-33264**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Total sulphate (as SO4 in soil) | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total Sulphur in soil | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Semi-volatile organic compounds in soil | Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| TPH1 (Leachates) | Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS. | In-house method | L070-PL | W | NONE |
| TPHCWG (Leachates) | Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS. | In-house method | L070-PL | W | NONE |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| Volatile organic compounds in soil | Determination of volatile organic compounds in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| BTEX and MTBE in leachates (Monoaromatics) | Determination of BTEX and MTBE in leachates by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method with silica gel split/clean up. | L088/76-PL | W | MCERTS |
| TPH in (Soil) | Determination of TPH bands by HS-GC-MS/GC-FID | In-house method, TPH with carbon banding and silica gel split/cleanup. | L076-PL | D | MCERTS |
| Total cyanide in leachate - 1µg/l | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL | W | ISO 17025 |
| Asbestos Quantification - Gravimetric | Asbestos quantification by gravimetric method - in house method based on references. | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft). | A006-PL | D | ISO 17025 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |
| Sulphate, water soluble, in soil (1hr extraction) | Sulphate, water soluble, in soil (1hr extraction) | In-house method | L038-PL | D | MCERTS |

**Analytical Report Number : 22-33264**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

**List of HWOL Acronyms and Operators**

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

**Analytical Report Number : 22-33264**
**Project / Site name: Cherryfield Drive**

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name | Test Ref | Test Deviation |
|---|---|---|---|---|---|---|---|
| TP101 | None Supplied | S | 2138315 | c | Total cyanide in soil | L080-PL | c |
| TP102 | None Supplied | S | 2138294 | c | Total cyanide in soil | L080-PL | c |
| TP104 | None Supplied | S | 2138295 | c | Total cyanide in soil | L080-PL | c |
| TP107 | None Supplied | S | 2138316 | c | Sulphide in soil | L010-PL | c |
| TP107 | None Supplied | S | 2138316 | c | Total cyanide in soil | L080-PL | c |
| TP111 | None Supplied | S | 2138317 | c | Total cyanide in soil | L080-PL | c |
| TP112 | None Supplied | S | 2138297 | c | Total cyanide in soil | L080-PL | c |
| TP117 | None Supplied | S | 2138318 | c | Sulphide in soil | L010-PL | c |
| TP117 | None Supplied | S | 2138318 | c | Total cyanide in soil | L080-PL | c |
| TP118 | None Supplied | S | 2138299 | c | Sulphide in soil | L010-PL | c |
| TP118 | None Supplied | S | 2138299 | c | Total cyanide in soil | L080-PL | c |
| TP120 | None Supplied | S | 2138300 | c | Total cyanide in soil | L080-PL | c |
| TP121 | None Supplied | S | 2138319 | c | Total cyanide in soil | L080-PL | c |
| WS106 | None Supplied | S | 2138296 | c | Sulphide in soil | L010-PL | c |
| WS106 | None Supplied | S | 2138296 | c | Total cyanide in soil | L080-PL | c |
| WS110 | None Supplied | S | 2138298 | c | Sulphide in soil | L010-PL | c |
| WS110 | None Supplied | S | 2138298 | c | Total cyanide in soil | L080-PL | c |
| WS111 | None Supplied | S | 2138320 | c | Sulphide in soil | L010-PL | c |
| WS111 | None Supplied | S | 2138320 | c | Total cyanide in soil | L080-PL | c |
| WS114 | None Supplied | S | 2138301 | c | Sulphide in soil | L010-PL | c |
| WS114 | None Supplied | S | 2138301 | c | Total cyanide in soil | L080-PL | c |

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The results included within the report are representative of the samples submitted for analysis.

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# Analytical Report Number : 22-33380

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 18/01/2022 |
| **Your job number:** | 15-280 | **Samples instructed on/ Analysis started on:** | 18/01/2022 |
| **Your order number:** | 15280-NG-B | **Analysis completed by:** | 24/01/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 24/01/2022 |
| **Samples Analysed:** | 1 soil sample | | |

**Signed:** Izabela Wójcik

Izabela Wójcik
Technical Reviewer (Reporting Team)
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-33380**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2138870 |
| **Sample Reference** | | | | TP184 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.10 |
| **Date Sampled** | | | | 10/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| Stone Content | % | 0.1 | NONE | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 16 |
| Total mass of sample received | kg | 0.001 | NONE | 0.50 |

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

**General Inorganics**

| | | | | |
|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 8.4 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 900 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 0.082 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 160 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 81.7 |
| Sulphide | mg/kg | 1 | MCERTS | 8.3 |
| Total Sulphur | mg/kg | 50 | MCERTS | 420 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 1.2 |

**Total Phenols**

| | | | | |
|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 |

**Speciated PAHs**

| | | | | |
|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.28 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 0.95 |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.68 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 5.2 |
| Anthracene | mg/kg | 0.05 | MCERTS | 1.0 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 8.1 |
| Pyrene | mg/kg | 0.05 | MCERTS | 8.1 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 4.0 |
| Chrysene | mg/kg | 0.05 | MCERTS | 3.8 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 3.9 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 1.7 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 4.3 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 2.1 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.51 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 2.5 |

**Total PAH**

| | | | | |
|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 47.1 |

**Analytical Report Number: 22-33380**
**Project / Site name: Cherryfield Drive**
**Your Order No: 15280-NG-B**

| Lab Sample Number | | | | 2138870 |
|---|---|---|---|---|
| **Sample Reference** | | | | TP184 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.10 |
| **Date Sampled** | | | | 10/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| **Heavy Metals / Metalloids** | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 10 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | 0.3 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 21 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 60 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 150 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 180 |
| **Petroleum Hydrocarbons** | | | | |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | 7.5 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 30 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 110 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 54 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 200 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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**Analytical Report Number : 22-33380**
**Project / Site name: Cherryfield Drive**

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

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

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2138870 | TP184 | None Supplied | 0.1 | Brown clay and loam with gravel. |

**Analytical Report Number : 22-33380**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Hexavalent chromium in soil | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Total sulphate (as SO4 in soil) | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total Sulphur in soil | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| TPH in (Soil) | Determination of TPH bands by HS-GC-MS/GC-FID | In-house method, TPH with carbon banding and silica gel split/cleanup. | L076-PL | D | MCERTS |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |
| Sulphate, water soluble, in soil (1hr extraction) | Sulphate, water soluble, in soil (1hr extraction) | In-house method | L038-PL | D | MCERTS |

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**Analytical Report Number : 22-33380**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

**Analytical Report Number : 22-33380**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|

## Information in Support of Analytical Results

**List of HWOL Acronyms and Operators**

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

**Analytical Report Number : 22-33380**
**Project / Site name: Cherryfield Drive**

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name | Test Ref | Test Deviation |
|---|---|---|---|---|---|---|---|
| TP184 | None Supplied | S | 2138870 | c | Sulphide in soil | L010-PL | c |
| TP184 | None Supplied | S | 2138870 | c | Total cyanide in soil | L080-PL | c |

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# Analytical Report Number : 22-35680

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 26/01/2022 |
| **Your job number:** | 15-280 | **Samples instructed on/ Analysis started on:** | 26/01/2022 |
| **Your order number:** | 000 422 | **Analysis completed by:** | 02/02/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 02/02/2022 |
| **Samples Analysed:** | 1 leachate sample - 11 soil samples | | |

**Signed:** Karolina Marek

Karolina Marek
PL Head of Reporting Team
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151413 | 2151414 | 2151415 | 2151416 | 2151417 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP1115 | TP1117 | TP1121 | TP1125 | WS148 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.50 | 0.40 | 0.10 | 0.10 | 0.80 |
| **Date Sampled** | | | | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 15 | 14 | 20 | 21 | 12 |
| Total mass of sample received | kg | 0.001 | NONE | 0.40 | 0.40 | 0.40 | 0.40 | 0.40 |
| Asbestos in Soil | Type | N/A | ISO 17025 | - | Not-detected | Not-detected | Not-detected | - |
| Asbestos Analyst ID | N/A | N/A | N/A | | DBU | BPA | DBU | |

**General Inorganics**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 8.1 | - | - | - | 7.0 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 240 | - | - | - | 200 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 0.080 | - | - | - | 0.016 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 160 | - | - | - | 32 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 79.8 | - | - | - | 16.2 |
| Sulphide | mg/kg | 1 | MCERTS | 6.7 | - | - | - | 8.9 |
| Total Sulphur | mg/kg | 50 | MCERTS | 180 | - | - | - | 410 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 0.4 | - | - | - | 1.5 |

**Total Phenols**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |

**Speciated PAHs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 0.21 | 0.68 | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 1.2 | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.26 | - |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 0.23 | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 0.37 | 2.5 | - |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 1.3 | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.33 | 0.41 | 0.96 | 21 | - |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.35 | 0.51 | 1.1 | 24 | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.59 | 0.65 | 20 | - |
| Chrysene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.46 | 0.59 | 19 | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.79 | 0.83 | 33 | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.33 | 0.38 | 11 | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.74 | 0.76 | 30 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.44 | 0.35 | 15 | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | 3.8 | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.45 | 0.34 | 17 | - |

**Total PAH**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | < 0.80 | 4.72 | 6.51 | 199 | - |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151413 | 2151414 | 2151415 | 2151416 | 2151417 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | TP1115 | TP1117 | TP1121 | TP1125 | WS148 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 1.50 | 0.40 | 0.10 | 0.10 | 0.80 |
| Date Sampled | | | | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 5.3 | 9.5 | 14 | 130 | 5.2 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 110 | 88 | 240 | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - | 0.77 | 0.81 | 0.71 | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - | 1.0 | 0.3 | 5.6 | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | 6.3 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 42 | - | - | - | 17 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 22 | 35 | 49 | 690 | 15 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 13 | 50 | 93 | 1200 | 20 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 37 | 35 | 20 | 45 | 15 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | 32 | 27 | 44 | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 44 | 150 | 76 | 4200 | 38 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | 7.1 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | < 4.0 | 52 | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 6.5 | 110 | < 1.0 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 14 | 310 | < 1.0 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | < 10 | 44 | < 10 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | 20 | 520 | < 10 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| Chloroethane | µg/kg | 1 | NONE | - | - | - | - | < 1.0 |
| Bromomethane | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| Vinyl Chloride | µg/kg | 1 | NONE | - | - | - | - | < 1.0 |
| Trichlorofluoromethane | µg/kg | 1 | NONE | - | - | - | - | < 1.0 |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | - | - | - | - | < 1.0 |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Trichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | - | - | - | - | < 1.0 |
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Tetrachloromethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Trichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Dibromomethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Bromodichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |

**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151413 | 2151414 | 2151415 | 2151416 | 2151417 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP1115 | TP1117 | TP1121 | TP1125 | WS148 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.50 | 0.40 | 0.10 | 0.10 | 0.80 |
| **Date Sampled** | | | | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Tetrachloroethene | µg/kg | 1 | NONE | - | - | - | - | < 1.0 |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| Chlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| p & m-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Styrene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Tribromomethane | µg/kg | 1 | NONE | - | - | - | - | < 1.0 |
| o-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Isopropylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Bromobenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | - | - | - | - | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | < 1.0 |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | - | - | < 0.1 |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | - | - | < 0.2 |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | - | - | < 0.2 |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | - | - | < 0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | - | - | < 0.1 |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | - | - | < 0.1 |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151413 | 2151414 | 2151415 | 2151416 | 2151417 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP1115 | TP1117 | TP1121 | TP1125 | WS148 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.50 | 0.40 | 0.10 | 0.10 | 0.80 |
| **Date Sampled** | | | | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 | 24/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | - | - | - | - | < 0.1 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | - | - | - | - | < 0.3 |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Azobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | < 0.2 |
| Anthraquinone | mg/kg | 0.3 | MCERTS | - | - | - | - | < 0.3 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | - | - | - | - | < 0.3 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | - | < 0.05 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151418 | 2151419 | 2151420 | 2151421 | 2151422 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP194 | TP1204 | TP1214 | TP1218 | TP1222 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.80 | 0.50 | 0.10 | 0.70 | 0.20 |
| **Date Sampled** | | | | 24/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 35 | 14 | 17 | 12 | 13 |
| Total mass of sample received | kg | 0.001 | NONE | 1.0 | 1.0 | 0.40 | 0.40 | 0.40 |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | - | Not-detected |
| Asbestos Analyst ID | N/A | N/A | N/A | BPA | BPA | DBU | | BPA |

**General Inorganics**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 7.5 | 8.4 | - | 7.7 | 7.8 |
| Total Cyanide | mg/kg | 1 | MCERTS | 1.6 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 3400 | 380 | - | 180 | 400 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 0.18 | 0.035 | - | 0.037 | 0.032 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 370 | 70 | - | 73 | 65 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 184 | 35.2 | - | 36.5 | 32.3 |
| Sulphide | mg/kg | 1 | MCERTS | 2.5 | 2.8 | - | 5.9 | 3.1 |
| Total Sulphur | mg/kg | 50 | MCERTS | 1500 | 230 | - | 270 | 240 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 5.3 | 0.6 | - | 0.3 | 1.9 |

**Total Phenols**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | - | < 1.0 | < 1.0 |

**Speciated PAHs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.25 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.37 | < 0.05 | 0.65 | < 0.05 | 1.4 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | 0.21 | < 0.05 | 0.42 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.57 | 0.83 | 1.8 | < 0.05 | 3.5 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.53 | 1.1 | 1.5 | < 0.05 | 3.0 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.52 | 0.77 | 1.0 | < 0.05 | 1.9 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.36 | 0.65 | 0.73 | < 0.05 | 1.4 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 0.66 | 1.3 | 0.89 | < 0.05 | 1.8 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 0.20 | 0.38 | 0.53 | < 0.05 | 0.89 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.40 | 1.2 | 0.94 | < 0.05 | 1.7 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.56 | 0.55 | < 0.05 | 0.73 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | < 0.05 | < 0.05 | 0.25 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 | 0.61 | 0.53 | < 0.05 | 0.79 |

**Total PAH**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | 3.86 | 7.32 | 9.36 | < 0.80 | 17.9 |

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**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151418 | 2151419 | 2151420 | 2151421 | 2151422 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP194 | TP1204 | TP1214 | TP1218 | TP1222 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.80 | 0.50 | 0.10 | 0.70 | 0.20 |
| **Date Sampled** | | | | 24/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 6.6 | 10 | 5.6 | 13 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 76 | - | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - | - | 0.49 | - | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - | - | 0.3 | - | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 90 | 20 | - | 15 | 20 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 760 | 14 | 21 | 7.3 | 26 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 1000 | 16 | 27 | 6.4 | 58 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | 0.4 | 0.6 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 140 | 18 | 14 | 17 | 18 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 18 | - | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 1800 | 64 | 45 | 26 | 58 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | MCERTS | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 3.6 | 7.4 | 12 | < 1.0 | 42 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 1 | MCERTS | 31 | 18 | 24 | < 1.0 | 370 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 20 | < 10 | < 10 | < 10 | 360 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 55 | 25 | 36 | < 10 | 770 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chloroethane | µg/kg | 1 | NONE | - | - | - | - | - |
| Bromomethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Vinyl Chloride | µg/kg | 1 | NONE | - | - | - | - | - |
| Trichlorofluoromethane | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| Benzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tetrachloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Trichloroethene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Dibromomethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromodichloromethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Toluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |

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**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151418 | 2151419 | 2151420 | 2151421 | 2151422 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP194 | TP1204 | TP1214 | TP1218 | TP1222 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.80 | 0.50 | 0.10 | 0.70 | 0.20 |
| **Date Sampled** | | | | 24/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Tetrachloroethene | µg/kg | 1 | NONE | - | - | - | - | - |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| Chlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| p & m-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Styrene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Tribromomethane | µg/kg | 1 | NONE | - | - | - | - | - |
| o-Xylene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Isopropylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Bromobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Butylbenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | - | - | - | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | - | - | - | - | - |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | - | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |

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**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151418 | 2151419 | 2151420 | 2151421 | 2151422 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP194 | TP1204 | TP1214 | TP1218 | TP1222 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.80 | 0.50 | 0.10 | 0.70 | 0.20 |
| **Date Sampled** | | | | 24/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 | 25/01/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Azobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Anthraquinone | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | - | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample  I/S = Insufficient Sample

**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2151423 |
| **Sample Reference** | | | | TP1228 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.50 |
| **Date Sampled** | | | | 25/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| Stone Content | % | 0.1 | NONE | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 22 |
| Total mass of sample received | kg | 0.001 | NONE | 0.40 |

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

**General Inorganics**

| | | | | |
|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 7.7 |
| Total Cyanide | mg/kg | 1 | MCERTS | 2.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 850 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | 0.10 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | 210 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | 103 |
| Sulphide | mg/kg | 1 | MCERTS | 61 |
| Total Sulphur | mg/kg | 50 | MCERTS | 1800 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 1.8 |

**Total Phenols**

| | | | | |
|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 |

**Speciated PAHs**

| | | | | |
|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - |

**Total PAH**

| | | | | |
|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | MCERTS | - |

**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| Lab Sample Number | | | | 2151423 |
|---|---|---|---|---|
| **Sample Reference** | | | | TP1228 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.50 |
| **Date Sampled** | | | | 25/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| **Heavy Metals / Metalloids** | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 61 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 |
| Chromium (hexavalent) | mg/kg | 4 | NONE | < 4.0 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 35 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 120 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 200 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 51 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 280 |
| **Petroleum Hydrocarbons** | | | | |
| TPH (C5 - C6) HS_1D_TOTAL | mg/kg | 1 | NONE | < 1.0 |
| TPH (C6 - C8) HS_1D_TOTAL | mg/kg | 0.1 | MCERTS | < 0.1 |
| TPH (C8 - C10) HS_1D_TOTAL | mg/kg | 0.1 | MCERTS | < 0.1 |
| TPH (C10 - C12) EH_CU_1D_TOTAL | mg/kg | 2 | MCERTS | < 2.0 |
| TPH (C12 - C16) EH_CU_1D_TOTAL | mg/kg | 4 | MCERTS | < 4.0 |
| TPH (C16 - C21) EH_CU_1D_TOTAL | mg/kg | 1 | MCERTS | 3.5 |
| TPH (C21 - C35) EH_CU_1D_TOTAL | mg/kg | 1 | MCERTS | 40 |
| TPH (C35 - C40) EH_CU_1D_TOTAL | mg/kg | 10 | MCERTS | < 10 |
| TPH Total C5 - C40 EH_CU+HS_1D_TOTAL | mg/kg | 10 | MCERTS | 44 |
| **VOCs** | | | | |
| Chloromethane | µg/kg | 1 | ISO 17025 | < 1.0 |
| Chloroethane | µg/kg | 1 | NONE | < 1.0 |
| Bromomethane | µg/kg | 1 | ISO 17025 | < 1.0 |
| Vinyl Chloride | µg/kg | 1 | NONE | < 1.0 |
| Trichlorofluoromethane | µg/kg | 1 | NONE | < 1.0 |
| 1,1-Dichloroethene | µg/kg | 1 | NONE | < 1.0 |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 1 | ISO 17025 | < 1.0 |
| Cis-1,2-dichloroethene | µg/kg | 1 | MCERTS | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 1 | MCERTS | < 1.0 |
| 1,1-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 |
| 2,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 |
| Trichloromethane | µg/kg | 1 | MCERTS | < 1.0 |
| 1,1,1-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 |
| 1,2-Dichloroethane | µg/kg | 1 | MCERTS | < 1.0 |
| 1,1-Dichloropropene | µg/kg | 1 | MCERTS | < 1.0 |
| Trans-1,2-dichloroethene | µg/kg | 1 | NONE | < 1.0 |
| Benzene | µg/kg | 1 | MCERTS | < 1.0 |
| Tetrachloromethane | µg/kg | 1 | MCERTS | < 1.0 |
| 1,2-Dichloropropane | µg/kg | 1 | MCERTS | < 1.0 |
| Trichloroethene | µg/kg | 1 | MCERTS | < 1.0 |
| Dibromomethane | µg/kg | 1 | MCERTS | < 1.0 |
| Bromodichloromethane | µg/kg | 1 | MCERTS | < 1.0 |
| Cis-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 |
| Trans-1,3-dichloropropene | µg/kg | 1 | ISO 17025 | < 1.0 |
| Toluene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,1,2-Trichloroethane | µg/kg | 1 | MCERTS | < 1.0 |
| 1,3-Dichloropropane | µg/kg | 1 | ISO 17025 | < 1.0 |
| Dibromochloromethane | µg/kg | 1 | ISO 17025 | < 1.0 |

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**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2151423 |
| **Sample Reference** | | | | TP1228 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.50 |
| **Date Sampled** | | | | 25/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| Tetrachloroethene | µg/kg | 1 | NONE | < 1.0 |
| 1,2-Dibromoethane | µg/kg | 1 | ISO 17025 | < 1.0 |
| Chlorobenzene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 |
| Ethylbenzene | µg/kg | 1 | MCERTS | < 1.0 |
| p & m-Xylene | µg/kg | 1 | MCERTS | < 1.0 |
| Styrene | µg/kg | 1 | MCERTS | < 1.0 |
| Tribromomethane | µg/kg | 1 | NONE | < 1.0 |
| o-Xylene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/kg | 1 | MCERTS | < 1.0 |
| Isopropylbenzene | µg/kg | 1 | MCERTS | < 1.0 |
| Bromobenzene | µg/kg | 1 | MCERTS | < 1.0 |
| n-Propylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 |
| 2-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 |
| 4-Chlorotoluene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 |
| tert-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/kg | 1 | ISO 17025 | < 1.0 |
| sec-Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,3-Dichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 |
| p-Isopropyltoluene | µg/kg | 1 | ISO 17025 | < 1.0 |
| 1,2-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,4-Dichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 |
| Butylbenzene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/kg | 1 | ISO 17025 | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/kg | 1 | MCERTS | < 1.0 |
| Hexachlorobutadiene | µg/kg | 1 | MCERTS | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/kg | 1 | ISO 17025 | < 1.0 |

**SVOCs**

| | | | | |
|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | < 0.1 |
| Phenol | mg/kg | 0.2 | ISO 17025 | < 0.2 |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | < 0.2 |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | < 0.1 |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | < 0.2 |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | < 0.1 |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | < 0.3 |
| Hexachloroethane | mg/kg | 0.05 | MCERTS | < 0.05 |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | < 0.3 |
| 4-Methylphenol | mg/kg | 0.2 | NONE | < 0.2 |
| Isophorone | mg/kg | 0.2 | MCERTS | < 0.2 |
| 2-Nitrophenol | mg/kg | 0.3 | MCERTS | < 0.3 |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | < 0.3 |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | < 0.3 |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 |
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.30 |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | < 0.3 |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | < 0.1 |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | < 0.1 |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | < 0.1 |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | MCERTS | < 0.1 |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | MCERTS | < 0.2 |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | < 0.1 |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | < 0.1 |

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**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**
**Your Order No: 000 422**

| **Lab Sample Number** | | | | 2151423 |
|---|---|---|---|---|
| **Sample Reference** | | | | TP1228 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.50 |
| **Date Sampled** | | | | 25/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | < 0.1 |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | MCERTS | < 0.1 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | MCERTS | < 0.2 |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | < 0.2 |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | ISO 17025 | < 0.3 |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 |
| 4-Nitroaniline | mg/kg | 0.2 | MCERTS | < 0.2 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Azobenzene | mg/kg | 0.3 | MCERTS | < 0.3 |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | < 0.2 |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | < 0.3 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.54 |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Carbazole | mg/kg | 0.3 | MCERTS | < 0.3 |
| Dibutyl phthalate | mg/kg | 0.2 | MCERTS | < 0.2 |
| Anthraquinone | mg/kg | 0.3 | MCERTS | < 0.3 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.63 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.54 |
| Butyl benzyl phthalate | mg/kg | 0.3 | ISO 17025 | < 0.3 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.37 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.34 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | MCERTS | 0.44 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | MCERTS | 0.16 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.35 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | < 0.05 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000 422**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2151424 |
| **Sample Reference** | | | | TP1204 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.50 |
| **Date Sampled** | | | | 25/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Leachate Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| **General Inorganics** | | | | |
| pH (automated) | pH Units | N/A | ISO 17025 | 7.7 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | ISO 17025 | < 1.0 |
| **Total Phenols** | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | 1.9 |
| **Speciated PAHs** | | | | |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Fluorene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | NONE | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | NONE | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | NONE | < 0.01 |
| **Total PAH** | | | | |
| Total EPA-16 PAHs | µg/l | 0.2 | NONE | < 0.2 |
| **Heavy Metals / Metalloids** | | | | |
| Arsenic (dissolved) | µg/l | 1 | ISO 17025 | 2.8 |
| Cadmium (dissolved) | µg/l | 0.08 | ISO 17025 | 0.24 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 |
| Chromium (dissolved) | µg/l | 0.4 | ISO 17025 | 3.5 |
| Copper (dissolved) | µg/l | 0.7 | ISO 17025 | 5.8 |
| Lead (dissolved) | µg/l | 1 | ISO 17025 | 6.7 |
| Mercury (dissolved) | µg/l | 0.5 | ISO 17025 | < 0.5 |
| Nickel (dissolved) | µg/l | 0.3 | ISO 17025 | 5.8 |
| Selenium (dissolved) | µg/l | 4 | ISO 17025 | < 4.0 |
| Zinc (dissolved) | µg/l | 0.4 | ISO 17025 | 13 |

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**Analytical Report Number: 22-35680**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000 422**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2151424 |
| **Sample Reference** | | | | TP1204 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.50 |
| **Date Sampled** | | | | 25/01/2022 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Leachate Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| **Monoaromatics & Oxygenates** | | | | |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 |
| p & m-xylene | µg/l | 1 | ISO 17025 | < 1.0 |
| o-xylene | µg/l | 1 | ISO 17025 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 10 | NONE | < 10 |
| **Petroleum Hydrocarbons** | | | | |
| TPH1 (C10 - C40) EH_1D_TOTAL_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aromatic >C5 - C7 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 |
| TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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**Analytical Report Number : 22-35680**
**Project / Site name: Cherryfield Drive**

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

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

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2151413 | TP1115 | None Supplied | 1.5 | Brown clay and sand with gravel. |
| 2151414 | TP1117 | None Supplied | 0.4 | Brown clay and sand with gravel. |
| 2151415 | TP1121 | None Supplied | 0.1 | Brown loam and clay with vegetation and gravel |
| 2151416 | TP1125 | None Supplied | 0.1 | Brown clay and sand with vegetation and gravel |
| 2151417 | WS148 | None Supplied | 0.8 | Brown loam and clay with gravel. |
| 2151418 | TP194 | None Supplied | 0.8 | Brown clay and sand with glass and clinker |
| 2151419 | TP1204 | None Supplied | 0.5 | Light brown clay and sand with vegetation and gravel. |
| 2151420 | TP1214 | None Supplied | 0.1 | Brown loam and clay with vegetation and gravel |
| 2151421 | TP1218 | None Supplied | 0.7 | Brown sand with gravel. |
| 2151422 | TP1222 | None Supplied | 0.2 | Brown clay and sand with brick and tar. |
| 2151423 | TP1228 | None Supplied | 0.5 | Brown clay and sand with gravel and vegetation. |

**Analytical Report Number : 22-35680**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| BS EN 12457-1 (2:1) Leachate Prep | 2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis. | In-house method based on BSEN12457-1. | L043-PL | W | NONE |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Metals by ICP-OES in leachate | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L039-PL | W | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Hexavalent chromium in leachate | Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | ISO 17025 |
| Hexavalent chromium in soil | Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | NONE |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in leachate - LOW LEVEL 1 ug/l | Determination of phenols in leachate by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | ISO 17025 |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in leachate | Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L102B-PL | W | NONE |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| pH at 20oC in leachate (automated) | Determination of pH in leachate by electrometric measurement. | In house method. | L099B | W | ISO 17025 |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Total sulphate (as SO4 in soil) | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |

**Analytical Report Number : 22-35680**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total Sulphur in soil | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Semi-volatile organic compounds in soil | Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| TPH1 (Leachates) | Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS. | In-house method | L070-PL | W | NONE |
| TPHCWG (Leachates) | Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS. | In-house method | L070-PL | W | NONE |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| Volatile organic compounds in soil | Determination of volatile organic compounds in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| BTEX and MTBE in leachates (Monoaromatics) | Determination of BTEX and MTBE in leachates by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| TPH in (Soil) | Determination of TPH bands by HS-GC-MS/GC-FID | In-house method, TPH with carbon banding and silica gel split/cleanup. | L076-PL | D | MCERTS |
| Total cyanide in leachate - 1µg/l | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL | W | ISO 17025 |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |
| Sulphate, water soluble, in soil (1hr extraction) | Sulphate, water soluble, in soil (1hr extraction) | In-house method | L038-PL | D | MCERTS |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions |
|---|---|
| HS | Headspace Analysis |
| MS | Mass spectrometry |
| FID | Flame Ionisation Detector |

**Analytical Report Number : 22-35680**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| GC | Gas Chromatography | | | | |
| EH | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) | | | | |
| CU | Clean-up - e.g. by Florisil®, silica gel | | | | |
| 1D | GC - Single coil/column gas chromatography | | | | |
| 2D | GC-GC - Double coil/column gas chromatography | | | | |
| Total | Aliphatics & Aromatics | | | | |
| AL | Aliphatics | | | | |
| AR | Aromatics | | | | |
| #1 | EH_2D_Total but with humics mathematically subtracted | | | | |
| #2 | EH_2D_Total but with fatty acids mathematically subtracted | | | | |
| _ | Operator - understore to separate acronyms (exception for +) | | | | |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total | | | | |

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# Analytical Report Number : 23-68577

Replaces Analytical Report Number: 23-68577, issue no. 1
Report format change.
Asbestos Quantification Gravimetric certificate added.

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 13/11/2023 |
| **Your job number:** | 15-280 | **Samples instructed on/ Analysis started on:** | 13/11/2023 |
| **Your order number:** | 006735 | **Analysis completed by:** | 17/11/2023 |
| **Report Issue Number:** | 2 | **Report issued on:** | 20/11/2023 |
| **Samples Analysed:** | 2 leachate samples - 11 soil samples | | |

**Signed:**

Joanna Wawrzeczko
Senior Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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

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The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877083 | 2877084 | 2877085 | 2877086 | 2877087 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP202 | TP204 | TP206 | TP207 | TP208 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.00 | 1.80 | 1.30 | 0.50 | 0.30 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 8.1 | 12 | 11 | 12 | 10 |
| Total mass of sample received | kg | 0.001 | NONE | 0.3 | 0.3 | 0.3 | 0.9 | 0.4 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | Chrysotile | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | Detected | - | - | Not-detected | Not-detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | 0.009 | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | 0.009 | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | EWS | N/A | N/A | EWS | DSO |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | - | - | 8 | 9.4 | 8.5 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | - | 62 | 640 | 300 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | - | - | 0.0058 | 0.13 | 0.071 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | - | - | 12 | 250 | 140 |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | - | - | 5.8 | 127 | 71.2 |
| Sulphide | mg/kg | 1 | MCERTS | - | - | 1.2 | 16 | 3.4 |
| Total Sulphur | mg/kg | 50 | MCERTS | - | - | < 50 | 800 | 240 |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 4.3 | 0.2 | 0.2 | 0.8 | 0.8 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | - | < 1.0 | < 1.0 | < 1.0 |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.14 | < 0.05 | < 0.05 | 0.07 | 0.08 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | 0.36 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 0.24 | < 0.05 | < 0.05 | 0.15 | 0.3 |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.34 | < 0.05 | < 0.05 | 0.14 | 0.27 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 2.4 | < 0.05 | < 0.05 | 0.68 | 1.5 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.82 | < 0.05 | < 0.05 | 0.35 | 0.42 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 5.5 | < 0.05 | < 0.05 | 2 | 2 |
| Pyrene | mg/kg | 0.05 | MCERTS | 4.9 | < 0.05 | < 0.05 | 2 | 1.7 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 2.7 | < 0.05 | < 0.05 | 0.86 | 0.85 |
| Chrysene | mg/kg | 0.05 | MCERTS | 2.7 | < 0.05 | < 0.05 | 0.84 | 0.78 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 3.5 | < 0.05 | < 0.05 | 1.1 | 0.92 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 1.4 | < 0.05 | < 0.05 | 0.46 | 0.33 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 3.1 | < 0.05 | < 0.05 | 0.99 | 0.77 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 1.6 | < 0.05 | < 0.05 | 0.47 | 0.34 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.46 | < 0.05 | < 0.05 | 0.13 | 0.09 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 1.9 | < 0.05 | < 0.05 | 0.54 | 0.42 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 32.1 | < 0.80 | < 0.80 | 10.8 | 10.8 |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877083 | 2877084 | 2877085 | 2877086 | 2877087 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP202 | TP204 | TP206 | TP207 | TP208 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.00 | 1.80 | 1.30 | 0.50 | 0.30 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 5.1 | 8.1 | 6.2 | 7.9 | 8.5 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 73 | - | - | - |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.34 | 1 | - | - | - |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.3 | < 0.2 | - | - | - |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | 0.4 | < 0.2 | < 0.2 | 0.4 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 29 | 24 | 29 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 21 | 21 | 16 | 42 | 19 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 83 | 7.6 | 5.8 | 35 | 40 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 9.7 | 40 | 27 | 23 | 25 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 | 34 | - | - | - |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 100 | 41 | 28 | 94 | 49 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | 37 | < 4.0 | < 4.0 | < 4.0 | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 170 | < 10 | < 10 | 15 | 21 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 1700 | < 10 | < 10 | 74 | 100 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | NONE | 1400 | < 10 | < 10 | 29 | 48 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | NONE | 3200 | < 10 | < 10 | 120 | 170 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Chloroethane | µg/kg | 5 | NONE | - | - | - | - | - |
| Bromomethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Vinyl Chloride | µg/kg | 5 | NONE | - | - | - | - | - |
| Trichlorofluoromethane | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,1-dichloroethene | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 5 | NONE | - | - | - | - | - |
| Trans 1,2-dichloroethylene | µg/kg | 5 | NONE | - | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,1-dichloroethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 2,2-Dichloropropane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Chloroform | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,1,1-Trichloroethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,2-dichloroethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,1-Dichloropropene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Cis-1,2-dichloroethene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Benzene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| Carbontetrachloride | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,2-dichloropropane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Trichloroethene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Dibromomethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Bromodichloromethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Cis-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Trans-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |

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The results included within the report relate only to the sample(s) submitted for testing.

**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877083 | 2877084 | 2877085 | 2877086 | 2877087 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP202 | TP204 | TP206 | TP207 | TP208 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.00 | 1.80 | 1.30 | 0.50 | 0.30 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Toluene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| 1,1,2-Trichloroethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,3-Dichloropropane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Dibromochloromethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Tetrachloroethene | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,2-Dibromoethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Chlorobenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Ethylbenzene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| p & m-xylene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| Styrene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Bromoform | µg/kg | 5 | NONE | - | - | - | - | - |
| o-xylene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| Isopropylbenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Bromobenzene | µg/kg | 5 | NONE | - | - | - | - | - |
| N-Propylbenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 2-Chlorotoluene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 4-Chlorotoluene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Tert-Butylbenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Sec-Butylbenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,3-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| P-Isopropyltoluene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,4-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,2-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Butylbenzene | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |
| Hexachlorobutadiene | µg/kg | 5 | NONE | - | - | - | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | - | - | - |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | - | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Hexachloroethane | mg/kg | 0.05 | ISO 17025 | - | - | - | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | NONE | - | - | - | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877083 | 2877084 | 2877085 | 2877086 | 2877087 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP202 | TP204 | TP206 | TP207 | TP208 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 1.00 | 1.80 | 1.30 | 0.50 | 0.30 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | NONE | - | - | - | - | - |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | - | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | - | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | NONE | - | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Azobenzene | mg/kg | 0.3 | NONE | - | - | - | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | - | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | - | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | NONE | - | - | - | - | - |
| Anthraquinone | mg/kg | 0.3 | NONE | - | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | NONE | - | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |

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

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877088 | 2877089 | 2877090 | 2877091 | 2877092 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP210 | TP211 | WS201 | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.70 | 0.10 | 1.50 | 0.80 | 3.10 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 11 | 16 | 4.4 | 11 | 9.1 |
| Total mass of sample received | kg | 0.001 | NONE | 1 | 0.4 | 0.9 | 0.3 | 0.3 |
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | - | - | - | - | - |
| Asbestos in Soil | Type | N/A | ISO 17025 | Not-detected | Not-detected | Not-detected | - | - |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | - | - | - | - | - |
| Asbestos Analyst ID | N/A | N/A | N/A | EWS | EWS | EWS | N/A | N/A |
| **General Inorganics** | | | | | | | | |
| pH - Automated | pH Units | N/A | MCERTS | - | - | 8 | 10.3 | - |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | - | 250 | 3200 | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | - | - | 0.032 | 0.34 | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | - | - | 65 | 670 | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | - | - | 32.3 | 335 | - |
| Sulphide | mg/kg | 1 | MCERTS | - | - | 27 | 64 | - |
| Total Sulphur | mg/kg | 50 | MCERTS | - | - | 270 | 1400 | - |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 0.9 | 1.5 | 0.9 | 1.2 | 0.1 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | - | < 1.0 | < 1.0 | - |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.15 | < 0.05 | - | 0.33 | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | < 0.05 | - | 0.1 | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | 0.14 | 0.13 | - | 1.8 | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | 0.09 | 0.09 | - | 1.7 | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 1.3 | 1 | - | 10 | < 0.05 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.24 | 0.22 | - | 3 | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 3 | 2.7 | - | 12 | < 0.05 |
| Pyrene | mg/kg | 0.05 | MCERTS | 2.9 | 2.7 | - | 10 | < 0.05 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 1.5 | 1.5 | - | 4.7 | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | 1.5 | 1.5 | - | 4.4 | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 1.9 | 1.9 | - | 5.2 | < 0.05 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.57 | 0.81 | - | 1.9 | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 1.5 | 1.6 | - | 4.2 | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.81 | 0.84 | - | 2 | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.23 | 0.28 | - | 0.69 | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.97 | 1.1 | - | 2.3 | < 0.05 |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 16.7 | 16.4 | - | 64.7 | < 0.80 |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877088 | 2877089 | 2877090 | 2877091 | 2877092 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP210 | TP211 | WS201 | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.70 | 0.10 | 1.50 | 0.80 | 3.10 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 10 | 11 | 5.7 | 5.9 | 5.4 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 150 | 130 | - | - | 37 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.65 | 0.68 | - | - | 0.97 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 1 | 0.2 | - | - | < 0.2 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | 0.4 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - | - | 18 | 14 | - |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 32 | 49 | 25 | 23 | 3.4 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 60 | 79 | 36 | 79 | 6.5 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 15 | 19 | 16 | 10 | 17 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 | 24 | - | - | 18 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 120 | 110 | 38 | 100 | 23 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 | < 2.0 | < 2.0 | < 2.0 | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 | < 4.0 | < 4.0 | 29 | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 | < 10 | < 10 | 120 | < 10 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 86 | 93 | < 10 | 510 | < 10 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | NONE | 39 | 38 | < 10 | 210 | < 10 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | NONE | 140 | 140 | < 10 | 870 | < 10 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Chloroethane | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| Bromomethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Vinyl Chloride | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| Trichlorofluoromethane | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,1-dichloroethene | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| Trans 1,2-dichloroethylene | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,1-dichloroethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 2,2-Dichloropropane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Chloroform | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,1,1-Trichloroethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,2-dichloroethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,1-Dichloropropene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Cis-1,2-dichloroethene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Benzene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| Carbontetrachloride | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,2-dichloropropane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Trichloroethene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Dibromomethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Bromodichloromethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Cis-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Trans-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877088 | 2877089 | 2877090 | 2877091 | 2877092 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP210 | TP211 | WS201 | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.70 | 0.10 | 1.50 | 0.80 | 3.10 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Toluene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| 1,1,2-Trichloroethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,3-Dichloropropane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Dibromochloromethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Tetrachloroethene | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,2-Dibromoethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Chlorobenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Ethylbenzene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| p & m-xylene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| Styrene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Bromoform | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| o-xylene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| Isopropylbenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Bromobenzene | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| N-Propylbenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 2-Chlorotoluene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 4-Chlorotoluene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,3,5-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Tert-Butylbenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,2,4-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Sec-Butylbenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,3-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| P-Isopropyltoluene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,4-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,2-dichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Butylbenzene | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| 1,2,4-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |
| Hexachlorobutadiene | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| 1,2,3-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - | - | < 5.0 | - | - |

**SVOCs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | - | - | < 0.2 | - | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| Hexachloroethane | mg/kg | 0.05 | ISO 17025 | - | - | < 0.05 | - | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - | - | < 0.2 | - | - |
| Isophorone | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | - |
| 2-Nitrophenol | mg/kg | 0.3 | NONE | - | - | < 0.3 | - | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | 0.23 | - | - |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| Lab Sample Number | | | | 2877088 | 2877089 | 2877090 | 2877091 | 2877092 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | TP210 | TP211 | WS201 | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.70 | 0.10 | 1.50 | 0.80 | 3.10 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | NONE | - | - | < 0.2 | - | - |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - | - | < 0.1 | - | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | NONE | - | - | < 0.1 | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | 0.15 | - | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | NONE | - | - | < 0.2 | - | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | - |
| 4-Nitroaniline | mg/kg | 0.2 | NONE | - | - | < 0.2 | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | 0.15 | - | - |
| Azobenzene | mg/kg | 0.3 | NONE | - | - | < 0.3 | - | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - | - | < 0.2 | - | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | 0.74 | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | 0.15 | - | - |
| Carbazole | mg/kg | 0.3 | MCERTS | - | - | < 0.3 | - | - |
| Dibutyl phthalate | mg/kg | 0.2 | NONE | - | - | < 0.2 | - | - |
| Anthraquinone | mg/kg | 0.3 | NONE | - | - | < 0.3 | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | 0.91 | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | 0.83 | - | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | NONE | - | - | < 0.3 | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | 0.35 | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | 0.46 | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | 0.42 | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | 0.2 | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | 0.38 | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | 0.22 | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | 0.27 | - | - |

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

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2877093 |
| **Sample Reference** | | | | WS206 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.90 |
| **Date Sampled** | | | | 11/11/2023 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| Stone Content | % | 0.1 | NONE | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 13 |
| Total mass of sample received | kg | 0.001 | NONE | 0.4 |

| | | | | |
|---|---|---|---|---|
| Asbestos in Soil Screen / Identification Name | Type | N/A | ISO 17025 | Chrysotile |
| Asbestos in Soil | Type | N/A | ISO 17025 | Detected |
| Asbestos Quantification (Stage 2) | % | 0.001 | ISO 17025 | < 0.001 |
| Asbestos Quantification Total | % | 0.001 | ISO 17025 | < 0.001 |
| Asbestos Analyst ID | N/A | N/A | N/A | DSO |

**General Inorganics**

| | | | | |
|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | - |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | g/l | 0.00125 | MCERTS | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/kg | 2.5 | MCERTS | - |
| Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction | mg/l | 1.25 | MCERTS | - |
| Sulphide | mg/kg | 1 | MCERTS | - |
| Total Sulphur | mg/kg | 50 | MCERTS | - |
| Total Organic Carbon (TOC) - Automated | % | 0.1 | MCERTS | 1.3 |

**Total Phenols**

| | | | | |
|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - |

**Speciated PAHs**

| | | | | |
|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | 0.09 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.34 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.07 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.58 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.61 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.48 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.52 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.77 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.32 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.52 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.34 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.11 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.43 |

**Total PAH**

| | | | | |
|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 5.18 |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2877093 |
| **Sample Reference** | | | | WS206 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.90 |
| **Date Sampled** | | | | 11/11/2023 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| **Heavy Metals / Metalloids** | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 20 |
| Barium (aqua regia extractable) | mg/kg | 1 | MCERTS | 290 |
| Beryllium (aqua regia extractable) | mg/kg | 0.06 | MCERTS | 0.95 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.2 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | < 1.8 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | - |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 93 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 150 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 33 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 |
| Vanadium (aqua regia extractable) | mg/kg | 1 | MCERTS | 44 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 300 |
| **Petroleum Hydrocarbons** | | | | |
| TPH (C5 - C6) $_{HS\_1D\_TOTAL}$ | mg/kg | 0.1 | NONE | < 0.1 |
| TPH (C6 - C8) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 |
| TPH (C8 - C10) $_{HS\_1D\_TOTAL}$ | mg/kg | 1 | NONE | < 1.0 |
| TPH (C10 - C12) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 2 | MCERTS | < 2.0 |
| TPH (C12 - C16) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 4 | MCERTS | < 4.0 |
| TPH (C16 - C21) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | < 10 |
| TPH (C21 - C35) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | MCERTS | 17 |
| TPH (C35 - C40) $_{EH\_CU\_1D\_TOTAL}$ | mg/kg | 10 | NONE | < 10 |
| TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$ | mg/kg | 10 | NONE | 29 |
| **VOCs** | | | | |
| Chloromethane | µg/kg | 5 | ISO 17025 | - |
| Chloroethane | µg/kg | 5 | NONE | - |
| Bromomethane | µg/kg | 5 | ISO 17025 | - |
| Vinyl Chloride | µg/kg | 5 | NONE | - |
| Trichlorofluoromethane | µg/kg | 5 | NONE | - |
| 1,1-dichloroethene | µg/kg | 5 | NONE | - |
| 1,1,2-Trichloro 1,2,2-Trifluoroethane | µg/kg | 5 | NONE | - |
| Trans 1,2-dichloroethylene | µg/kg | 5 | NONE | - |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | - |
| 1,1-dichloroethane | µg/kg | 5 | ISO 17025 | - |
| 2,2-Dichloropropane | µg/kg | 5 | ISO 17025 | - |
| Chloroform | µg/kg | 5 | NONE | - |
| 1,1,1-Trichloroethane | µg/kg | 5 | ISO 17025 | - |
| 1,2-dichloroethane | µg/kg | 5 | ISO 17025 | - |
| 1,1-Dichloropropene | µg/kg | 5 | ISO 17025 | - |
| Cis-1,2-dichloroethene | µg/kg | 5 | ISO 17025 | - |
| Benzene | µg/kg | 5 | MCERTS | - |
| Carbontetrachloride | µg/kg | 5 | NONE | - |
| 1,2-dichloropropane | µg/kg | 5 | ISO 17025 | - |
| Trichloroethene | µg/kg | 5 | ISO 17025 | - |
| Dibromomethane | µg/kg | 5 | ISO 17025 | - |
| Bromodichloromethane | µg/kg | 5 | ISO 17025 | - |
| Cis-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - |
| Trans-1,3-dichloropropene | µg/kg | 5 | ISO 17025 | - |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| | | | | |
|---|---|---|---|---|
| **Lab Sample Number** | | | | 2877093 |
| **Sample Reference** | | | | WS206 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.90 |
| **Date Sampled** | | | | 11/11/2023 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| Toluene | µg/kg | 5 | MCERTS | - |
| 1,1,2-Trichloroethane | µg/kg | 5 | ISO 17025 | - |
| 1,3-Dichloropropane | µg/kg | 5 | ISO 17025 | - |
| Dibromochloromethane | µg/kg | 5 | ISO 17025 | - |
| Tetrachloroethene | µg/kg | 5 | NONE | - |
| 1,2-Dibromoethane | µg/kg | 5 | ISO 17025 | - |
| Chlorobenzene | µg/kg | 5 | ISO 17025 | - |
| 1,1,1,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - |
| Ethylbenzene | µg/kg | 5 | MCERTS | - |
| p & m-xylene | µg/kg | 5 | MCERTS | - |
| Styrene | µg/kg | 5 | ISO 17025 | - |
| Bromoform | µg/kg | 5 | NONE | - |
| o-xylene | µg/kg | 5 | MCERTS | - |
| Isopropylbenzene | µg/kg | 5 | ISO 17025 | - |
| 1,1,2,2-Tetrachloroethane | µg/kg | 5 | ISO 17025 | - |
| Bromobenzene | µg/kg | 5 | NONE | - |
| N-Propylbenzene | µg/kg | 5 | ISO 17025 | - |
| 2-Chlorotoluene | µg/kg | 5 | ISO 17025 | - |
| 4-Chlorotoluene | µg/kg | 5 | ISO 17025 | - |
| 1,3,5-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - |
| Tert-Butylbenzene | µg/kg | 5 | ISO 17025 | - |
| 1,2,4-Trimethylbenzene | µg/kg | 5 | ISO 17025 | - |
| Sec-Butylbenzene | µg/kg | 5 | ISO 17025 | - |
| 1,3-dichlorobenzene | µg/kg | 5 | ISO 17025 | - |
| P-Isopropyltoluene | µg/kg | 5 | ISO 17025 | - |
| 1,4-dichlorobenzene | µg/kg | 5 | ISO 17025 | - |
| 1,2-dichlorobenzene | µg/kg | 5 | ISO 17025 | - |
| Butylbenzene | µg/kg | 5 | NONE | - |
| 1,2-Dibromo-3-chloropropane | µg/kg | 5 | ISO 17025 | - |
| 1,2,4-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - |
| Hexachlorobutadiene | µg/kg | 5 | NONE | - |
| 1,2,3-Trichlorobenzene | µg/kg | 5 | ISO 17025 | - |

**SVOCs**

| | | | | |
|---|---|---|---|---|
| Aniline | mg/kg | 0.1 | NONE | - |
| Phenol | mg/kg | 0.2 | ISO 17025 | - |
| 2-Chlorophenol | mg/kg | 0.1 | MCERTS | - |
| Bis(2-chloroethyl)ether | mg/kg | 0.2 | MCERTS | - |
| 1,3-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - |
| 1,2-Dichlorobenzene | mg/kg | 0.1 | MCERTS | - |
| 1,4-Dichlorobenzene | mg/kg | 0.2 | MCERTS | - |
| Bis(2-chloroisopropyl)ether | mg/kg | 0.1 | MCERTS | - |
| 2-Methylphenol | mg/kg | 0.3 | MCERTS | - |
| Hexachloroethane | mg/kg | 0.05 | ISO 17025 | - |
| Nitrobenzene | mg/kg | 0.3 | MCERTS | - |
| 4-Methylphenol | mg/kg | 0.2 | NONE | - |
| Isophorone | mg/kg | 0.2 | MCERTS | - |
| 2-Nitrophenol | mg/kg | 0.3 | NONE | - |
| 2,4-Dimethylphenol | mg/kg | 0.3 | MCERTS | - |
| Bis(2-chloroethoxy)methane | mg/kg | 0.3 | MCERTS | - |
| 1,2,4-Trichlorobenzene | mg/kg | 0.3 | MCERTS | - |
| Naphthalene | mg/kg | 0.05 | MCERTS | - |

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**
**Your Order No: 006735**

| **Lab Sample Number** | | | | 2877093 |
|---|---|---|---|---|
| **Sample Reference** | | | | WS206 |
| **Sample Number** | | | | None Supplied |
| **Depth (m)** | | | | 0.90 |
| **Date Sampled** | | | | 11/11/2023 |
| **Time Taken** | | | | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | |
| 2,4-Dichlorophenol | mg/kg | 0.3 | MCERTS | - |
| 4-Chloroaniline | mg/kg | 0.1 | NONE | - |
| Hexachlorobutadiene | mg/kg | 0.1 | MCERTS | - |
| 4-Chloro-3-methylphenol | mg/kg | 0.1 | NONE | - |
| 2,4,6-Trichlorophenol | mg/kg | 0.1 | NONE | - |
| 2,4,5-Trichlorophenol | mg/kg | 0.2 | NONE | - |
| 2-Methylnaphthalene | mg/kg | 0.1 | NONE | - |
| 2-Chloronaphthalene | mg/kg | 0.1 | MCERTS | - |
| Dimethylphthalate | mg/kg | 0.1 | MCERTS | - |
| 2,6-Dinitrotoluene | mg/kg | 0.1 | NONE | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - |
| 2,4-Dinitrotoluene | mg/kg | 0.2 | NONE | - |
| Dibenzofuran | mg/kg | 0.2 | MCERTS | - |
| 4-Chlorophenyl phenyl ether | mg/kg | 0.3 | MCERTS | - |
| Diethyl phthalate | mg/kg | 0.2 | MCERTS | - |
| 4-Nitroaniline | mg/kg | 0.2 | NONE | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - |
| Azobenzene | mg/kg | 0.3 | NONE | - |
| Bromophenyl phenyl ether | mg/kg | 0.2 | MCERTS | - |
| Hexachlorobenzene | mg/kg | 0.3 | MCERTS | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - |
| Carbazole | mg/kg | 0.3 | MCERTS | - |
| Dibutyl phthalate | mg/kg | 0.2 | NONE | - |
| Anthraquinone | mg/kg | 0.3 | NONE | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - |
| Butyl benzyl phthalate | mg/kg | 0.3 | NONE | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - |

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

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**Analytical Report Number:** 23-68577
**Project / Site name:** Cherryfield Drive
**Your Order No:** 006735

# Certificate of Analysis - Asbestos Quantification

## Methods:

### Qualitative Analysis

The samples were analysed qualitatively for asbestos by polarising light and dispersion staining as described by the Health and Safety Executive in HSG 248.

### Quantitative Analysis

The analysis was carried out using our documented in-house method A006-PL based on HSE Contract Research Report No: 83/1996: Development and Validation of an analytical method to determine the amount of asbestos in soils and loose aggregates (Davies et al, 1996) and HSG 248. Our method includes initial examination of the entire representative sample, then fractionation and detailed analysis of each fraction, with quantification by hand picking and weighing.

The limit of detection (reporting limit) of this method is 0.001 %.

The method has been validated using samples of at least 100 g, results for samples smaller than this should be interpreted with caution.

Both Qualitative and Quantitative Analyses are UKAS accredited.

| Sample Number | Sample ID | Sample Depth (m) | Sample Weight (g) | Asbestos Containing Material Types Detected (ACM) | PLM Results | Asbestos by hand picking/weighing (%) | Total % Asbestos in Sample |
|---|---|---|---|---|---|---|---|
| **2877083** | TP202 | 1.00 | 107 | Bitumen | **Chrysotile** | 0.009 | **0.009** |
| **2877093** | WS206 | 0.90 | 177 | Loose Fibres | **Chrysotile** | < 0.001 | **< 0.001** |

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


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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2877094 | 2877095 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | TP207 | WS201 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 1.50 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Leachate Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **General Inorganics** | | | | | |
| pH (automated) | pH Units | N/A | ISO 17025 | 7.6 | 7.8 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | ISO 17025 | < 1.0 | 1.7 |
| **Total Phenols** | | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | 2.5 | 3.6 |
| **Speciated PAHs** | | | | | |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Fluorene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | NONE | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | NONE | < 0.01 | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | NONE | < 0.01 | < 0.01 |
| **Total PAH** | | | | | |
| Total EPA-16 PAHs | µg/l | 0.2 | NONE | < 0.2 | < 0.2 |
| **Heavy Metals / Metalloids** | | | | | |
| Arsenic (dissolved) | µg/l | 1 | ISO 17025 | 1.1 | < 1.0 |
| Cadmium (dissolved) | µg/l | 0.08 | ISO 17025 | < 0.08 | < 0.08 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 | < 5.0 |
| Chromium (dissolved) | µg/l | 0.4 | ISO 17025 | < 0.4 | 1.6 |
| Copper (dissolved) | µg/l | 0.7 | ISO 17025 | 14 | 44 |
| Lead (dissolved) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Mercury (dissolved) | µg/l | 0.5 | ISO 17025 | < 0.5 | < 0.5 |
| Nickel (dissolved) | µg/l | 0.3 | ISO 17025 | 1.2 | 2.4 |
| Selenium (dissolved) | µg/l | 4 | ISO 17025 | < 4.0 | < 4.0 |
| Zinc (dissolved) | µg/l | 0.4 | ISO 17025 | 7.1 | 5.3 |
| **Monoaromatics & Oxygenates** | | | | | |
| Benzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Toluene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Ethylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| p & m-xylene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| o-xylene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 10 | NONE | < 10 | < 10 |

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The results included within the report relate only to the sample(s) submitted for testing.

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**Analytical Report Number: 23-68577**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2877094 | 2877095 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | TP207 | WS201 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.50 | 1.50 |
| **Date Sampled** | | | | 11/11/2023 | 11/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Leachate Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **Petroleum Hydrocarbons** | | | | | |
| TPH1 (C10 - C40) EH_1D_TOTAL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C5 - C7 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_MS | µg/l | 10 | NONE | < 10 | < 10 |

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

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**Analytical Report Number : 23-68577**
**Project / Site name: Cherryfield Drive**

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

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

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2877083 | TP202 | None Supplied | 1 | Brown clay and sand with gravel. |
| 2877084 | TP204 | None Supplied | 1.8 | Brown clay and sand with gravel. |
| 2877085 | TP206 | None Supplied | 1.3 | Brown clay and sand with gravel. |
| 2877086 | TP207 | None Supplied | 0.5 | Brown clay and sand with gravel. |
| 2877087 | TP208 | None Supplied | 0.3 | Brown clay and sand with gravel. |
| 2877088 | TP210 | None Supplied | 0.7 | Brown clay and sand with gravel. |
| 2877089 | TP211 | None Supplied | 0.1 | Brown clay and sand with gravel. |
| 2877090 | WS201 | None Supplied | 1.5 | Brown clay and sand with gravel. |
| 2877091 | WS202 | None Supplied | 0.8 | Brown clay and sand with gravel. |
| 2877092 | WS204 | None Supplied | 3.1 | Brown clay and sand. |
| 2877093 | WS206 | None Supplied | 0.9 | Brown clay and sand with gravel. |

**Analytical Report Number : 23-68577**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| BS EN 12457-1 (2:1) Leachate Prep | 2:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis. | In-house method based on BSEN12457-1. | L043-PL | W | NONE |
| Asbestos identification in soil | Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques. | In house method based on HSG 248 | A001-PL | D | ISO 17025 |
| Metals by ICP-OES in leachate | Determination of metals in leachate by acidification followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L039-PL | W | ISO 17025 |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Hexavalent chromium in leachate | Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | ISO 17025 |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in leachate - LOW LEVEL 1 ug/l | Determination of phenols in leachate by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | ISO 17025 |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in leachate | Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L102B-PL | W | ISO 17025 |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. Refer to CoA for analyte specific accreditation. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| pH at 20oC in leachate (automated) | Determination of pH in leachate by electrometric measurement. | In house method. | L099B | W | ISO 17025 |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Total sulphate (as SO4 in soil) | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |

**Analytical Report Number : 23-68577**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total Sulphur in soil | Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Semi-volatile organic compounds in soil | Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.Refer to CoA for analyte specific accreditation. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| TPH1 (Leachates) | Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS. | In-house method | L070-PL | W | NONE |
| TPHCWG (Leachates) | Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS. | In-house method | L070-PL | W | ISO 17025 |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Total organic carbon (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |
| Volatile organic compounds in soil | Determination of volatile organic compounds in soil by headspace GC-MS. | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| BTEX and MTBE in leachates (Monoaromatics) | Determination of BTEX and MTBE in leachates by headspace GC-MS. | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | ISO 17025 |
| TPH in (Soil) | Determination of TPH bands by HS-GC-MS/GC-FID | In-house method, TPH with carbon banding and silica gel split/cleanup. | L076-PL | D | MCERTS |
| Total cyanide in leachate - 1µg/l | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080-PL | W | ISO 17025 |
| Asbestos Quantification - Gravimetric | Asbestos quantification by gravimetric method - in house method based on references. | HSE Report No: 83/1996, HSG 248, HSG 264 & SCA Blue Book (draft). | A006-PL | D | ISO 17025 |
| Hexavalent chromium in soil | Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | MCERTS |
| D.O. for Gravimetric Quant if Screen/ID positive | Dependent option for Gravimetric Quant if Screen/ID positive scheduled. | In house asbestos methods A001 & A006. | A006-PL | D | NONE |

**Analytical Report Number : 23-68577**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Sulphate, water soluble, in soil (1hr extraction) | Sulphate, water soluble, in soil (1hr extraction) | In-house method | L038-PL | D | MCERTS |

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

## Information in Support of Analytical Results

**List of HWOL Acronyms and Operators**

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

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# Analytical Report Number : 23-71784

Replaces Analytical Report Number: 23-71784, issue no. 1
Result correction by laboratory.
Quality Control Failure Caveat Changed for MTBE in all samples by laboratory

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 28/11/2023 |
| **Your job number:** | 15-280 | **Samples instructed on/ Analysis started on:** | 28/11/2023 |
| **Your order number:** | 006735 | **Analysis completed by:** | 04/12/2023 |
| **Report Issue Number:** | 2 | **Report issued on:** | 20/12/2023 |
| **Samples Analysed:** | 2 water samples | | |

Izabela Wójcik
**Signed:**

Izabela Wójcik
Senior Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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

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**Analytical Report Number: 23-71784**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2893510 | 2893511 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 27/11/2023 | 27/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **General Inorganics** | | | | | |
| pH (L099) | pH Units | N/A | ISO 17025 | 7.3 | 8 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| Dissolved Organic Carbon (DOC) | mg/l | 0.1 | ISO 17025 | 22.9 | 8.4 |
| **Total Phenols** | | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | 1.6 | 1.6 |
| **Heavy Metals / Metalloids** | | | | | |
| Calcium (dissolved) | mg/l | 0.012 | ISO 17025 | 60 | 63 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 | < 5.0 |
| Arsenic (dissolved) | µg/l | 0.15 | ISO 17025 | 1.94 | 1.53 |
| Cadmium (dissolved) | µg/l | 0.02 | ISO 17025 | < 0.02 | 0.04 |
| Chromium (dissolved) | µg/l | 0.2 | ISO 17025 | 0.4 | 1.3 |
| Copper (dissolved) | µg/l | 0.5 | ISO 17025 | 2.1 | 5.1 |
| Lead (dissolved) | µg/l | 0.2 | ISO 17025 | < 0.2 | < 0.2 |
| Manganese (dissolved) | µg/l | 0.05 | ISO 17025 | 4000 | 76 |
| Mercury (dissolved) | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 |
| Nickel (dissolved) | µg/l | 0.5 | ISO 17025 | 6.2 | 1.1 |
| Selenium (dissolved) | µg/l | 0.6 | ISO 17025 | 4 | 3.1 |
| Zinc (dissolved) | µg/l | 0.5 | ISO 17025 | 2.6 | 1.1 |
| **Monoaromatics & Oxygenates** | | | | | |
| Benzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Toluene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Ethylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| p & m-xylene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| o-xylene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| MTBE (Methyl Tertiary Butyl Ether)# | µg/l | 3 | NONE | < 3.0 | < 3.0 |

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**Analytical Report Number: 23-71784**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2893510 | 2893511 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 27/11/2023 | 27/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **Petroleum Hydrocarbons** | | | | | |
| TPH1 (C10 - C40) EH_1D_TOTAL_MS | µg/l | 10 | ISO 17025 | 25 | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C5 - C7 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_MS | µg/l | 10 | NONE | 15 | < 10 |
| TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_MS | µg/l | 10 | NONE | 10 | < 10 |
| TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_MS | µg/l | 10 | NONE | 25 | < 10 |

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**Analytical Report Number: 23-71784**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2893510 | 2893511 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 27/11/2023 | 27/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **VOCs** | | | | | |
| Chloromethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Chloroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Bromomethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Vinyl Chloride | µg/l | 3 | NONE | < 3.0 | < 3.0 |
| Trichlorofluoromethane | µg/l | 3 | NONE | < 3.0 | < 3.0 |
| 1,1-Dichloroethene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Trans 1,2-dichloroethylene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| MTBE (Methyl Tertiary Butyl Ether)# | µg/l | 3 | NONE | < 3.0 | < 3.0 |
| 1,1-Dichloroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 2,2-Dichloropropane## | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Chloroform | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,1,1-Trichloroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2-Dichloroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,1-Dichloropropene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Cis-1,2-dichloroethene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Benzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Carbontetrachloride | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2-Dichloropropane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Trichloroethene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Dibromomethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Bromodichloromethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Cis-1,3-dichloropropene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Trans-1,3-dichloropropene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Toluene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,1,2-Trichloroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,3-Dichloropropane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Dibromochloromethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Tetrachloroethene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2-Dibromoethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Chlorobenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,1,1,2-Tetrachloroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Ethylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| p & m-Xylene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Styrene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Bromoform | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| o-Xylene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Isopropylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,1,2,2-Tetrachloroethane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| Bromobenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| n-Propylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 2-Chlorotoluene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 4-Chlorotoluene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,3,5-Trimethylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| tert-Butylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2,4-Trimethylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| sec-Butylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,3-Dichlorobenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| p-Isopropyltoluene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,4-Dichlorobenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2-Dichlorobenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |

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**Analytical Report Number: 23-71784**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2893510 | 2893511 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 27/11/2023 | 27/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| Butylbenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2-Dibromo-3-chloropropane | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2,4-Trichlorobenzene# | µg/l | 3 | NONE | < 3.0 | < 3.0 |
| Hexachlorobutadiene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |
| 1,2,3-Trichlorobenzene | µg/l | 3 | ISO 17025 | < 3.0 | < 3.0 |

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**Analytical Report Number: 23-71784**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2893510 | 2893511 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 27/11/2023 | 27/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **SVOCs** | | | | | |
| Aniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Phenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Chlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroethyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroisopropyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachloroethane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Nitrobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Isophorone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Nitrophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4-Dimethylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroethoxy)methane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,2,4-Trichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| 2,4-Dichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chloroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachlorobutadiene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chloro-3-methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4,5-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Methylnaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Chloronaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dimethylphthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,6-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | 1.2 | < 0.01 |
| 2,4-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dibenzofuran | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chlorophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Diethyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Nitroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Fluorene | µg/l | 0.01 | ISO 17025 | 0.26 | < 0.01 |
| Azobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bromophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Carbazole | µg/l | 0.05 | NONE | 1.1 | < 0.05 |
| Dibutyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Anthraquinone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | 2.1 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | 1.5 | < 0.01 |
| Butyl benzyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |

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**Analytical Report Number: 23-71784**
**Project / Site name: Cherryfield Drive**

**Your Order No: 006735**

| **Lab Sample Number** | | | | 2893510 | 2893511 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS202 | WS204 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 27/11/2023 | 27/11/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| 3&4-Methylphenol | µg/l | 0.1 | NONE | < 0.10 | < 0.10 |

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

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**Analytical Report Number : 23-71784**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in water by ICP-MS (dissolved) | Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW. | In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS. | L012-PL | W | ISO 17025 |
| Metals in water by ICP-OES (dissolved) | Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn). | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L039-PL | W | ISO 17025 |
| Hexavalent chromium in water | Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW. | L080-PL | W | ISO 17025 |
| Monohydric phenols in water - LOW LEVEL 1 ug/l | Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | ISO 17025 |
| Semi-volatile organic compounds in water | Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS. | In-house method based on USEPA 8270 | L102B-PL | W | ISO 17025 |
| TPHCWG (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation. | In-house method | L070-PL | W | ISO 17025 |
| Volatile organic compounds in water | Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| Dissolved Organic Carbon in water | Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L037-PL | W | ISO 17025 |
| BTEX and MTBE in water (Monoaromatics) | Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260. Refer to CoA for analyte specific accreditation | L073B-PL | W | ISO 17025 |
| Low level total cyanide in water | Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | NONE |
| pH at 20oC in water (automated) | Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW | In house method. | L099-PL | W | ISO 17025 |
| TPH1 (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS. | In-house method | L070-PL | W | ISO 17025 |

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

**Analytical Report Number : 23-71784**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

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

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

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# Analytical Report Number : 22-40844

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 18/02/2022 |
| **Your job number:** | 15 280 | **Samples instructed on/ Analysis started on:** | 18/02/2022 |
| **Your order number:** | 000697 | **Analysis completed by:** | 25/02/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 25/02/2022 |
| **Samples Analysed:** | 7 water samples | | |

**Signed:** Karolina Marek

Karolina Marek
PL Head of Reporting Team
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| **Lab Sample Number** | | | | 2179406 | 2179407 | 2179408 | 2179409 | 2179410 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS142 | WS124 | WS106 | CP103 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **General Inorganics** | | | | | | | | |
| pH | pH Units | N/A | ISO 17025 | 7.8 | 7.4 | 7.1 | 7.2 | 7.3 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | ISO 17025 | 1.9 | < 1.0 | < 1.0 | < 1.0 | 2.8 |
| Dissolved Organic Carbon (DOC) | mg/l | 0.1 | ISO 17025 | 11.0 | 14.1 | 18.0 | 26.3 | 18.9 |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | 2.4 | 2.5 | 2.9 | 5.2 | 1.9 |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Calcium (dissolved) | mg/l | 0.012 | ISO 17025 | 110 | 94 | 93 | 260 | 160 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Arsenic (dissolved) | µg/l | 0.15 | ISO 17025 | 1.03 | 1.89 | 3.87 | 2.42 | 6.36 |
| Cadmium (dissolved) | µg/l | 0.02 | ISO 17025 | 0.02 | < 0.02 | < 0.02 | 0.04 | 0.07 |
| Chromium (dissolved) | µg/l | 0.2 | ISO 17025 | 2.9 | 2.5 | 3.2 | 4.6 | 3.6 |
| Copper (dissolved) | µg/l | 0.5 | ISO 17025 | 6.0 | 3.5 | 1.4 | 4.3 | 8.8 |
| Lead (dissolved) | µg/l | 0.2 | ISO 17025 | < 0.2 | 1.7 | < 0.2 | < 0.2 | < 0.2 |
| Manganese (dissolved) | µg/l | 0.05 | ISO 17025 | 27 | 130 | 3600 | 1900 | 3200 |
| Mercury (dissolved) | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved) | µg/l | 0.5 | ISO 17025 | 7.0 | 4.0 | 3.9 | 8.1 | 26 |
| Selenium (dissolved) | µg/l | 0.6 | ISO 17025 | 4.4 | 1.6 | 1.1 | 1.3 | 1.6 |
| Zinc (dissolved) | µg/l | 0.5 | ISO 17025 | 12 | 6.1 | 650 | 21 | 60 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| Lab Sample Number | | | | 2179406 | 2179407 | 2179408 | 2179409 | 2179410 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS142 | WS124 | WS106 | CP103 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH1 (C10 - C40) EH_2D_TOTAL_#1_#2 | µg/l | 10 | NONE | < 10 | 50 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C5 - C7 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | 50 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | 50 | < 10 | < 10 | < 10 |
| **VOCs** | | | | | | | | |
| Chloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl Chloride | µg/l | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane | µg/l | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromoethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| **Lab Sample Number** | | | | 2179406 | 2179407 | 2179408 | 2179409 | 2179410 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS142 | WS124 | WS106 | CP103 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Styrene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tribromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| n-Propylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| tert-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| sec-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p-Isopropyltoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **SVOCs** | | | | | | | | |
| Aniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Chlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroethyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroisopropyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachloroethane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Isophorone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Nitrophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4-Dimethylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroethoxy)methane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2,4-Trichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| 2,4-Dichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Chloroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobutadiene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Chloro-3-methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,5-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Methylnaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Chloronaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dimethylphthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,6-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| 2,4-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenzofuran | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| **Lab Sample Number** | | | | 2179406 | 2179407 | 2179408 | 2179409 | 2179410 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS142 | WS124 | WS106 | CP103 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| 4-Chlorophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Diethyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Nitroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Azobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bromophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Carbazole | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibutyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthraquinone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Butyl benzyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| 3&4-Methylphenol | µg/l | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 | < 0.10 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| **Lab Sample Number** | | | | 2179411 | 2179412 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | CP102 | CP101 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **General Inorganics** | | | | | |
| pH | pH Units | N/A | ISO 17025 | 7.1 | 7.4 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Dissolved Organic Carbon (DOC) | mg/l | 0.1 | ISO 17025 | 11.7 | 16.2 |
| **Total Phenols** | | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | 2.6 | 2.5 |
| **Heavy Metals / Metalloids** | | | | | |
| Calcium (dissolved) | mg/l | 0.012 | ISO 17025 | 280 | 180 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 | < 5.0 |
| Arsenic (dissolved) | µg/l | 0.15 | ISO 17025 | 1.29 | 3.68 |
| Cadmium (dissolved) | µg/l | 0.02 | ISO 17025 | 0.50 | 0.07 |
| Chromium (dissolved) | µg/l | 0.2 | ISO 17025 | 5.2 | 3.9 |
| Copper (dissolved) | µg/l | 0.5 | ISO 17025 | 15 | 2.4 |
| Lead (dissolved) | µg/l | 0.2 | ISO 17025 | 0.2 | 1.5 |
| Manganese (dissolved) | µg/l | 0.05 | ISO 17025 | 240 | 1100 |
| Mercury (dissolved) | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 |
| Nickel (dissolved) | µg/l | 0.5 | ISO 17025 | 22 | 5.6 |
| Selenium (dissolved) | µg/l | 0.6 | ISO 17025 | 2.0 | 1.0 |
| Zinc (dissolved) | µg/l | 0.5 | ISO 17025 | 1100 | 19 |
| **Monoaromatics & Oxygenates** | | | | | |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| p & m-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| o-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| **Lab Sample Number** | | | | 2179411 | 2179412 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | CP102 | CP101 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **Petroleum Hydrocarbons** | | | | | |
| TPH1 (C10 - C40) EH_2D_TOTAL_#1_#2 | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C5 - C7 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| **VOCs** | | | | | |
| Chloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Chloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Bromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Vinyl Chloride | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| Trichlorofluoromethane | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Cis-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 2,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trans-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Tetrachloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Dibromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Bromodichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Cis-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trans-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Dibromochloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Tetrachloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dibromoethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Chlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| p & m-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| **Lab Sample Number** | | | | 2179411 | 2179412 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | CP102 | CP101 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| Styrene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Tribromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| o-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Isopropylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Bromobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| n-Propylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 2-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 4-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| tert-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| sec-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| p-Isopropyltoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |

**SVOCs**

| | | | | | |
|---|---|---|---|---|---|
| Aniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Phenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Chlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroethyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroisopropyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachloroethane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Nitrobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Isophorone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Nitrophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4-Dimethylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroethoxy)methane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,2,4-Trichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| 2,4-Dichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chloroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachlorobutadiene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chloro-3-methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4,5-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Methylnaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Chloronaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dimethylphthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,6-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| 2,4-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dibenzofuran | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |

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**Analytical Report Number: 22-40844**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000697**

| **Lab Sample Number** | | | | 2179411 | 2179412 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | CP102 | CP101 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/02/2022 | 17/02/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| 4-Chlorophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Diethyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Nitroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Fluorene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Azobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bromophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Carbazole | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dibutyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Anthraquinone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Butyl benzyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |

| | | | | | |
|---|---|---|---|---|---|
| 3&4-Methylphenol | µg/l | 0.1 | NONE | < 0.10 | < 0.10 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

**Analytical Report Number : 22-40844**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in water by ICP-MS (dissolved) | Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW. | In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS. | L012-PL | W | ISO 17025 |
| Metals in water by ICP-OES (dissolved) | Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn). | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L039-PL | W | ISO 17025 |
| Hexavalent chromium in water | Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW. | L080-PL | W | ISO 17025 |
| Monohydric phenols in water - LOW LEVEL 1 ug/l | Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | ISO 17025 |
| Semi-volatile organic compounds in water | Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS. | In-house method based on USEPA 8270 | L102B-PL | W | NONE |
| TPHCWG (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation. | In-house method | L070-PL | W | NONE |
| Volatile organic compounds in water | Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| Dissolved Organic Carbon in water | Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L037-PL | W | ISO 17025 |
| BTEX and MTBE in water (Monoaromatics) | Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| Low level total cyanide in water | Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | ISO 17025 |
| pH at 20oC in water (automated) | Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW | In house method. | L099-PL | W | ISO 17025 |
| TPH1 (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS. | In-house method | L070-PL | W | NONE |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

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**Analytical Report Number : 22-40844**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

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

**Analytical Report Number : 22-40844**
**Project / Site name: Cherryfield Drive**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name | Test Ref | Test Deviation |
|---|---|---|---|---|---|---|---|
| CP101 | None Supplied | W | 2179412 | c | pH at 20oC in water (automated) | L099-PL | c |
| CP102 | None Supplied | W | 2179411 | c | pH at 20oC in water (automated) | L099-PL | c |
| CP103 | None Supplied | W | 2179410 | c | pH at 20oC in water (automated) | L099-PL | c |
| WS106 | None Supplied | W | 2179409 | c | pH at 20oC in water (automated) | L099-PL | c |
| WS124 | None Supplied | W | 2179408 | c | pH at 20oC in water (automated) | L099-PL | c |
| WS142 | None Supplied | W | 2179407 | c | pH at 20oC in water (automated) | L099-PL | c |
| WS161 | None Supplied | W | 2179406 | c | pH at 20oC in water (automated) | L099-PL | c |

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# Analytical Report Number : 22-44551

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 09/03/2022 |
| **Your job number:** | 15-280 | **Samples instructed on/ Analysis started on:** | 09/03/2022 |
| **Your order number:** | 000910 | **Analysis completed by:** | 16/03/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 16/03/2022 |
| **Samples Analysed:** | 4 water samples | | |

**Signed:**

Anna Goc
Technical Reviewer (Reporting Team)
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-44551**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000910**

| Lab Sample Number | | | | 2199768 | 2199769 | 2199770 | 2199771 |
|---|---|---|---|---|---|---|---|
| Sample Reference | | | | WS142 | WS124 | CP102 | CP101 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| Date Sampled | | | | 09/03/2022 | 09/03/2022 | 09/03/2022 | 09/03/2022 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| **General Inorganics** | | | | | | | |
| pH | pH Units | N/A | ISO 17025 | 7.1 | 6.8 | 6.8 | 6.8 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dissolved Organic Carbon (DOC) | mg/l | 0.1 | ISO 17025 | 12.4 | 9.12 | 10.6 | 13.9 |
| **Total Phenols** | | | | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Heavy Metals / Metalloids** | | | | | | | |
| Calcium (dissolved) | mg/l | 0.012 | ISO 17025 | 89 | 91 | 250 | 270 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 | < 5.0 | < 5.0 | < 5.0 |
| Arsenic (dissolved) | µg/l | 0.15 | ISO 17025 | 2.3 | 0.27 | < 0.15 | 1.79 |
| Cadmium (dissolved) | µg/l | 0.02 | ISO 17025 | 0.07 | < 0.02 | 0.55 | 0.07 |
| Chromium (dissolved) | µg/l | 0.2 | ISO 17025 | 3.7 | 3.7 | 5.3 | 7.7 |
| Copper (dissolved) | µg/l | 0.5 | ISO 17025 | 10 | 2 | 16 | 1.1 |
| Lead (dissolved) | µg/l | 0.2 | ISO 17025 | 0.4 | < 0.2 | 0.3 | < 0.2 |
| Manganese (dissolved) | µg/l | 0.05 | ISO 17025 | 34 | 2800 | 340 | 1400 |
| Mercury (dissolved) | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nickel (dissolved) | µg/l | 0.5 | ISO 17025 | 5.3 | 3.4 | 26 | 13 |
| Selenium (dissolved) | µg/l | 0.6 | ISO 17025 | 2.4 | < 0.6 | 4 | 1 |
| Zinc (dissolved) | µg/l | 0.5 | ISO 17025 | 5.5 | 150 | 1200 | 10 |
| **Monoaromatics & Oxygenates** | | | | | | | |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **Petroleum Hydrocarbons** | | | | | | | |
| TPH1 (C10 - C40) EH_2D_TOTAL_#1_#2 | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C5 - C7 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |
| TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 | < 10 | < 10 |

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**Analytical Report Number: 22-44551**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000910**

| **Lab Sample Number** | | | | 2199768 | 2199769 | 2199770 | 2199771 |
|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS142 | WS124 | CP102 | CP101 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 09/03/2022 | 09/03/2022 | 09/03/2022 | 09/03/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| **VOCs** | | | | | | | |
| Chloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Vinyl Chloride | µg/l | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichlorofluoromethane | µg/l | 1 | NONE | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromodichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Cis-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Trans-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Dibromochloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tetrachloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dibromoethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Chlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p & m-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Styrene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Tribromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| o-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Isopropylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Bromobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| n-Propylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 2-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 4-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| tert-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| sec-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| p-Isopropyltoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |

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**Analytical Report Number: 22-44551**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000910**

| **Lab Sample Number** | | | | 2199768 | 2199769 | 2199770 | 2199771 |
|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS142 | WS124 | CP102 | CP101 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 09/03/2022 | 09/03/2022 | 09/03/2022 | 09/03/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| 1,2-Dibromo-3-chloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| 1,2,3-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| **SVOCs** | | | | | | | |
| Aniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Chlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroethyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroisopropyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachloroethane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Nitrobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Isophorone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Nitrophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4-Dimethylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bis(2-chloroethoxy)methane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 1,2,4-Trichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| 2,4-Dichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Chloroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobutadiene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Chloro-3-methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,4,5-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Methylnaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2-Chloronaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dimethylphthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 2,6-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| 2,4-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibenzofuran | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Chlorophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Diethyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| 4-Nitroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluorene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Azobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Bromophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Hexachlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Carbazole | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Dibutyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Anthraquinone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Butyl benzyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 | < 0.05 | < 0.05 |

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**Analytical Report Number: 22-44551**
**Project / Site name: Cherryfield Drive**

**Your Order No: 000910**

| **Lab Sample Number** | | | | 2199768 | 2199769 | 2199770 | 2199771 |
|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS142 | WS124 | CP102 | CP101 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Date Sampled** | | | | 09/03/2022 | 09/03/2022 | 09/03/2022 | 09/03/2022 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 | < 0.01 | < 0.01 |
| 3&4-Methylphenol | µg/l | 0.1 | NONE | < 0.10 | < 0.10 | < 0.10 | < 0.10 |

U/S = Unsuitable Sample  I/S = Insufficient Sample

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**Analytical Report Number : 22-44551**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in water by ICP-OES (dissolved) | Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn). | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L039-PL | W | ISO 17025 |
| Metals in water by ICP-MS (dissolved) | Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW. | In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS. | L012-PL | W | ISO 17025 |
| Hexavalent chromium in water | Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW. | L080-PL | W | ISO 17025 |
| Monohydric phenols in water - LOW LEVEL 1 ug/l | Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | ISO 17025 |
| Semi-volatile organic compounds in water | Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS. | In-house method based on USEPA 8270 | L102B-PL | W | ISO 17025 |
| TPHCWG (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation. | In-house method | L070-PL | W | ISO 17025 |
| Volatile organic compounds in water | Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| Dissolved Organic Carbon in water | Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L037-PL | W | ISO 17025 |
| BTEX and MTBE in water (Monoaromatics) | Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| Low level total cyanide in water | Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | ISO 17025 |
| pH at 20oC in water (automated) | Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW | In house method. | L099-PL | W | ISO 17025 |
| TPH1 (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS. | In-house method | L070-PL | W | NONE |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions |
|---|---|
| HS | Headspace Analysis |
| MS | Mass spectrometry |
| FID | Flame Ionisation Detector |

**Analytical Report Number : 22-44551**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| GC | Gas Chromatography | | | | |
| EH | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) | | | | |
| CU | Clean-up - e.g. by Florisil®, silica gel | | | | |
| 1D | GC - Single coil/column gas chromatography | | | | |
| 2D | GC-GC - Double coil/column gas chromatography | | | | |
| Total | Aliphatics & Aromatics | | | | |
| AL | Aliphatics | | | | |
| AR | Aromatics | | | | |
| #1 | EH_2D_Total but with humics mathematically subtracted | | | | |
| #2 | EH_2D_Total but with fatty acids mathematically subtracted | | | | |
| _ | Operator - understore to separate acronyms (exception for +) | | | | |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total | | | | |

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# Analytical Report Number : 22-46802

| | | | |
|---|---|---|---|
| **Project / Site name:** | Cherryfield Drive | **Samples received on:** | 18/03/2022 |
| **Your job number:** | 15 280 | **Samples instructed on/ Analysis started on:** | 21/03/2022 |
| **Your order number:** | 001020 | **Analysis completed by:** | 28/03/2022 |
| **Report Issue Number:** | 1 | **Report issued on:** | 28/03/2022 |
| **Samples Analysed:** | 2 water samples | | |

**Signed:**

Joanna Wawrzeczko
Technical Reviewer (Reporting Team)
**For & on behalf of i2 Analytical Ltd.**

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

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

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

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

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

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

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The results included within the report are representative of the samples submitted for analysis.

**Analytical Report Number: 22-46802**
**Project / Site name: Cherryfield Drive**

**Your Order No: 001020**

| **Lab Sample Number** | | | | 2211477 | 2211478 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS106 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/03/2022 | 17/03/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **General Inorganics** | | | | | |
| pH | pH Units | N/A | ISO 17025 | 6.9 | 7.4 |
| Total Cyanide (Low Level 1 µg/l) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Dissolved Organic Carbon (DOC) | mg/l | 0.1 | ISO 17025 | 11.4 | 4.74 |
| **Total Phenols** | | | | | |
| Total Phenols (monohydric) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| **Heavy Metals / Metalloids** | | | | | |
| Calcium (dissolved) | mg/l | 0.012 | ISO 17025 | 260 | 120 |
| Chromium (hexavalent) | µg/l | 5 | ISO 17025 | < 5.0 | < 5.0 |
| Arsenic (dissolved) | µg/l | 0.15 | ISO 17025 | 1.36 | 0.48 |
| Cadmium (dissolved) | µg/l | 0.02 | ISO 17025 | < 0.02 | 0.03 |
| Chromium (dissolved) | µg/l | 0.2 | ISO 17025 | 7.5 | 3.7 |
| Copper (dissolved) | µg/l | 0.5 | ISO 17025 | < 0.5 | 1.2 |
| Lead (dissolved) | µg/l | 0.2 | ISO 17025 | 0.3 | < 0.2 |
| Manganese (dissolved) | µg/l | 0.05 | ISO 17025 | 1700 | 12 |
| Mercury (dissolved) | µg/l | 0.05 | ISO 17025 | < 0.05 | < 0.05 |
| Nickel (dissolved) | µg/l | 0.5 | ISO 17025 | 13 | 6 |
| Selenium (dissolved) | µg/l | 0.6 | ISO 17025 | 1.6 | 3.2 |
| Zinc (dissolved) | µg/l | 0.5 | ISO 17025 | 11 | 6.9 |

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| Lab Sample Number | | | | 2211477 | 2211478 |
|---|---|---|---|---|---|
| Sample Reference | | | | WS161 | WS106 |
| Sample Number | | | | None Supplied | None Supplied |
| Depth (m) | | | | None Supplied | None Supplied |
| Date Sampled | | | | 17/03/2022 | 17/03/2022 |
| Time Taken | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **Monoaromatics & Oxygenates** | | | | | |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| p & m-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| o-xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| **Petroleum Hydrocarbons** | | | | | |
| TPH1 (C10 - C40) EH_2D_TOTAL_#1_#2 | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C5 - C6 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C6 - C8 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C8 - C10 HS_1D_AL | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aliphatic >C10 - C12 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C12 - C16 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C16 - C21 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic >C21 - C35 EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aliphatic (C5 - C35) HS+EH_1D_AL_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C5 - C7 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C7 - C8 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C8 - C10 HS_1D_AR | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| TPH-CWG - Aromatic >C10 - C12 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C12 - C16 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C16 - C21 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic >C21 - C35 EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |
| TPH-CWG - Aromatic (C5 - C35) HS+EH_1D_AR_#1_#2_MS | µg/l | 10 | NONE | < 10 | < 10 |

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**Project / Site name: Cherryfield Drive**

**Your Order No: 001020**

| **Lab Sample Number** | | | | 2211477 | 2211478 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS106 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/03/2022 | 17/03/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **VOCs** | | | | | |
| Chloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Chloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Bromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Vinyl Chloride | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| Trichlorofluoromethane | µg/l | 1 | NONE | < 1.0 | < 1.0 |
| 1,1-Dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,2-Trichloro-1,2,2-trifluoroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Cis-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| MTBE (Methyl Tertiary Butyl Ether) | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 2,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,1-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1-Dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trans-1,2-dichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Benzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Tetrachloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trichloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Dibromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Bromodichloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Cis-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Trans-1,3-dichloropropene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Toluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,2-Trichloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,3-Dichloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Dibromochloromethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Tetrachloroethene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dibromoethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Chlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,1,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Ethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| p & m-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Styrene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Tribromomethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| o-Xylene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,1,2,2-Tetrachloroethane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Isopropylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Bromobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| n-Propylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 2-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 4-Chlorotoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,3,5-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| tert-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2,4-Trimethylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| sec-Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,3-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| p-Isopropyltoluene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,4-Dichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Butylbenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2-Dibromo-3-chloropropane | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| 1,2,4-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |
| Hexachlorobutadiene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |

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**Analytical Report Number: 22-46802**
**Project / Site name: Cherryfield Drive**

**Your Order No: 001020**

| **Lab Sample Number** | | | | 2211477 | 2211478 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS106 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/03/2022 | 17/03/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| 1,2,3-Trichlorobenzene | µg/l | 1 | ISO 17025 | < 1.0 | < 1.0 |

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**Project / Site name: Cherryfield Drive**

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|---|---|---|---|---|---|
| Sample Reference | | | | WS161 | WS106 |
| Sample Number | | | | None Supplied | None Supplied |
| Depth (m) | | | | None Supplied | None Supplied |
| Date Sampled | | | | 17/03/2022 | 17/03/2022 |
| Time Taken | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| **SVOCs** | | | | | |
| Aniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Phenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Chlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroethyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,3-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,2-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,4-Dichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroisopropyl)ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachloroethane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Nitrobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Isophorone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Nitrophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4-Dimethylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bis(2-chloroethoxy)methane | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 1,2,4-Trichlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Naphthalene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| 2,4-Dichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chloroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachlorobutadiene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chloro-3-methylphenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4,6-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,4,5-Trichlorophenol | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Methylnaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2-Chloronaphthalene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dimethylphthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 2,6-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Acenaphthylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Acenaphthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| 2,4-Dinitrotoluene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dibenzofuran | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Chlorophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Diethyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| 4-Nitroaniline | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Fluorene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Azobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Bromophenyl phenyl ether | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Hexachlorobenzene | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Phenanthrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Carbazole | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Dibutyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Anthraquinone | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Butyl benzyl phthalate | µg/l | 0.05 | NONE | < 0.05 | < 0.05 |
| Benzo(a)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Chrysene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(b)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(k)fluoranthene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(a)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Indeno(1,2,3-cd)pyrene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Dibenz(a,h)anthracene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |
| Benzo(ghi)perylene | µg/l | 0.01 | ISO 17025 | < 0.01 | < 0.01 |

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**Analytical Report Number: 22-46802**
**Project / Site name: Cherryfield Drive**

**Your Order No: 001020**

| **Lab Sample Number** | | | | 2211477 | 2211478 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS161 | WS106 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | None Supplied | None Supplied |
| **Date Sampled** | | | | 17/03/2022 | 17/03/2022 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Water Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| 3&4-Methylphenol | µg/l | 0.1 | NONE | < 0.10 | < 0.10 |

U/S = Unsuitable Sample I/S = Insufficient Sample

**Analytical Report Number : 22-46802**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in water by ICP-OES (dissolved) | Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn). | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L039-PL | W | ISO 17025 |
| Metals in water by ICP-MS (dissolved) | Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW. | In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS. | L012-PL | W | ISO 17025 |
| Hexavalent chromium in water | Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW. | L080-PL | W | ISO 17025 |
| Monohydric phenols in water - LOW LEVEL 1 ug/l | Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | ISO 17025 |
| Semi-volatile organic compounds in water | Determination of semi-volatile organic compounds in leachate by extraction in dichloromethane followed by GC-MS. | In-house method based on USEPA 8270 | L102B-PL | W | ISO 17025 |
| TPHCWG (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation. | In-house method | L070-PL | W | ISO 17025 |
| Volatile organic compounds in water | Determination of volatile organic compounds in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| Dissolved Organic Carbon in water | Determination of dissolved inorganic carbon in water by TOC/DOC NDIR Analyser. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L037-PL | W | ISO 17025 |
| BTEX and MTBE in water (Monoaromatics) | Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW | In-house method based on USEPA8260 | L073B-PL | W | ISO 17025 |
| Low level total cyanide in water | Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | ISO 17025 |
| pH at 20oC in water (automated) | Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW | In house method. | L099-PL | W | ISO 17025 |
| TPH1 (Waters) | Determination of dichloromethane extractable hydrocarbons in water by GC-MS. | In-house method | L070-PL | W | NONE |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**
**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions |
|---|---|
| HS | Headspace Analysis |
| MS | Mass spectrometry |
| FID | Flame Ionisation Detector |
| GC | Gas Chromatography |
| EH | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) |
| CU | Clean-up - e.g. by Florisil®, silica gel |

**Analytical Report Number : 22-46802**
**Project / Site name: Cherryfield Drive**

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

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| 1D | GC - Single coil/column gas chromatography | | | | |
| 2D | GC-GC - Double coil/column gas chromatography | | | | |
| Total | Aliphatics & Aromatics | | | | |
| AL | Aliphatics | | | | |
| AR | Aromatics | | | | |
| #1 | EH_2D_Total but with humics mathematically subtracted | | | | |
| #2 | EH_2D_Total but with fatty acids mathematically subtracted | | | | |
| _ | Operator - understore to separate acronyms (exception for +) | | | | |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total | | | | |

**Analytical Report Number : 22-46802**
**Project / Site name: Cherryfield Drive**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name | Test Ref | Test Deviation |
|---|---|---|---|---|---|---|---|
| WS106 | None Supplied | W | 2211478 | c | pH at 20oC in water (automated) | L099-PL | c |
| WS161 | None Supplied | W | 2211477 | c | pH at 20oC in water (automated) | L099-PL | c |

# APPENDIX VII
# ORIGIN OF TIER I GENERIC ASSESSMENT CRITERIA

| CONSTITUENT | ORIGIN OF RISK ASSESSMENT VALUE |
|---|---|
| **Arsenic** | 2014 LQM/CIEH S4ULs |
| **Cadmium** | 2014 LQM/CIEH S4ULs |
| **Chromium** | 2014 LQM/CIEH S4ULs |
| **Lead** | 2014 LQM/CIEH S4ULs |
| **Mercury** | 2014 LQM/CIEH S4ULs – methylmercury |
| **Nickel** | 2014 LQM/CIEH S4ULs |
| **Selenium** | 2014 LQM/CIEH S4ULs |
| **Copper** | 2014 LQM/CIEH S4ULs |
| **Zinc** | 2014 LQM/CIEH S4ULs |
| **Cyanide – Total** | 2014 LQM/CIEH S4ULs |
| **Phenols – Total** | 2014 LQM/CIEH S4ULs |
| **Naphthalene** | General assessment criteria (GAC) developed by CIEH/LQM Suitable 4 Use Levels with supporting data from SR3, SR7 and existing Tox report where applicable. 1% SOM. |
| **Acenaphthylene** | |
| **Acenaphthene** | |
| **Fluorene** | |
| **Phenanthrene** | |
| **Anthracene** | |
| **Fluoranthene** | |
| **Pyrene** | |
| **Benzo(a)Anthracene** | |
| **Chrysene** | |
| **Benzo(b/k)Fluoranthene** [iii] | |
| **Benzo(a)Pyrene** | |
| **Indeno(123-cd)Pyrene** | |
| **Dibenzo(a,h)Anthracene** | |
| **Benzo(ghi)Perylene** | |
| **TPH $C_5$-$C_6$ (aliphatic)** | |
| **TPH $C_6$-$C_8$ (aliphatic)** | |
| **TPH $C_8$-$C_{10}$ (aliphatic)** | |
| **TPH $C_{10}$-$C_{12}$ (aliphatic)** | |
| **TPH $C_{12}$-$C_{16}$ (aromatic)** | |
| **TPH $C_{16}$-$C_{21}$ (aromatic)** | |
| **TPH $C_{21}$-$C_{35}$ (aromatic)** | |

# APPENDIX VIII
# DYNAMIC CONE PENETROMETER TEST CERTIFICATES




*Location Symbols*

DCP101 Approximate Dynamic Cone Penetrometer Test Location

*Notes:*

*Client:* DWH

*Job No:* 15-280

*Date:* 25.02.2022

*Drawing No:* 018

*Scale:* NTS@ A3

| Phase | Issue | Date | Drawn | Checked |
|---|---|---|---|---|
| P1 | REVA | 25.02.2022 | EB | NG |

*Job Title:* Cherryfield Drive, Kirkby

*Drawing Title:* DCP Location Plan


Environmental Engineering Partnership Ltd
Taylor Road, Trafford Park
Urmston, Manchester, M41 7JQ
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
Website: www.e3p.co.uk



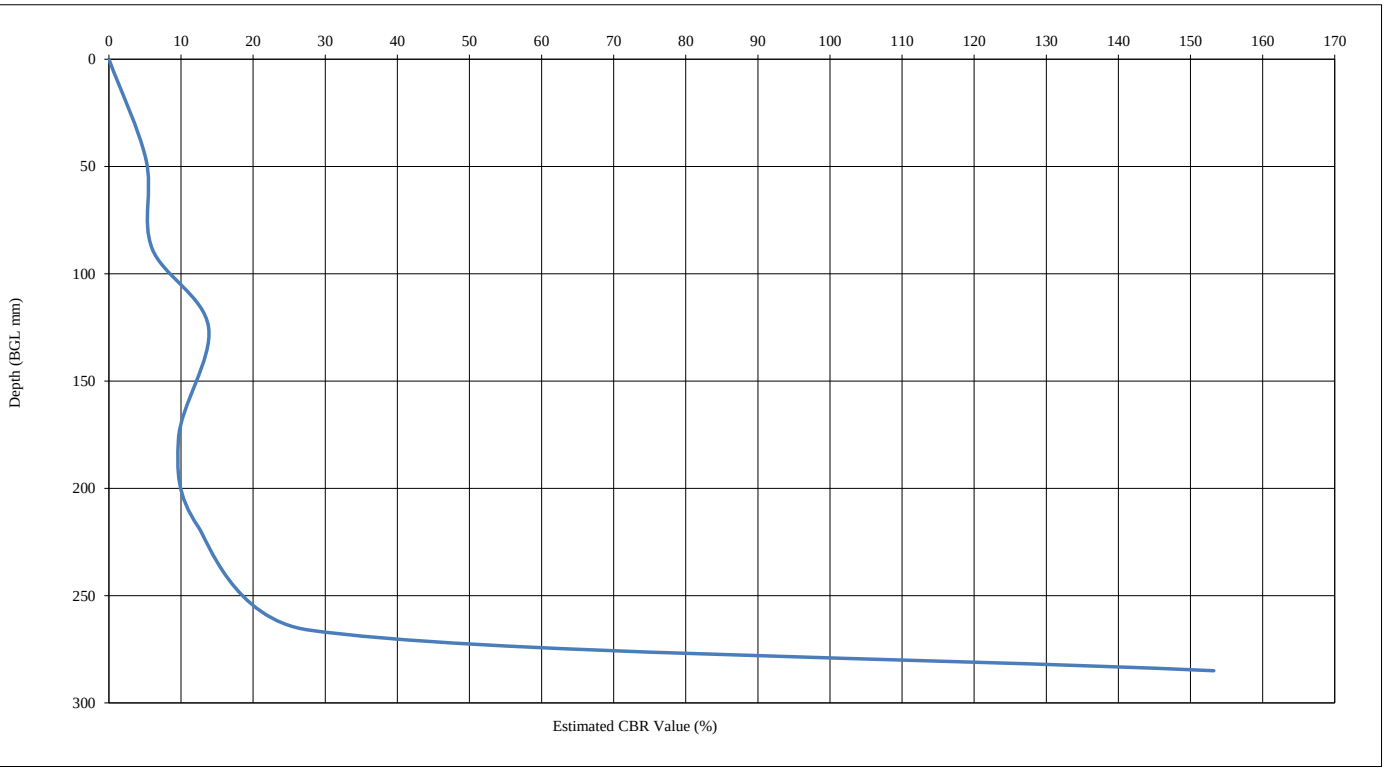
The client must not amend any drawing, design or other intellectual property produced by E3P Ltd without permission in writing from E3P Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, E3P Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or intellectual property.

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP125 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 285 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 88 | 2 | 2 | 44.00 | 5.53 |
| 88 | 218 | 8 | 6 | 21.67 | 11.70 |
| 218 | 285 | 23 | 15 | 4.47 | 62.08 |
| | | | | | |

**Comments**

Terminated on obstruction

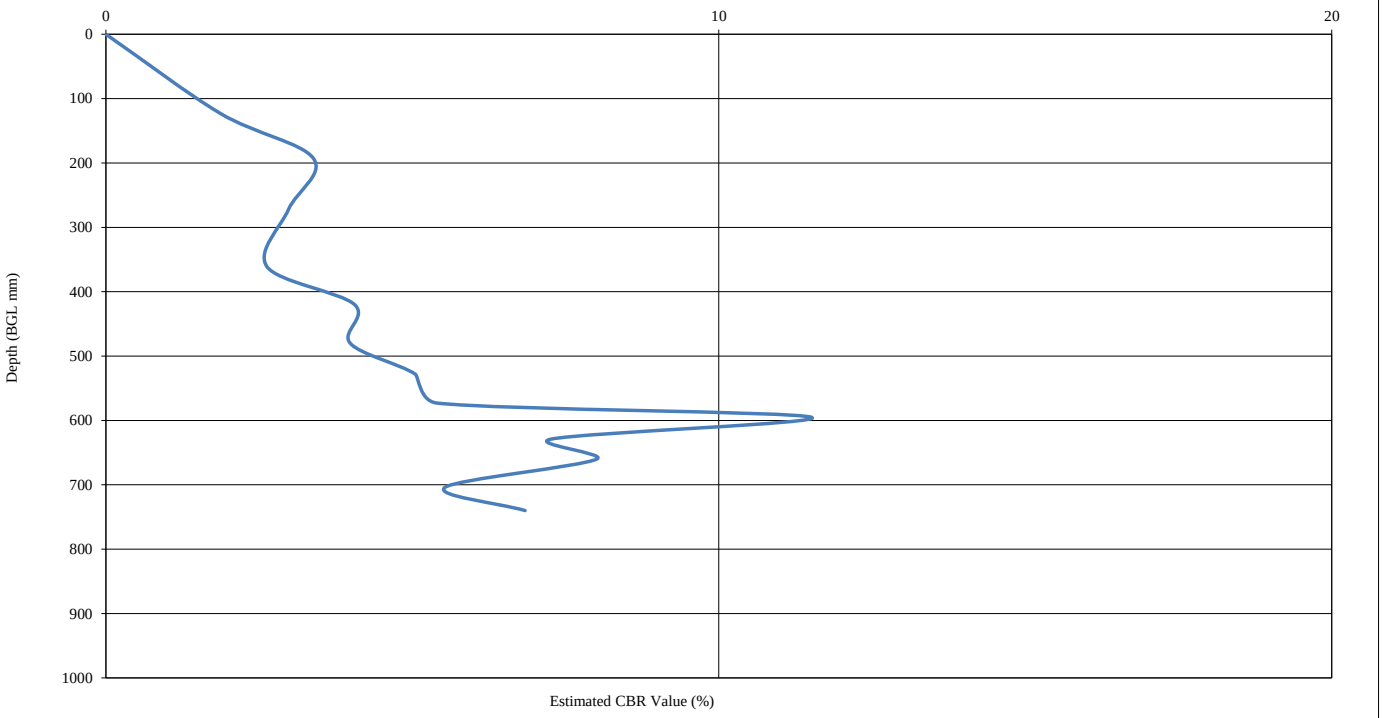
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP126 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 740 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 361 | 4 | 4 | 90.25 | 2.59 |
| 361 | 573 | 8 | 4 | 53.00 | 4.54 |
| 573 | 704 | 12 | 4 | 32.75 | 7.56 |
| 704 | 740 | 13 | 1 | 36.00 | 6.84 |

**Comments**

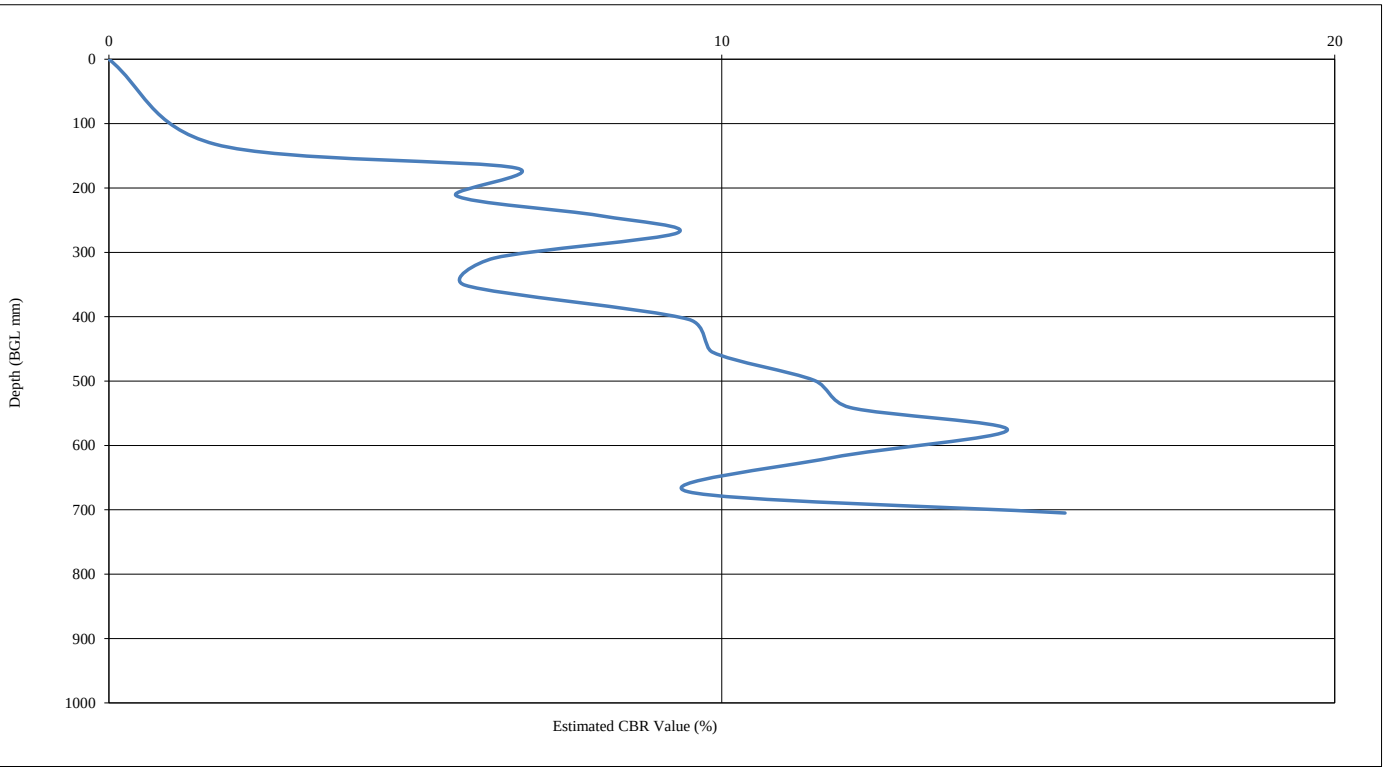
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP127 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 705 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 132 | 1 | 1 | 132.00 | 1.73 |
| 132 | 212 | 3 | 2 | 40.00 | 6.12 |
| 212 | 351 | 7 | 4 | 34.75 | 7.10 |
| 351 | 705 | 23 | 16 | 22.13 | 11.44 |

**Comments**

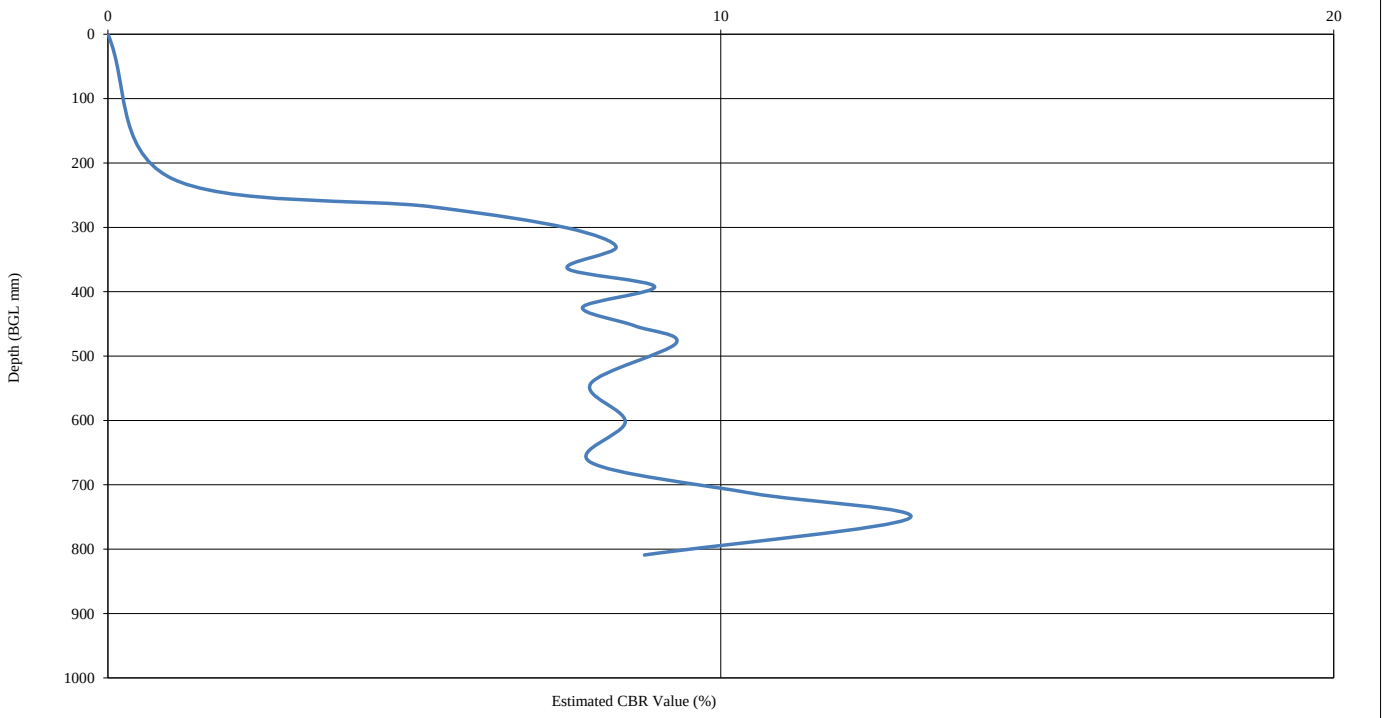
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP128 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 809 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 222 | 1 | 1 | 222.00 | 1.00 |
| 222 | 665 | 15 | 14 | 31.64 | 7.84 |
| 665 | 809 | 21 | 6 | 24.00 | 10.50 |
| | | | | | |

**Comments**

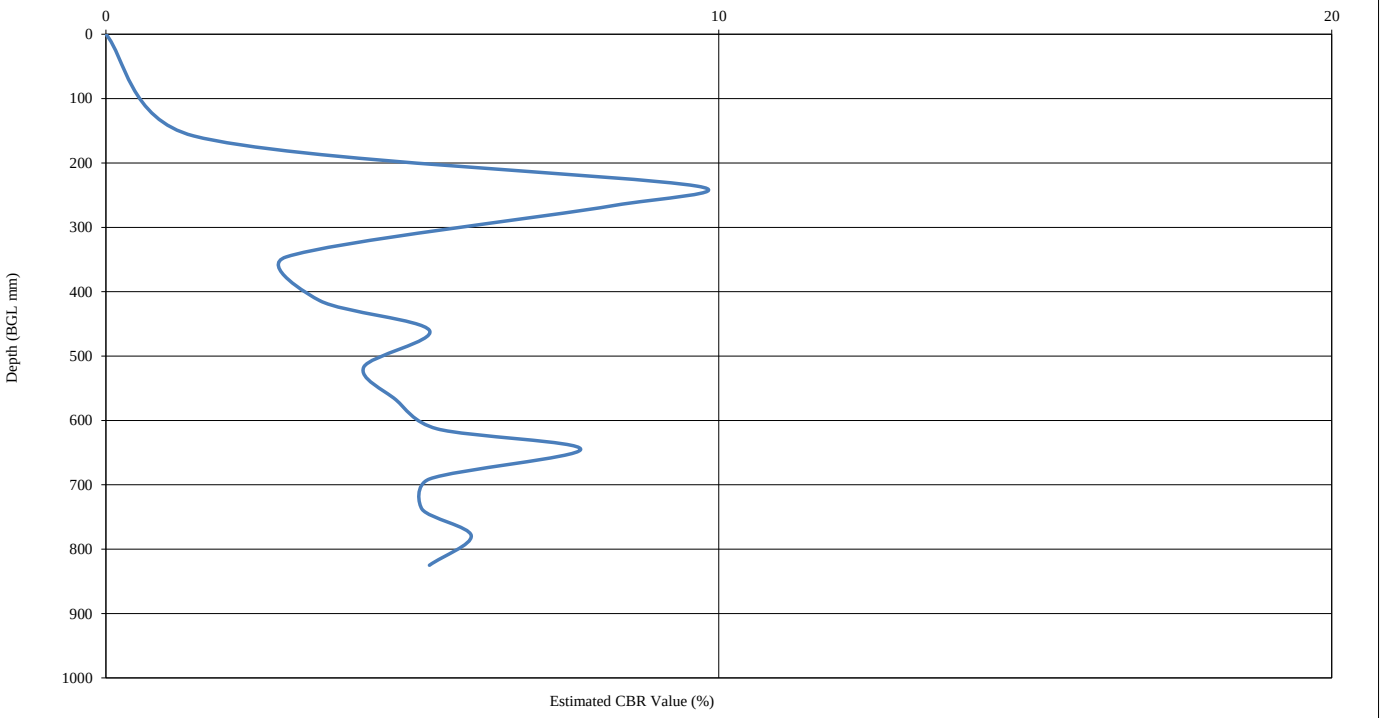
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP129 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 825 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 158 | 1 | 1 | 158.00 | 1.43 |
| 158 | 346 | 6 | 5 | 37.60 | 6.53 |
| 346 | 825 | 16 | 10 | 47.90 | 5.06 |
| | | | | | |

**Comments**

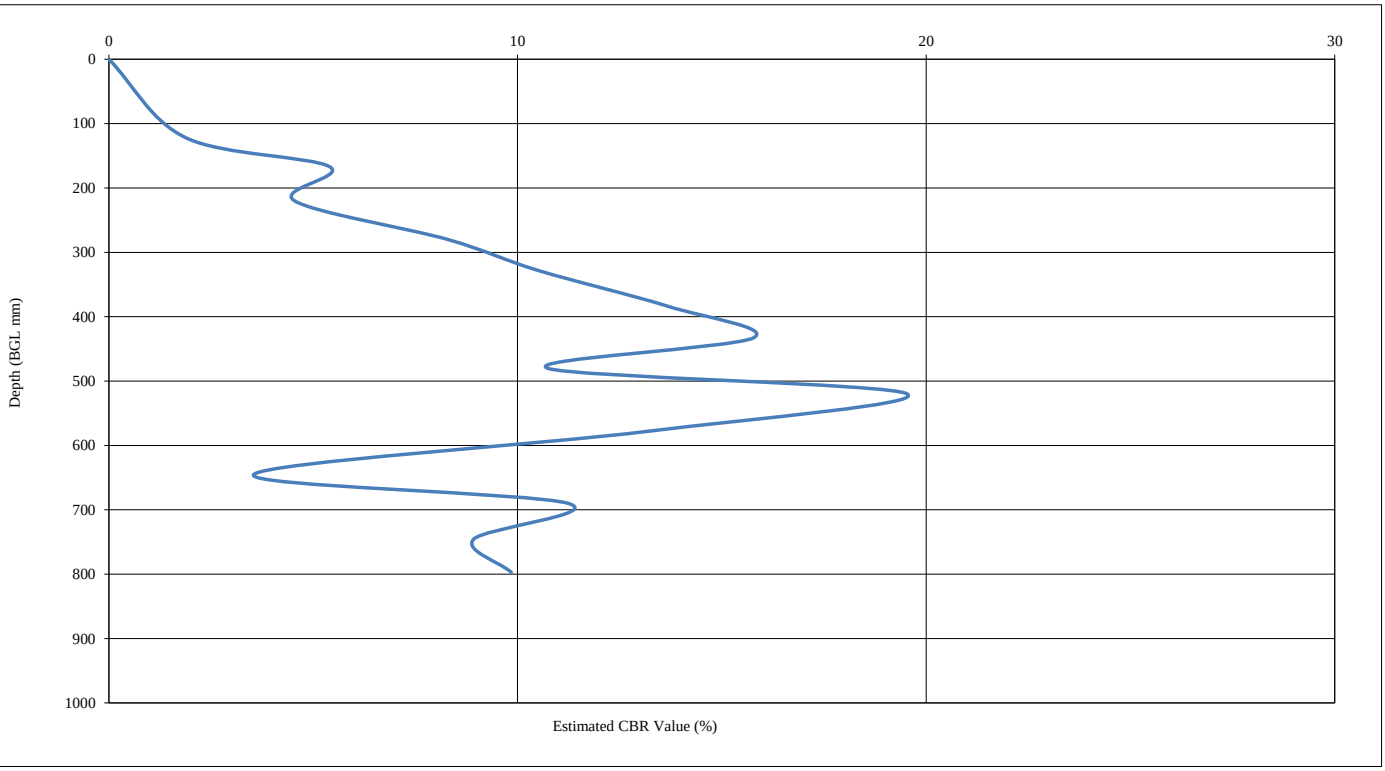
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP130 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 840 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 122 | 1 | 13 | 9.38 | 28.32 |
| 122 | 645 | 22 | 21 | 24.90 | 10.10 |
| 645 | 840 | 30 | 8 | 24.38 | 10.33 |
| | | | | | |

**Comments**

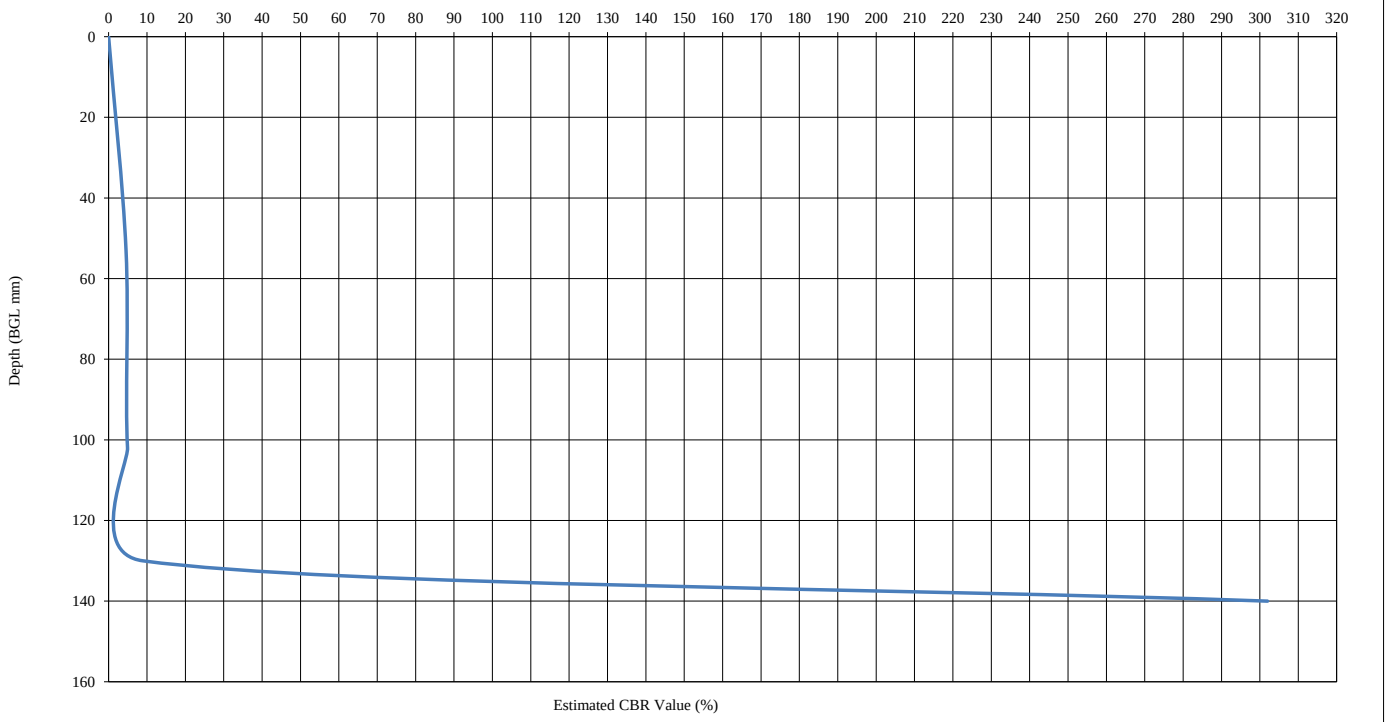
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP131 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 140 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 130 | 3 | 3 | 43.33 | 5.62 |
| 130 | 140 | 13 | 10 | 1.00 | 302.00 |
| | | | | | |
| | | | | | |

**Comments**

Terminated on obstruction

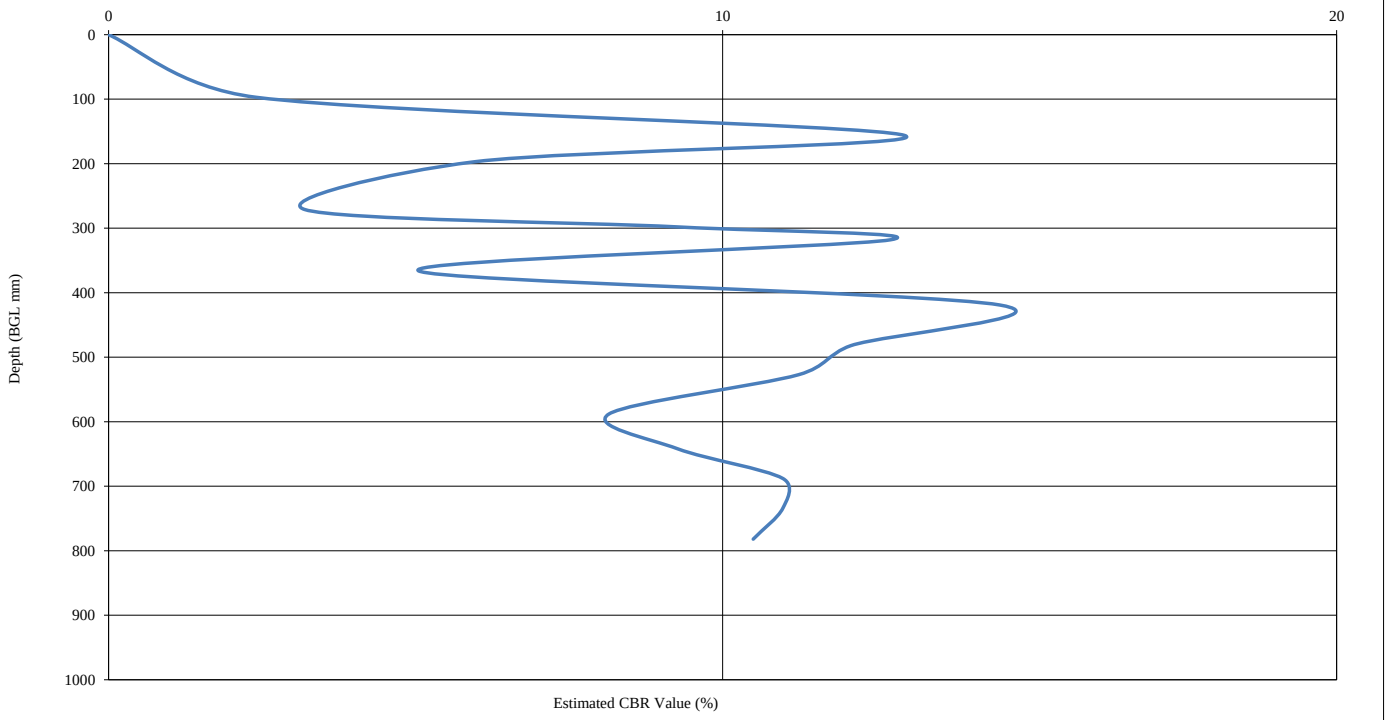
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP132 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 782 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 271 | 6 | 6 | 45.17 | 5.38 |
| 271 | 366 | 9 | 3 | 31.67 | 7.83 |
| 366 | 588 | 19 | 10 | 22.20 | 11.40 |
| 588 | 782 | 27 | 8 | 24.25 | 10.38 |

**Comments**

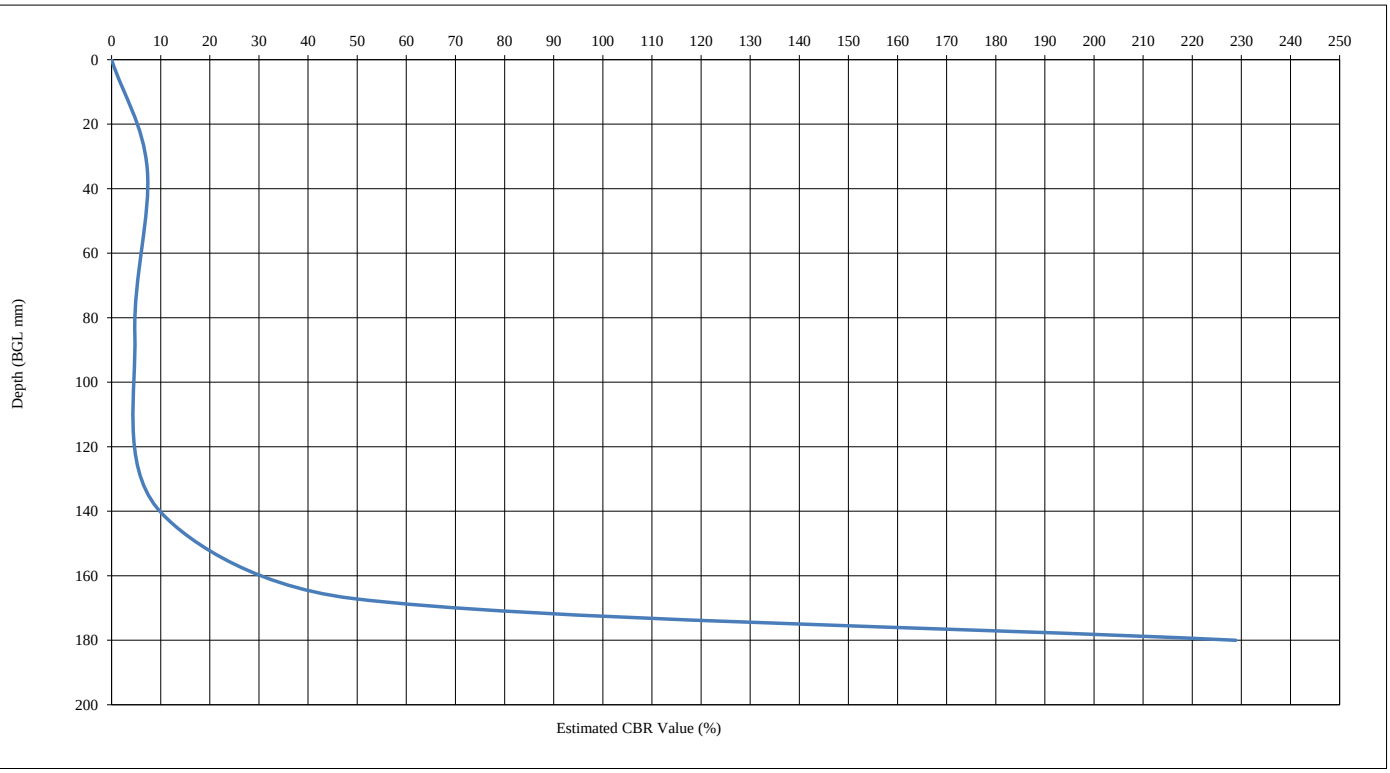
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP133 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 180 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 139 | 4 | 4 | 34.75 | 7.10 |
| 139 | 180 | 19 | 15 | 2.73 | 104.33 |
| | | | | | |
| | | | | | |

**Comments**

Terminated on obstruction

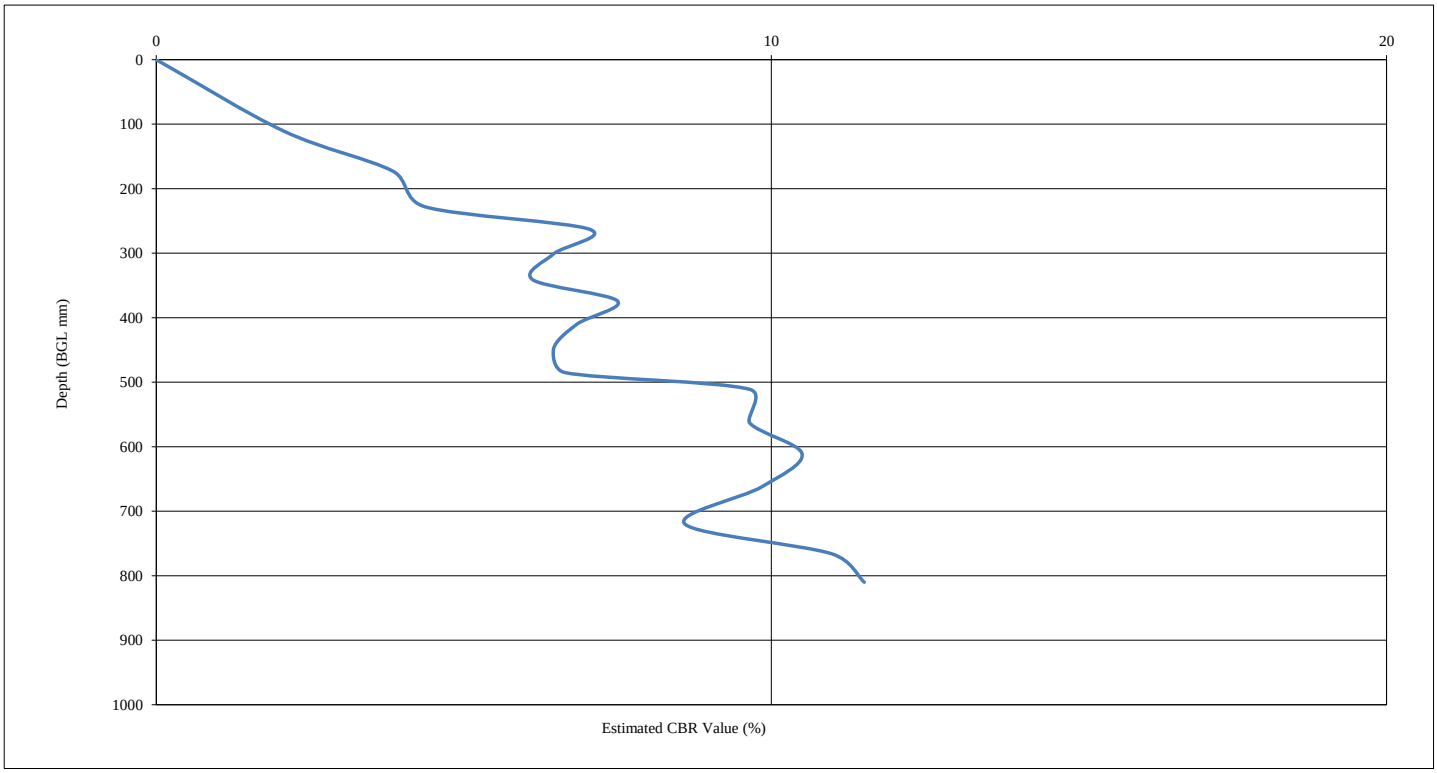
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP134 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 810 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 341 | 6 | 6 | 56.83 | 4.22 |
| 341 | 485 | 10 | 4 | 36.00 | 6.84 |
| 485 | 720 | 19 | 9 | 26.11 | 9.60 |
| 720 | 810 | 23 | 4 | 22.50 | 11.24 |

**Comments**

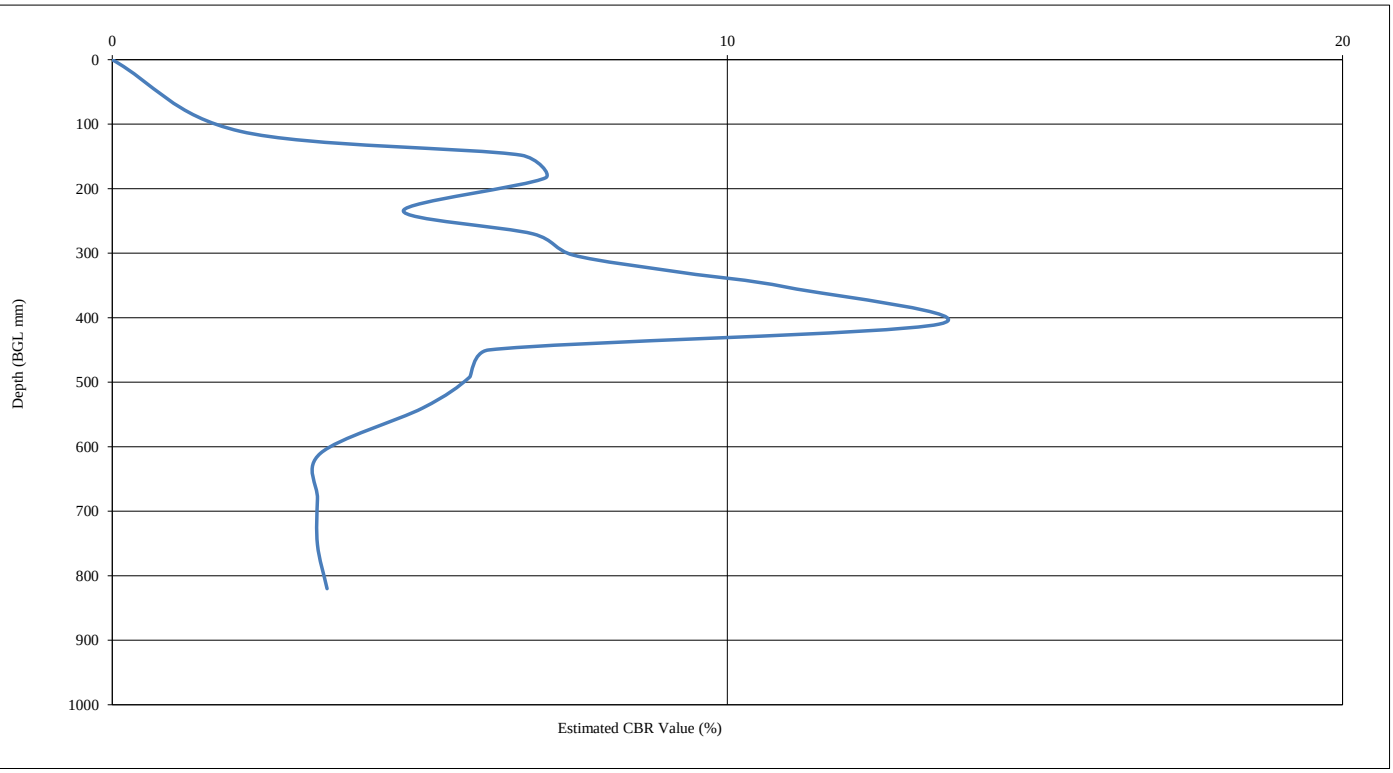
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP135 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 820 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 111 | 1 | 1 | 111.00 | 2.08 |
| 111 | 234 | 4 | 3 | 41.00 | 5.96 |
| 234 | 610 | 15 | 11 | 34.18 | 7.22 |
| 610 | 820 | 18 | 3 | 70.00 | 3.39 |

**Comments**

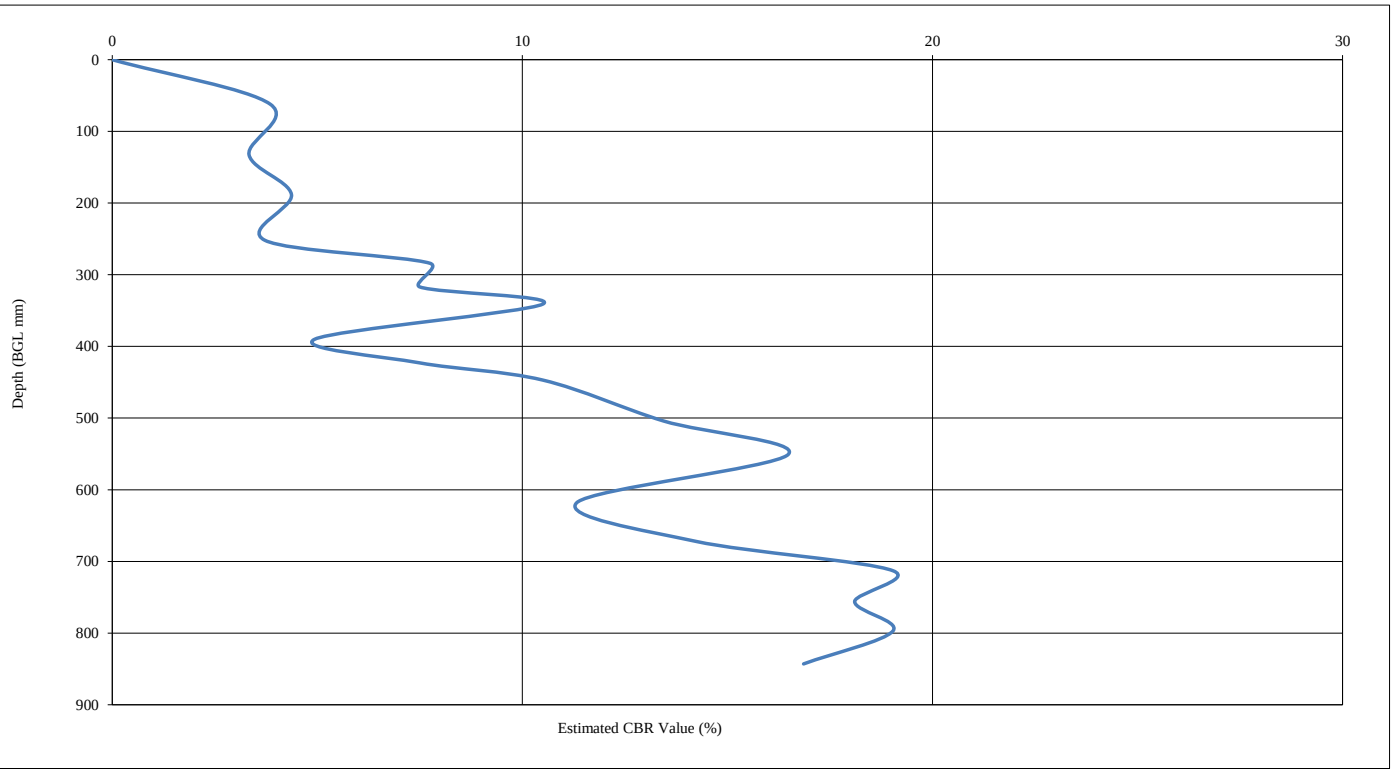
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP136 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 843 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 252 | 4 | 4 | 63.00 | 3.79 |
| 252 | 390 | 8 | 4 | 34.50 | 7.15 |
| 390 | 618 | 19 | 11 | 20.73 | 12.26 |
| 618 | 843 | 34 | 15 | 15.00 | 17.25 |

**Comments**

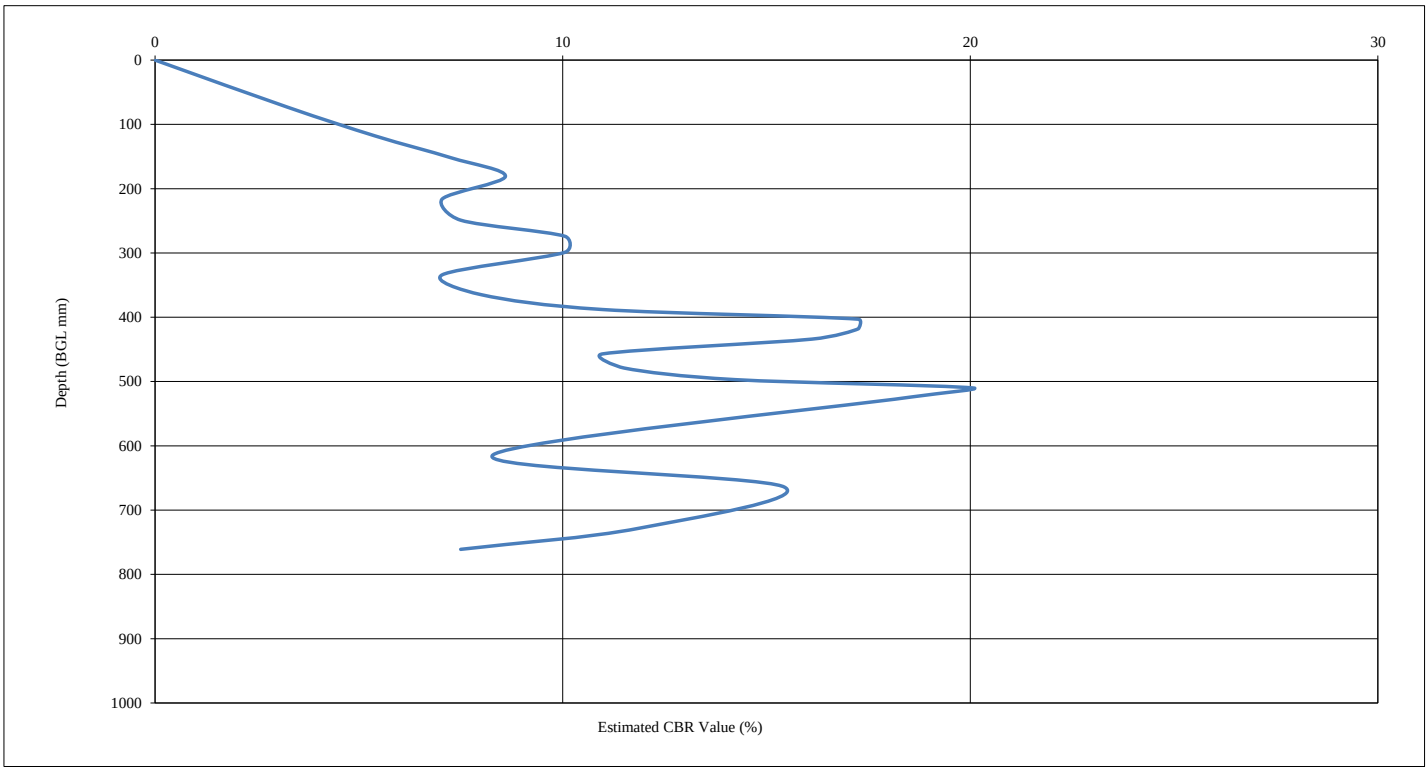
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP117 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 761 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 249 | 6 | 6 | 41.50 | 5.88 |
| 249 | 334 | 9 | 3 | 28.33 | 8.81 |
| 334 | 614 | 22 | 13 | 21.54 | 11.77 |
| 614 | 761 | 29 | 7 | 21.00 | 12.09 |
| | | | | | |

**Comments**

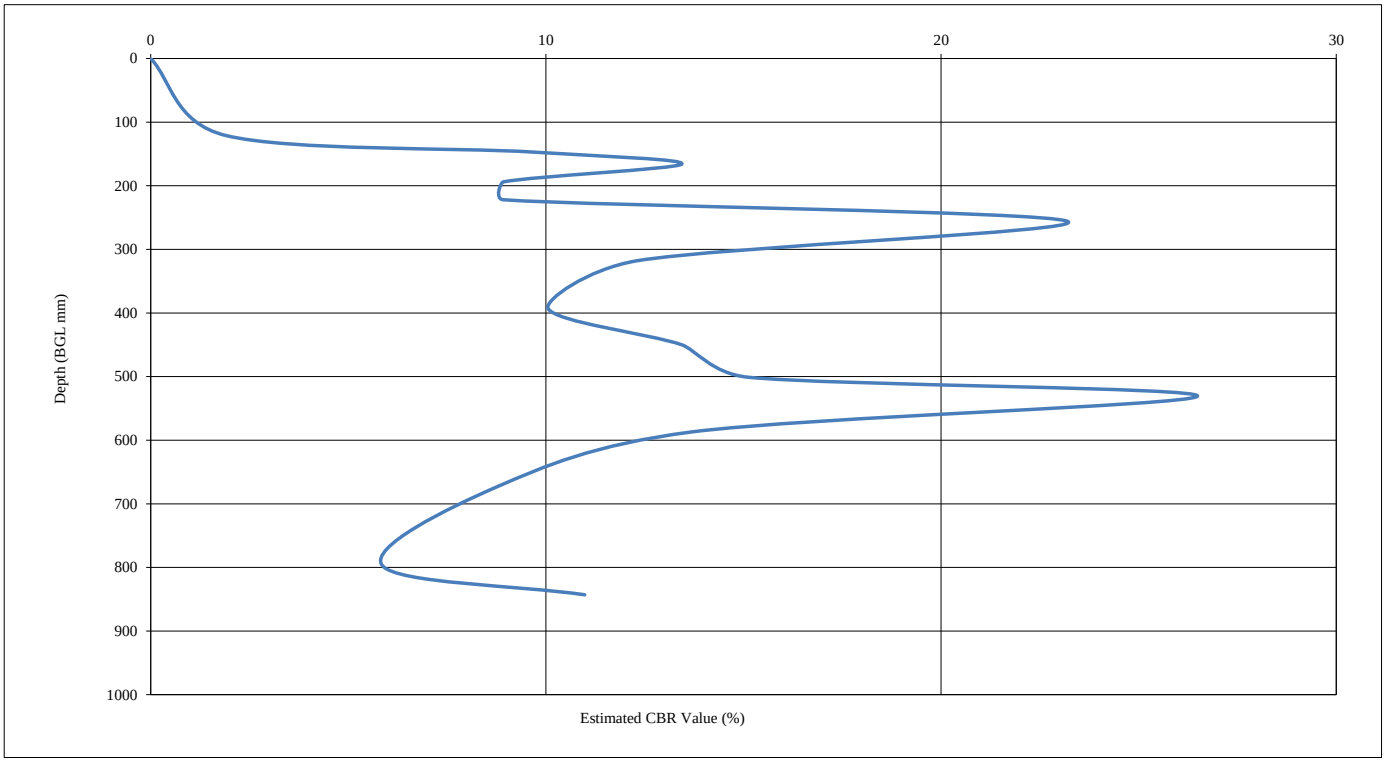
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP105 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 843 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 121 | 1 | 1 | 121.00 | 1.90 |
| 121 | 222 | 5 | 4 | 25.25 | 9.95 |
| 222 | 393 | 14 | 9 | 19.00 | 13.44 |
| 393 | 797 | 32 | 18 | 22.44 | 11.27 |
| 797 | 843 | 34 | 2 | 23.00 | 10.98 |

**Comments**

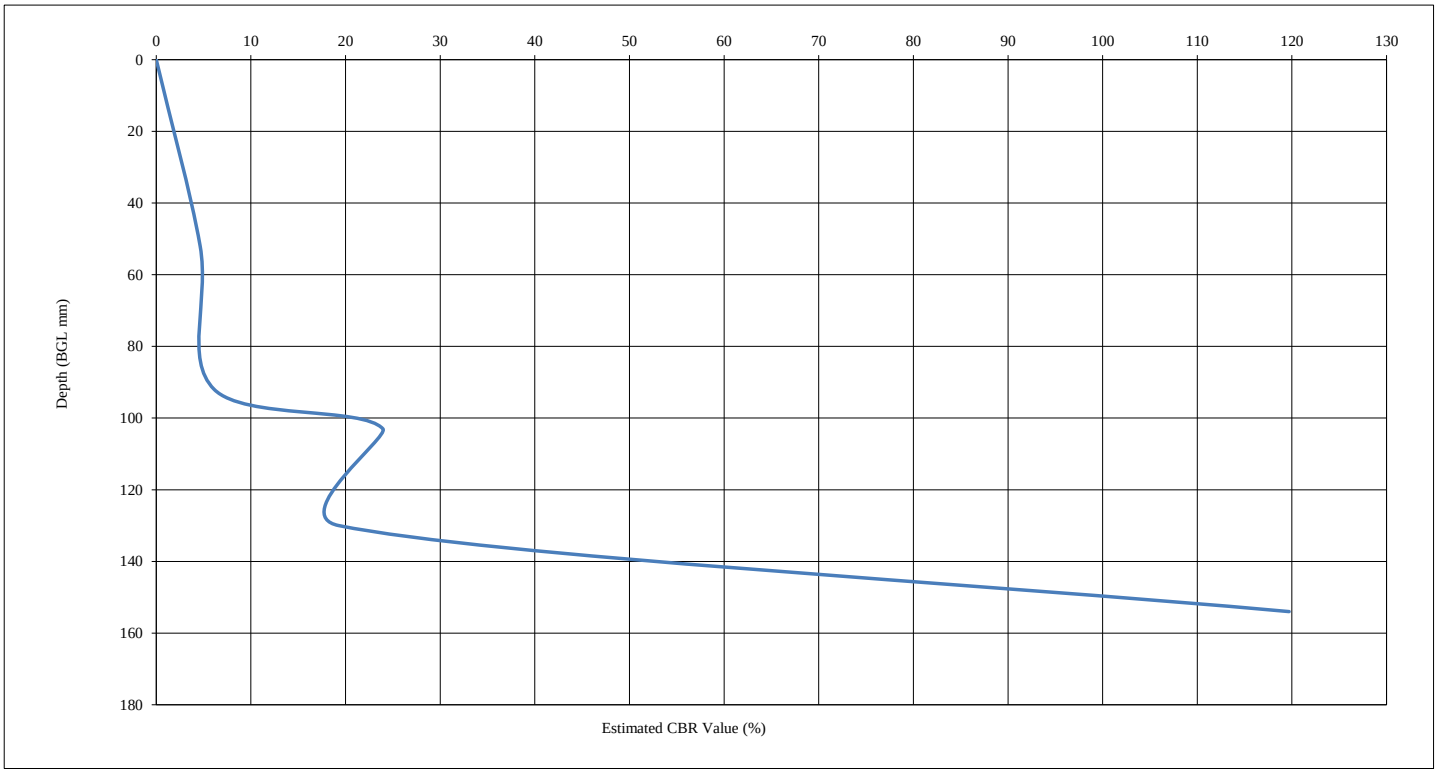
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP137 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 154 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 92 | 2 | 2 | 46.00 | 5.28 |
| 92 | 130 | 5 | 3 | 12.67 | 20.63 |
| 130 | 154 | 15 | 10 | 2.40 | 119.71 |
| | | | | | |

**Comments**

Terminated on obstruction

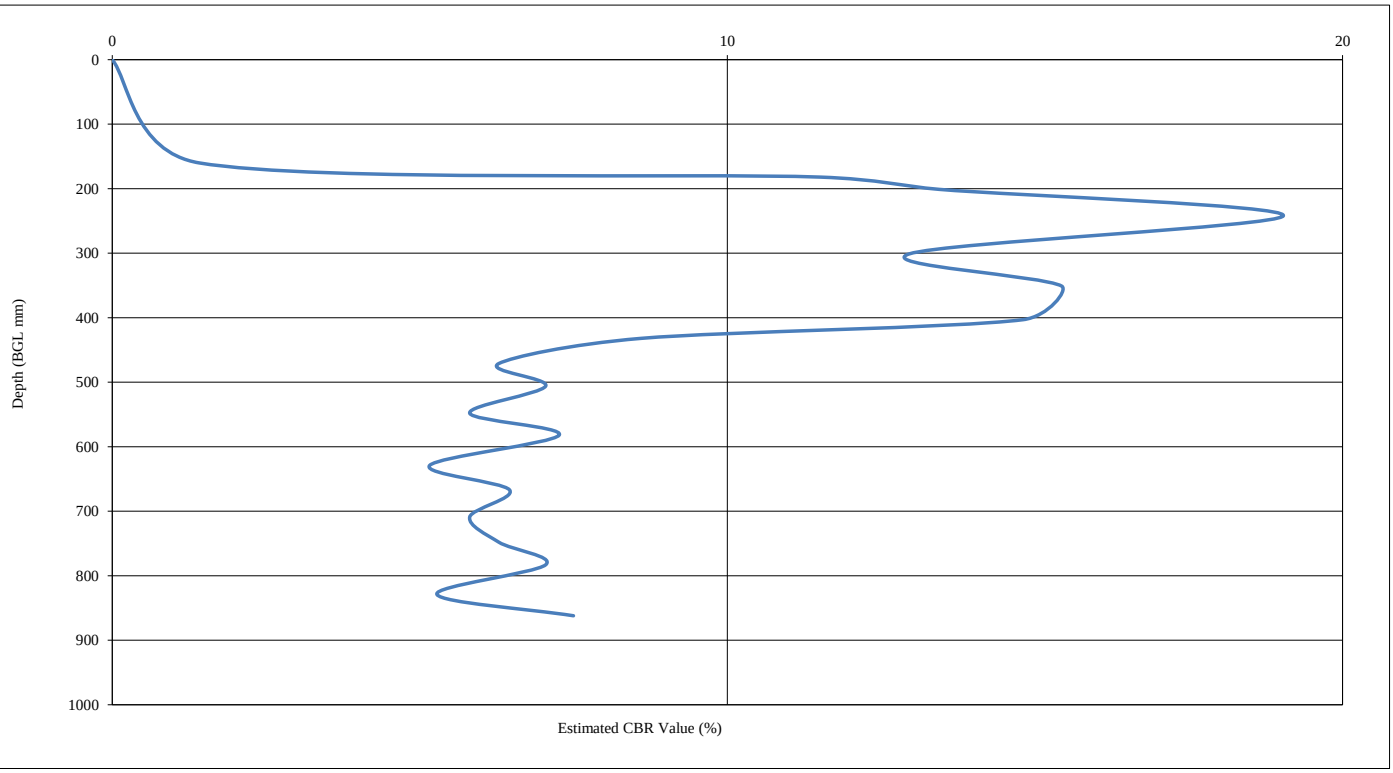
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP138 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 862 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 160 | 1 | 1 | 160.00 | 1.41 |
| 160 | 471 | 17 | 16 | 19.44 | 13.12 |
| 471 | 862 | 27 | 10 | 39.10 | 6.27 |
| | | | | | |

**Comments**

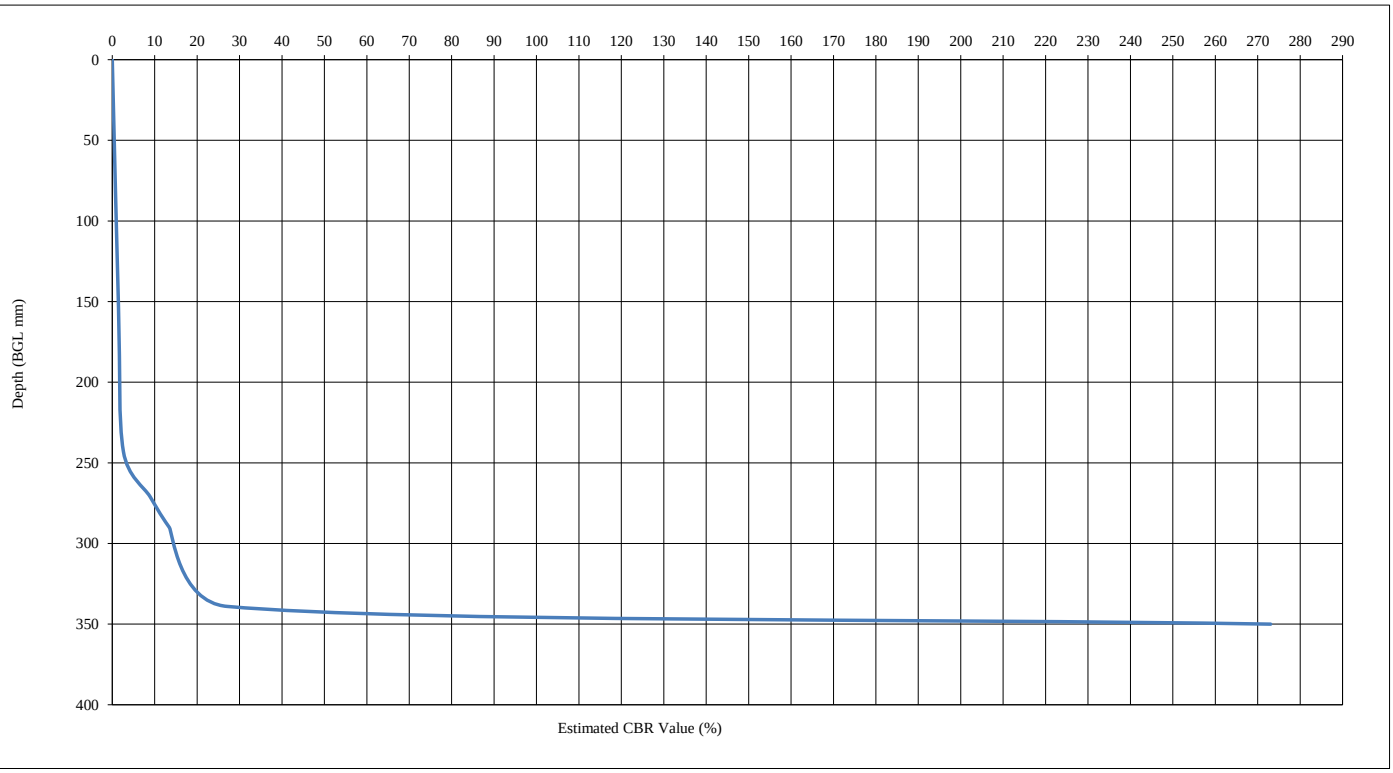
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|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP139 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 350 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 243 | 2 | 2 | 121.50 | 1.89 |
| 243 | 339 | 9 | 7 | 13.71 | 18.97 |
| 339 | 350 | 19 | 10 | 1.10 | 273.05 |
| | | | | | |

**Comments**

Terminated on obstruction

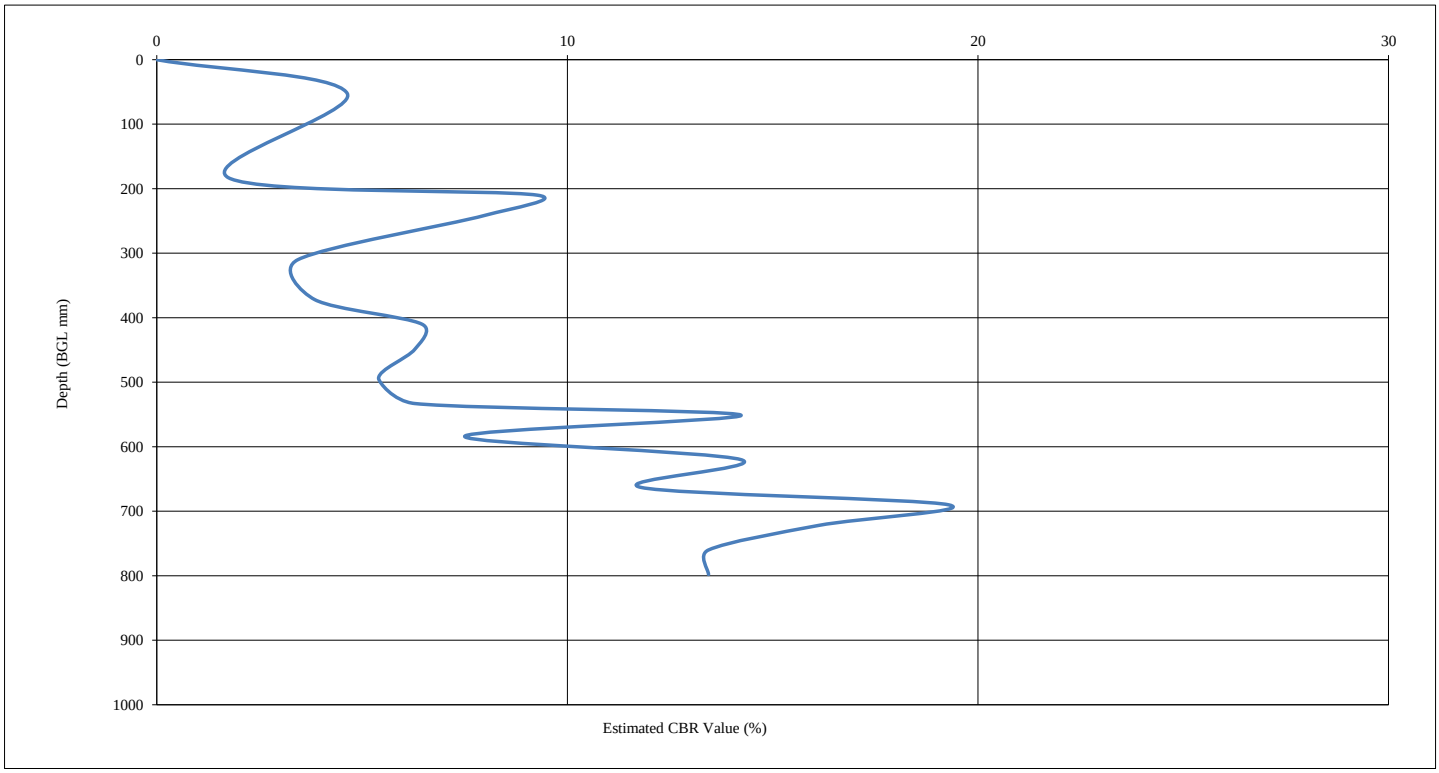
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 20/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP140 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 798 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 183 | 2 | 2 | 91.50 | 2.55 |
| 183 | 372 | 6 | 4 | 47.25 | 5.13 |
| 372 | 533 | 10 | 4 | 40.25 | 6.08 |
| 533 | 798 | 24 | 14 | 18.93 | 13.49 |

**Comments**

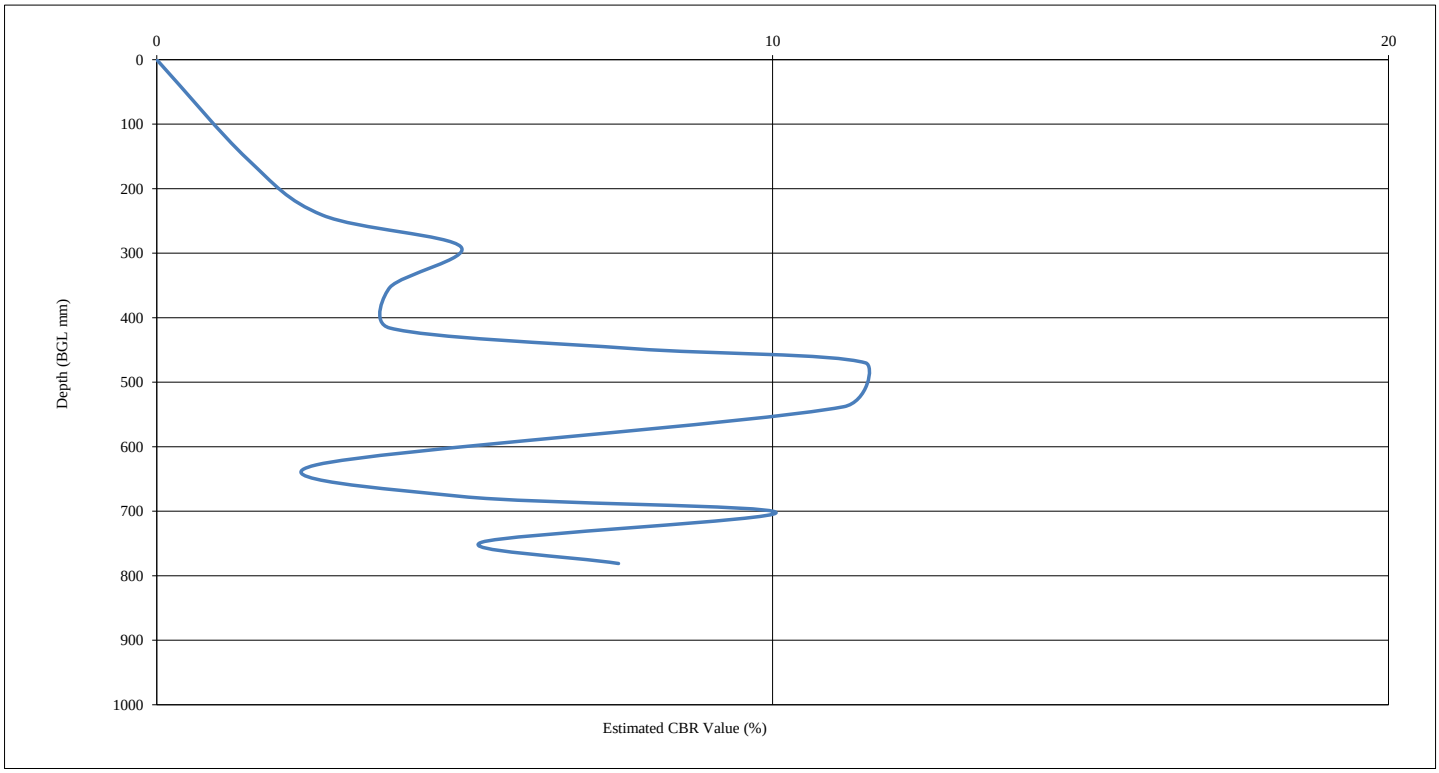
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP141 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 781 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 241 | 2 | 2 | 120.50 | 1.91 |
| 241 | 416 | 5 | 3 | 58.33 | 4.11 |
| 416 | 628 | 11 | 6 | 35.33 | 6.98 |
| 628 | 781 | 15 | 4 | 38.25 | 6.41 |

**Comments**

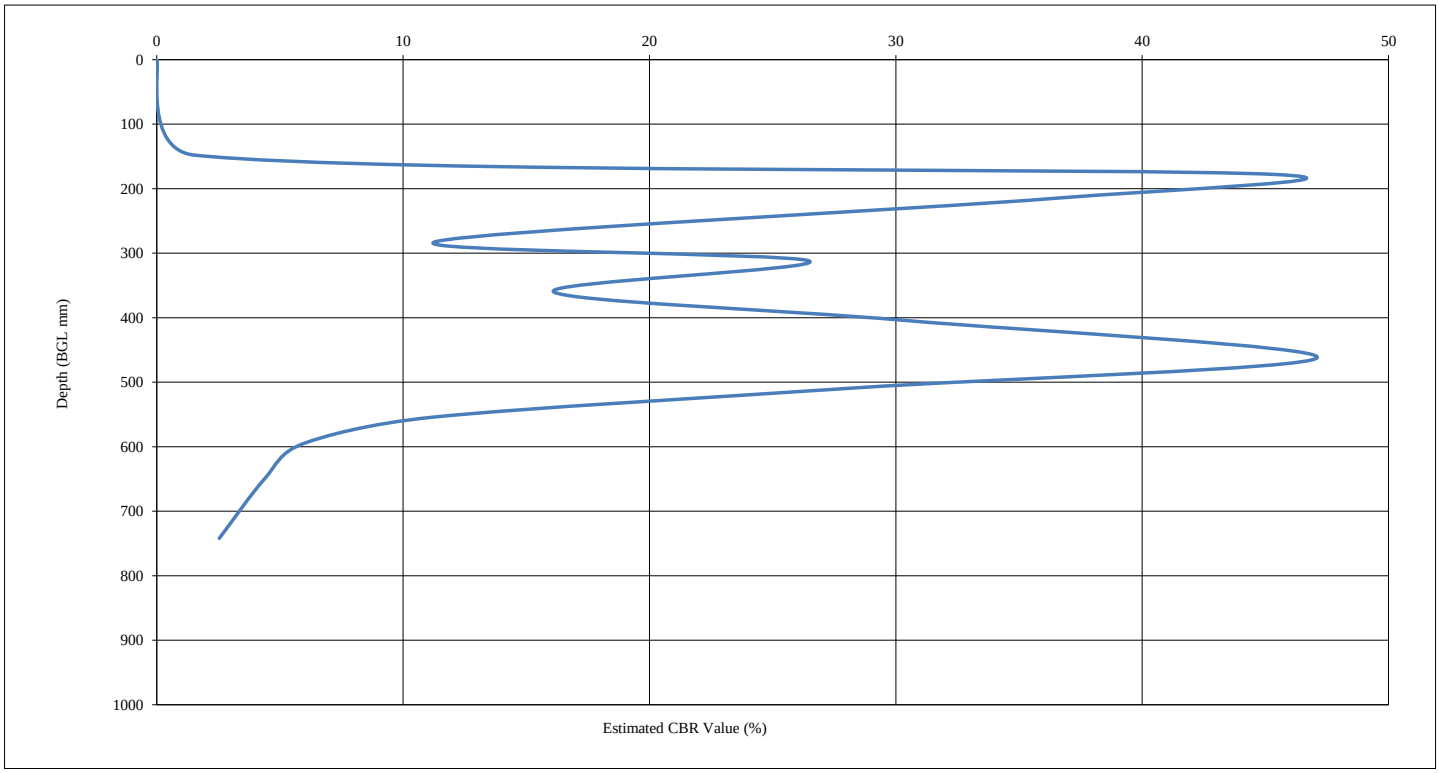
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP142 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 742 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 148 | 1 | 1 | 148.00 | 1.53 |
| 148 | 282 | 14 | 13 | 10.31 | 25.65 |
| 282 | 554 | 42 | 28 | 9.71 | 27.31 |
| 554 | 742 | 45 | 3 | 62.67 | 3.81 |

**Comments**

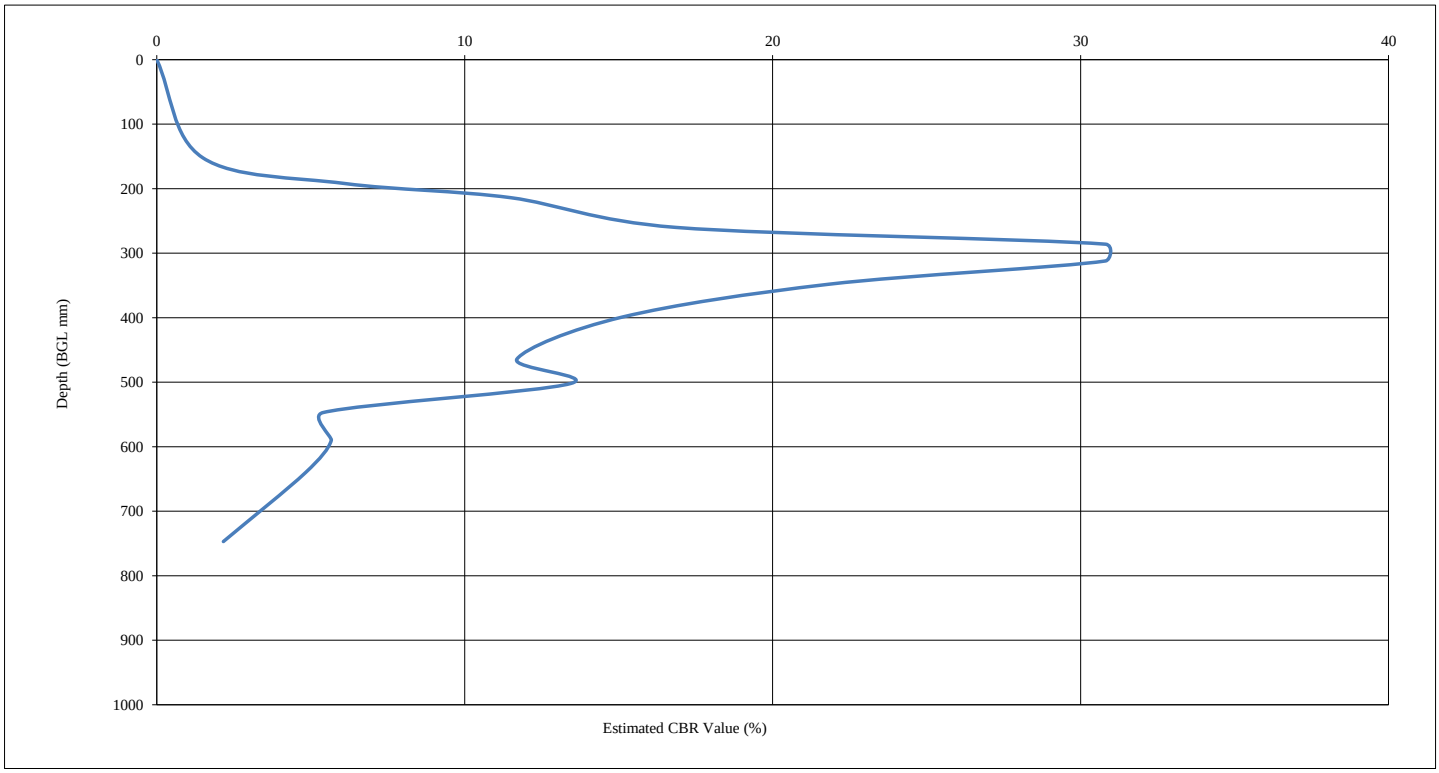
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP143 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 747 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 192 | 2 | 2 | 96.00 | 2.43 |
| 192 | 464 | 21 | 19 | 14.32 | 18.13 |
| 464 | 747 | 24 | 3 | 94.33 | 2.47 |
| | | | | | |

**Comments**

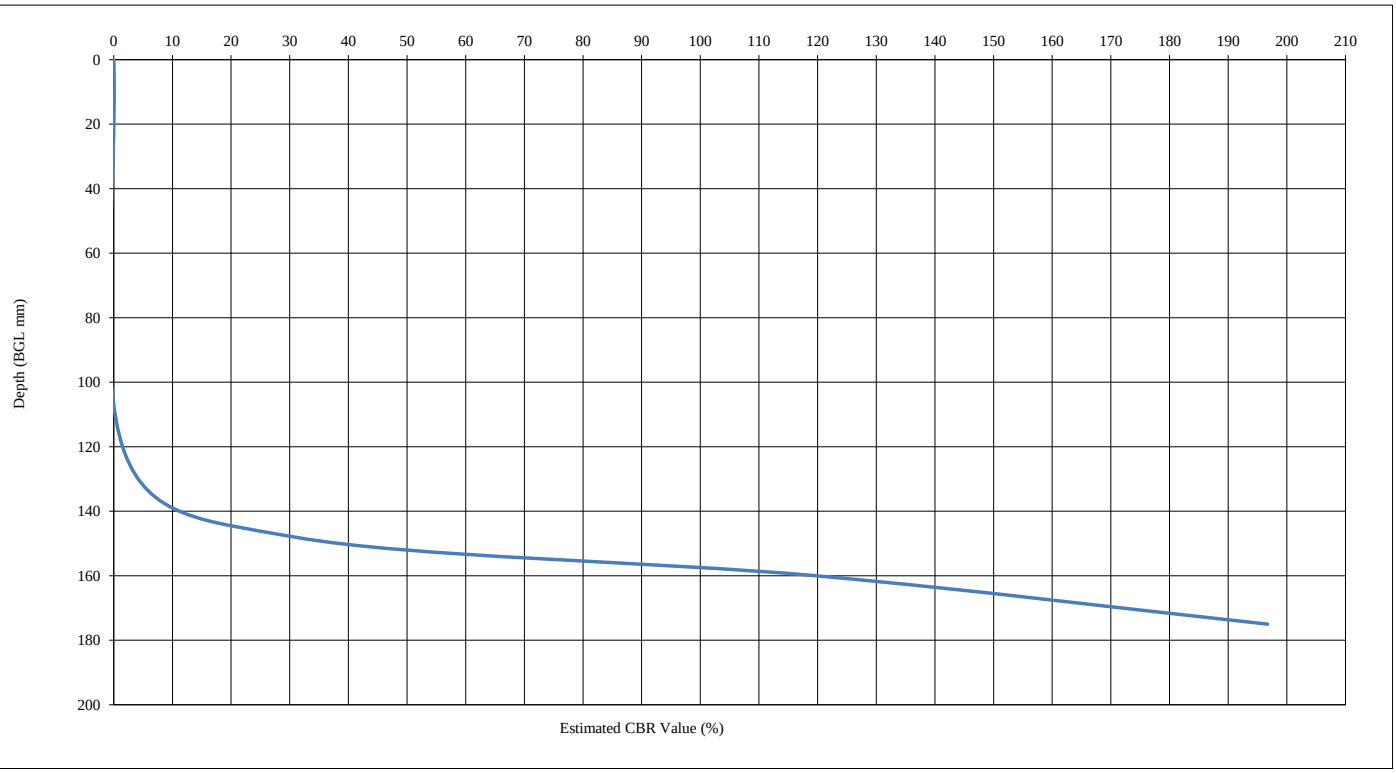
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP144 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 175 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 122 | 1 | 1 | 122.00 | 1.88 |
| 122 | 175 | 19 | 18 | 2.94 | 96.44 |
| | | | | | |
| | | | | | |

**Comments**

Terminated on obstruction

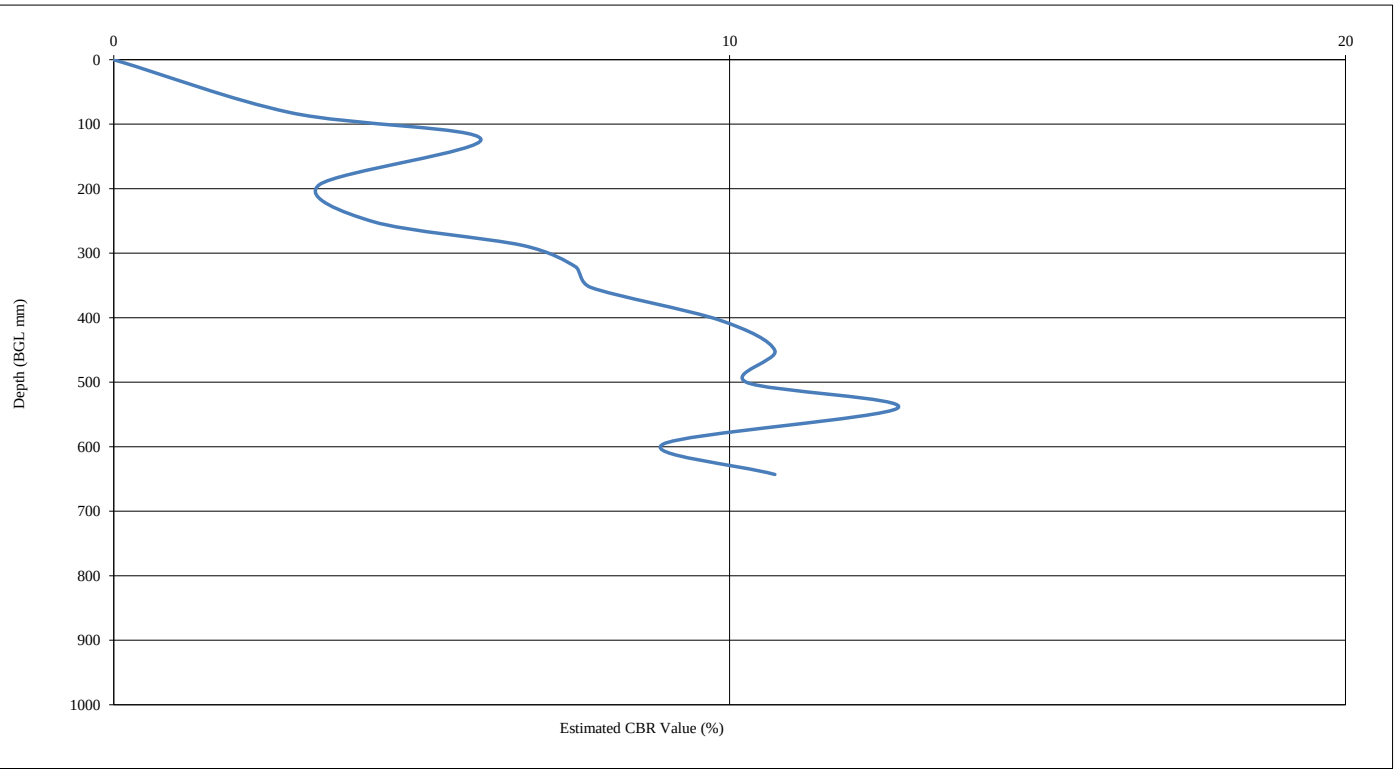
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP145 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 643 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 194 | 3 | 3 | 64.67 | 3.68 |
| 194 | 451 | 11 | 8 | 32.13 | 7.71 |
| 451 | 643 | 19 | 8 | 24.00 | 10.50 |
| | | | | | |

**Comments**

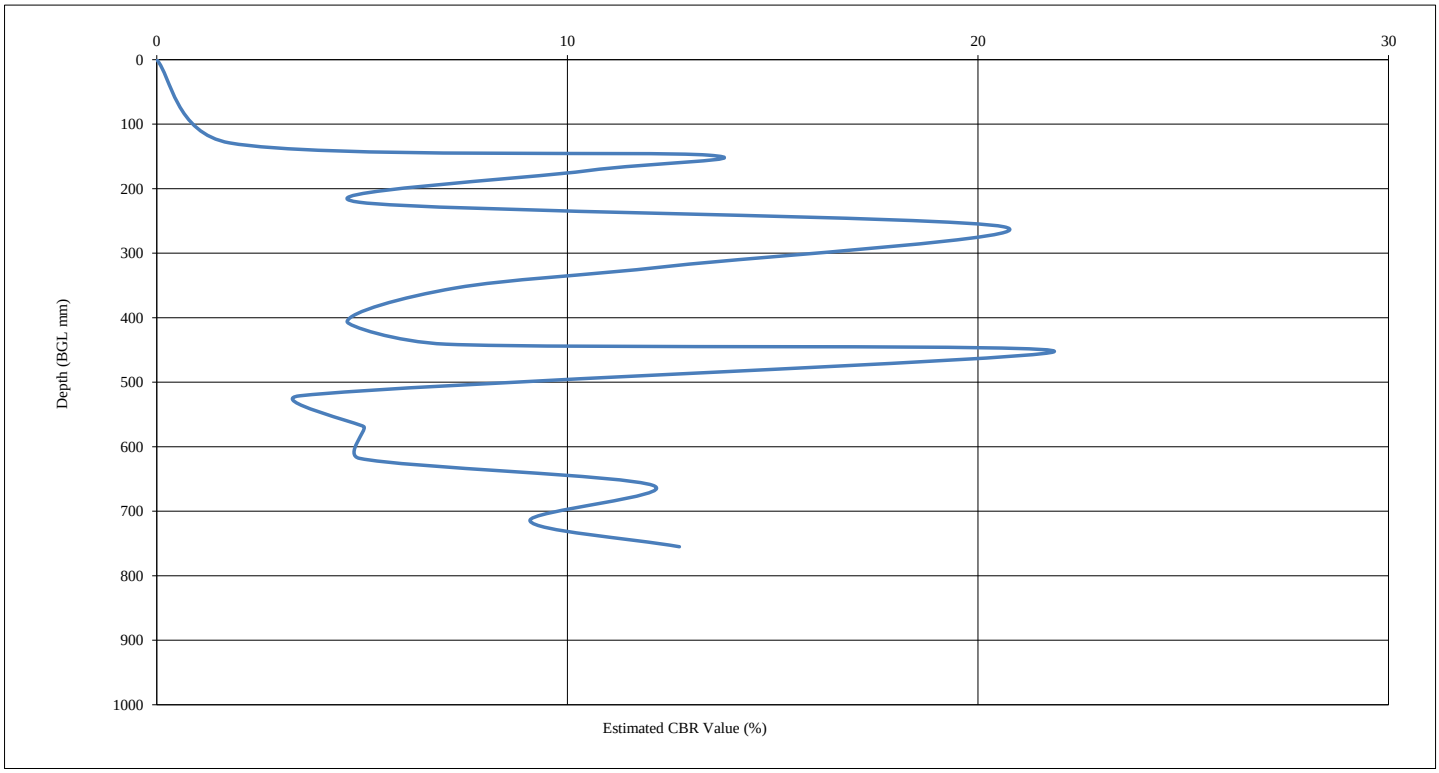
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP146 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 755 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 129 | 1 | 1 | 129.00 | 1.77 |
| 129 | 521 | 15 | 14 | 28.00 | 8.92 |
| 521 | 755 | 23 | 8 | 29.25 | 8.52 |
| | | | | | |

**Comments**

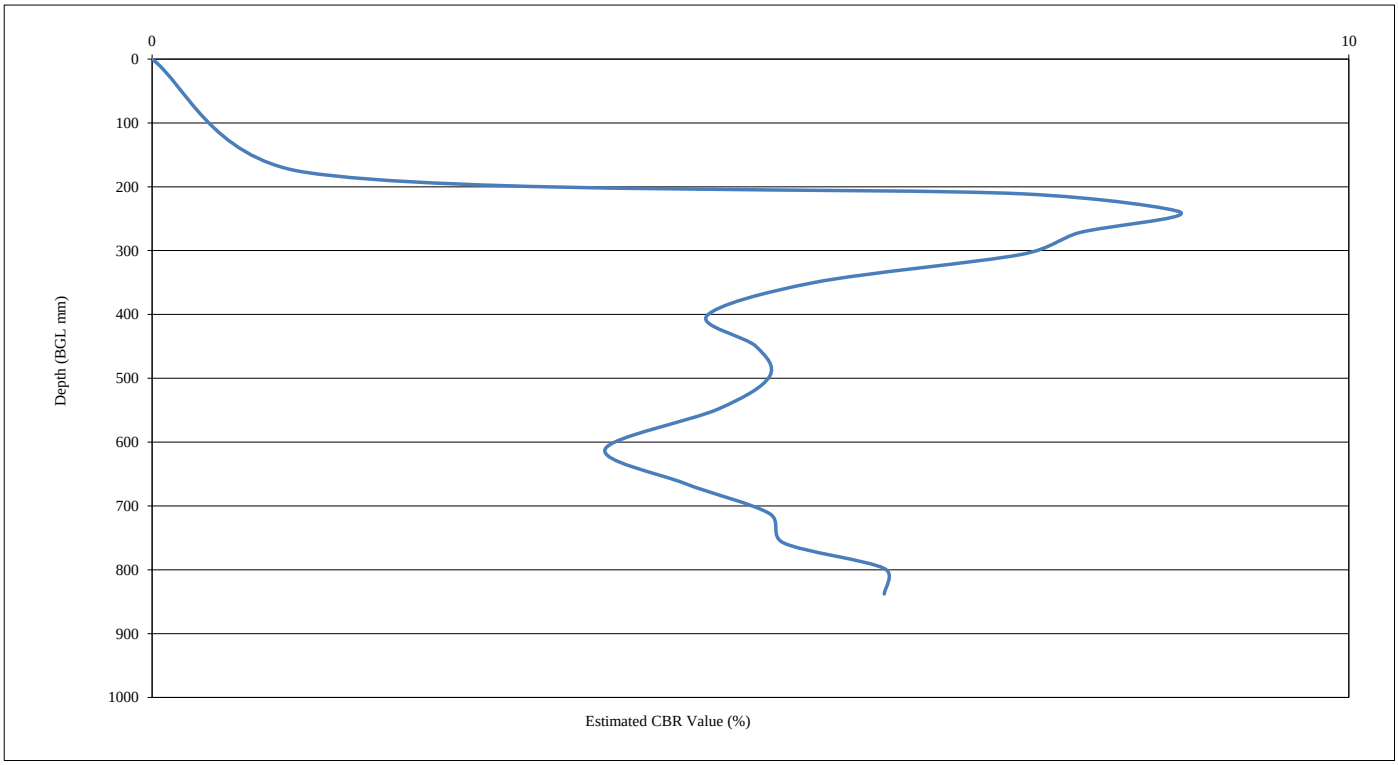
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP101 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 838 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 177 | 1 | 1 | 177.00 | 1.27 |
| 177 | 402 | 7 | 6 | 37.50 | 6.55 |
| 402 | 611 | 11 | 4 | 52.25 | 4.61 |
| 611 | 838 | 16 | 5 | 45.40 | 5.35 |
| | | | | | |

**Comments**

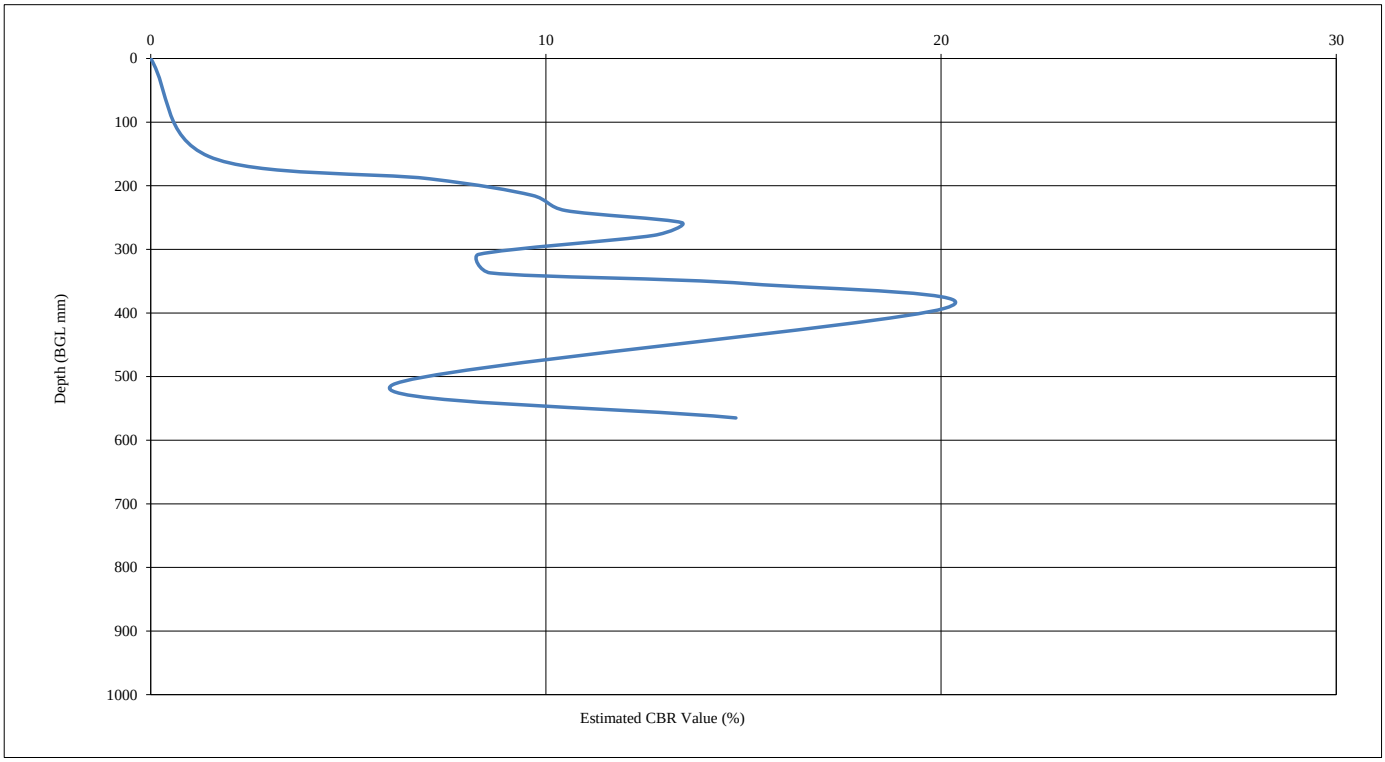
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP102 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 565 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 189 | 2 | 2 | 94.50 | 2.47 |
| 189 | 513 | 15 | 13 | 24.92 | 10.09 |
| 513 | 565 | 18 | 3 | 17.33 | 14.81 |
| | | | | | |
| | | | | | |

**Comments**

Terminated on obstruction

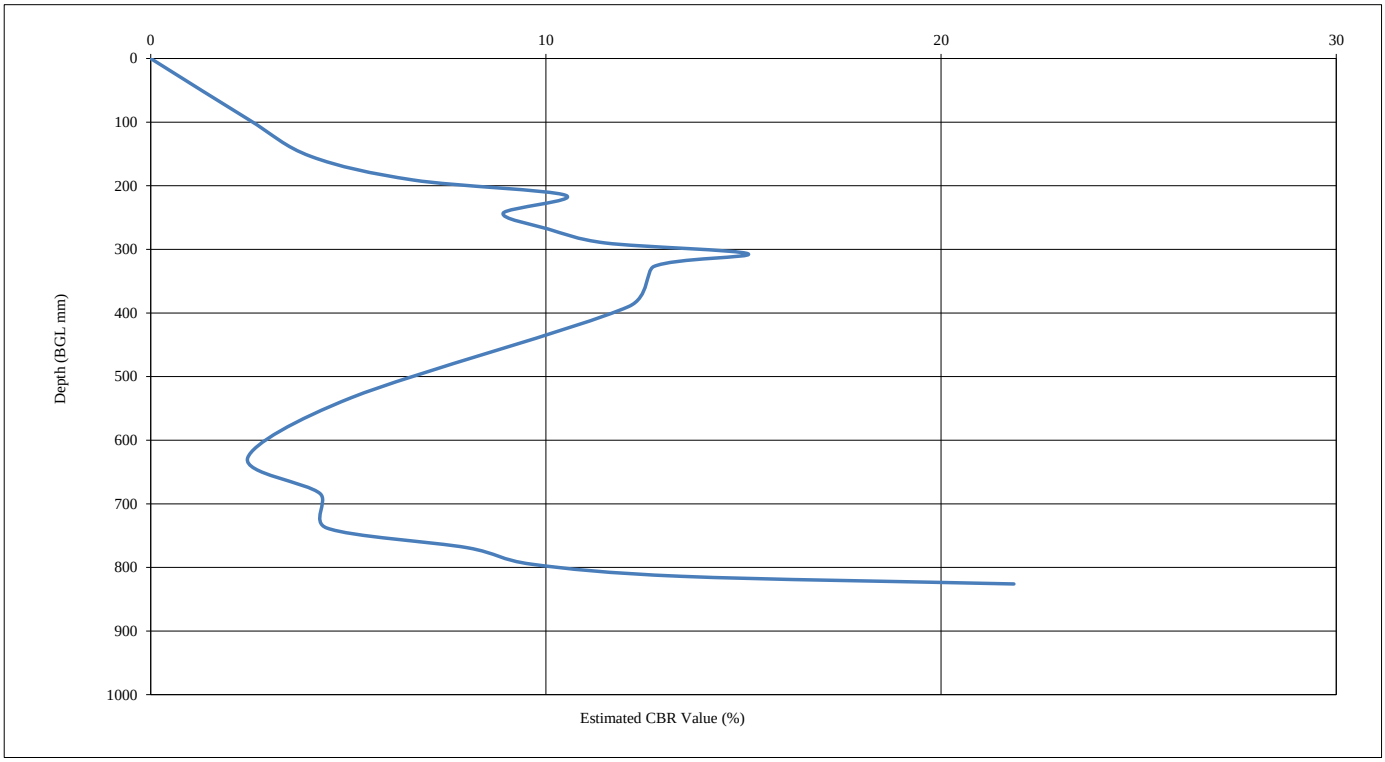
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP103 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 826 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 154 | 2 | 2 | 77.00 | 3.06 |
| 154 | 243 | 5 | 3 | 29.67 | 8.39 |
| 243 | 628 | 16 | 11 | 35.00 | 7.05 |
| 628 | 826 | 22 | 6 | 33.00 | 7.50 |
| | | | | | |

**Comments**

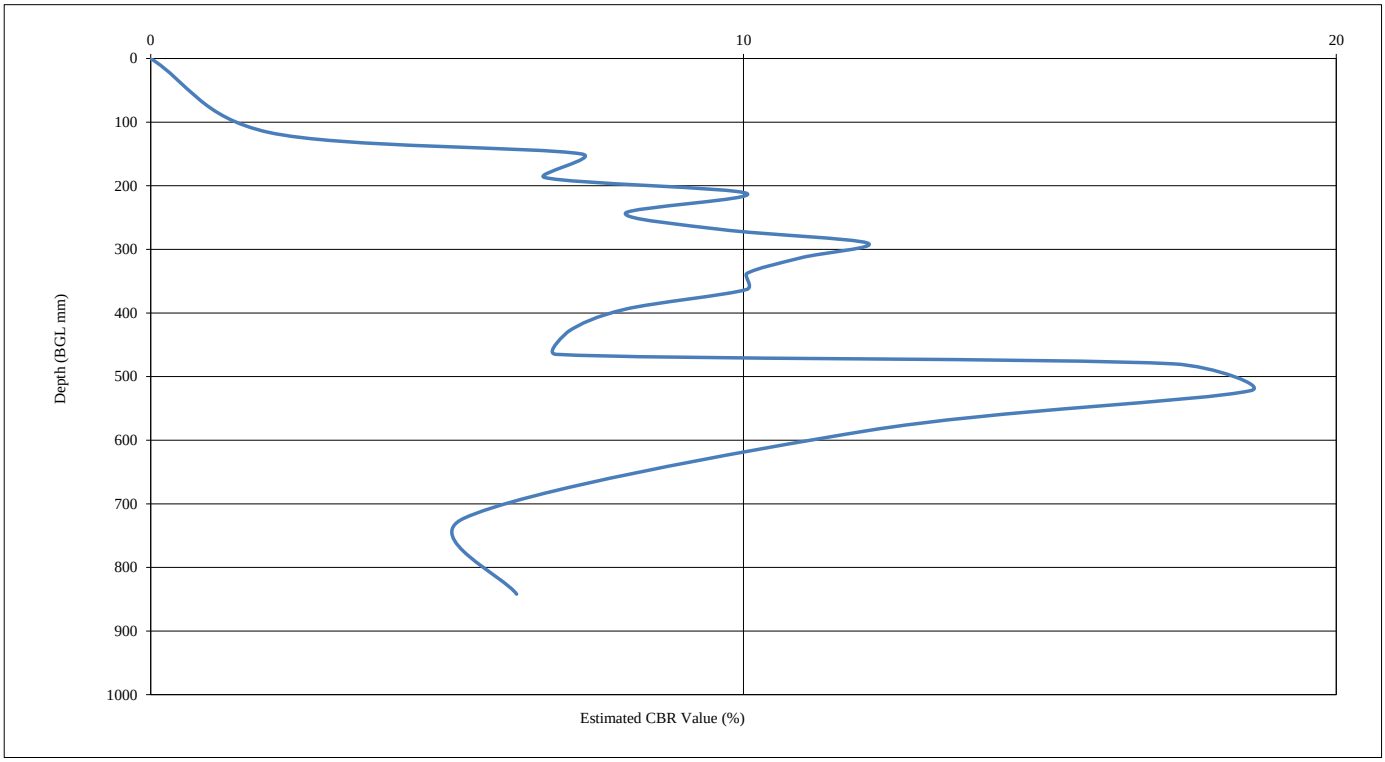
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP104 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 842 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 187 | 3 | 3 | 62.33 | 3.83 |
| 187 | 243 | 5 | 2 | 28.00 | 8.92 |
| 243 | 465 | 13 | 8 | 27.75 | 9.00 |
| 465 | 723 | 23 | 10 | 25.80 | 9.73 |
| 723 | 842 | 26 | 3 | 39.67 | 6.17 |

**Comments**

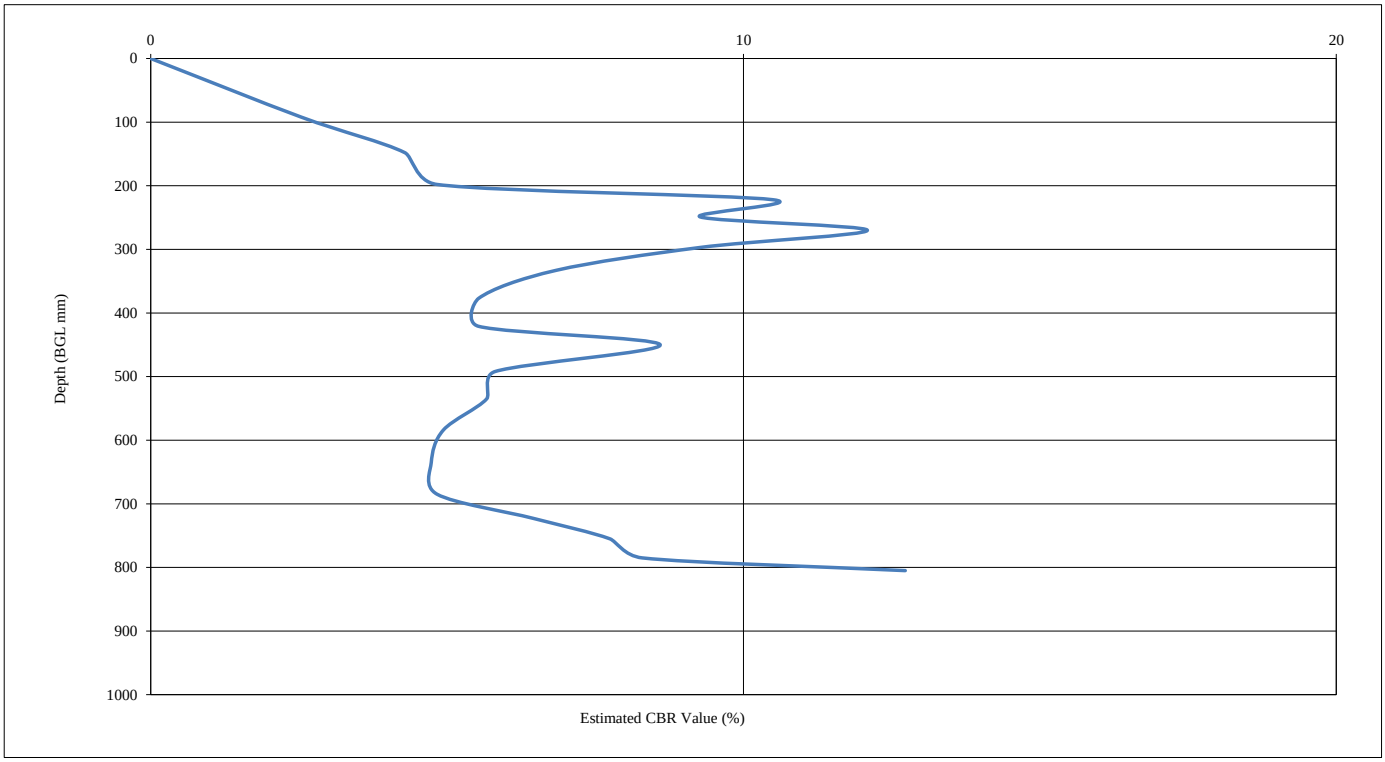
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | | |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP106 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 805 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 198 | 3 | 3 | 66.00 | 3.60 |
| 198 | 377 | 9 | 6 | 29.83 | 8.34 |
| 377 | 535 | 13 | 4 | 39.50 | 6.20 |
| 535 | 805 | 20 | 7 | 38.57 | 6.36 |
| | | | | | |

**Comments**

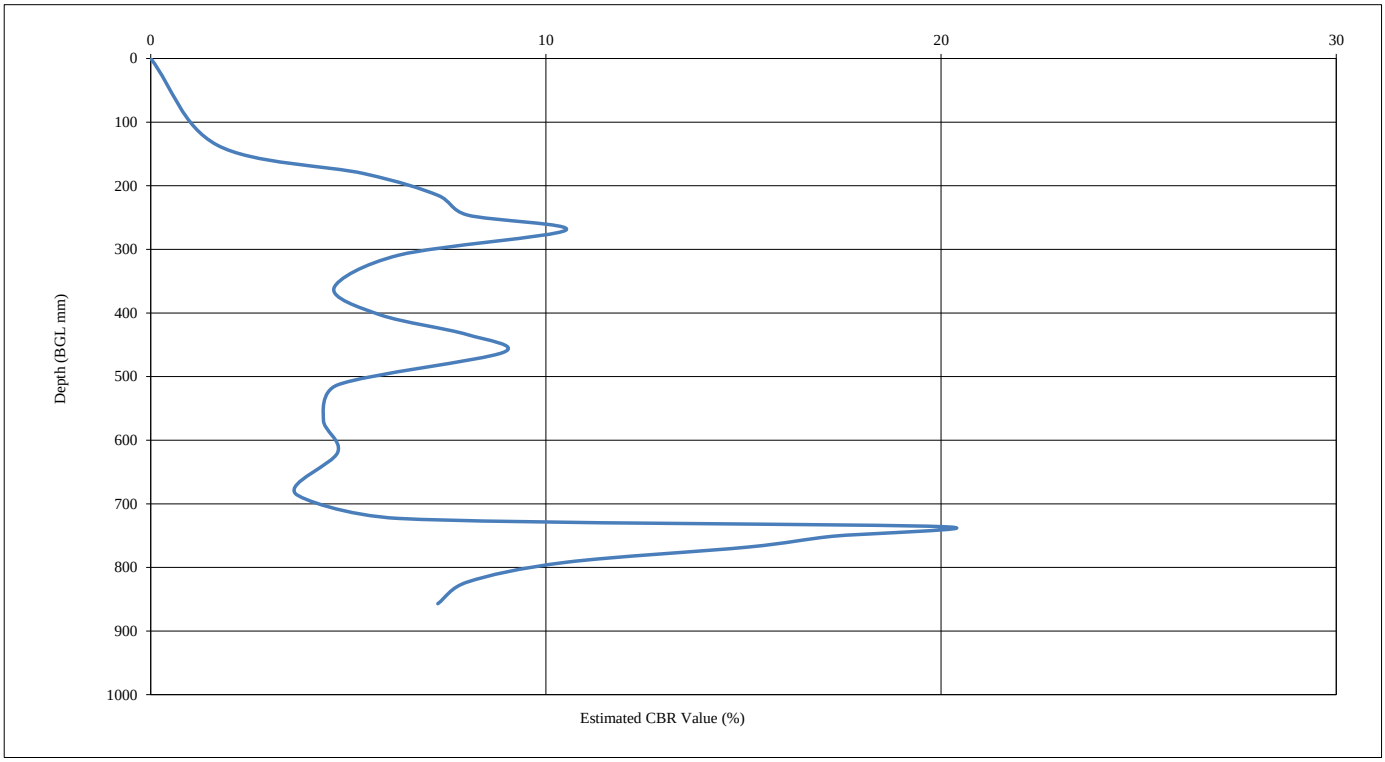
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP107 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 857 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 136 | 1 | 1 | 136.00 | 1.68 |
| 136 | 361 | 7 | 6 | 37.50 | 6.55 |
| 361 | 568 | 12 | 5 | 41.40 | 5.90 |
| 568 | 684 | 14 | 2 | 58.00 | 4.13 |
| 684 | 857 | 21 | 7 | 24.71 | 10.18 |

**Comments**

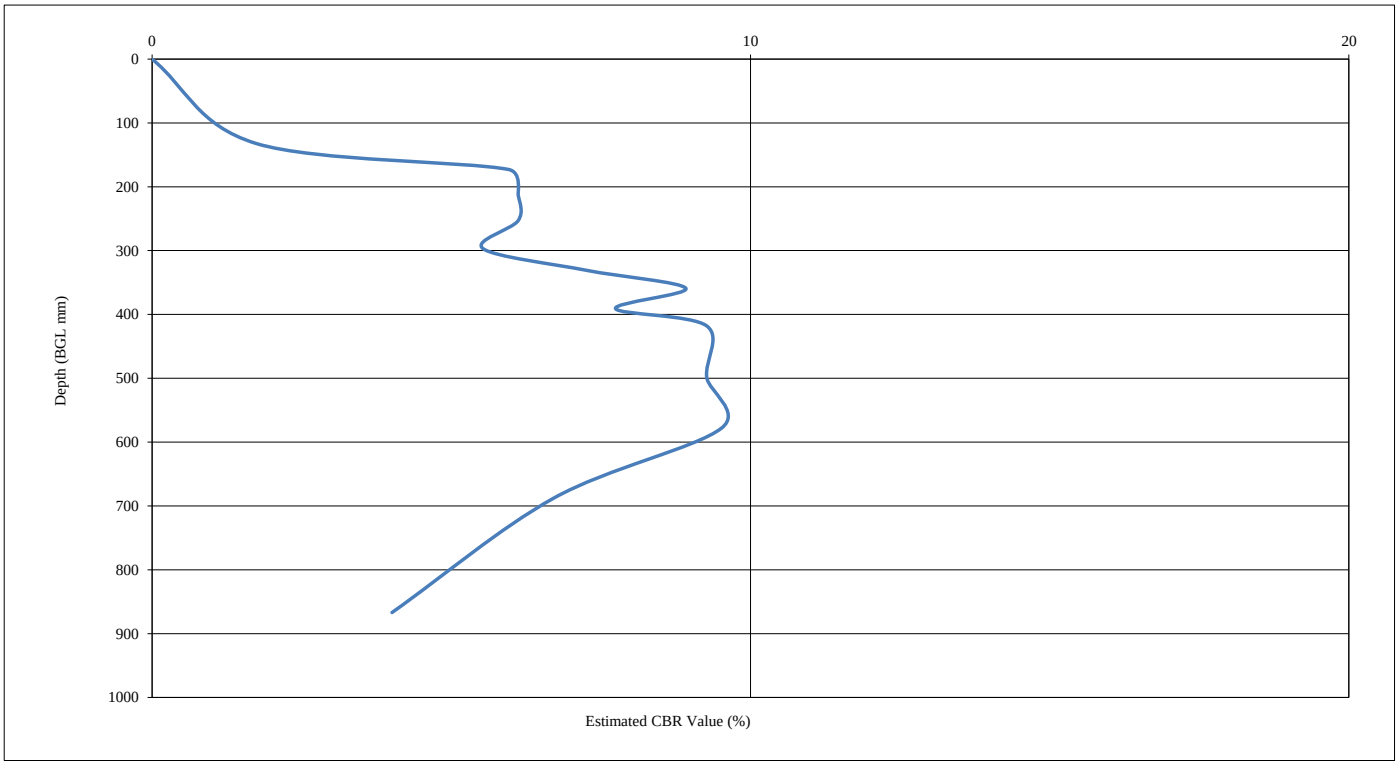
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | | |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP108 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 867 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 132 | 1 | 1 | 132.00 | 1.73 |
| 132 | 297 | 5 | 4 | 41.25 | 5.92 |
| 297 | 391 | 8 | 3 | 31.33 | 7.92 |
| 391 | 867 | 21 | 13 | 36.62 | 6.72 |
| | | | | | |

**Comments**

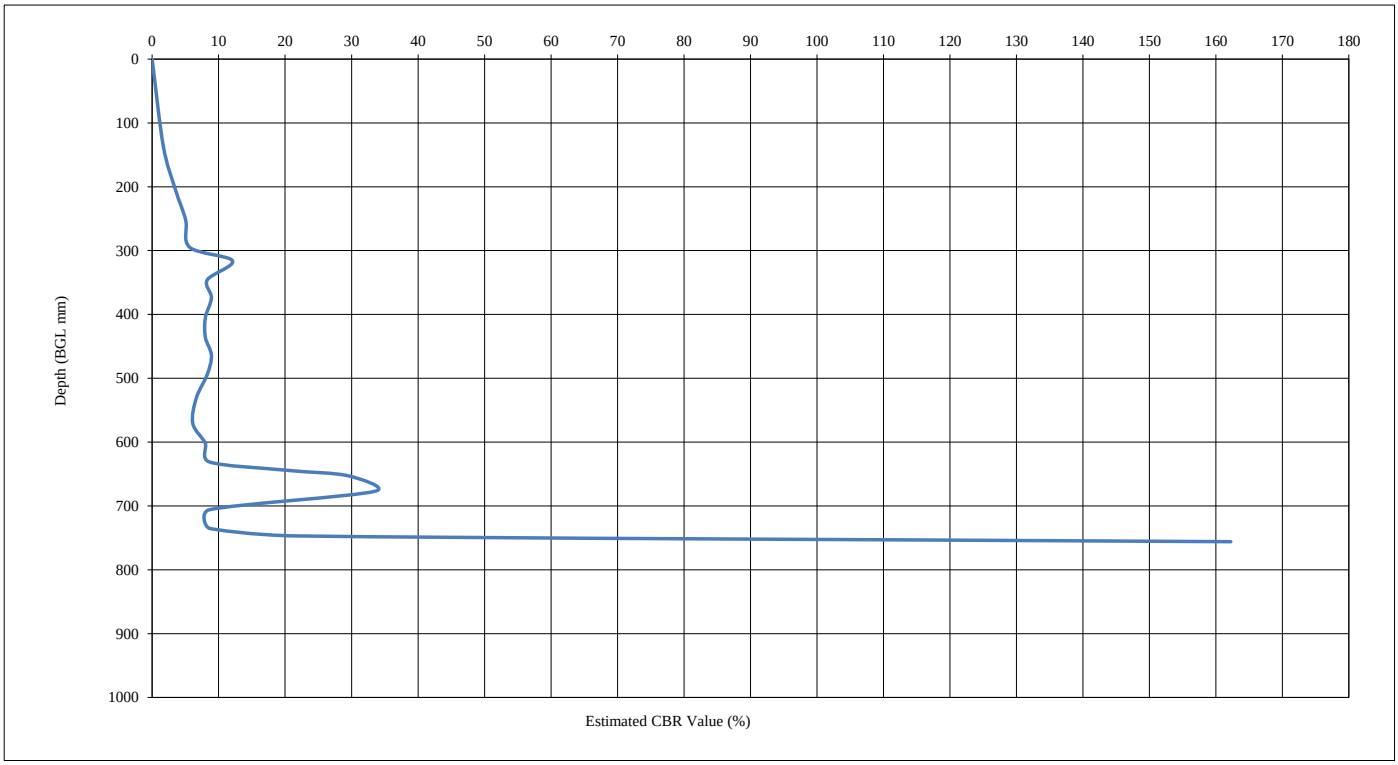
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP109 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 756 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 295 | 4 | 4 | 73.75 | 3.20 |
| 295 | 346 | 6 | 2 | 25.50 | 9.85 |
| 346 | 631 | 15 | 9 | 31.67 | 7.83 |
| 631 | 735 | 22 | 7 | 14.86 | 17.43 |
| 735 | 756 | 28 | 6 | 3.50 | 80.34 |

**Comments**

Terminated on obstruction

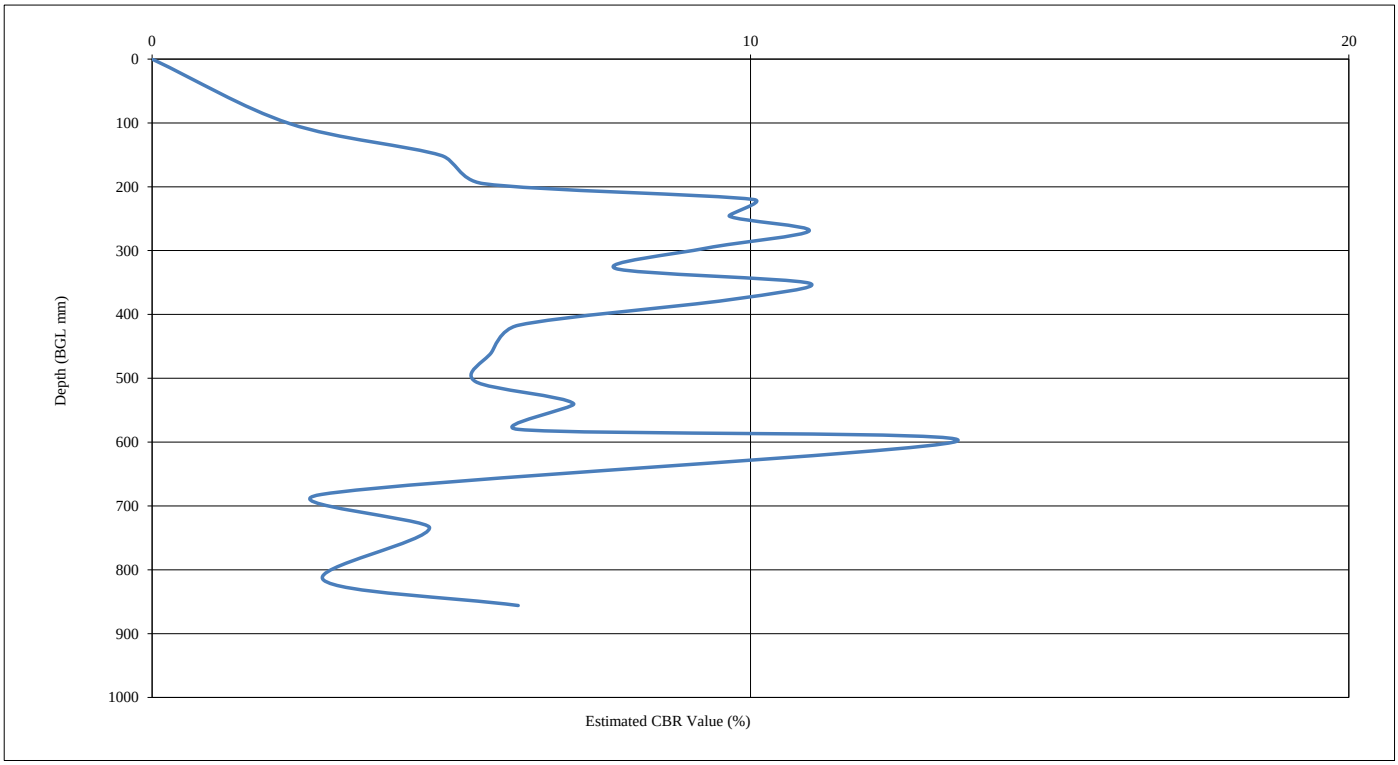
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|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP110 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 856 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 195 | 3 | 3 | 65.00 | 3.66 |
| 195 | 580 | 15 | 12 | 32.08 | 7.72 |
| 580 | 682 | 17 | 2 | 51.00 | 4.73 |
| 682 | 856 | 20 | 3 | 58.00 | 4.13 |
| | | | | | |

**Comments**

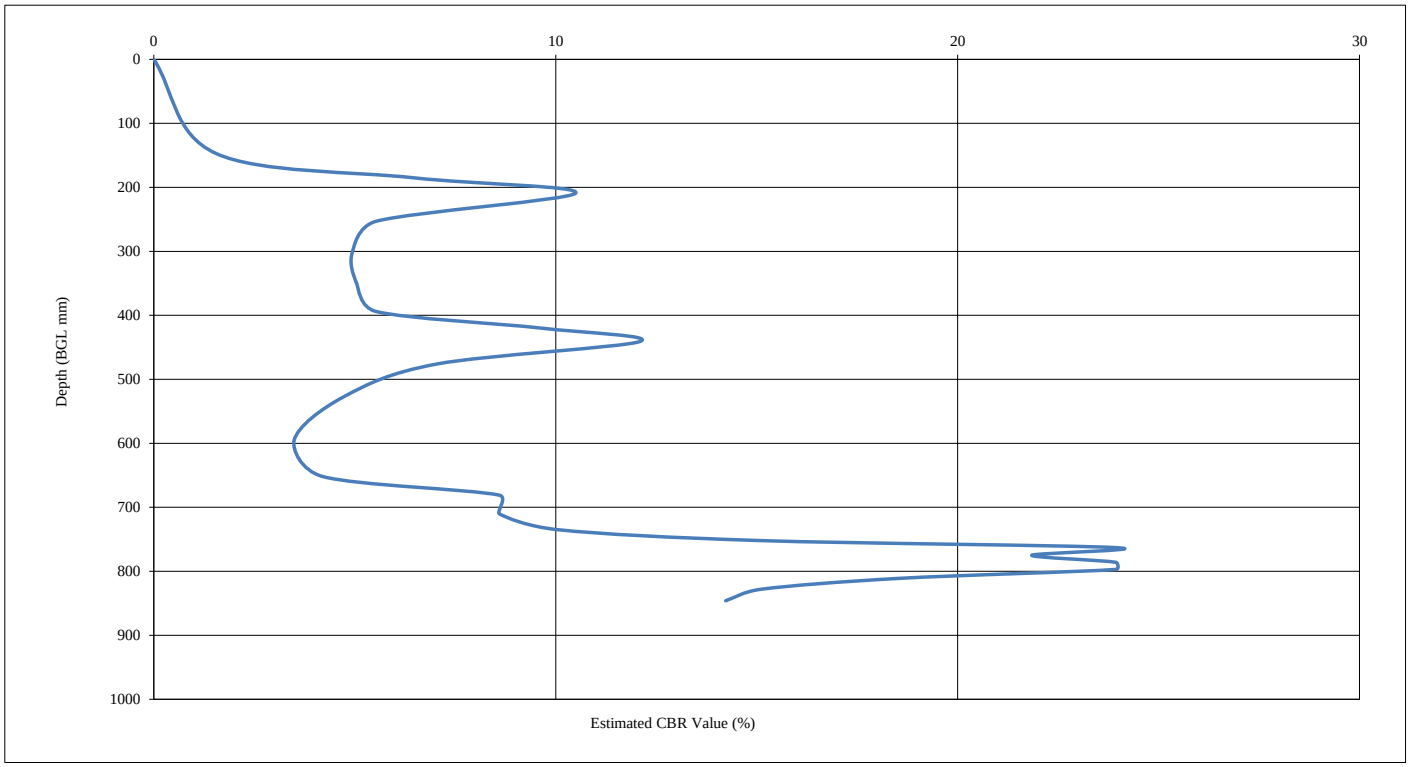
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP111 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 846 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 147 | 1 | 1 | 147.00 | 1.55 |
| 147 | 350 | 6 | 5 | 40.60 | 6.02 |
| 350 | 595 | 12 | 6 | 40.83 | 5.99 |
| 595 | 710 | 15 | 3 | 38.33 | 6.40 |
| 710 | 846 | 24 | 9 | 15.11 | 17.12 |

**Comments**

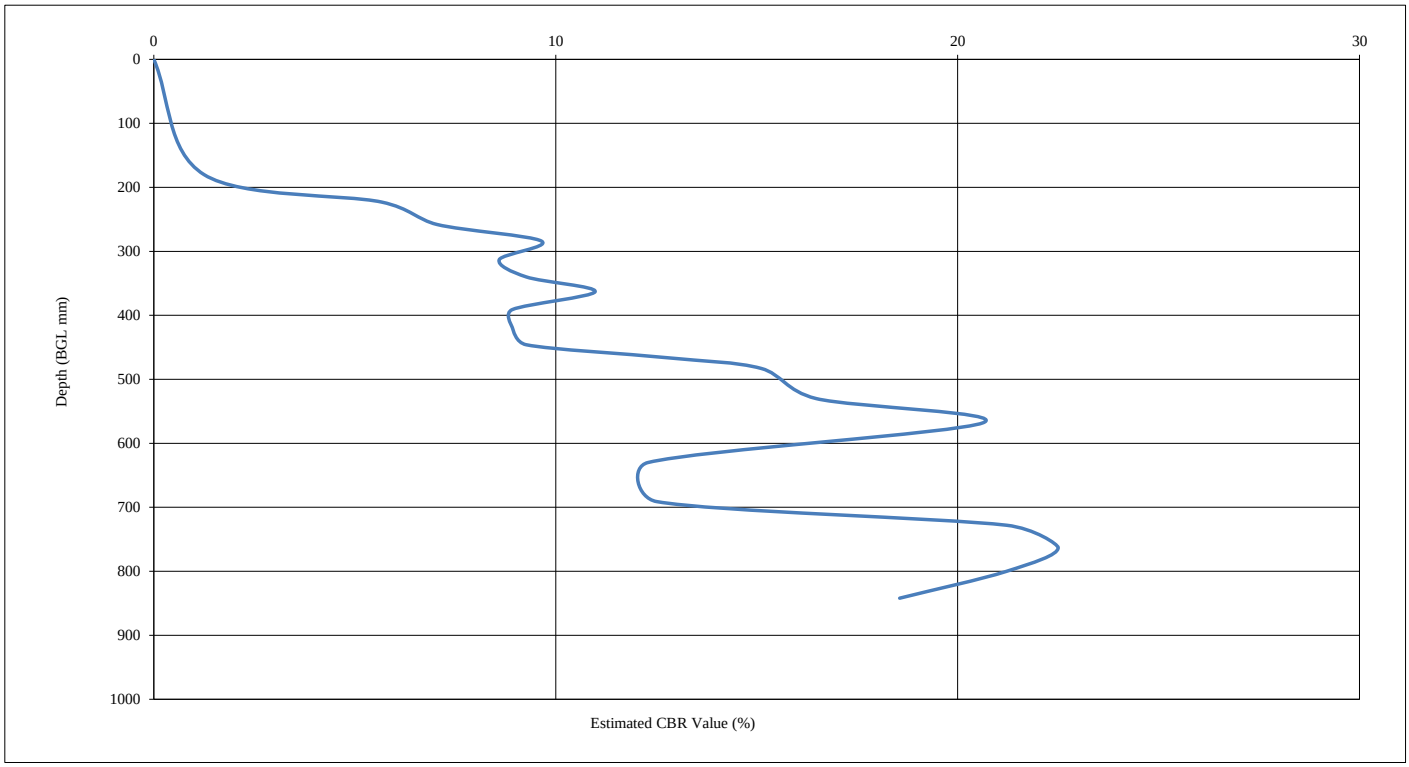
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | | |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP112 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 842 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 223 | 2 | 2 | 111.50 | 2.07 |
| 223 | 446 | 10 | 8 | 27.88 | 8.96 |
| 446 | 691 | 24 | 14 | 17.50 | 14.66 |
| 691 | 842 | 36 | 12 | 12.58 | 20.77 |
| | | | | | |

**Comments**

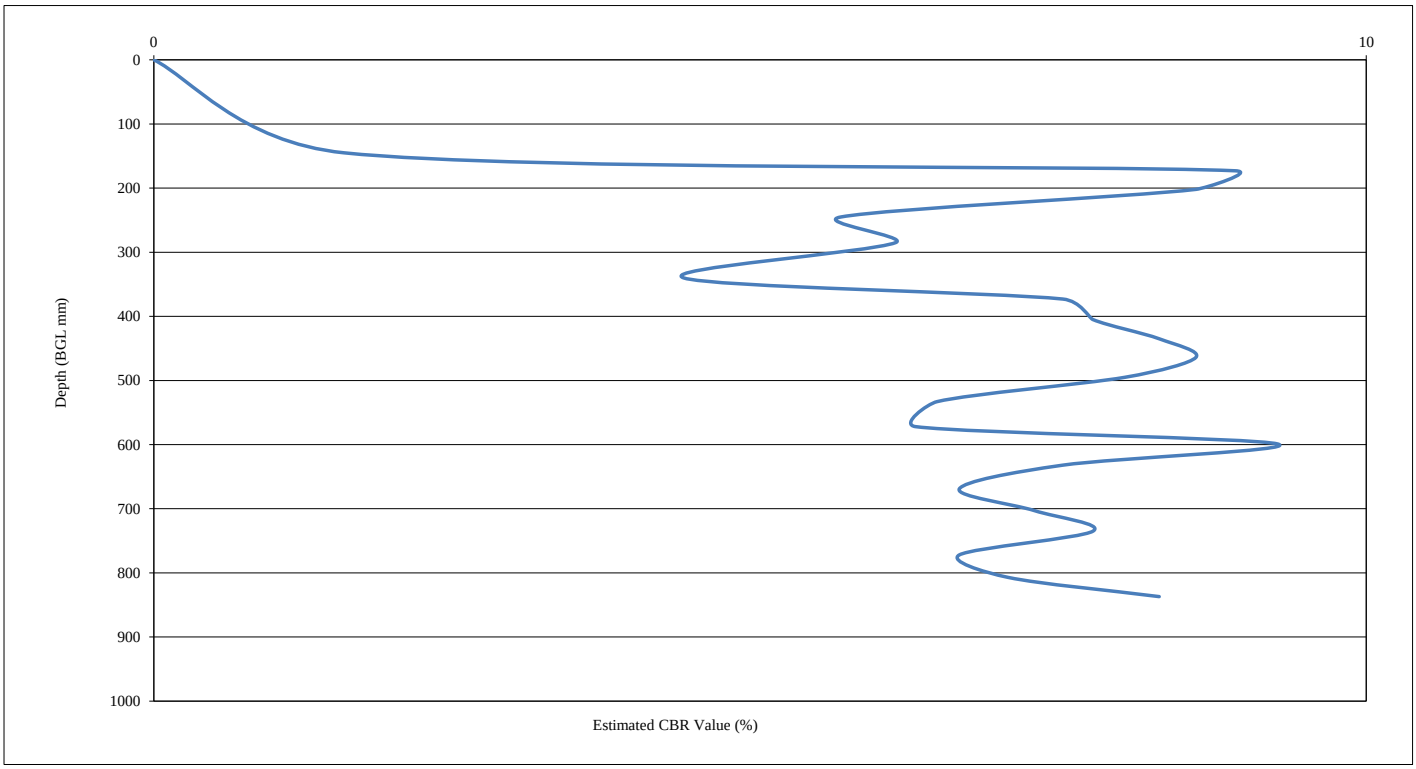
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP113 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 837 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 145 | 1 | 1 | 145.00 | 1.57 |
| 145 | 340 | 6 | 5 | 39.00 | 6.28 |
| 340 | 572 | 13 | 7 | 33.14 | 7.46 |
| 572 | 669 | 16 | 3 | 32.33 | 7.66 |
| 669 | 837 | 21 | 5 | 33.60 | 7.36 |

**Comments**

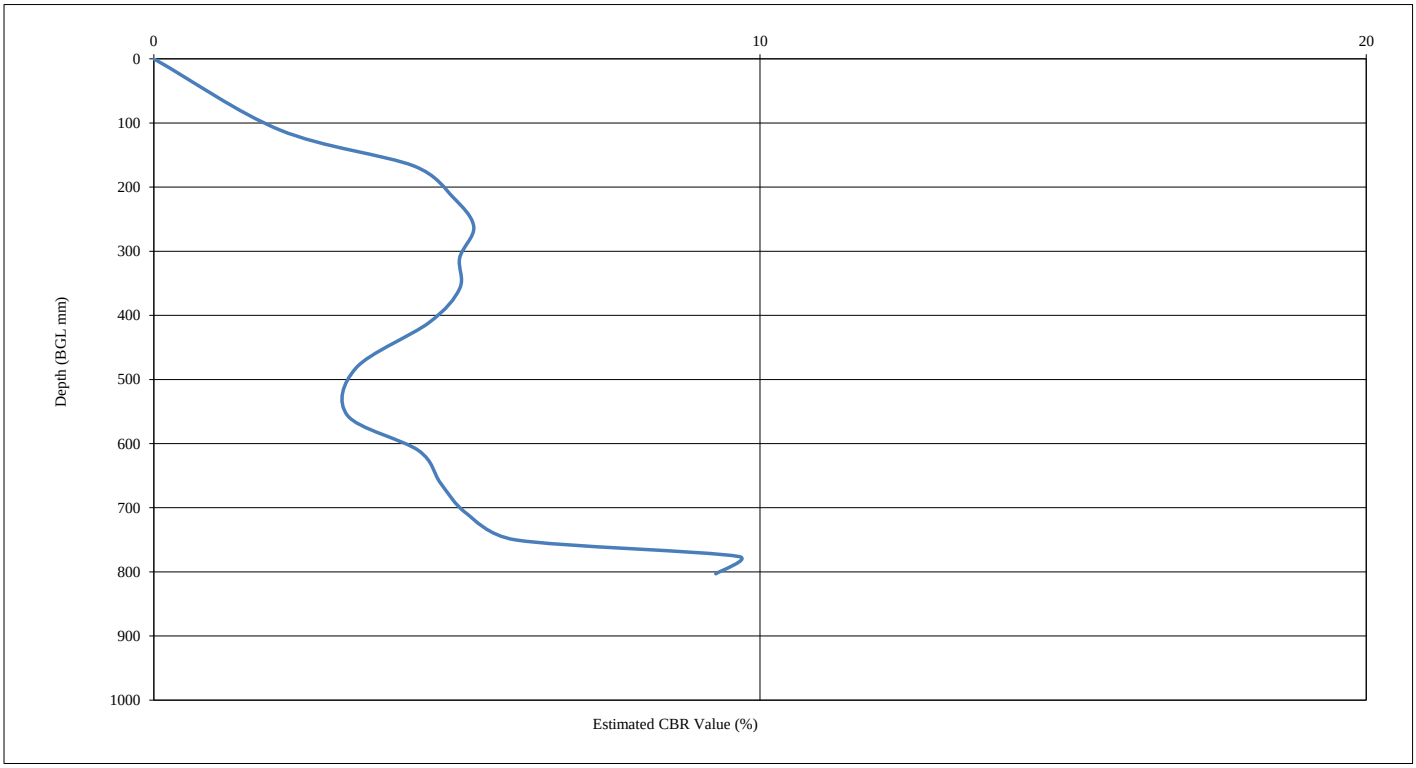
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2021 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP114 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 803 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 111 | 1 | 1 | 111.00 | 2.08 |
| 111 | 556 | 9 | 8 | 55.63 | 4.32 |
| 556 | 750 | 13 | 4 | 48.50 | 4.99 |
| 750 | 803 | 15 | 2 | 26.50 | 9.45 |
| | | | | | |

**Comments**

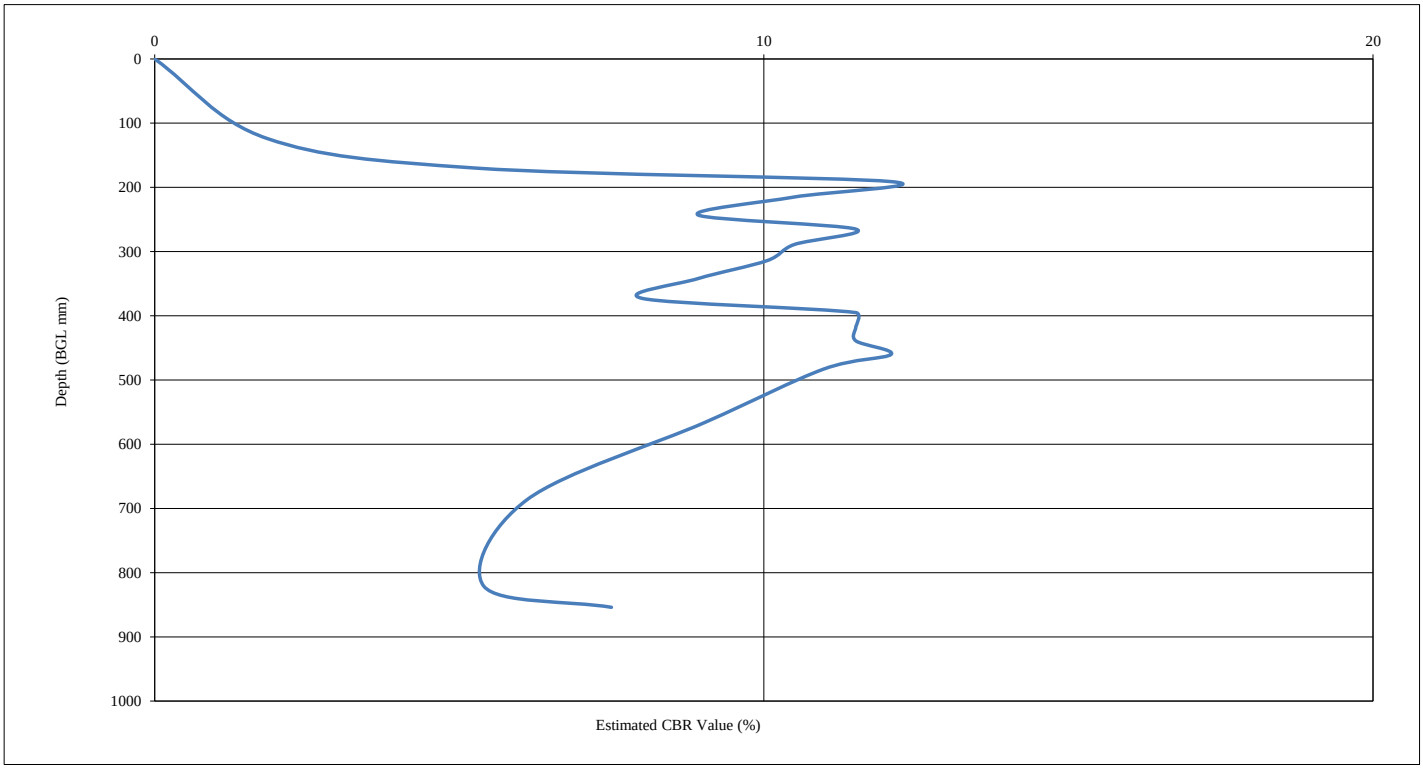
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP115 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 854 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 124 | 1 | 1 | 124.00 | 1.85 |
| 124 | 243 | 5 | 4 | 29.75 | 8.37 |
| 243 | 373 | 10 | 5 | 26.00 | 9.65 |
| 373 | 821 | 24 | 14 | 32.00 | 7.75 |
| 821 | 854 | 25 | 1 | 33.00 | 7.50 |

**Comments**

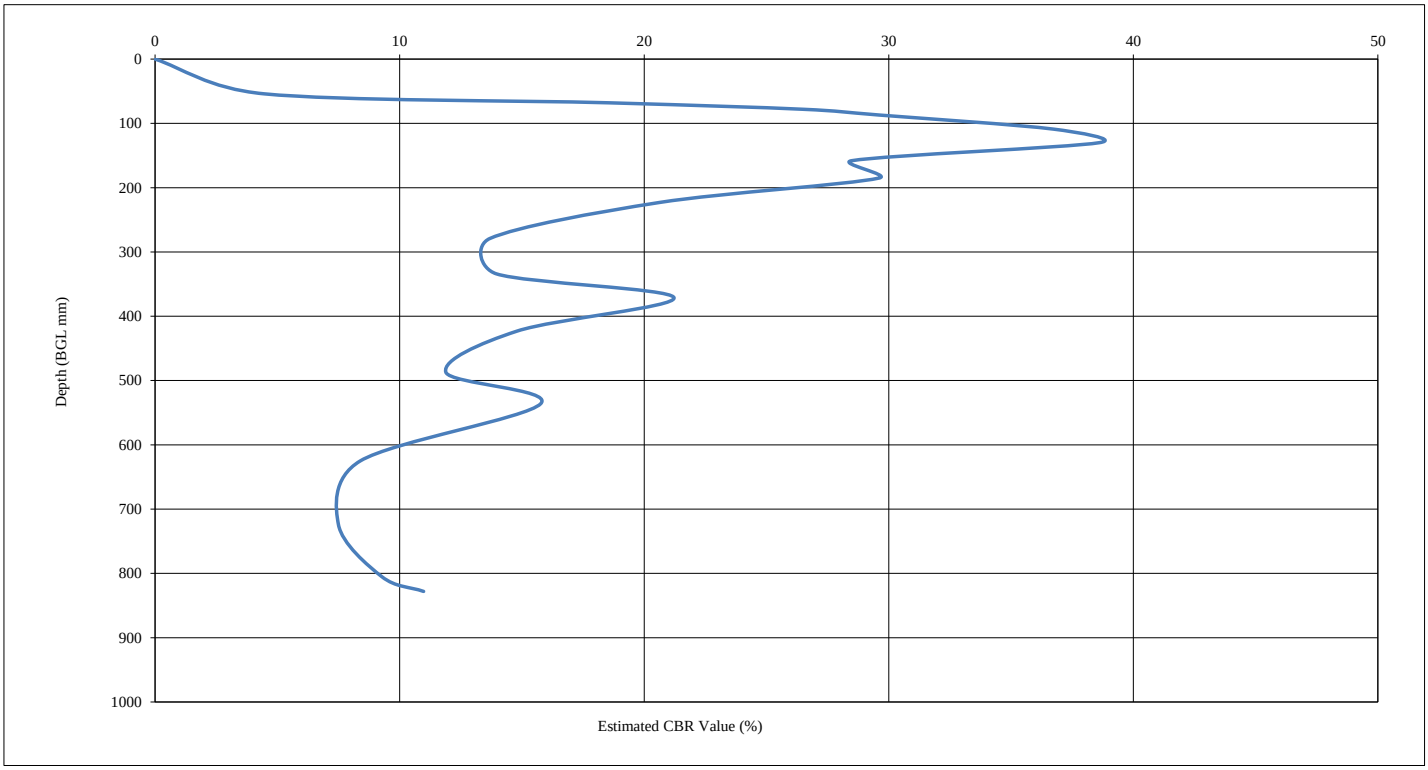
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP118 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 828 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 158 | 13 | 13 | 12.15 | 21.55 |
| 158 | 334 | 25 | 12 | 14.67 | 17.67 |
| 334 | 487 | 34 | 9 | 17.00 | 15.12 |
| 487 | 828 | 47 | 13 | 26.23 | 9.56 |
| | | | | | |

**Comments**

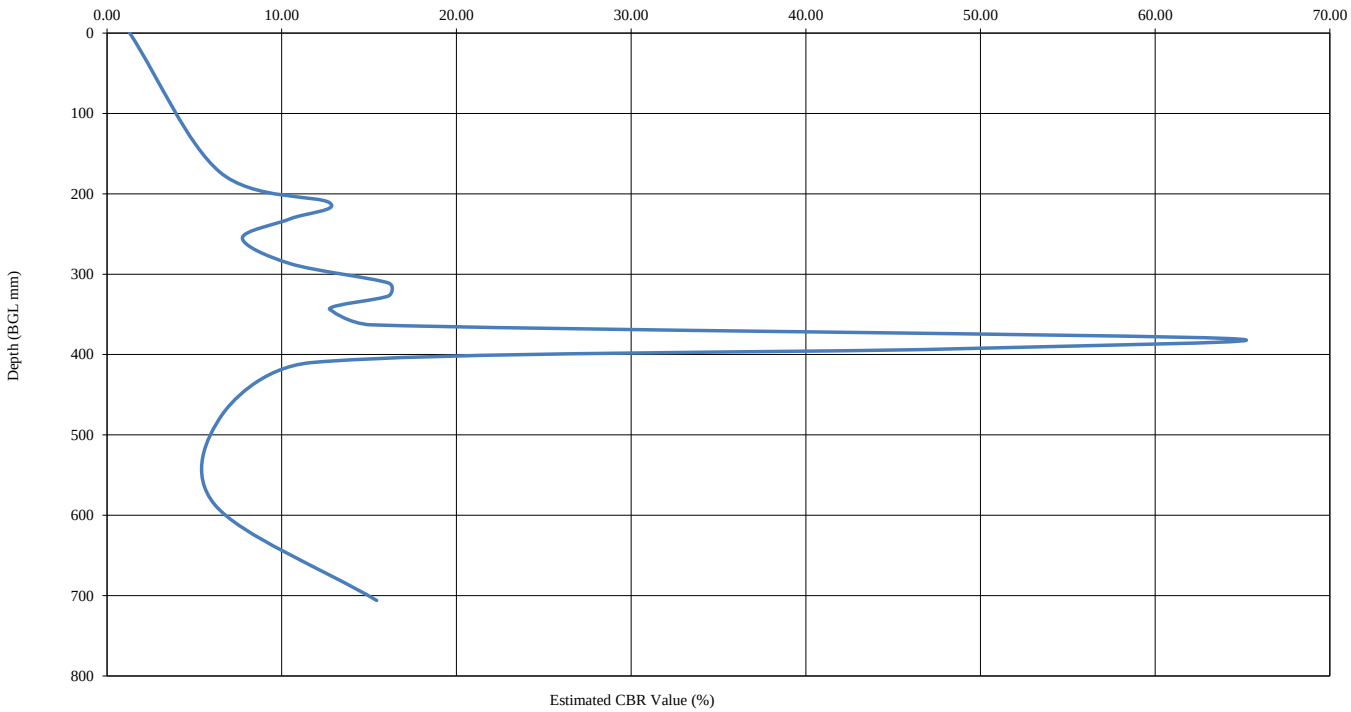
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP119 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 756 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 211 | 2 | 2 | 105.50 | 2.19 |
| 211 | 343 | 8 | 6 | 22.00 | 11.51 |
| 343 | 410 | 16 | 8 | 8.38 | 31.95 |
| 410 | 756 | 28 | 12 | 28.83 | 8.65 |

**Comments**

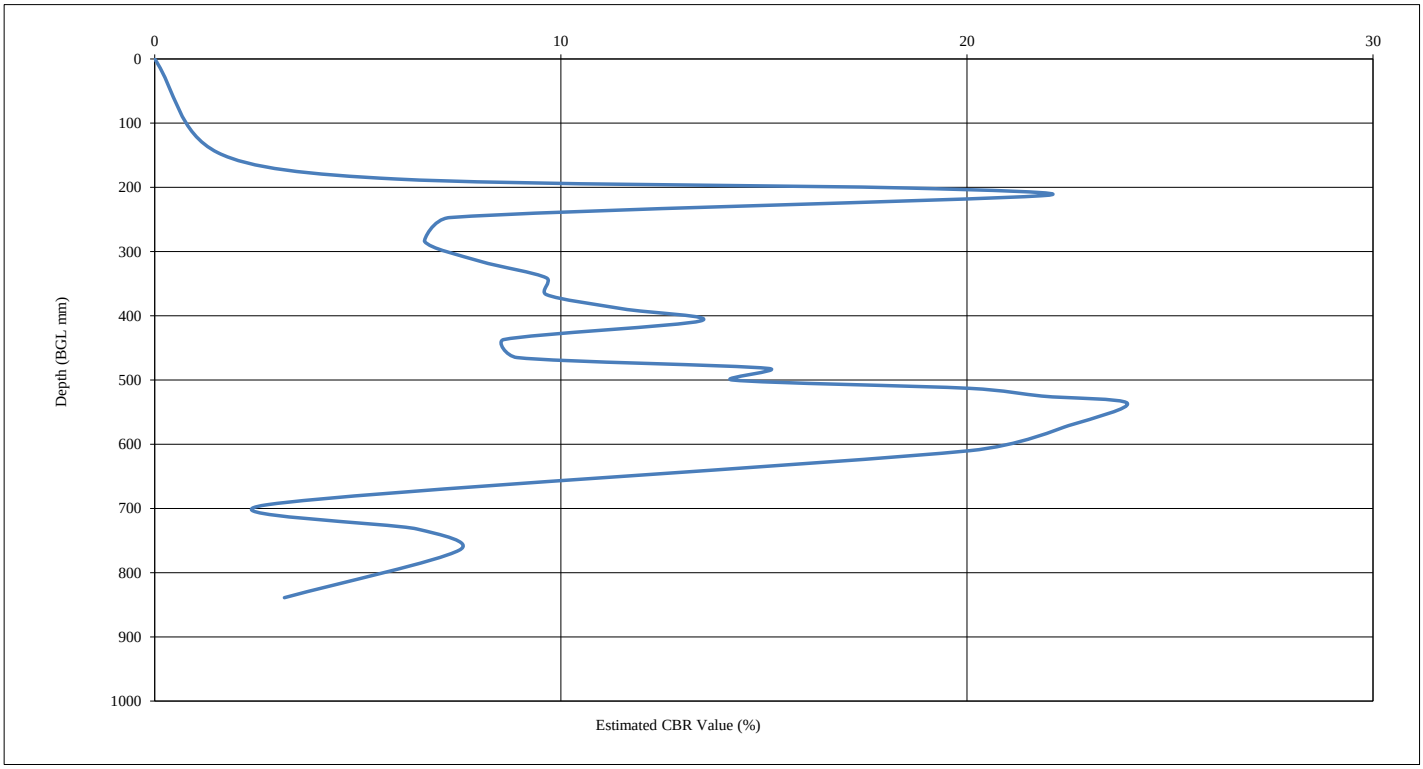
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP116 | **Easting:** | 341036 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 398360 |
| **Final Depth (mm BGL):** | 839 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 187 | 2 | 2 | 93.50 | 2.49 |
| 187 | 284 | 6 | 4 | 24.25 | 10.38 |
| 284 | 437 | 12 | 6 | 25.50 | 9.85 |
| 437 | 694 | 25 | 13 | 19.77 | 12.89 |
| 694 | 839 | 28 | 3 | 48.33 | 5.01 |

**Comments**

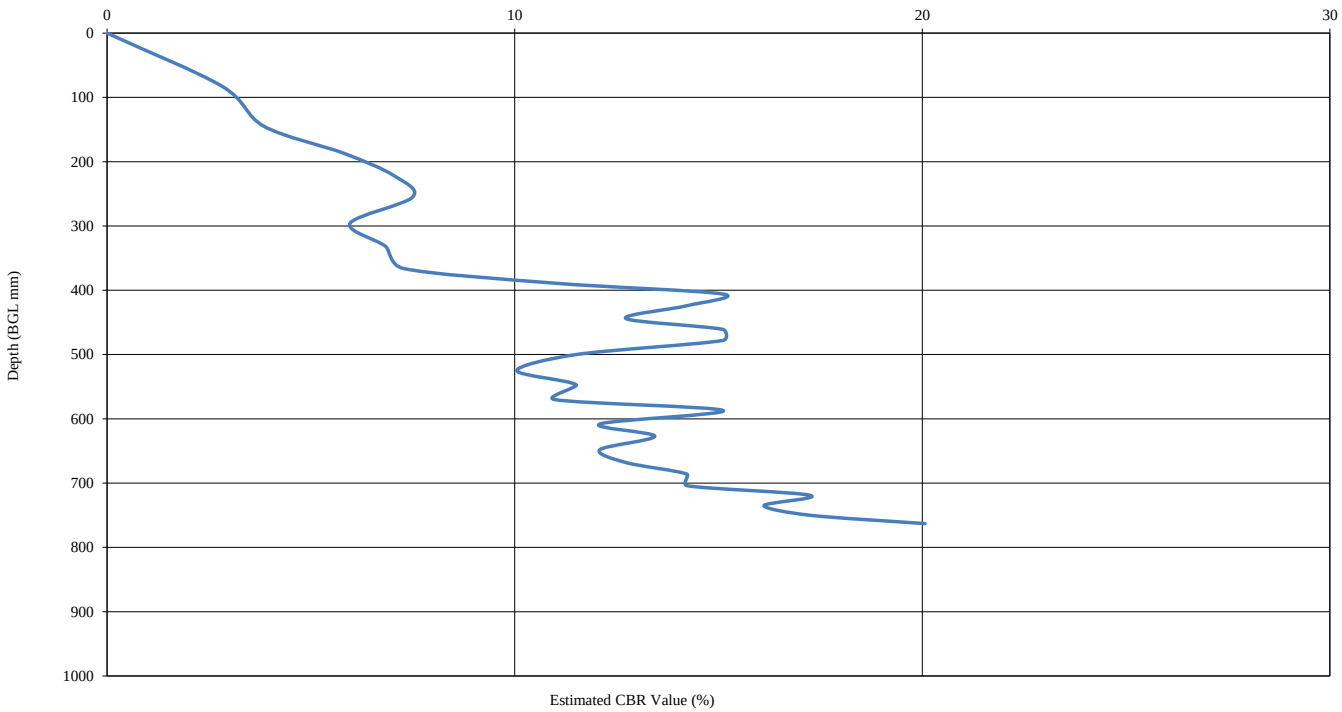
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 25/01/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP120 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 763 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 296 | 6 | 6 | 49.33 | 4.90 |
| 296 | 525 | 16 | 10 | 22.90 | 11.03 |
| 525 | 668 | 23 | 7 | 20.43 | 12.45 |
| 668 | 763 | 29 | 6 | 15.83 | 16.29 |

**Comments**

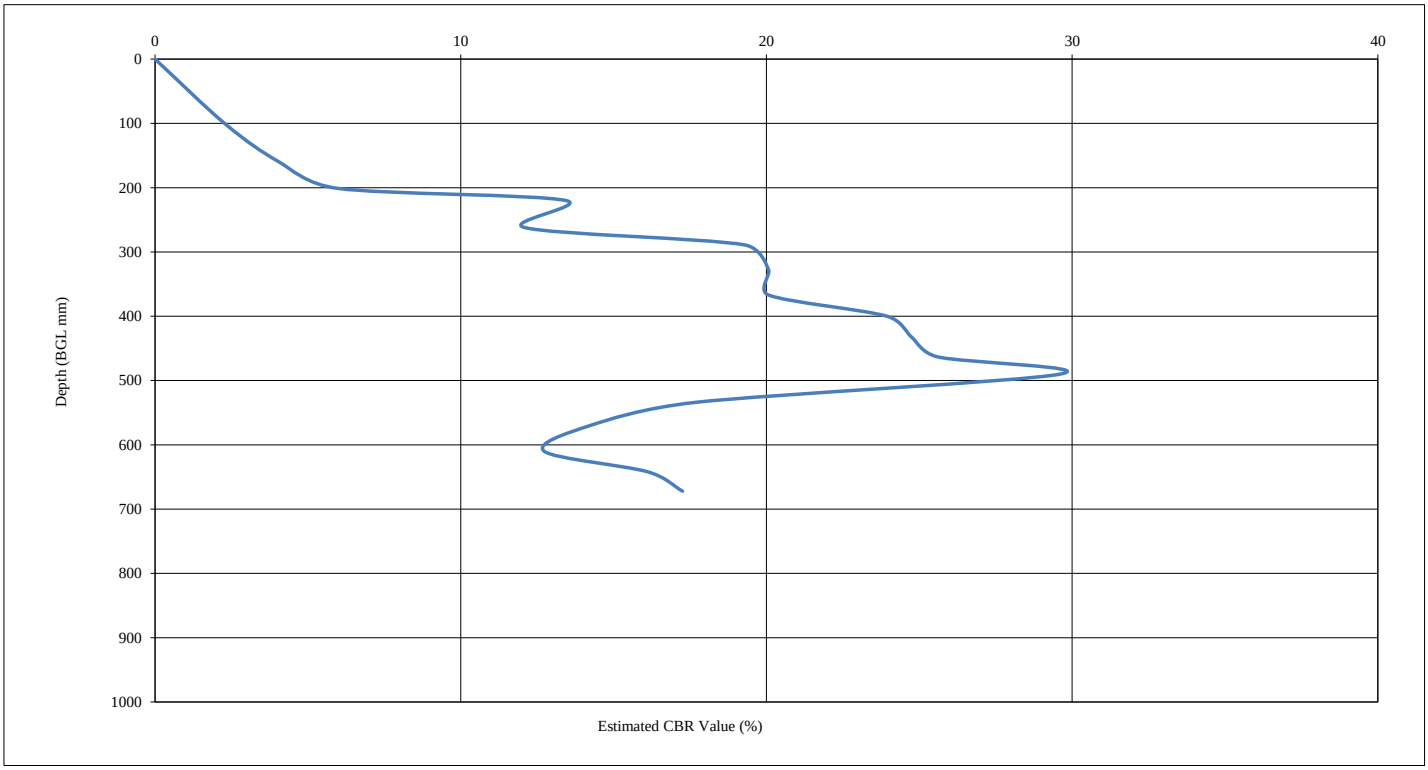
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 08/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP121 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 672 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 201 | 3 | 3 | 67.00 | 3.55 |
| 201 | 262 | 6 | 3 | 20.33 | 12.51 |
| 262 | 610 | 33 | 27 | 12.89 | 20.25 |
| 610 | 672 | 37 | 4 | 15.50 | 16.67 |

**Comments**

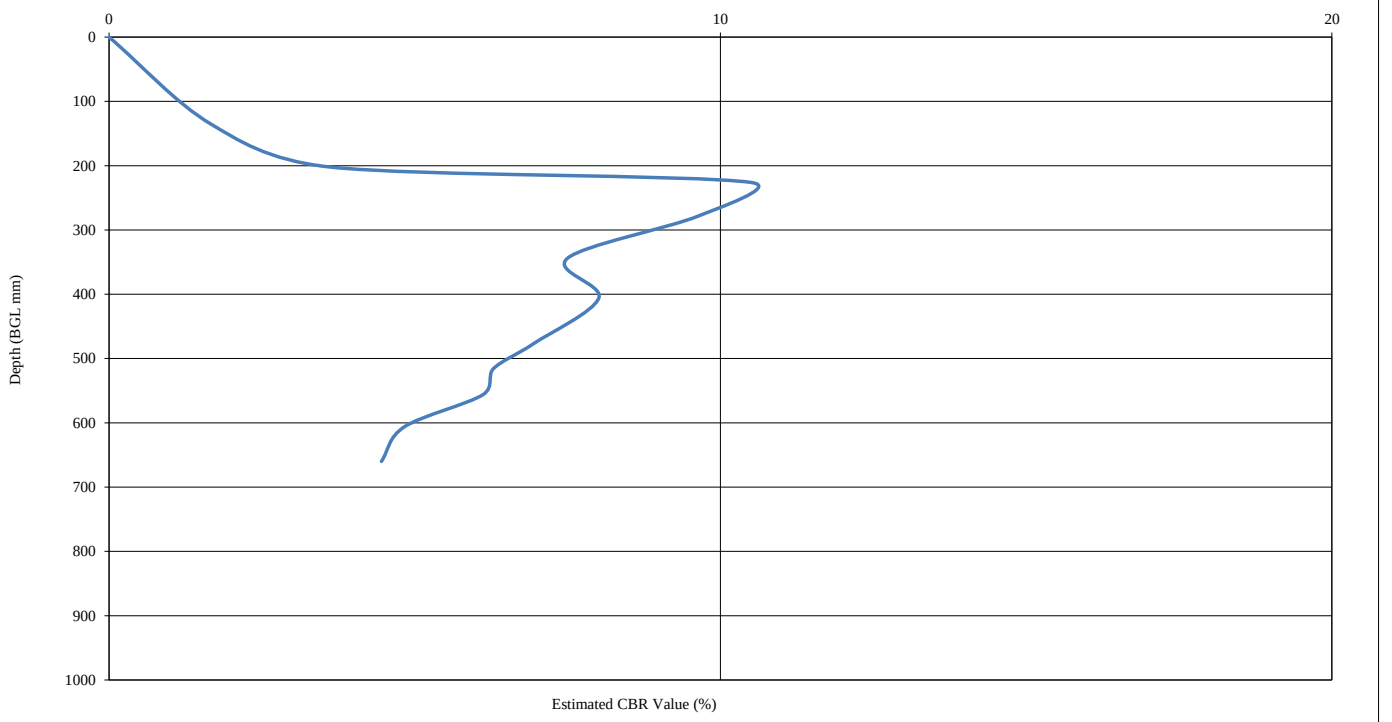
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| RW | NG | 07.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP122 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 660 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 202 | 2 | 2 | 101.00 | 2.30 |
| 202 | 344 | 7 | 5 | 28.40 | 8.79 |
| 344 | 516 | 12 | 5 | 34.40 | 7.18 |
| 516 | 660 | 15 | 3 | 48.00 | 5.05 |

**Comments**

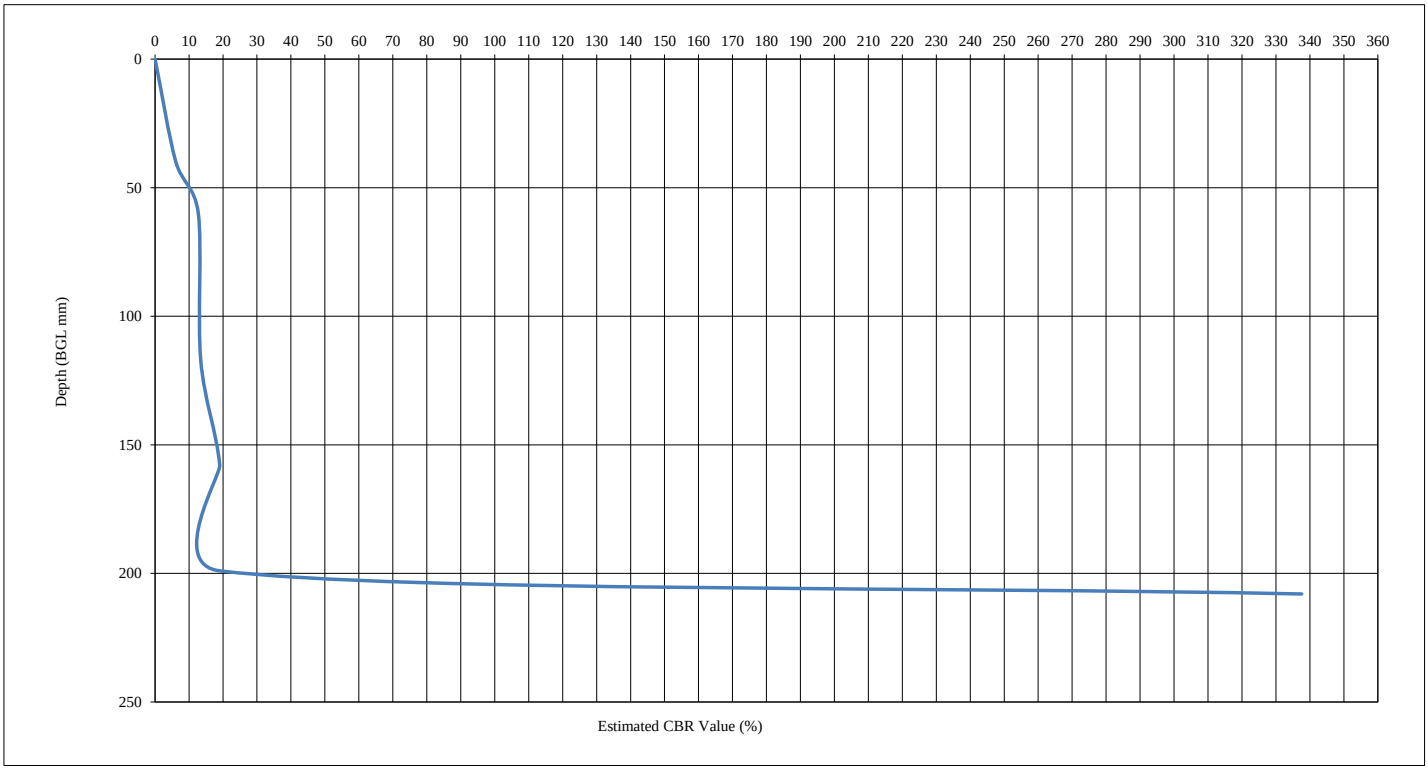
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 08/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP123 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 208 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 40 | 1 | 1 | 40.00 | 6.12 |
| 40 | 117 | 5 | 4 | 19.25 | 13.25 |
| 117 | 199 | 11 | 6 | 13.67 | 19.04 |
| 199 | 208 | 21 | 10 | 0.90 | 337.57 |

**Comments**

Terminated on obstruction

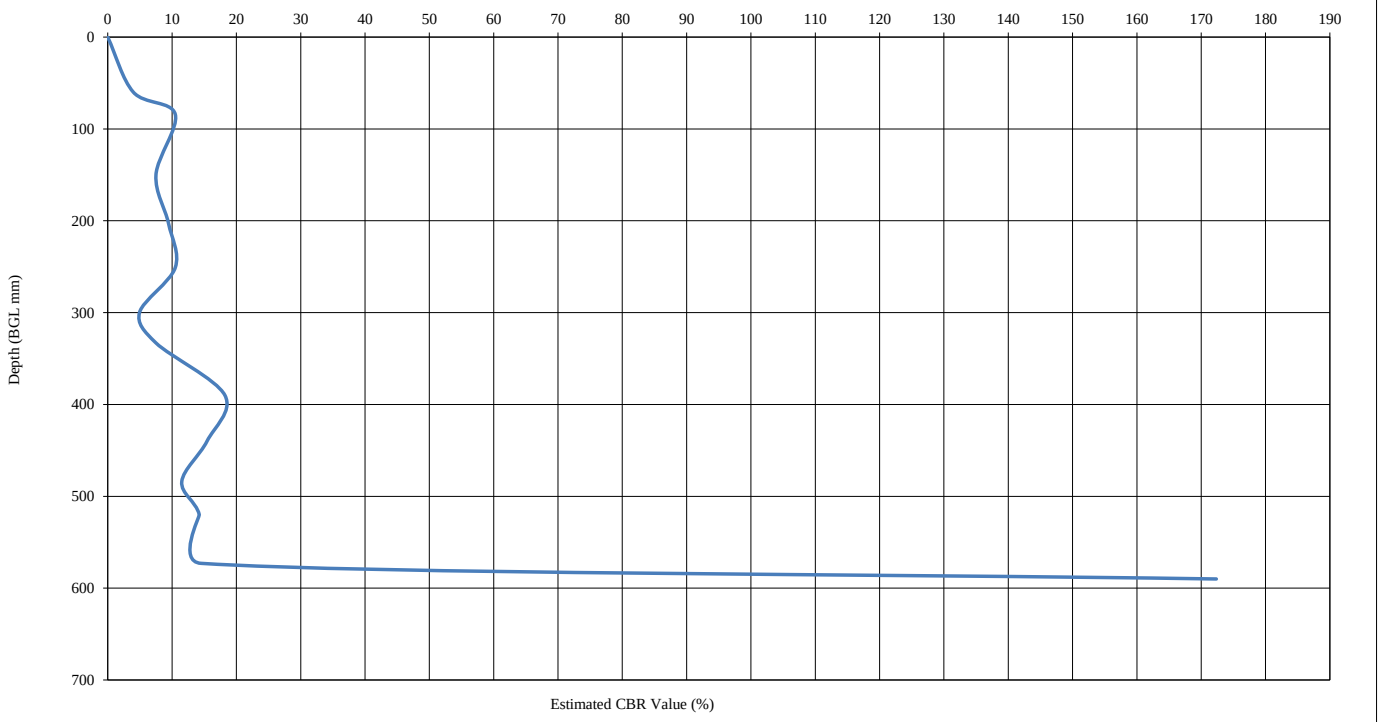
| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

*In Accordance with TRL Report PR/INT/277/04*

| | | | |
|---|---|---|---|
| **Site Name** | Cherryfield Drive | **Test Date:** | 07/02/2022 |
| **Site Ref** | 15-280 | **Test Location:** | Cherryfield Drive |
| **Test No.:** | DCP124 | **Easting:** | 0 |
| **Initial Depth (mm BGL):** | 0 | **Northing:** | 0 |
| **Final Depth (mm BGL):** | 590 | | |

## Estimated California Bearing Ratio Graph




| Start Depth (mm) BGL | Finish Depth (mm) BGL | No. of Blows | Blows Per Layer | DCP mm/Blows | Ave Estimated Layer (CBR %) |
|---|---|---|---|---|---|
| 0 | 60 | 1 | 1 | 60.00 | 3.99 |
| 60 | 300 | 9 | 8 | 30.00 | 8.29 |
| 300 | 573 | 24 | 15 | 18.20 | 14.06 |
| 573 | 590 | 34 | 10 | 1.70 | 172.35 |

**Comments**

| Site Engineer: | Checked By: | Date: | Approved By: | Date: |
|---|---|---|---|---|
| JJ | NG | 08.02.2022 | BH | 19/04/2022 |

# APPENDIX IX
# BRE365 SOAKAWAY TEST CERTIFICATES

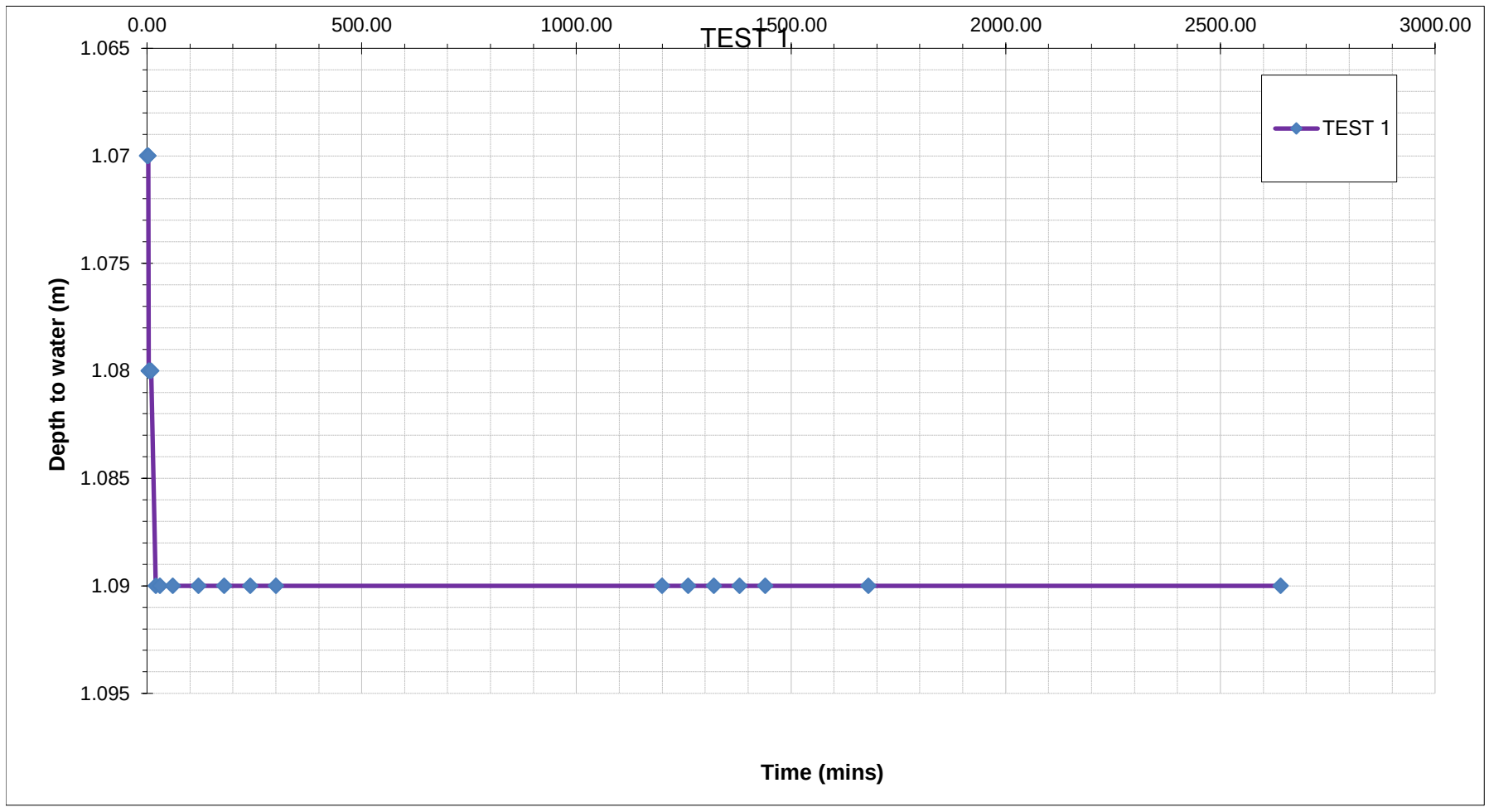
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 10.01.22 | |
| **Trial Pit Number:** | SA101 | |
| **Length:** | 2.50 | m |
| **Width:** | 0.70 | m |
| **Depth:** | 3.20 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 1.07 | | | | |
| 1.00 | 1.07 | | | | |
| 2.00 | 1.07 | | | | |
| 3.00 | 1.07 | | | | |
| 4.00 | 1.08 | | | | |
| 5.00 | 1.08 | | | | |
| 10.00 | 1.08 | | | | |
| 20.00 | 1.09 | | | | |
| 30.00 | 1.09 | | | | |
| 60.00 | 1.09 | | | | |
| 120.00 | 1.09 | | | | |
| 180.00 | 1.09 | | | | |
| 240.00 | 1.09 | | | | |
| 300.00 | 1.09 | | | | |
| 1200.00 | 1.09 | | | | |
| 1260.00 | 1.09 | | | | |
| 1320.00 | 1.09 | | | | |
| 1380.00 | 1.09 | | | | |
| 1440.00 | 1.09 | | | | |
| 1680.00 | 1.09 | | | | |
| 2640.00 | 1.09 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 2.13 | | |
| 75% Effective Storage Depth | m | 1.60 | | |
| (i.e. depth below GL) | m | 1.60 | | |
| 25% Effective Storage Depth | m | 0.53 | | |
| (i.e. depth below GL) | m | 2.67 | | |
| Effective Storage Depth 75%-25% | m | 1.07 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.86 | | |
| a (50%) | m2 | 8.57 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



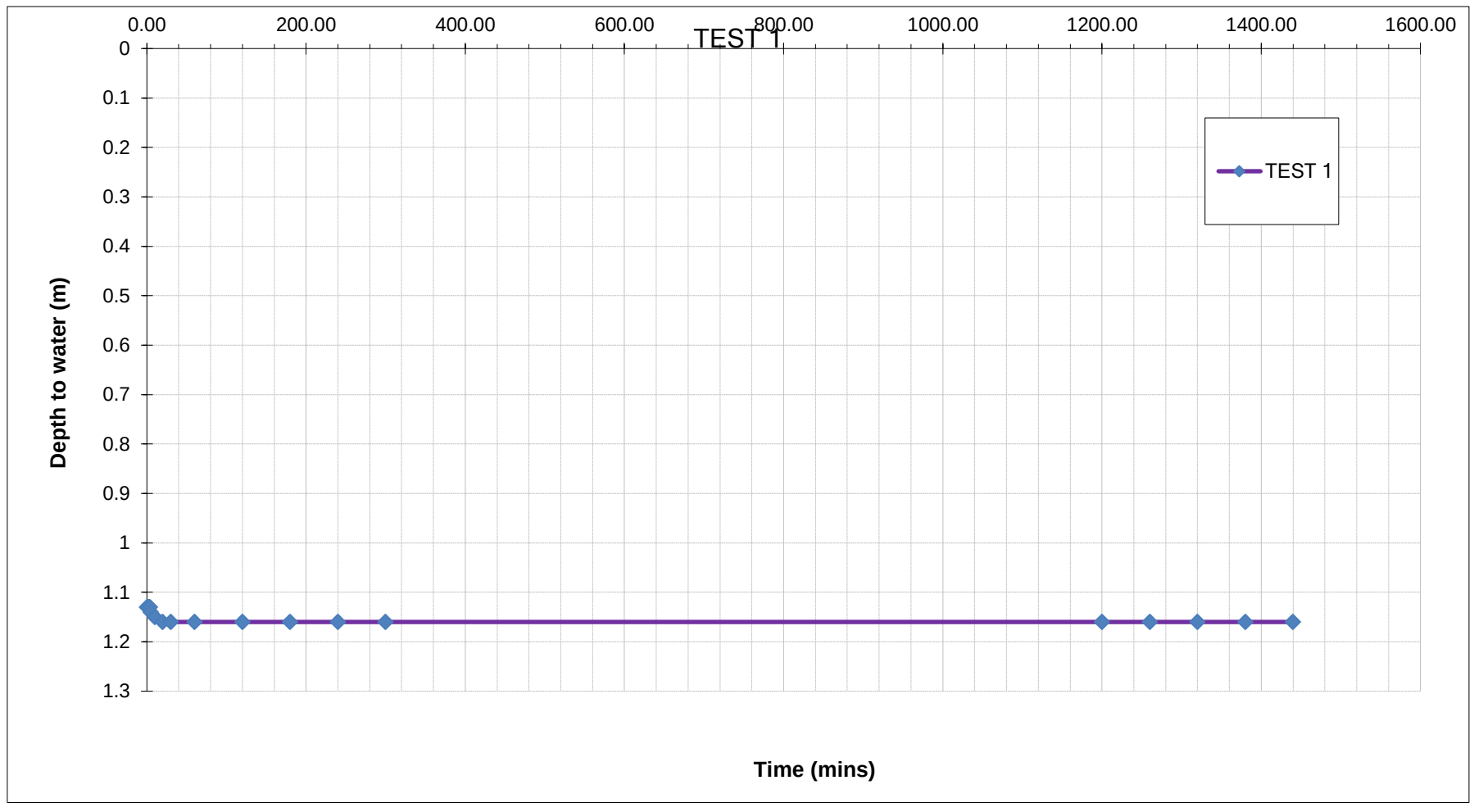
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 10.01.22 | |
| **Trial Pit Number:** | SA102 | |
| **Length:** | 2.60 | m |
| **Width:** | 0.80 | m |
| **Depth:** | 2.60 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 1.13 | | | | |
| 1.00 | 1.13 | | | | |
| 2.00 | 1.13 | | | | |
| 3.00 | 1.13 | | | | |
| 4.00 | 1.13 | | | | |
| 5.00 | 1.14 | | | | |
| 10.00 | 1.15 | | | | |
| 20.00 | 1.16 | | | | |
| 30.00 | 1.16 | | | | |
| 60.00 | 1.16 | | | | |
| 120.00 | 1.16 | | | | |
| 180.00 | 1.16 | | | | |
| 240.00 | 1.16 | | | | |
| 300.00 | 1.16 | | | | |
| 1200.00 | 1.16 | | | | |
| 1260.00 | 1.16 | | | | |
| 1320.00 | 1.16 | | | | |
| 1380.00 | 1.16 | | | | |
| 1440.00 | 1.16 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 1.47 | | |
| 75% Effective Storage Depth | m | 1.10 | | |
| (i.e. depth below GL) | m | 1.50 | | |
| 25% Effective Storage Depth | m | 0.37 | | |
| (i.e. depth below GL) | m | 2.23 | | |
| Effective Storage Depth 75%-25% | m | 0.74 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.53 | | |
| a (50%) | m2 | 7.08 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



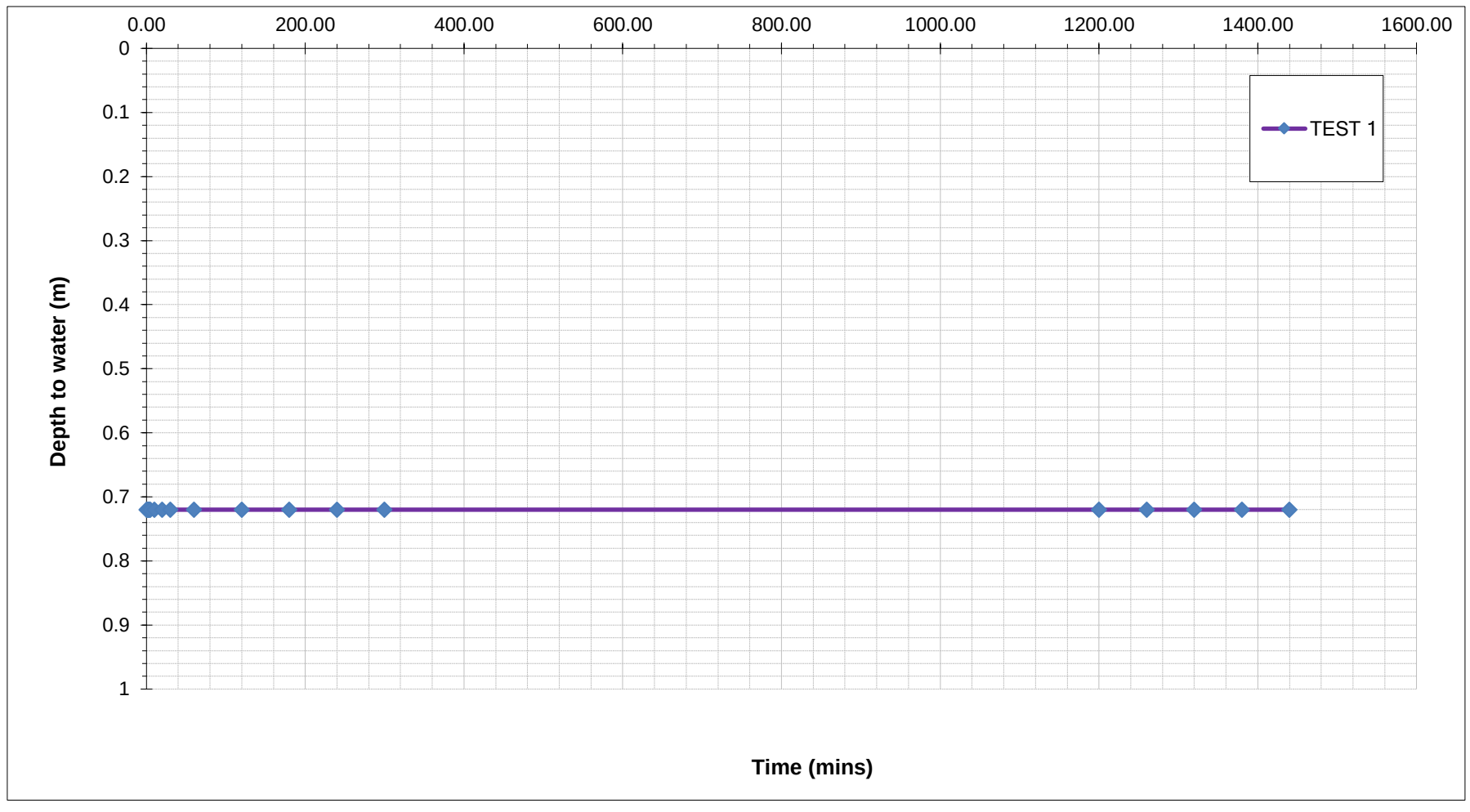
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 10.01.22 | |
| **Trial Pit Number:** | SA103 | |
| **Length:** | 2.50 | m |
| **Width:** | 0.70 | m |
| **Depth:** | 2.23 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 0.72 | | | | |
| 1.00 | 0.72 | | | | |
| 2.00 | 0.72 | | | | |
| 3.00 | 0.72 | | | | |
| 4.00 | 0.72 | | | | |
| 5.00 | 0.72 | | | | |
| 10.00 | 0.72 | | | | |
| 20.00 | 0.72 | | | | |
| 30.00 | 0.72 | | | | |
| 60.00 | 0.72 | | | | |
| 120.00 | 0.72 | | | | |
| 180.00 | 0.72 | | | | |
| 240.00 | 0.72 | | | | |
| 300.00 | 0.72 | | | | |
| 1200.00 | 0.72 | | | | |
| 1260.00 | 0.72 | | | | |
| 1320.00 | 0.72 | | | | |
| 1380.00 | 0.72 | | | | |
| 1440.00 | 0.72 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 1.51 | | |
| 75% Effective Storage Depth | m | 1.13 | | |
| (i.e. depth below GL) | m | 1.10 | | |
| 25% Effective Storage Depth | m | 0.38 | | |
| (i.e. depth below GL) | m | 1.85 | | |
| Effective Storage Depth 75%-25% | m | 0.76 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.32 | | |
| a (50%) | m2 | 6.58 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 10.01.22 | |

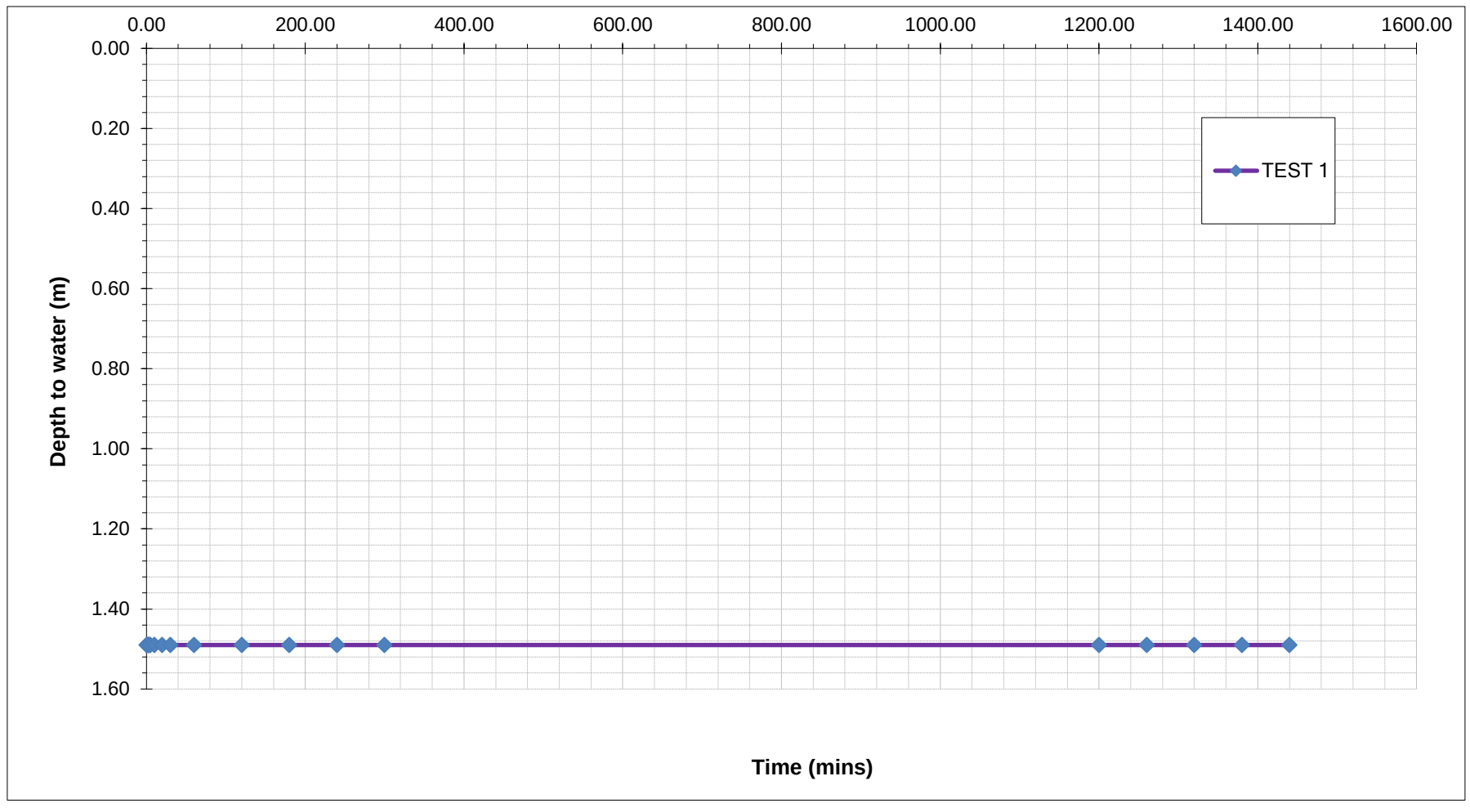
| | | |
|---|---|---|
| **Trial Pit Number:** | SA104 | |
| **Length:** | 2.00 | m |
| **Width:** | 0.90 | m |
| **Depth:** | 2.60 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 1.49 | | | | |
| 1.00 | 1.49 | | | | |
| 2.00 | 1.49 | | | | |
| 3.00 | 1.49 | | | | |
| 4.00 | 1.49 | | | | |
| 5.00 | 1.49 | | | | |
| 10.00 | 1.49 | | | | |
| 20.00 | 1.49 | | | | |
| 30.00 | 1.49 | | | | |
| 60.00 | 1.49 | | | | |
| 120.00 | 1.49 | | | | |
| 180.00 | 1.49 | | | | |
| 240.00 | 1.49 | | | | |
| 300.00 | 1.49 | | | | |
| 1200.00 | 1.49 | | | | |
| 1260.00 | 1.49 | | | | |
| 1320.00 | 1.49 | | | | |
| 1380.00 | 1.49 | | | | |
| 1440.00 | 1.49 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 1.11 | | |
| 75% Effective Storage Depth | m | 0.83 | | |
| (i.e. depth below GL) | m | 1.77 | | |
| 25% Effective Storage Depth | m | 0.28 | | |
| (i.e. depth below GL) | m | 2.32 | | |
| Effective Storage Depth 75%-25% | m | 0.56 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.00 | | |
| a (50%) | m2 | 5.02 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 10.01.22 | |

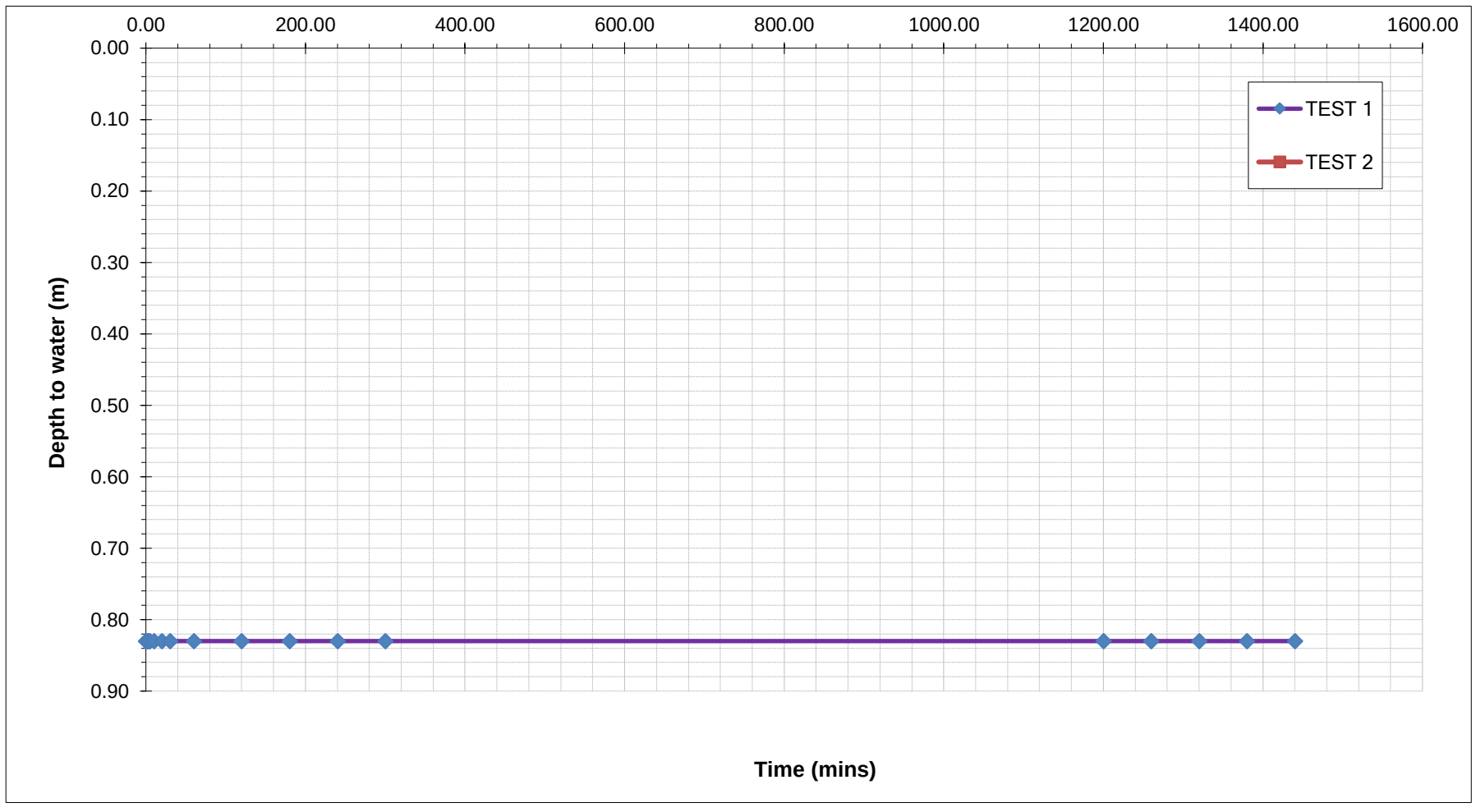
| | | |
|---|---|---|
| **Trial Pit Number:** | SA105 | |
| **Length:** | 2.00 | m |
| **Width:** | 0.60 | m |
| **Depth:** | 2.70 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 0.83 | | | | |
| 1.00 | 0.83 | | | | |
| 2.00 | 0.83 | | | | |
| 3.00 | 0.83 | | | | |
| 4.00 | 0.83 | | | | |
| 5.00 | 0.83 | | | | |
| 10.00 | 0.83 | | | | |
| 20.00 | 0.83 | | | | |
| 30.00 | 0.83 | | | | |
| 60.00 | 0.83 | | | | |
| 120.00 | 0.83 | | | | |
| 180.00 | 0.83 | | | | |
| 240.00 | 0.83 | | | | |
| 300.00 | 0.83 | | | | |
| 1200.00 | 0.83 | | | | |
| 1260.00 | 0.83 | | | | |
| 1320.00 | 0.83 | | | | |
| 1380.00 | 0.83 | | | | |
| 1440.00 | 0.83 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 1.87 | | |
| 75% Effective Storage Depth | m | 1.40 | | |
| (i.e. depth below GL) | m | 1.30 | | |
| 25% Effective Storage Depth | m | 0.47 | | |
| (i.e. depth below GL) | m | 2.23 | | |
| Effective Storage Depth 75%-25% | m | 0.94 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.12 | | |
| a (50%) | m2 | 6.06 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



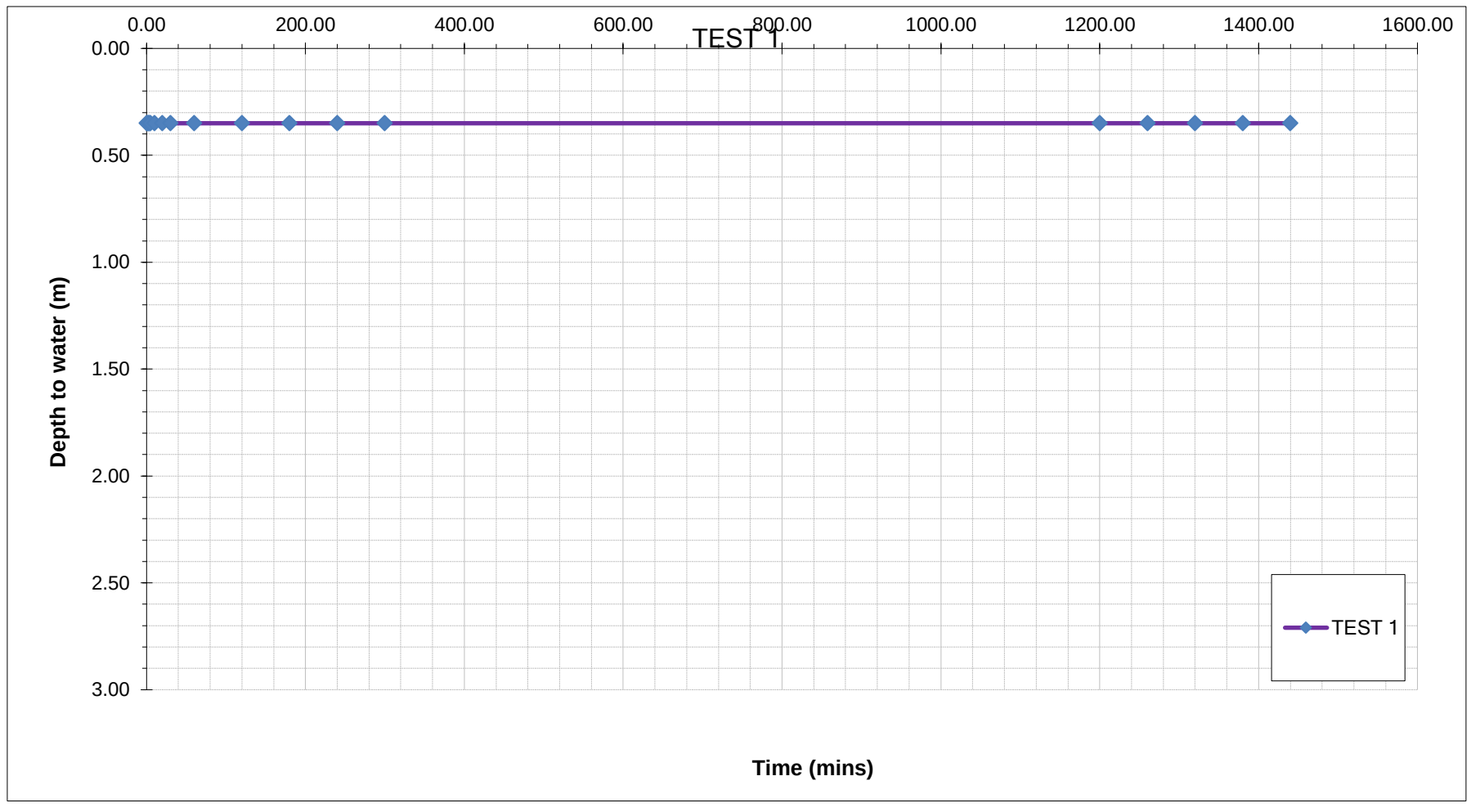
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 11.01.22 | |
| **Trial Pit Number:** | SA106 | |
| **Length:** | 2.50 | m |
| **Width:** | 0.50 | m |
| **Depth:** | 2.40 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 0.35 | | | | |
| 1.00 | 0.35 | | | | |
| 2.00 | 0.35 | | | | |
| 3.00 | 0.35 | | | | |
| 4.00 | 0.35 | | | | |
| 5.00 | 0.35 | | | | |
| 10.00 | 0.35 | | | | |
| 20.00 | 0.35 | | | | |
| 30.00 | 0.35 | | | | |
| 60.00 | 0.35 | | | | |
| 120.00 | 0.35 | | | | |
| 180.00 | 0.35 | | | | |
| 240.00 | 0.35 | | | | |
| 300.00 | 0.35 | | | | |
| 1200.00 | 0.35 | | | | |
| 1260.00 | 0.35 | | | | |
| 1320.00 | 0.35 | | | | |
| 1380.00 | 0.35 | | | | |
| 1440.00 | 0.35 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 2.05 | | |
| 75% Effective Storage Depth | m | 1.54 | | |
| (i.e. depth below GL) | m | 0.86 | | |
| 25% Effective Storage Depth | m | 0.51 | | |
| (i.e. depth below GL) | m | 1.89 | | |
| Effective Storage Depth 75%-25% | m | 1.03 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.28 | | |
| a (50%) | m2 | 7.40 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 11.01.22 | |

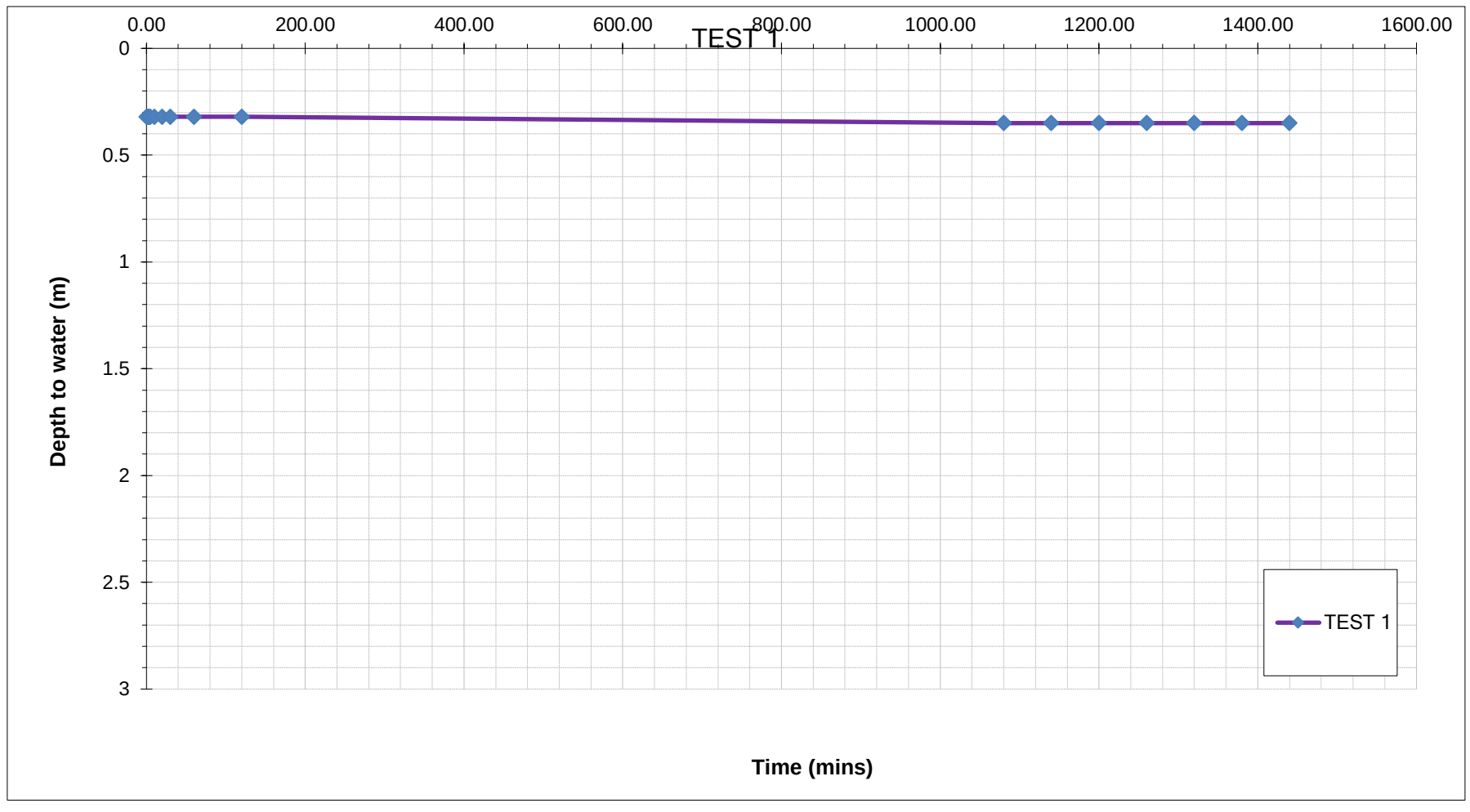
| | | |
|---|---|---|
| **Trial Pit Number:** | SA107 | |
| **Length:** | 2.00 | m |
| **Width:** | 0.60 | m |
| **Depth:** | 2.50 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 0.32 | | | | |
| 1.00 | 0.32 | | | | |
| 2.00 | 0.32 | | | | |
| 3.00 | 0.32 | | | | |
| 4.00 | 0.32 | | | | |
| 5.00 | 0.32 | | | | |
| 10.00 | 0.32 | | | | |
| 20.00 | 0.32 | | | | |
| 30.00 | 0.32 | | | | |
| 60.00 | 0.32 | | | | |
| 120.00 | 0.32 | | | | |
| 1080.00 | 0.35 | | | | |
| 1140.00 | 0.35 | | | | |
| 1200.00 | 0.35 | | | | |
| 1260.00 | 0.35 | | | | |
| 1320.00 | 0.35 | | | | |
| 1380.00 | 0.35 | | | | |
| 1440.00 | 0.35 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 2.18 | | |
| 75% Effective Storage Depth | m | 1.64 | | |
| (i.e. depth below GL) | m | 0.87 | | |
| 25% Effective Storage Depth | m | 0.55 | | |
| (i.e. depth below GL) | m | 1.96 | | |
| Effective Storage Depth 75%-25% | m | 1.09 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.31 | | |
| a (50%) | m2 | 6.87 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



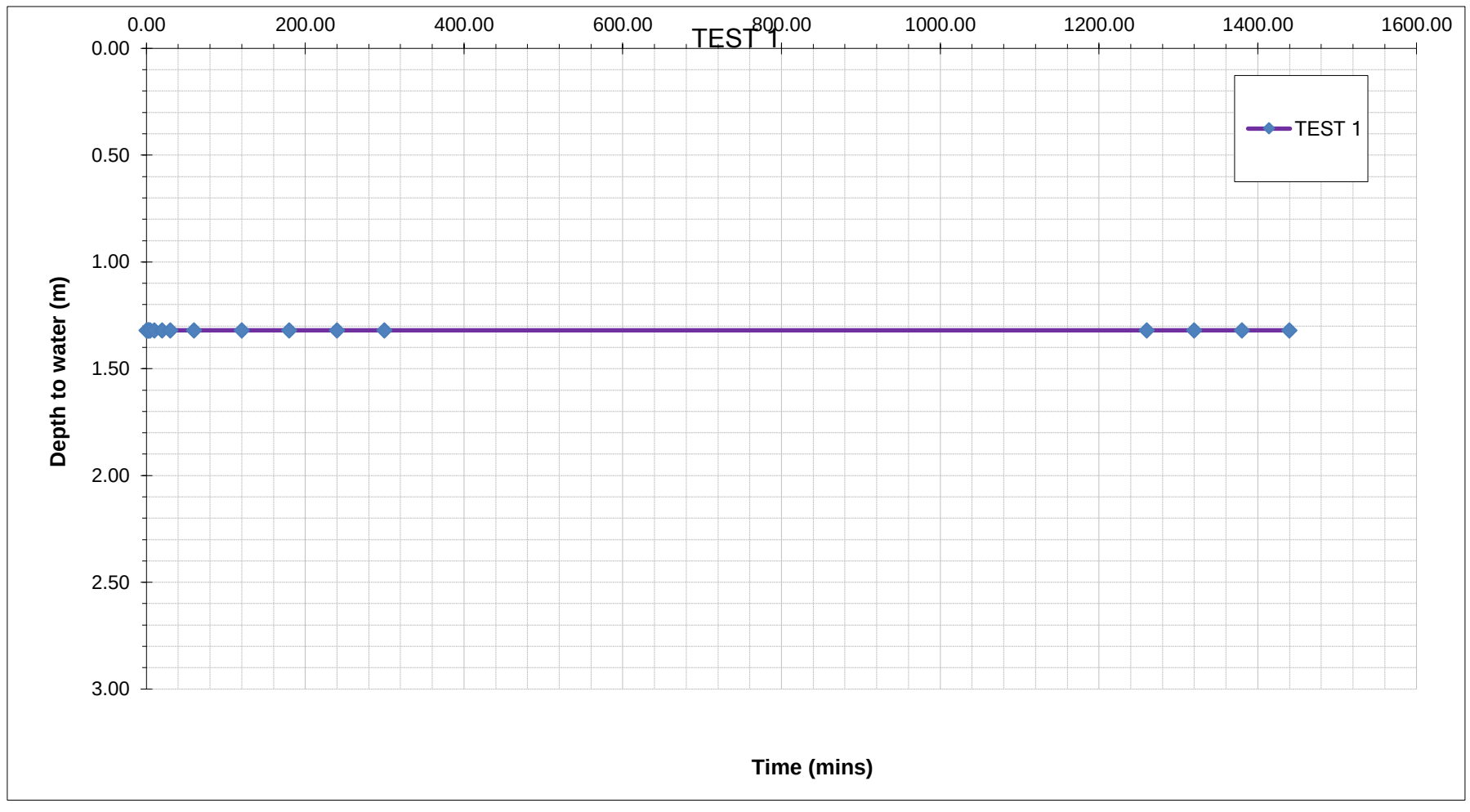
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 11.01.22 | |
| **Trial Pit Number:** | SA108 | |
| **Length:** | 2.90 | m |
| **Width:** | 1.20 | m |
| **Depth:** | 2.40 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 1.32 | | | | |
| 1.00 | 1.32 | | | | |
| 2.00 | 1.32 | | | | |
| 3.00 | 1.32 | | | | |
| 4.00 | 1.32 | | | | |
| 5.00 | 1.32 | | | | |
| 10.00 | 1.32 | | | | |
| 20.00 | 1.32 | | | | |
| 30.00 | 1.32 | | | | |
| 60.00 | 1.32 | | | | |
| 120.00 | 1.32 | | | | |
| 180.00 | 1.32 | | | | |
| 240.00 | 1.32 | | | | |
| 300.00 | 1.32 | | | | |
| 1260.00 | 1.32 | | | | |
| 1320.00 | 1.32 | | | | |
| 1380.00 | 1.32 | | | | |
| 1440.00 | 1.32 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 1.08 | | |
| 75% Effective Storage Depth | m | 0.81 | | |
| (i.e. depth below GL) | m | 1.59 | | |
| 25% Effective Storage Depth | m | 0.27 | | |
| (i.e. depth below GL) | m | 2.13 | | |
| Effective Storage Depth 75%-25% | m | 0.54 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.88 | | |
| a (50%) | m2 | 7.91 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



**MURRAY RIX**
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION SUMMARY SHEET
BS 1377 : PART 2 : Clause 9.2 : 1990

| | | | |
|---|---|---|---|
| CLIENT | e3p | SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25A | DATE RECEIVED | 09 February 2022 |

| Sample No | Site Reference | Material | Date Sampled | Sampled by | Advised Source | Percentage (%) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Boulders (>200mm) | Cobbles (200-63mm) | Gravel (63-2.0mm) | Sand (2.0-0.063mm) | Silt (0.063-0.002mm) | Clay (<0.002mm) |
| 109349 | TP163 B 1.4 | See MRN 4287/25 | 12-Jan-22 | Client | SI Sample | 0 | 0 | 0 | 17 | 83 | |
| 109351 | TP118 B 1.00 | See MRN 4287/25 | 10-Jan-22 | Client | SI Sample | 0 | 5 | 53 | 26 | 16 | |
| 109354 | TP140 B 0.50 | See MRN 4287/25 | 11-Jan-22 | Client | SI Sample | 0 | 0 | 37 | 41 | 22 | |
| 109356 | TP152 B 0.50 | See MRN 4287/25 | 12-Jan-22 | Client | SI Sample | 0 | 0 | 22 | 76 | 2 | |
| 109360 | TP1208 B 1.20 | See MRN 4287/25 | 25-Jan-22 | Client | SI Sample | 0 | 0 | 1 | 82 | 17 | |
| 109362 | TP1119 B 1 | See MRN 4287/25 | 24-Jan-22 | Client | SI Sample | 0 | 0 | 15 | 24 | 61 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

REMARKS – Silt & Clay content not determined, sedimentation analysis would be required.

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

SIGNED

DATE 01 March 2022

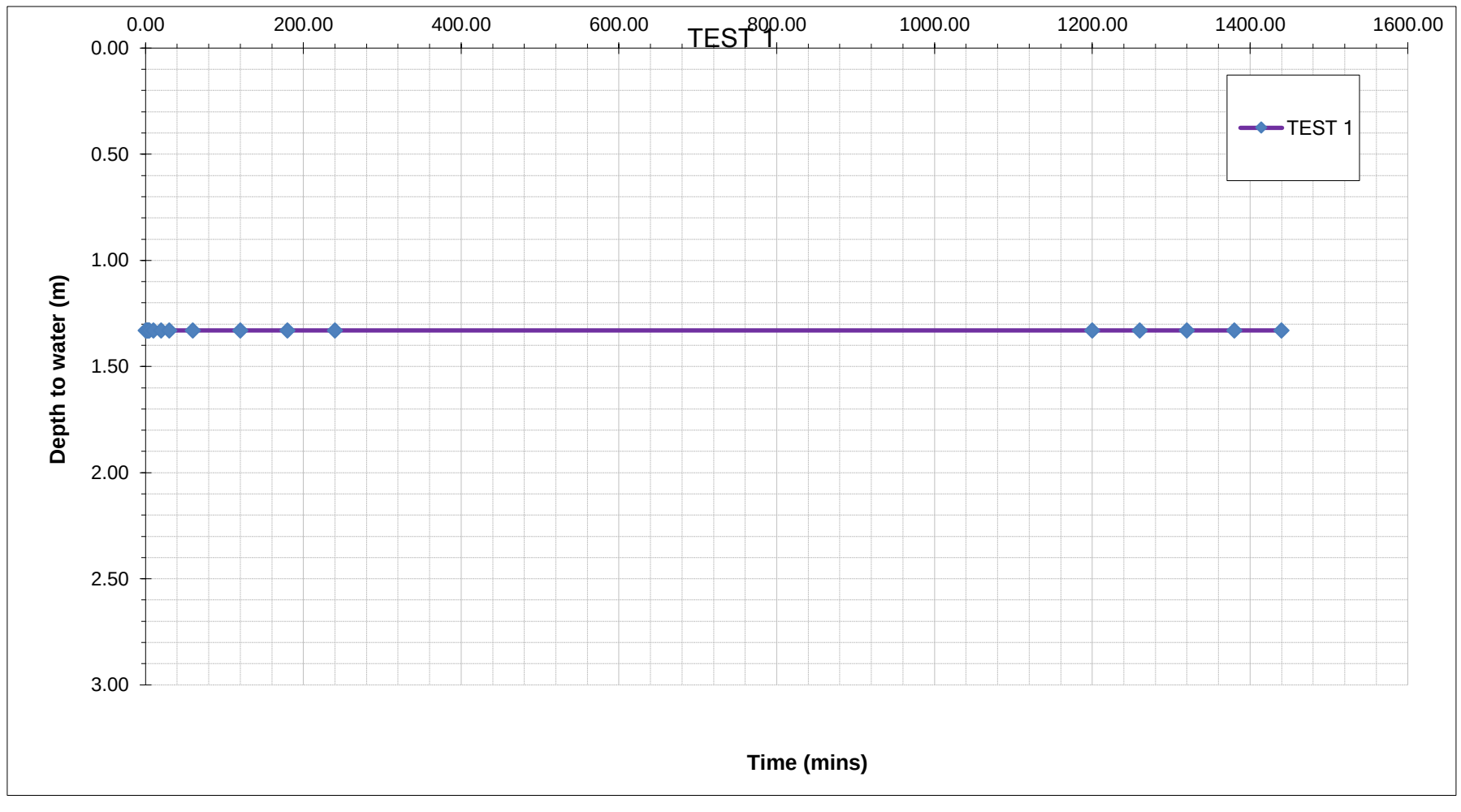
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 11.01.22 | |
| **Trial Pit Number:** | SA109 | |
| **Length:** | 2.10 | m |
| **Width:** | 1.20 | m |
| **Depth:** | 2.20 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 1.33 | | | | |
| 1.00 | 1.33 | | | | |
| 2.00 | 1.33 | | | | |
| 3.00 | 1.33 | | | | |
| 4.00 | 1.33 | | | | |
| 5.00 | 1.33 | | | | |
| 10.00 | 1.33 | | | | |
| 20.00 | 1.33 | | | | |
| 30.00 | 1.33 | | | | |
| 60.00 | 1.33 | | | | |
| 120.00 | 1.33 | | | | |
| 180.00 | 1.33 | | | | |
| 240.00 | 1.33 | | | | |
| 1200.00 | 1.33 | | | | |
| 1260.00 | 1.33 | | | | |
| 1320.00 | 1.33 | | | | |
| 1380.00 | 1.33 | | | | |
| 1440.00 | 1.33 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 0.87 | | |
| 75% Effective Storage Depth | m | 0.65 | | |
| (i.e. depth below GL) | m | 1.55 | | |
| 25% Effective Storage Depth | m | 0.22 | | |
| (i.e. depth below GL) | m | 1.98 | | |
| Effective Storage Depth 75%-25% | m | 0.44 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.10 | | |
| a (50%) | m2 | 5.39 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



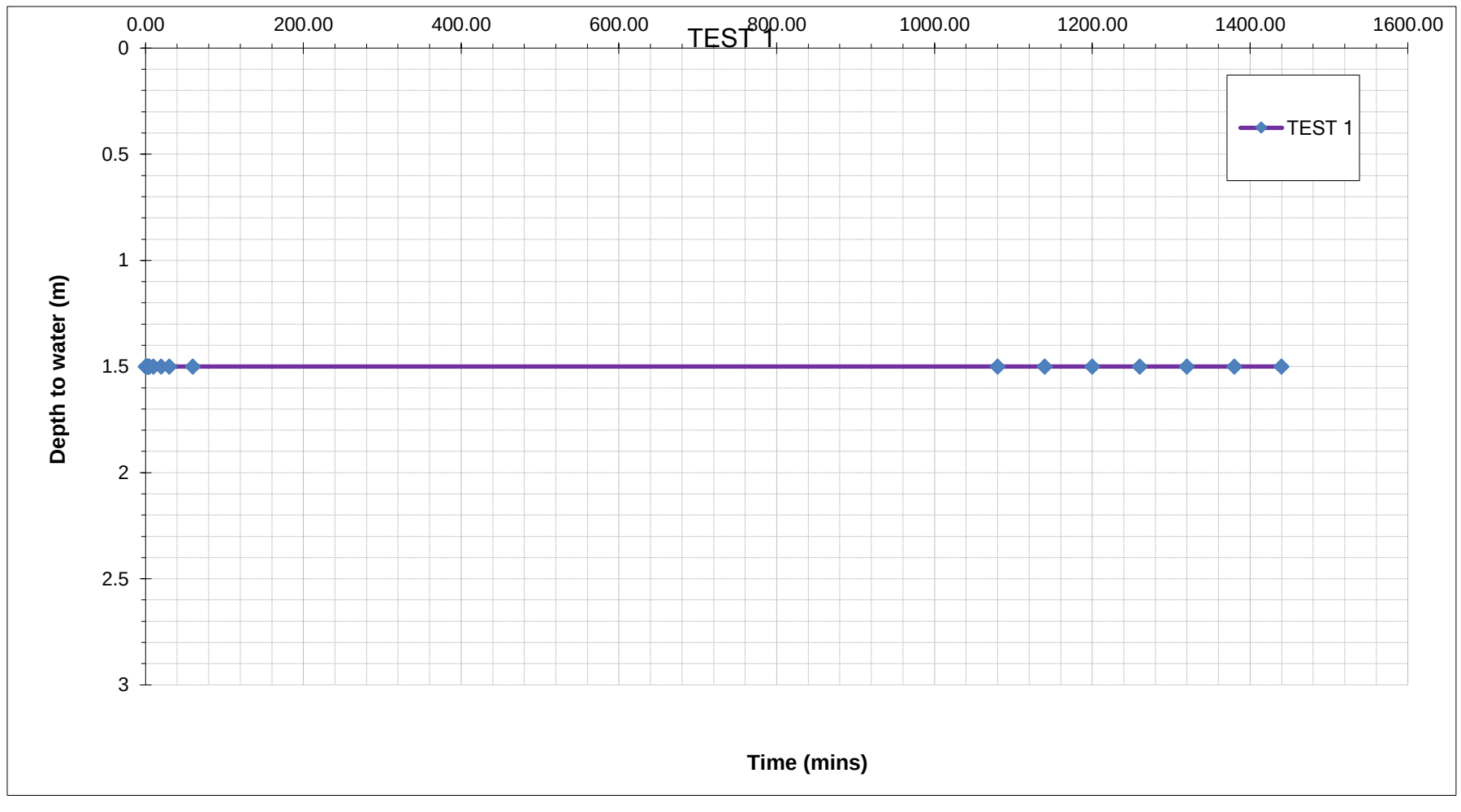
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 13.01.22 | |
| **Trial Pit Number:** | SA110 | |
| **Length:** | 2.20 | m |
| **Width:** | 1.20 | m |
| **Depth:** | 2.20 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 1.5 | | | | |
| 1.00 | 1.5 | | | | |
| 2.00 | 1.5 | | | | |
| 3.00 | 1.5 | | | | |
| 4.00 | 1.5 | | | | |
| 5.00 | 1.5 | | | | |
| 10.00 | 1.5 | | | | |
| 20.00 | 1.5 | | | | |
| 30.00 | 1.5 | | | | |
| 60.00 | 1.5 | | | | |
| 1080.00 | 1.5 | | | | |
| 1140.00 | 1.5 | | | | |
| 1200.00 | 1.5 | | | | |
| 1260.00 | 1.5 | | | | |
| 1320.00 | 1.5 | | | | |
| 1380.00 | 1.5 | | | | |
| 1440.00 | 1.5 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 0.70 | | |
| 75% Effective Storage Depth | m | 0.53 | | |
| (i.e. depth below GL) | m | 1.68 | | |
| 25% Effective Storage Depth | m | 0.18 | | |
| (i.e. depth below GL) | m | 2.03 | | |
| Effective Storage Depth 75%-25% | m | 0.35 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 0.92 | | |
| a (50%) | m2 | 5.02 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



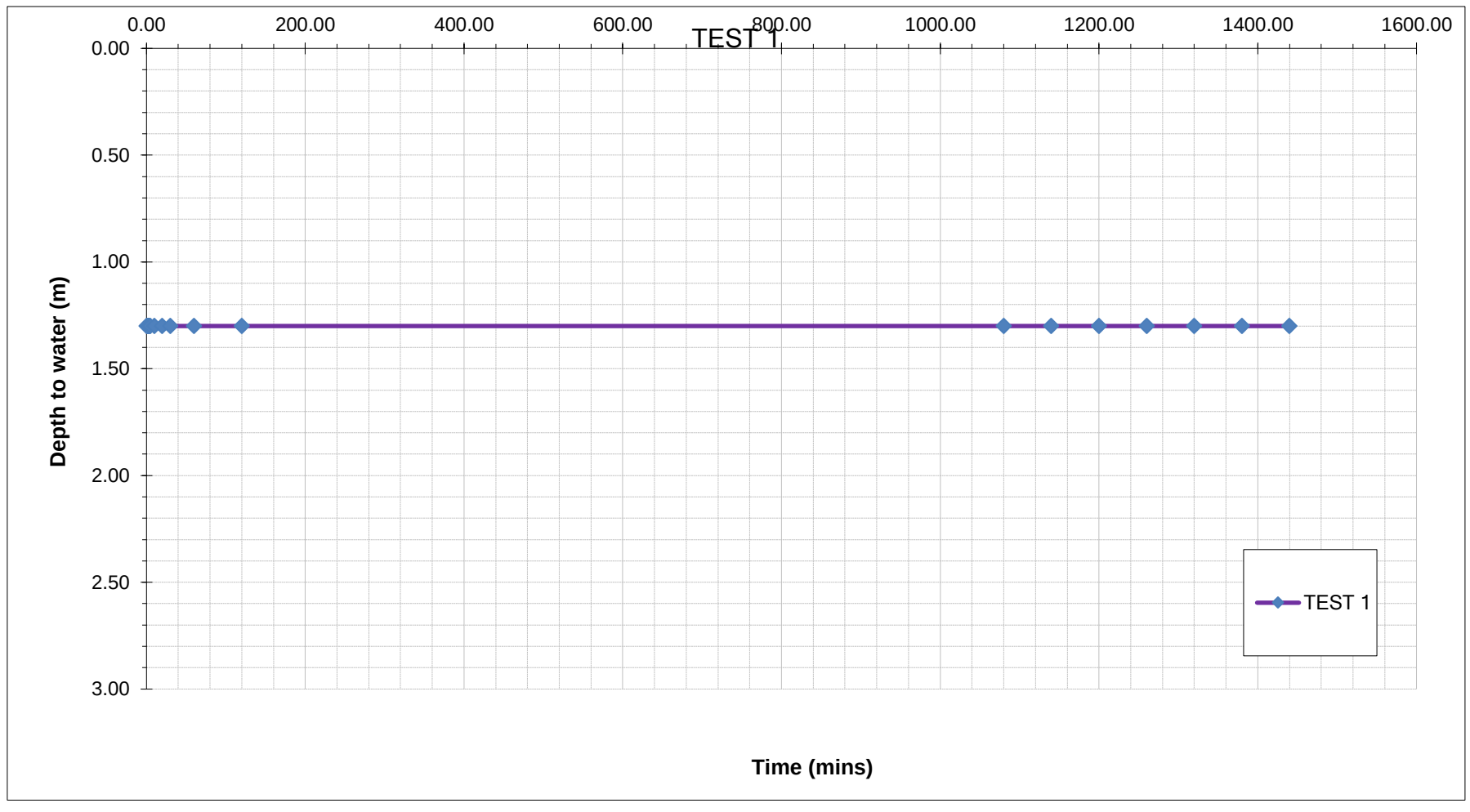
| | | |
|---|---|---|
| **Site:** | Cherryfield Drive. Kirkby | |
| **Job Number:** | 15-280 | |
| **Date of Test:** | 13.01.22 | |
| **Trial Pit Number:** | SA111 | |
| **Length:** | 2.90 | m |
| **Width:** | 0.60 | m |
| **Depth:** | 2.50 | m |
| **Groundwater Level:** | | m |

Test did not reach the 25% or 75% effective storage depth and therefore test has been recorded to have failed.

| TEST 1 | | TEST 2 | | TEST 3 | |
|---|---|---|---|---|---|
| Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) | Time(min) | Depth to Water (m) |
| 0.00 | 1.30 | | | | |
| 1.00 | 1.30 | | | | |
| 2.00 | 1.30 | | | | |
| 3.00 | 1.30 | | | | |
| 4.00 | 1.30 | | | | |
| 5.00 | 1.30 | | | | |
| 10.00 | 1.30 | | | | |
| 20.00 | 1.30 | | | | |
| 30.00 | 1.30 | | | | |
| 60.00 | 1.30 | | | | |
| 120.00 | 1.30 | | | | |
| 1080.00 | 1.30 | | | | |
| 1140.00 | 1.30 | | | | |
| 1200.00 | 1.30 | | | | |
| 1260.00 | 1.30 | | | | |
| 1320.00 | 1.30 | | | | |
| 1380.00 | 1.30 | | | | |
| 1440.00 | 1.30 | | | | |

| | | | | |
|---|---|---|---|---|
| Effective Storage Depth | m | 1.20 | | |
| 75% Effective Storage Depth | m | 0.90 | | |
| (i.e. depth below GL) | m | 1.60 | | |
| 25% Effective Storage Depth | m | 0.30 | | |
| (i.e. depth below GL) | m | 2.20 | | |
| Effective Storage Depth 75%-25% | m | 0.60 | | |
| Time to fall to 75% effective depth | mins | N/A | | |
| Time to fall to 25% effective depth | mins | N/A | | |
| V (75%-25%) | m3 | 1.04 | | |
| a (50%) | m2 | 5.94 | | |
| t (75%-25%) | mins | N/A | | |
| **SOIL INFILTRATION RATE** | m/s | **N/A** | **N/A** | **N/A** |

| | |
|---|---|
| **DESIGN SOIL INFILTRATION RATE, f** | **0.00E+00** |



# APPENDIX X
# GEOTECHNICAL TESTING RESULTS

MURRAY RIX

CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

# TEST REPORT

**Client** e3p

**Address** Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

**Contract** Cherryfield Drive

**Job Number** MRN 4287/25B
**Date of Issue** 24 February 2022
**Pages** 1 of 28

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

**TEST CERTIFICATE**

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

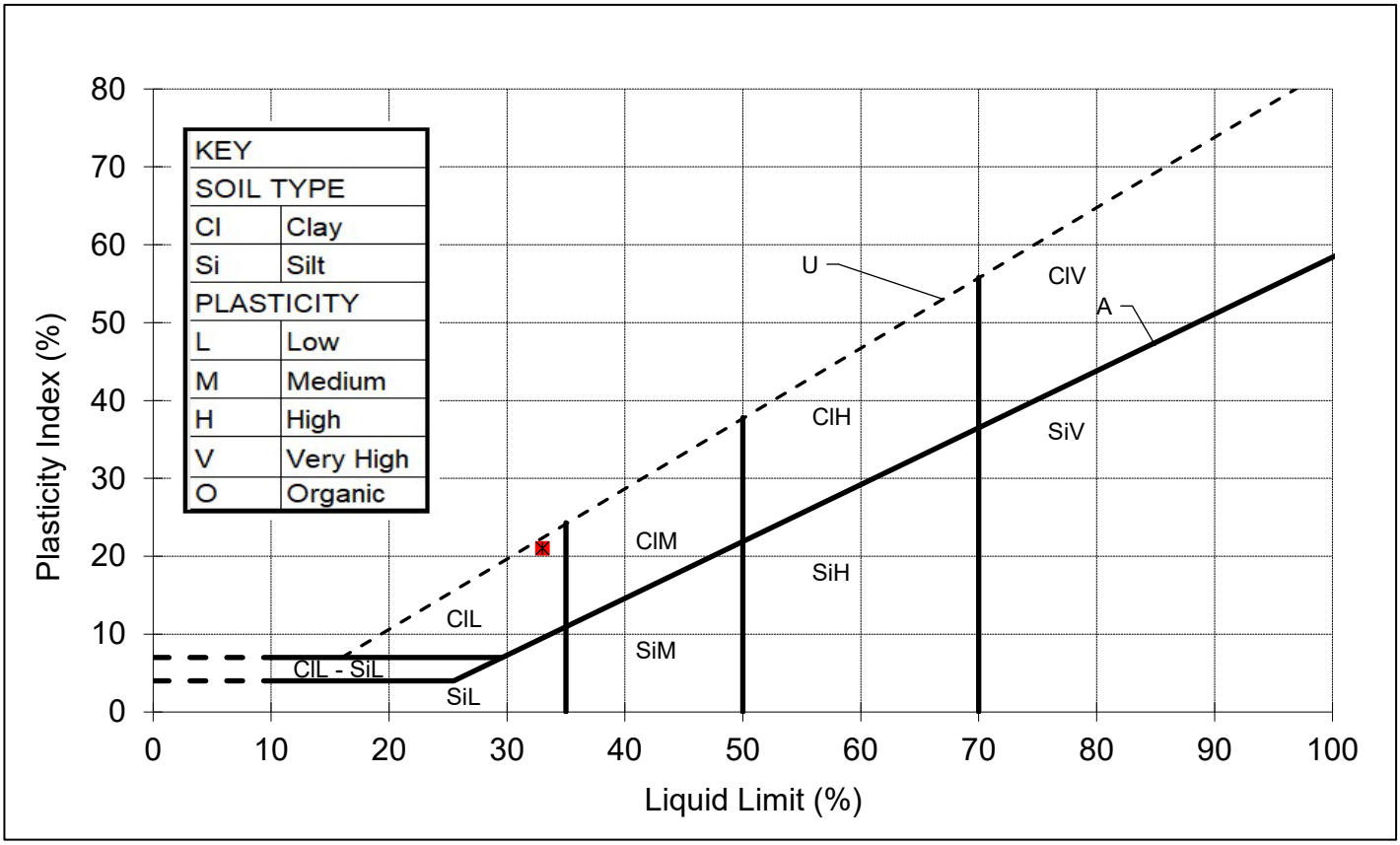
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS107 D 1.00 | DATE SAMPLED | 10-Jan-22 |
| SAMPLE No. | 109342 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 16 | 33 | 12 | 21 | 100 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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UKAS TESTING 1580

**TEST CERTIFICATE**

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

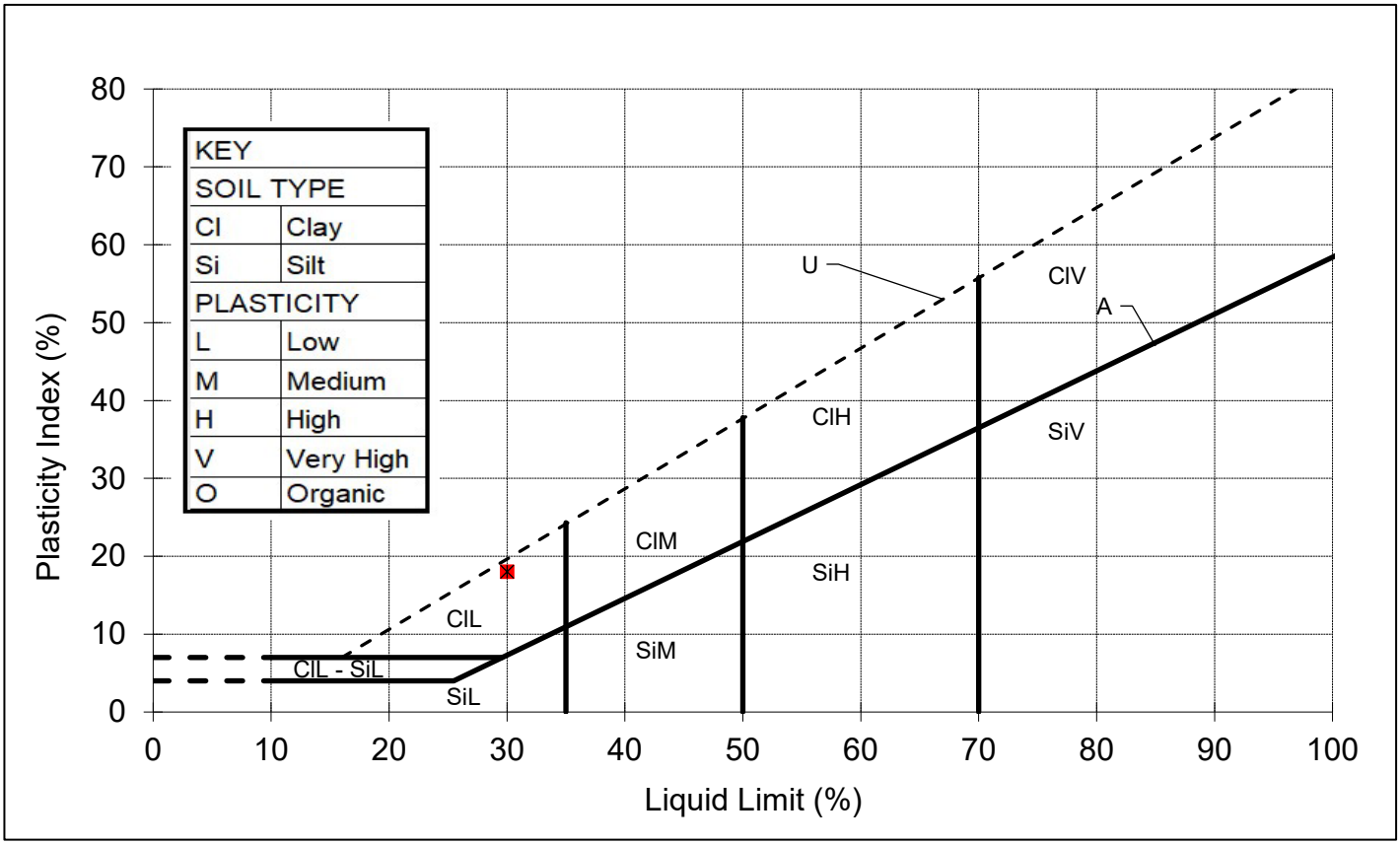
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS125 D 2.00 | DATE SAMPLED | 11-Jan-22 |
| SAMPLE No. | 109344 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Firm to stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 16 | 30 | 12 | 18 | 100 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

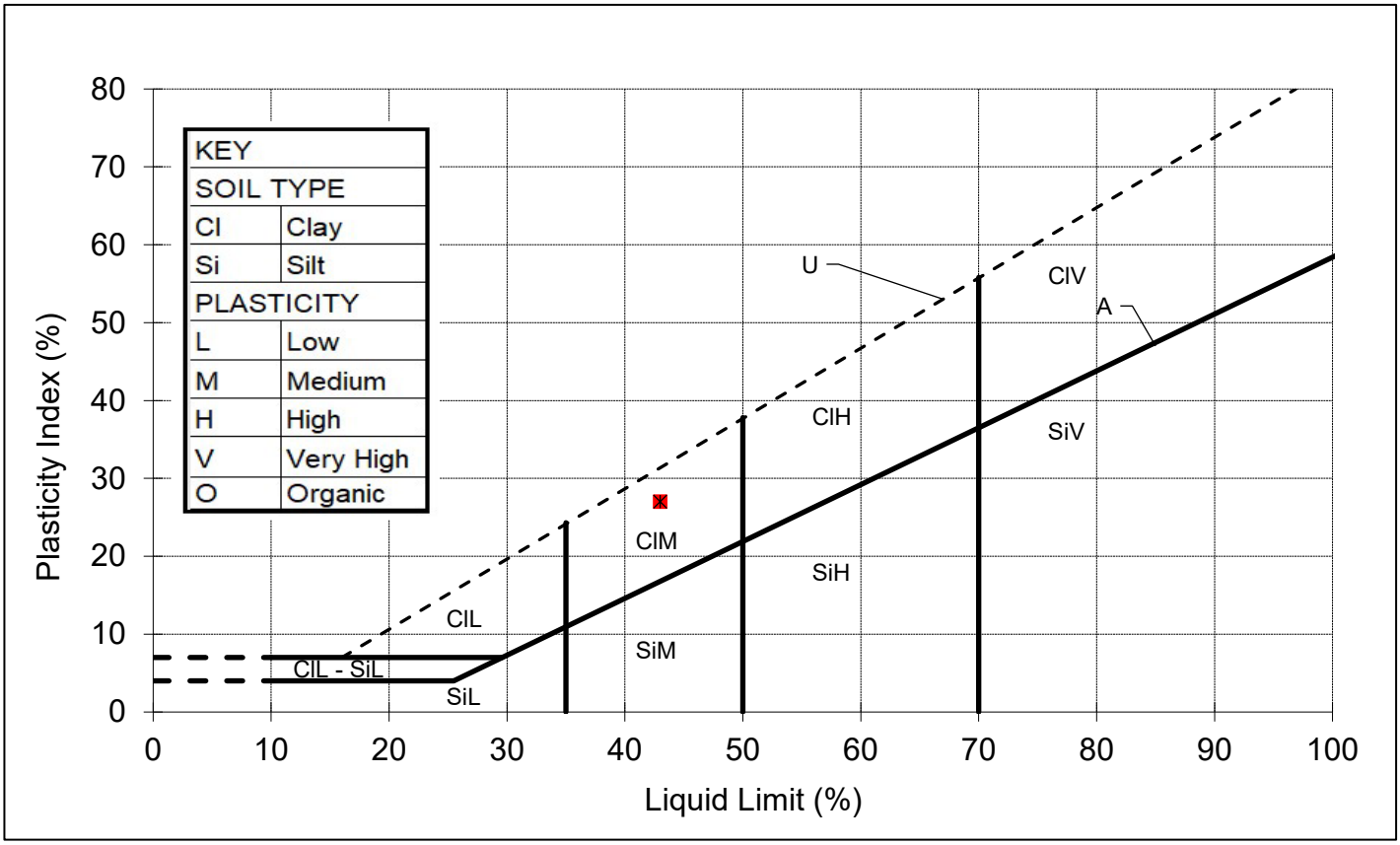
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS127 D 2.00 | DATE SAMPLED | 11-Jan-22 |
| SAMPLE No. | 109345 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Firm to stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 24 | 43 | 16 | 27 | 99 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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UKAS TESTING 1580

**TEST CERTIFICATE**

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

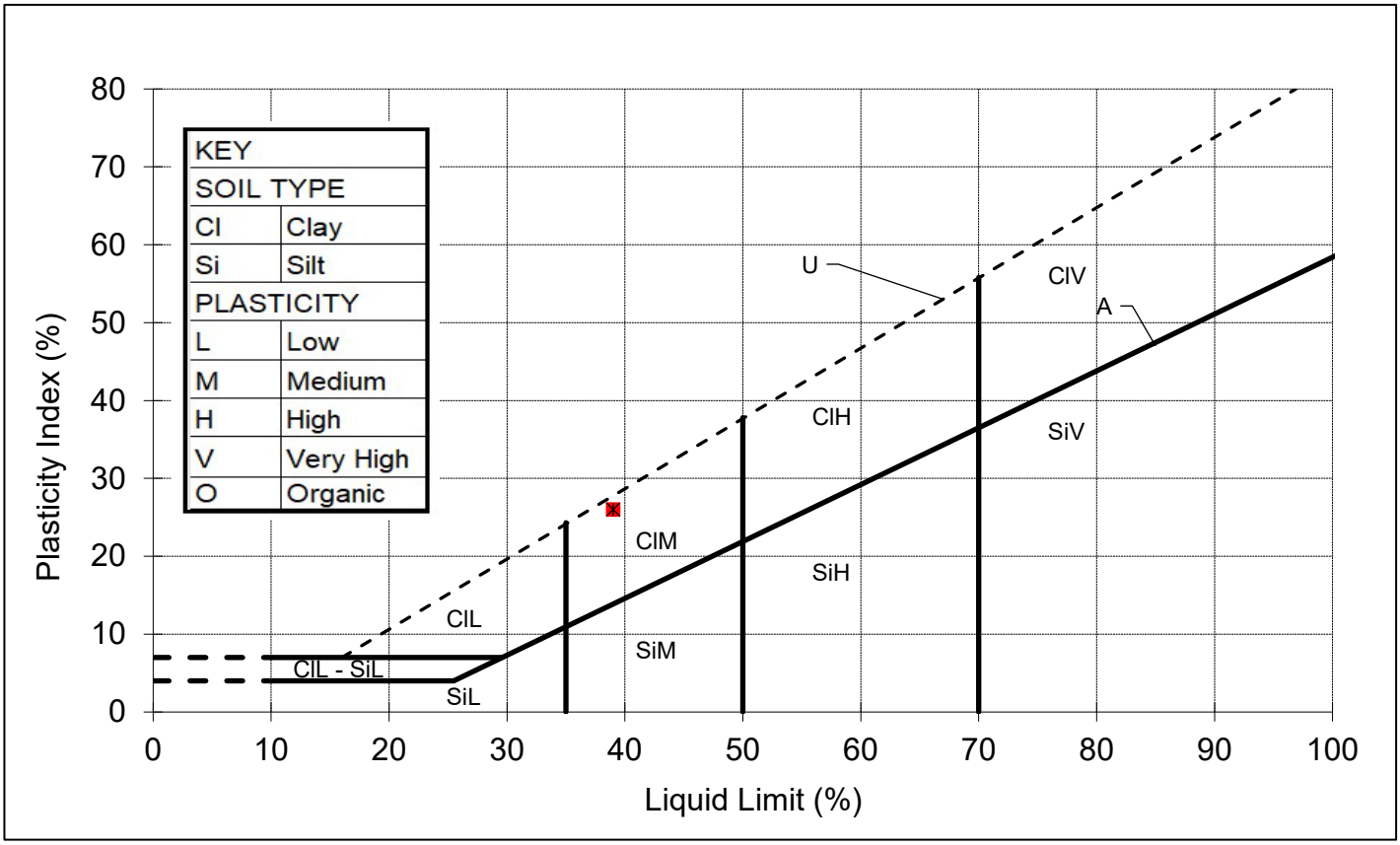
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS141 D 1.00 | DATE SAMPLED | 13-Jan-22 |
| SAMPLE No. | 109346 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 13 | 39 | 13 | 26 | 98 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

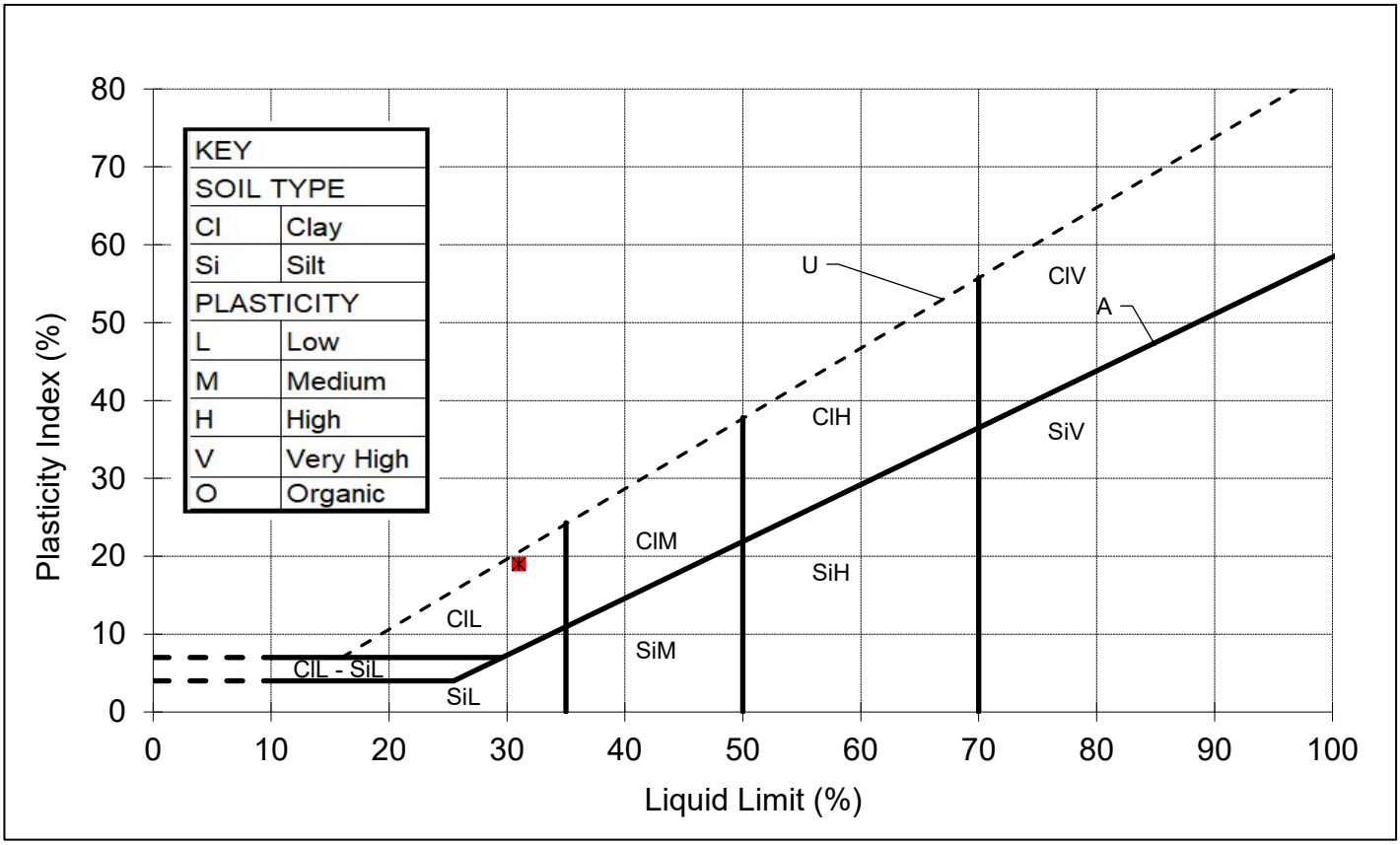
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS104 D 1.00 | DATE SAMPLED | 10-Jan-22 |
| SAMPLE No. | 109350 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 15 | 31 | 12 | 19 | 100 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

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UKAS TESTING 1580

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LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

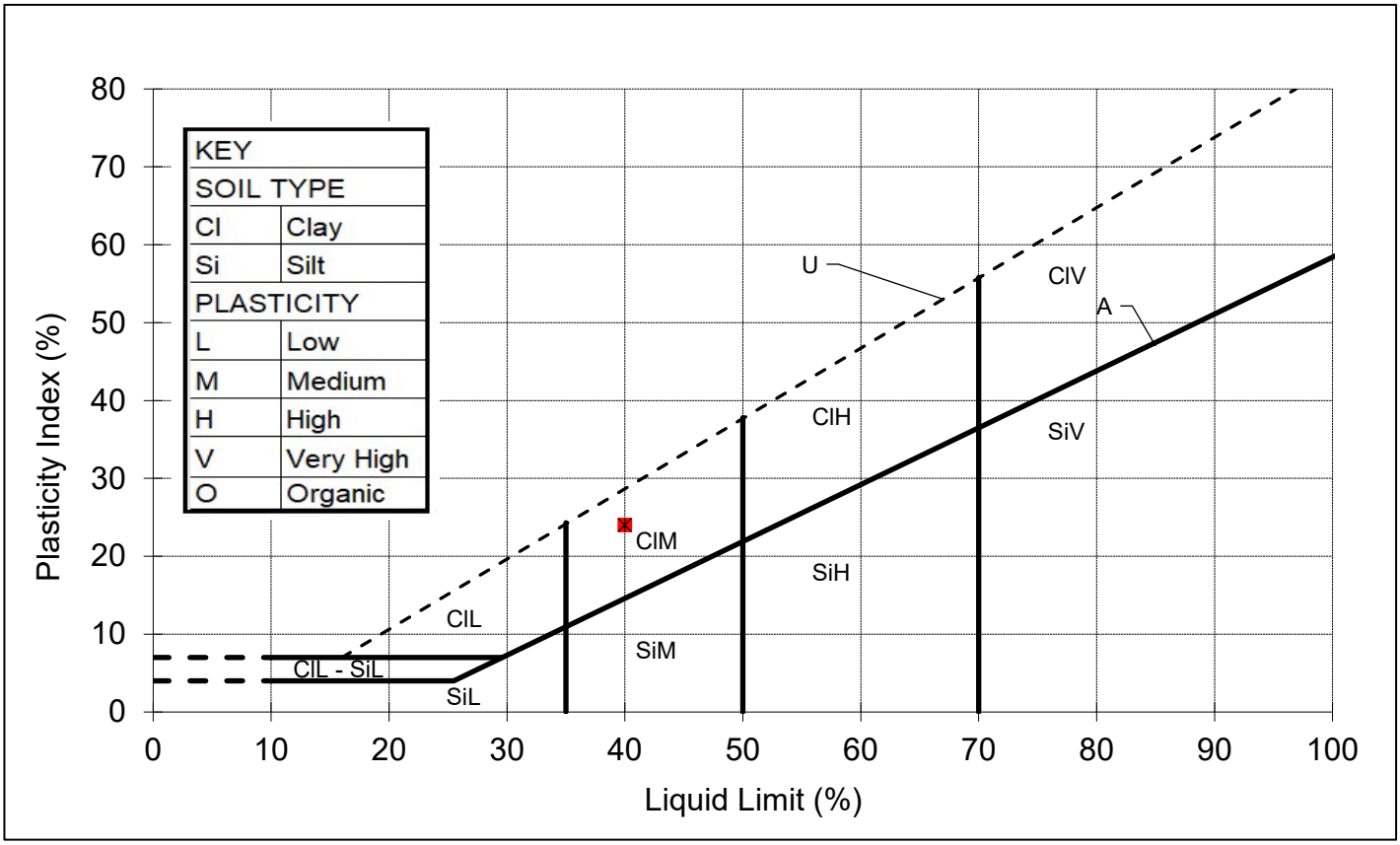
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS112 D 2.00 | DATE SAMPLED | 10-Jan-22 |
| SAMPLE No. | 109352 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Stiff red brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 17 | 40 | 16 | 24 | 98 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

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UKAS TESTING 1580

**TEST CERTIFICATE**

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

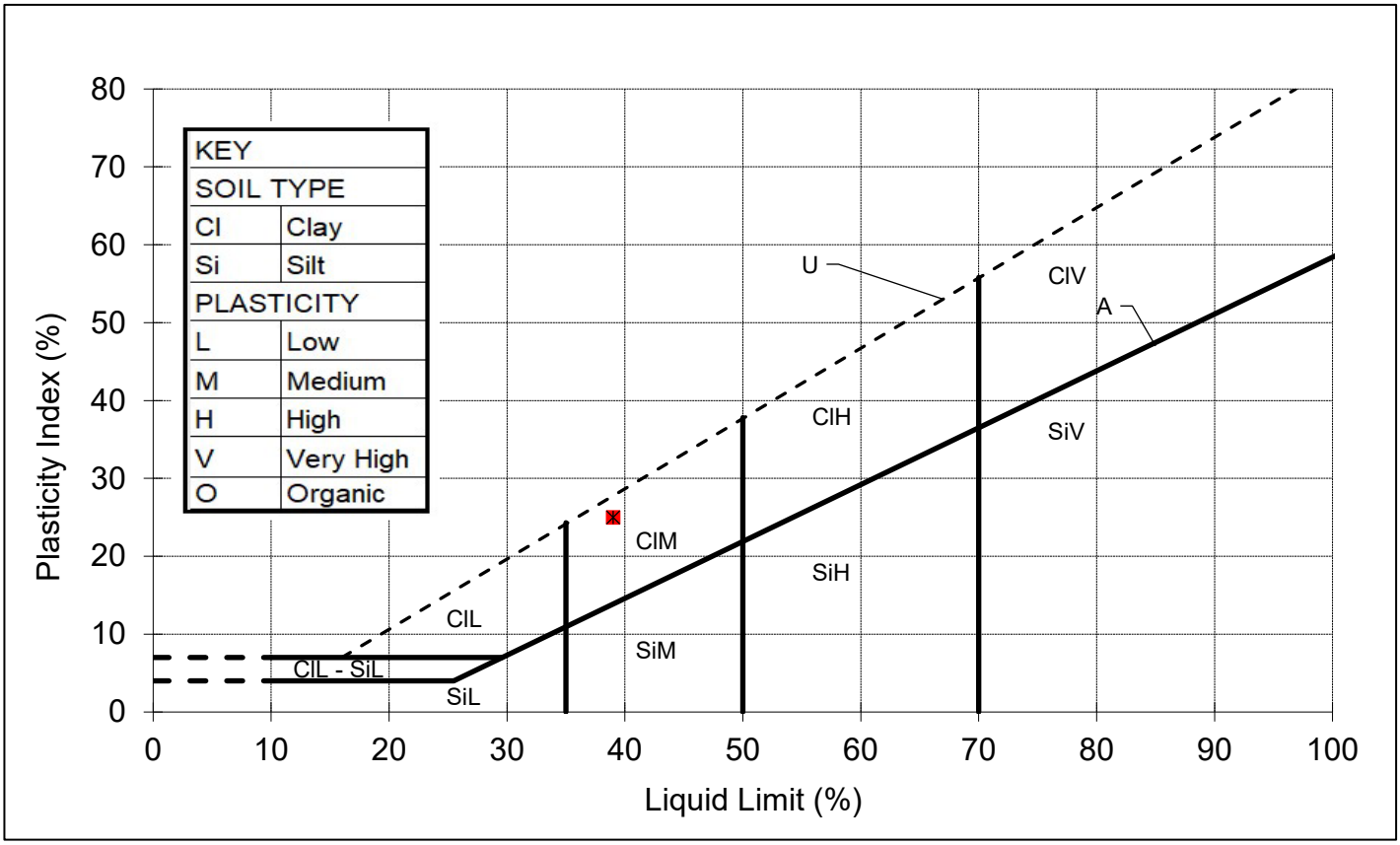
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS122 D 1.00 | DATE SAMPLED | 11-Jan-22 |
| SAMPLE No. | 109355 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Stiff red brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 16 | 39 | 14 | 25 | 96 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

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UKAS TESTING 1580

**TEST CERTIFICATE**

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

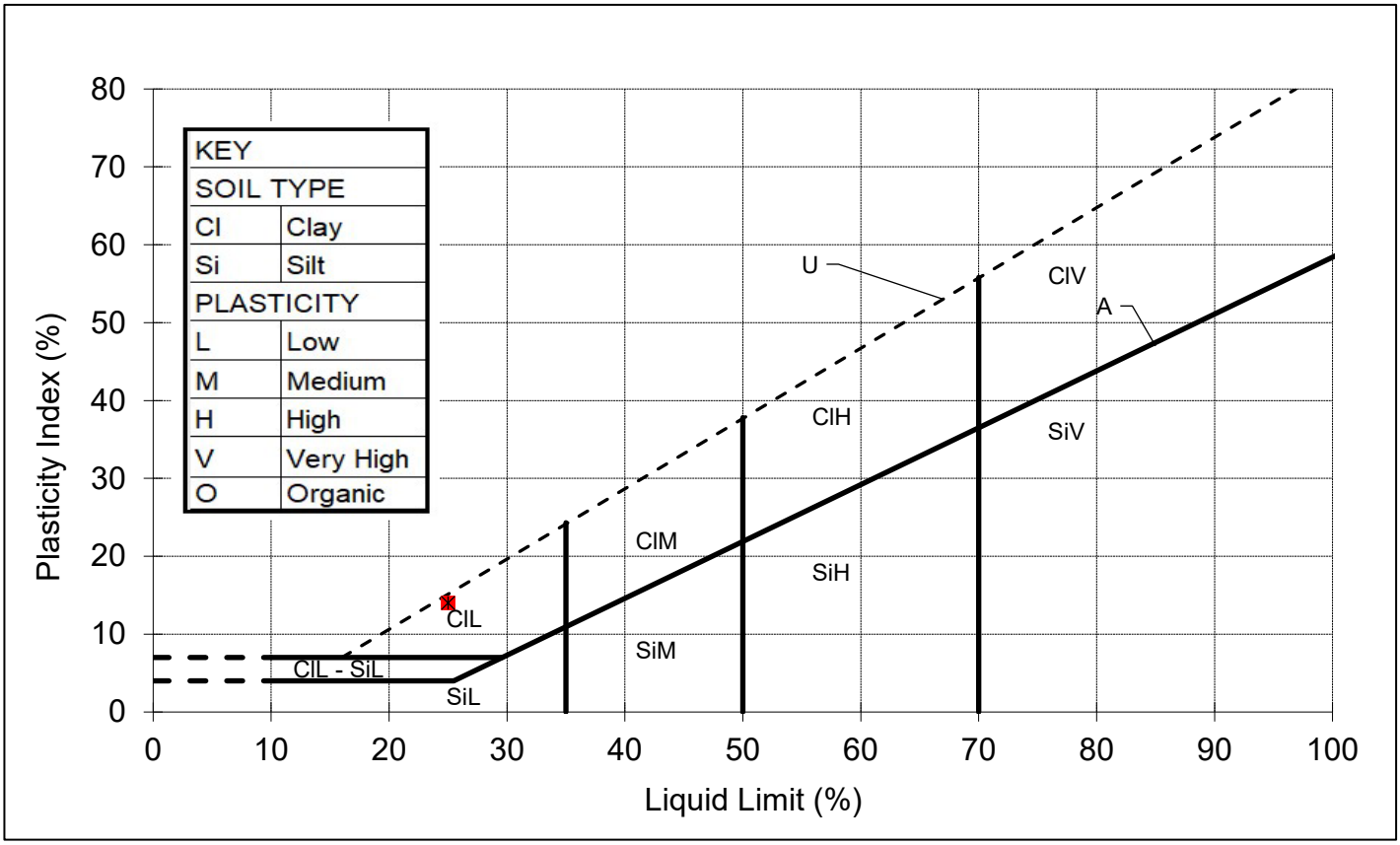
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS128 D 1.00 | DATE SAMPLED | 11-Jan-22 |
| SAMPLE No. | 109358 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Firm to stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 13 | 25 | 11 | 14 | 100 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

**TEST CERTIFICATE**

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

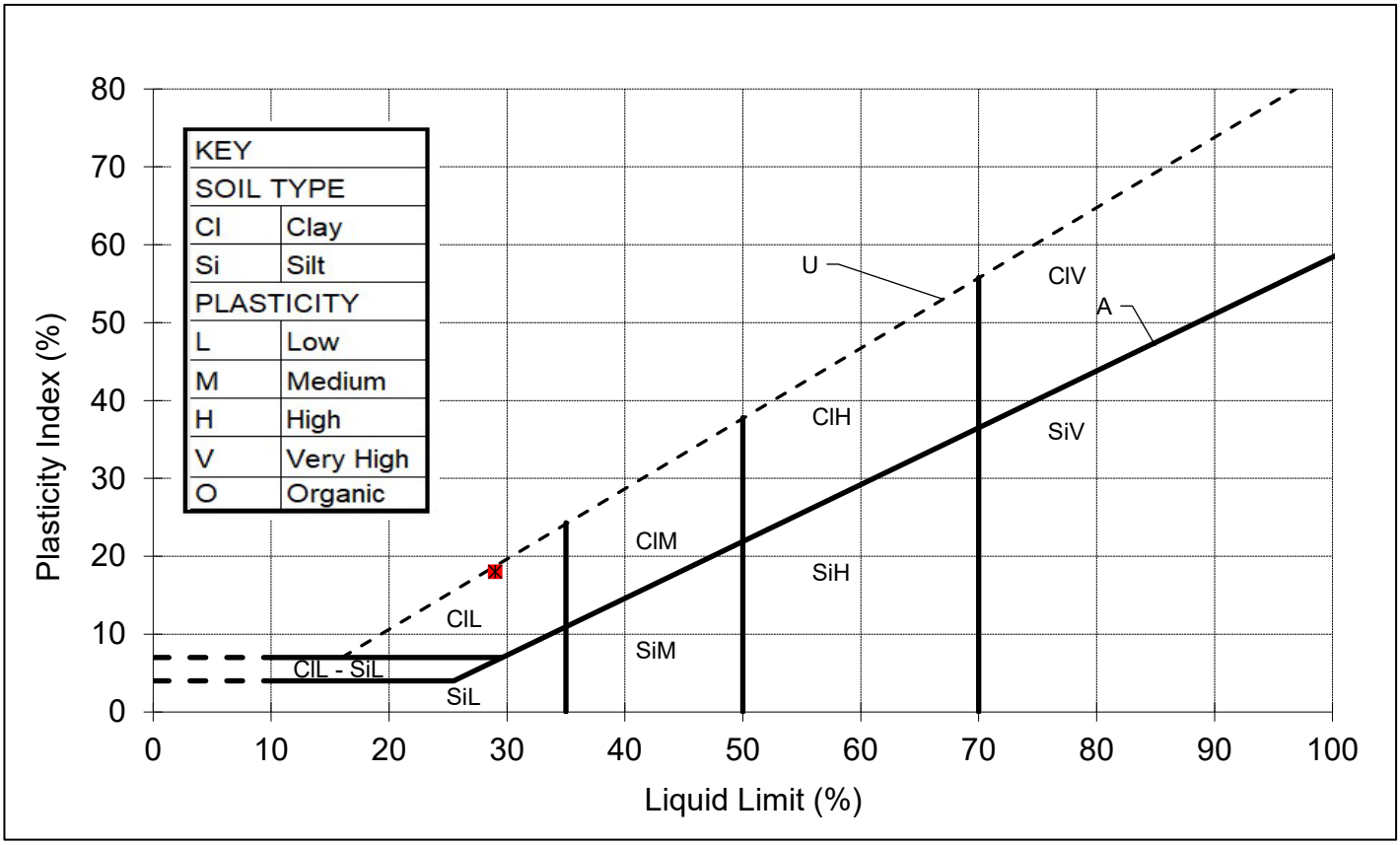
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS155 D 1 | DATE SAMPLED | 11-Jan-22 |
| SAMPLE No. | 109361 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 11 | 29 | 11 | 18 | 100 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870 FAX 0161 475 0871

UKAS TESTING 1580

**TEST CERTIFICATE**

LIQUID AND PLASTIC LIMIT

BS 1377: PART 2: 1990 Clause 4.4 ONE POINT METHOD & Clause 5.3

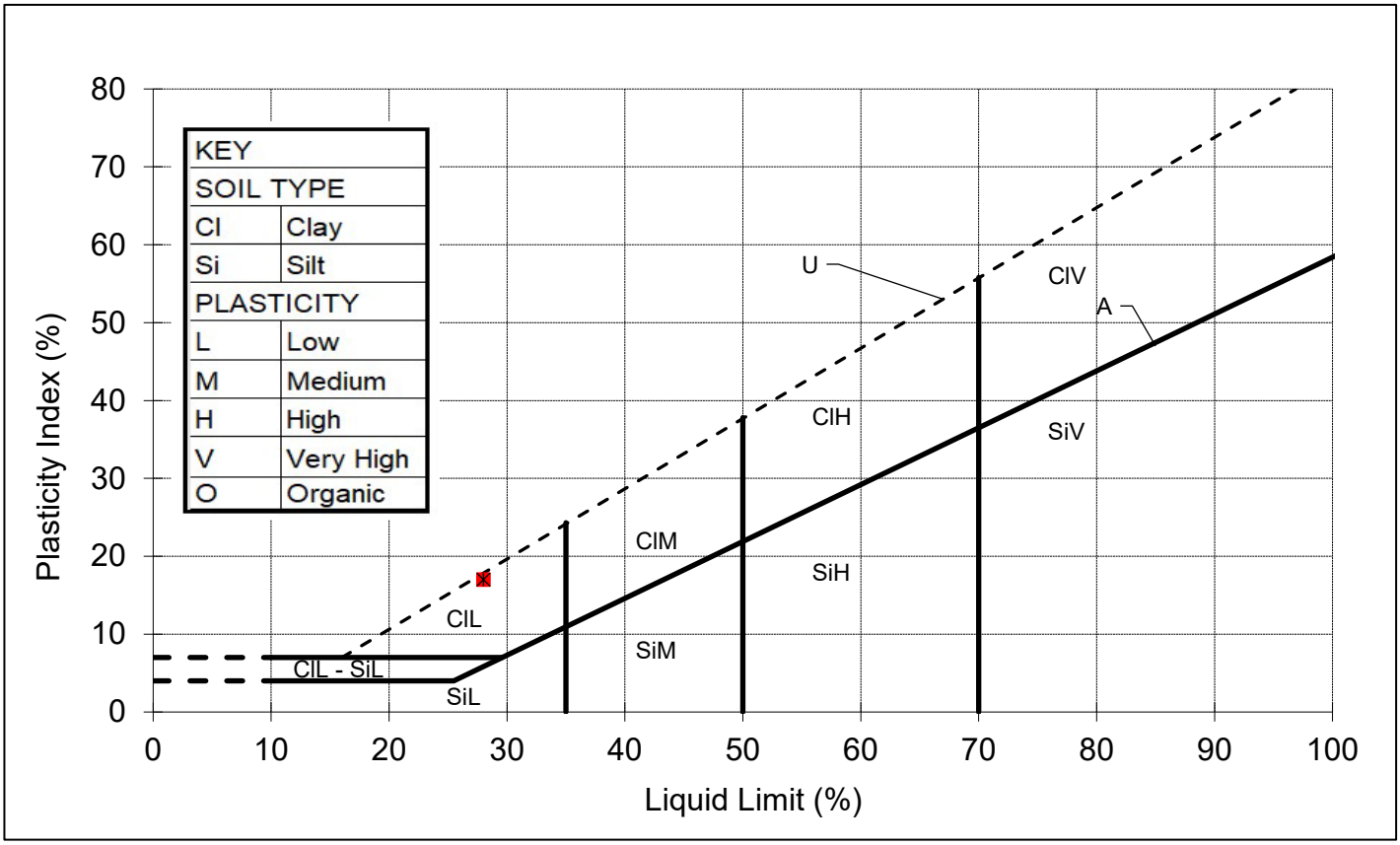
MOISTURE CONTENT METHOD BS 1377: PART 2: 1990 Clause 3.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | WS163 D 2 | DATE SAMPLED | 25-Jan-22 |
| SAMPLE No. | 109364 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 11-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Stiff brown silty sandy CLAY |
| ADVISED SOURCE | Site Investigation Sample |

| Natural Moisture Content (%) | Liquid Limit (%) | Plastic Limit (%) | Plasticity Index (%) | Passing 425 micron (%) |
|---|---|---|---|---|
| 11 | 28 | 11 | 17 | 100 |




REMARKS
Sample tested in natural condition

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 24-Feb-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870  FAX 0161 475 0871


UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

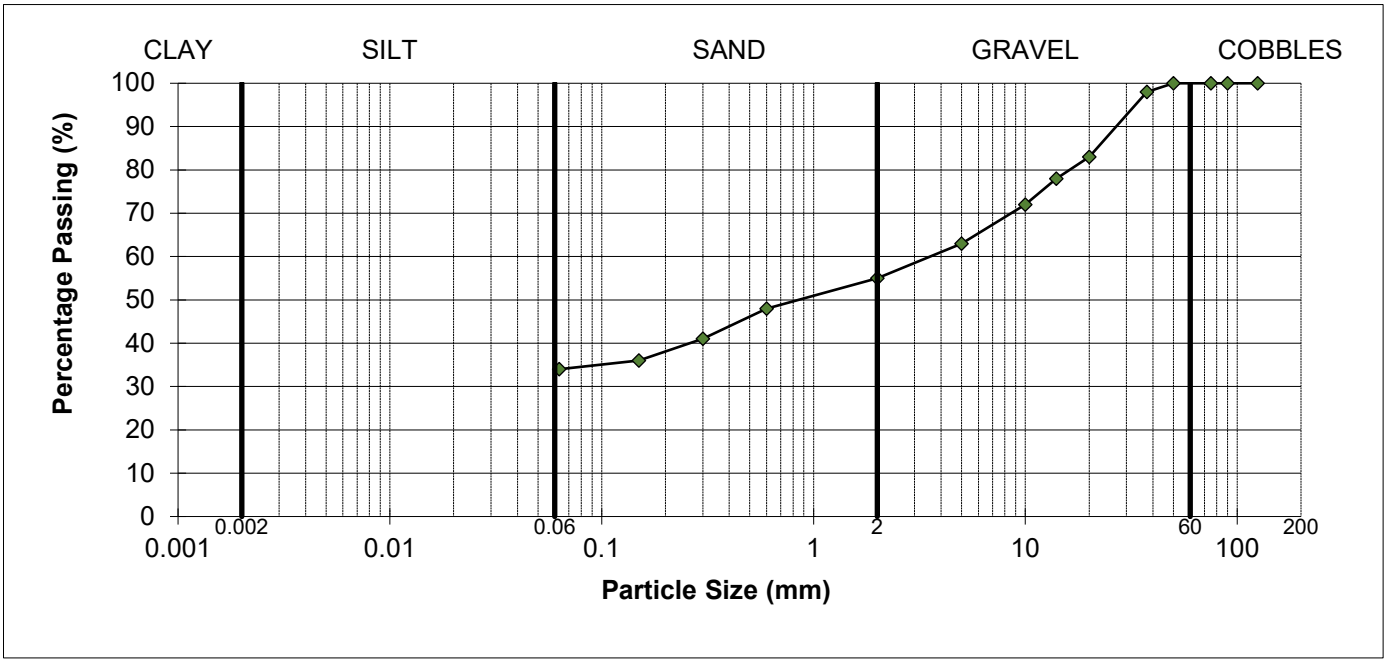
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP117 B 1 | DATE SAMPLED | 10-Jan-22 |
| LAB SAMPLE No | 109348 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 14-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | MADE GROUND |
| ADVISED SOURCE | Site Investigation Sample |

| Sieve Size (mm) | % Passing (%) | Specification (%) | Sieve Size (mm) | % Passing (%) | Specification (%) |
|---|---|---|---|---|---|
| 125 | 100 | | 10 | 72 | |
| 90 | 100 | | 5 | 63 | |
| 75 | 100 | | 2 | 55 | |
| 50 | 100 | | 0.6 | 48 | |
| 37.5 | 98 | | 0.3 | 41 | |
| 20 | 83 | | 0.15 | 36 | |
| 14 | 78 | | 0.063 | 34 | |




REMARKS
As received moisture content = 52%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)  DATE 24-Feb-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870  FAX 0161 475 0871


UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

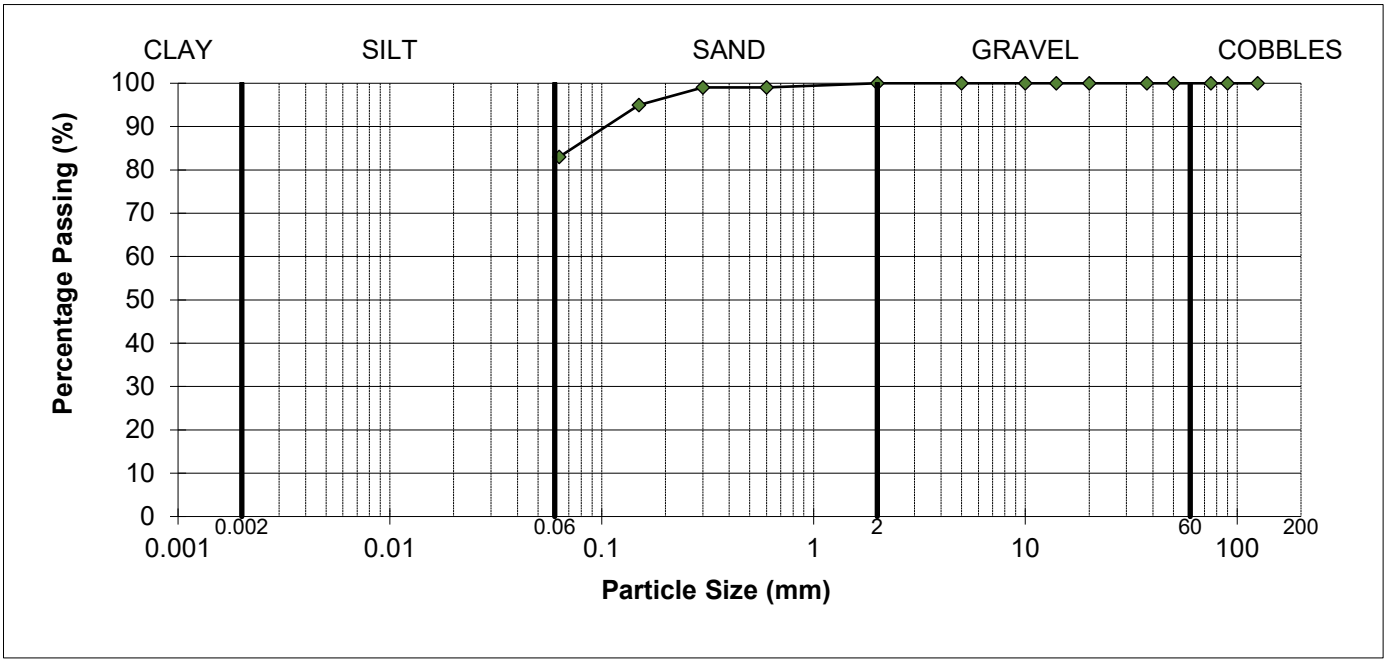
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP163 B 1.4 | DATE SAMPLED | 12-Jan-22 |
| LAB SAMPLE No | 109349 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 14-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Brown sandy SILT |
| ADVISED SOURCE | Site Investigation Sample |

| Sieve Size (mm) | % Passing (%) | Specification (%) | Sieve Size (mm) | % Passing (%) | Specification (%) |
|---|---|---|---|---|---|
| 125 | 100 | | 10 | 100 | |
| 90 | 100 | | 5 | 100 | |
| 75 | 100 | | 2 | 100 | |
| 50 | 100 | | 0.6 | 99 | |
| 37.5 | 100 | | 0.3 | 99 | |
| 20 | 100 | | 0.15 | 95 | |
| 14 | 100 | | 0.063 | 83 | |




REMARKS
As received moisture content = 22%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)  DATE 24-Feb-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870  FAX 0161 475 0871


UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

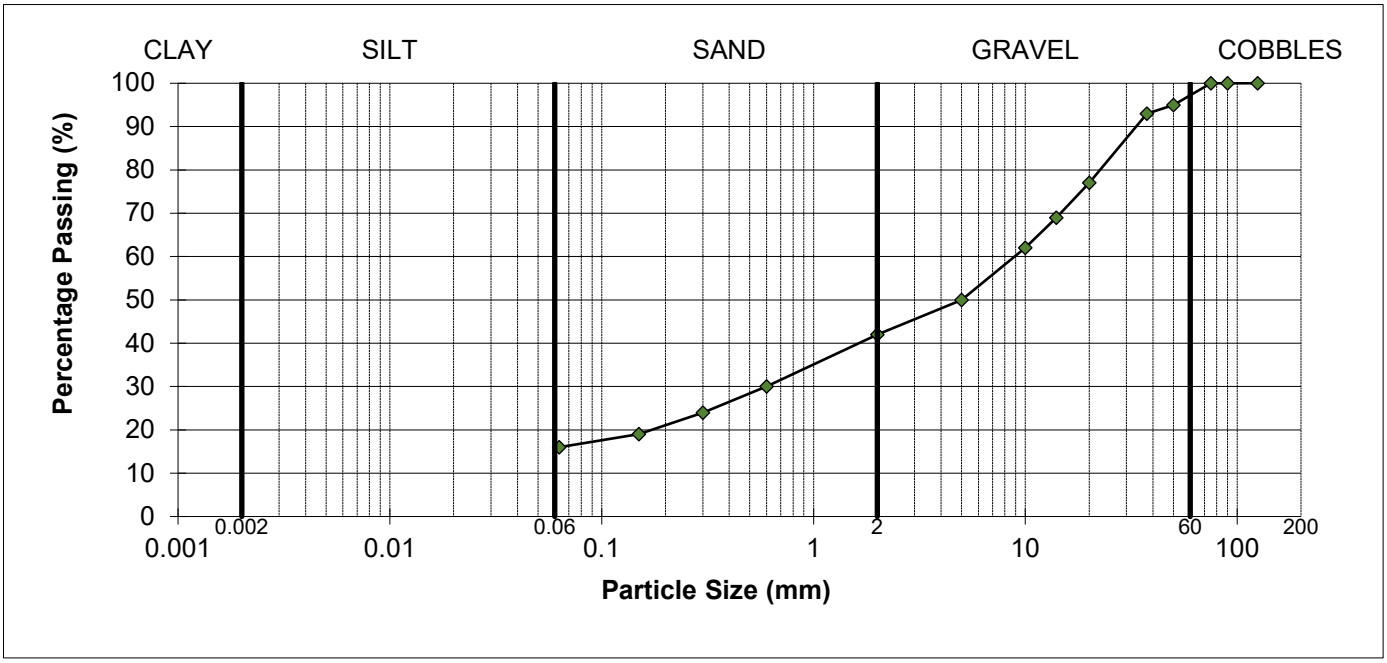
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP118 B 1.00 | DATE SAMPLED | 10-Jan-22 |
| LAB SAMPLE No | 109351 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 14-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | MADE GROUND |
| ADVISED SOURCE | Site Investigation Sample |

| Sieve Size (mm) | % Passing (%) | Specification (%) | Sieve Size (mm) | % Passing (%) | Specification (%) |
|---|---|---|---|---|---|
| 125 | 100 | | 10 | 62 | |
| 90 | 100 | | 5 | 50 | |
| 75 | 100 | | 2 | 42 | |
| 50 | 95 | | 0.6 | 30 | |
| 37.5 | 93 | | 0.3 | 24 | |
| 20 | 77 | | 0.15 | 19 | |
| 14 | 69 | | 0.063 | 16 | |




REMARKS
As received moisture content = 48%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)  DATE 24-Feb-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870  FAX 0161 475 0871


UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

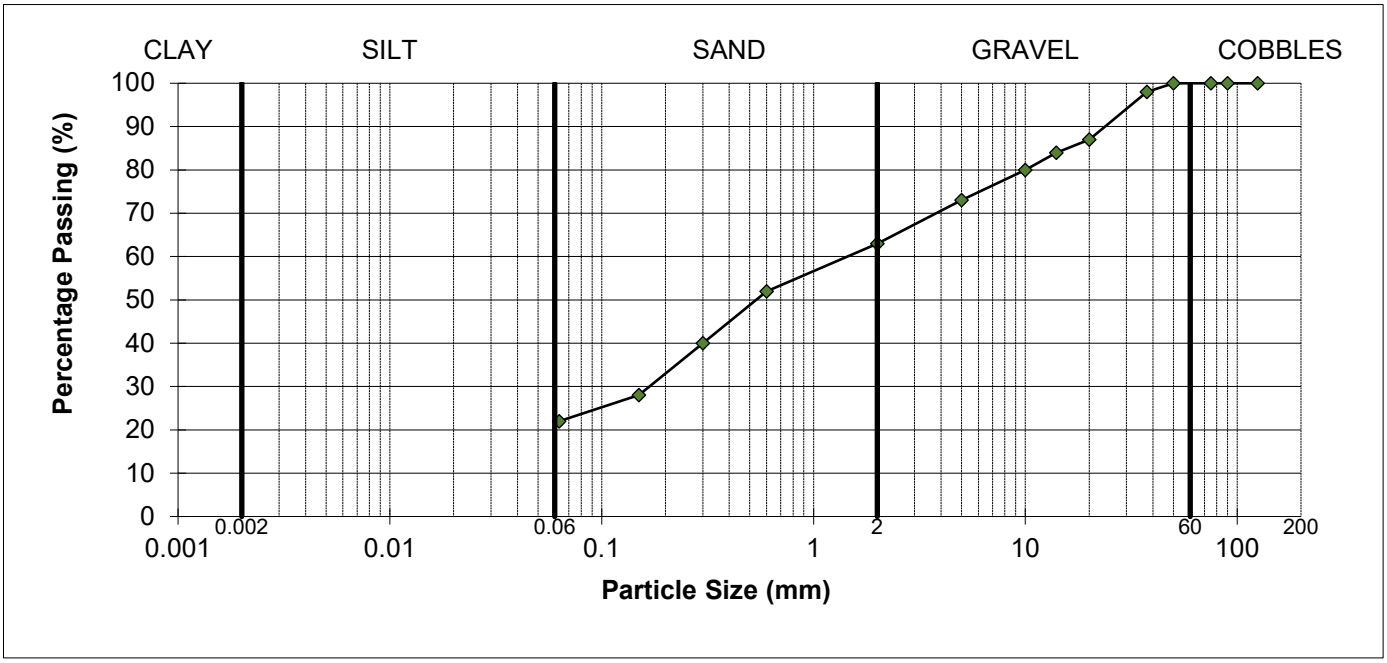
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP140 B 0.50 | DATE SAMPLED | 11-Jan-22 |
| LAB SAMPLE No | 109354 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 14-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | MADE GROUND |
| ADVISED SOURCE | Site Investigation Sample |

| Sieve Size (mm) | % Passing (%) | Specification (%) | Sieve Size (mm) | % Passing (%) | Specification (%) |
|---|---|---|---|---|---|
| 125 | 100 | | 10 | 80 | |
| 90 | 100 | | 5 | 73 | |
| 75 | 100 | | 2 | 63 | |
| 50 | 100 | | 0.6 | 52 | |
| 37.5 | 98 | | 0.3 | 40 | |
| 20 | 87 | | 0.15 | 28 | |
| 14 | 84 | | 0.063 | 22 | |




REMARKS
As received moisture content = 48%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)  DATE 24-Feb-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870  FAX 0161 475 0871


UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

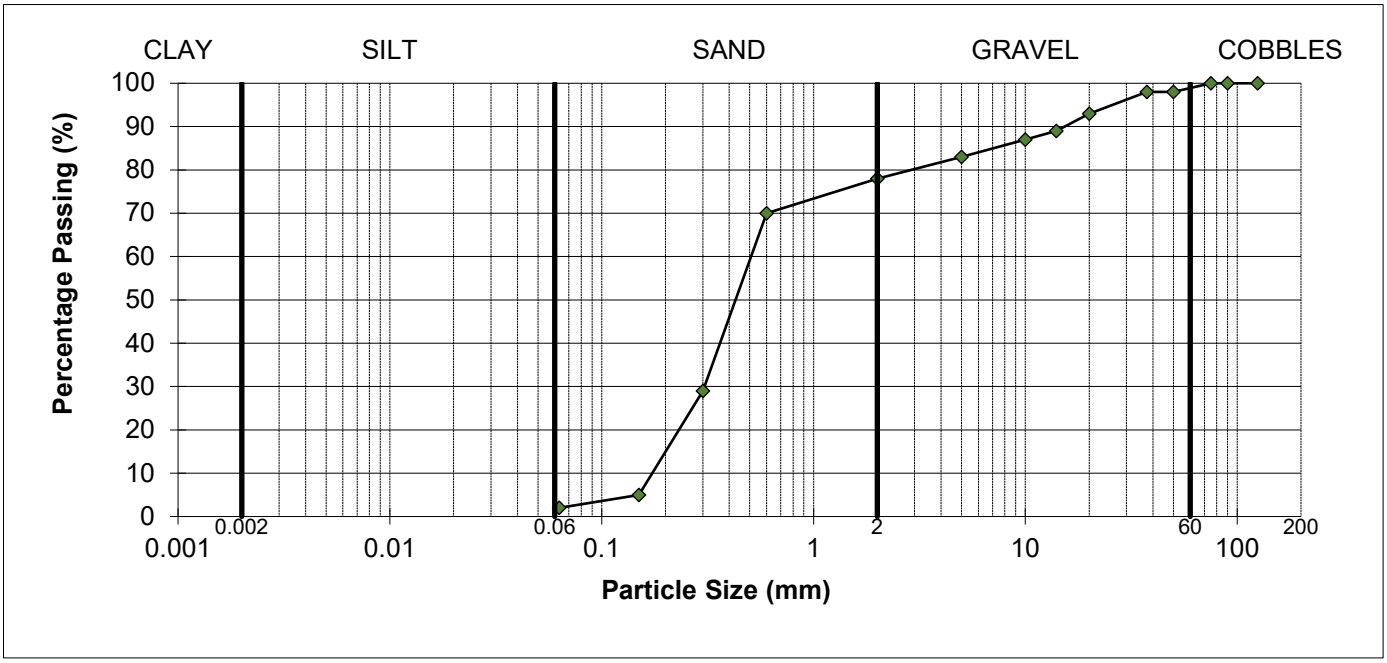
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP152 B 0.50 | DATE SAMPLED | 12-Jan-22 |
| LAB SAMPLE No | 109356 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 14-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Brown slightly silty SAND with frequent gravel |
| ADVISED SOURCE | Site Investigation Sample |

| Sieve Size (mm) | % Passing (%) | Specification (%) | Sieve Size (mm) | % Passing (%) | Specification (%) |
|---|---|---|---|---|---|
| 125 | 100 | | 10 | 87 | |
| 90 | 100 | | 5 | 83 | |
| 75 | 100 | | 2 | 78 | |
| 50 | 98 | | 0.6 | 70 | |
| 37.5 | 98 | | 0.3 | 29 | |
| 20 | 93 | | 0.15 | 5 | |
| 14 | 89 | | 0.063 | 2 | |




REMARKS
As received moisture content = 14%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)  DATE 24-Feb-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870  FAX 0161 475 0871


UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

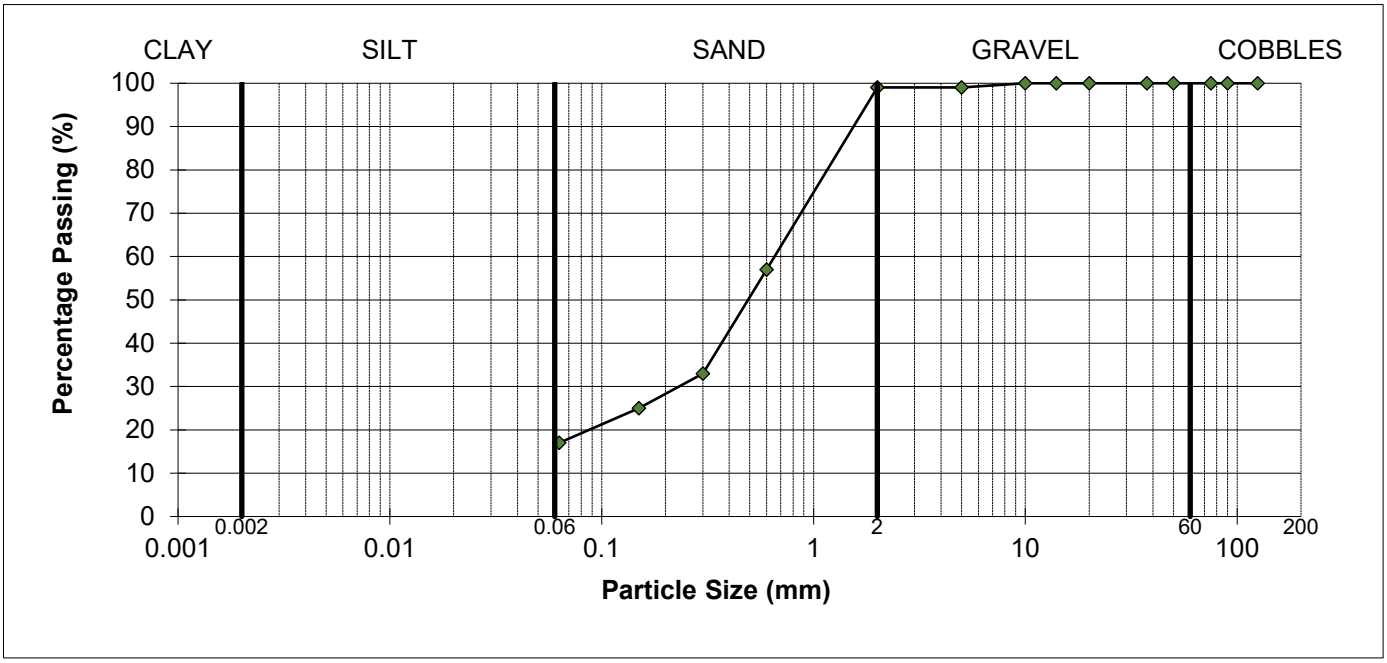
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP1108 B 1.20 | DATE SAMPLED | 25-Jan-22 |
| LAB SAMPLE No | 109360 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 14-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Brown silty SAND with rare gravel |
| ADVISED SOURCE | Site Investigation Sample |

| Sieve Size (mm) | % Passing (%) | Specification (%) | Sieve Size (mm) | % Passing (%) | Specification (%) |
|---|---|---|---|---|---|
| 125 | 100 | | 10 | 100 | |
| 90 | 100 | | 5 | 99 | |
| 75 | 100 | | 2 | 99 | |
| 50 | 100 | | 0.6 | 57 | |
| 37.5 | 100 | | 0.3 | 33 | |
| 20 | 100 | | 0.15 | 25 | |
| 14 | 100 | | 0.063 | 17 | |




REMARKS
As received moisture content = 14%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)  DATE 24-Feb-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870  FAX 0161 475 0871


UKAS TESTING 1580

## TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS 1377: PART 2: Clause 9.2: 1990

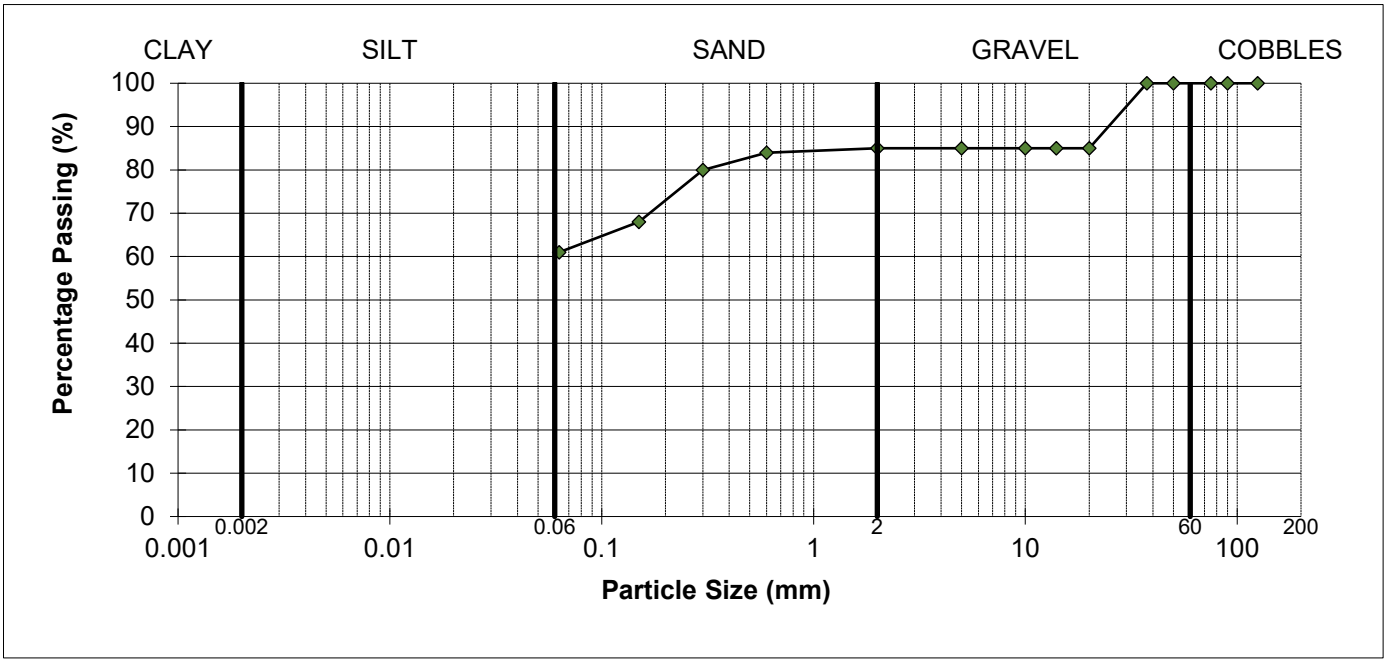
Determination of Moisture Content in accordance with BS 1377: PART 2: Clause 3: 1990 (Oven Dry)

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP1119 B 1 | DATE SAMPLED | 24-Jan-22 |
| LAB SAMPLE No | 109362 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 14-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Firm brown silty sandy CLAY with occasional gravel |
| ADVISED SOURCE | Site Investigation Sample |

| Sieve Size (mm) | % Passing (%) | Specification (%) | Sieve Size (mm) | % Passing (%) | Specification (%) |
|---|---|---|---|---|---|
| 125 | 100 | | 10 | 85 | |
| 90 | 100 | | 5 | 85 | |
| 75 | 100 | | 2 | 85 | |
| 50 | 100 | | 0.6 | 84 | |
| 37.5 | 100 | | 0.3 | 80 | |
| 20 | 85 | | 0.15 | 68 | |
| 14 | 85 | | 0.063 | 61 | |




REMARKS
As received moisture content = 23%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager)  DATE 24-Feb-22

form omcram

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

## TEST CERTIFICATE

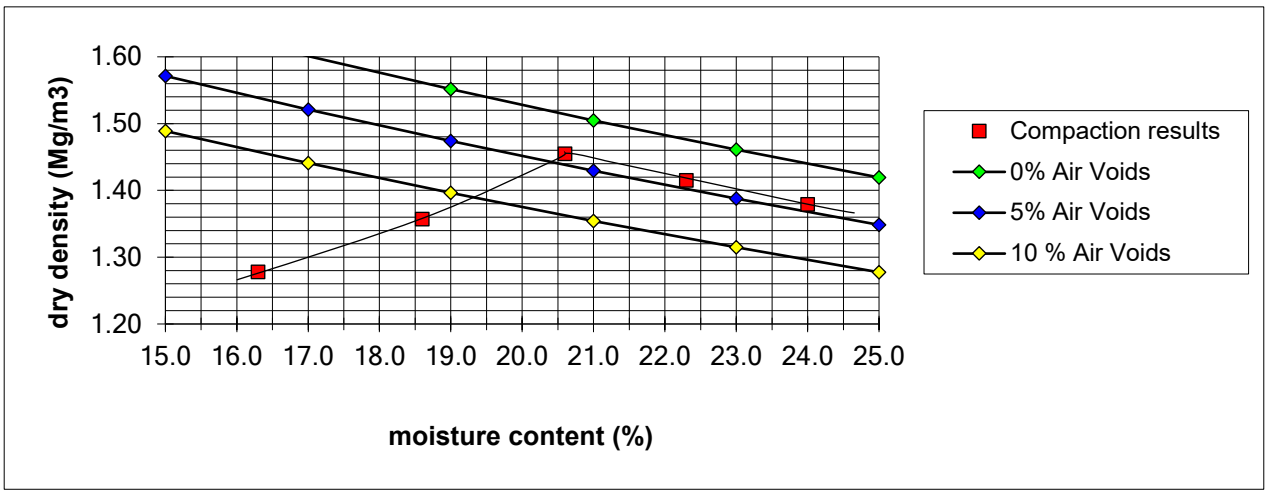
DRY DENSITY/MOISTURE CONTENT RELATIONSHIP 2.5kg RAMMER
BS 1377: PART 4: 1990
PARTICLE DENSITY METHOD BS 1377: PART 2: 1990 Clause 8.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP117 B 1 | DATE SAMPLED | 10-Jan-22 |
| LAB SAMPLE No | 109348 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 17-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | MADE GROUND |
| ADVISED SOURCE | Site Investigation Sample |
| PRE TREATMENT | Air Dried/Single Sample |

| Point Number | | Moisture Content (%) | Dry Density (Mg/m3) |
|---|---|---|---|
| 1 | | 16.3 | 1.278 |
| 2 | | 18.6 | 1.357 |
| 3 | | 20.6 | 1.455 |
| 4 | | 22.3 | 1.415 |
| 5 | | 24.0 | 1.379 |
| | Optimum | 21.0 | |
| | Maximum | | 1.45 |
| | Particle Density | 2.2 (Assumed) | |




REMARKS/ABNORMALITIES
Percentage of material retained on 37.5mm sieve = 2%
Percentage of material retained on 20mm sieve = 17%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 24-Feb-22

form omcram

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

## TEST CERTIFICATE

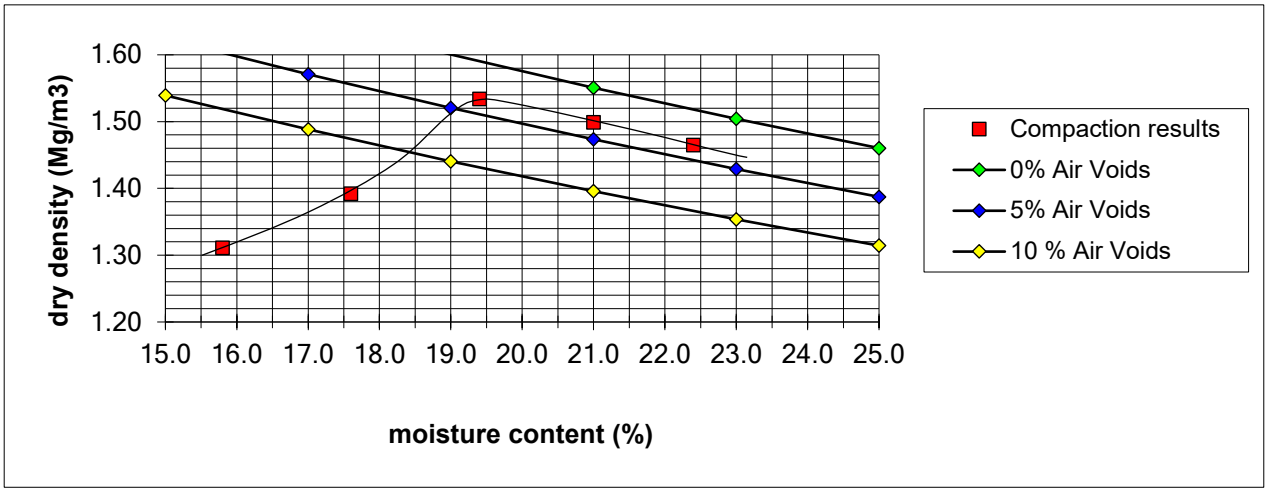
DRY DENSITY/MOISTURE CONTENT RELATIONSHIP 2.5kg RAMMER
BS 1377: PART 4: 1990
PARTICLE DENSITY METHOD BS 1377: PART 2: 1990 Clause 8.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP140 B 0.50 | DATE SAMPLED | 11-Jan-22 |
| LAB SAMPLE No | 109354 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 17-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | MADE GROUND |
| ADVISED SOURCE | Site Investigation Sample |
| PRE TREATMENT | Air Dried/Single Sample |

| Point Number | | Moisture Content (%) | Dry Density (Mg/m3) |
|---|---|---|---|
| 1 | | 15.8 | 1.311 |
| 2 | | 17.6 | 1.392 |
| 3 | | 19.4 | 1.534 |
| 4 | | 21.0 | 1.499 |
| 5 | | 22.4 | 1.465 |
| | Optimum | 19.0 | |
| | Maximum | | 1.53 |
| | Particle Density | 2.3 (Assumed) | |




REMARKS/ABNORMALITIES
Percentage of material retained on 37.5mm sieve = 2%
Percentage of material retained on 20mm sieve = 13%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 24-Feb-22

form omcram

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

## TEST CERTIFICATE

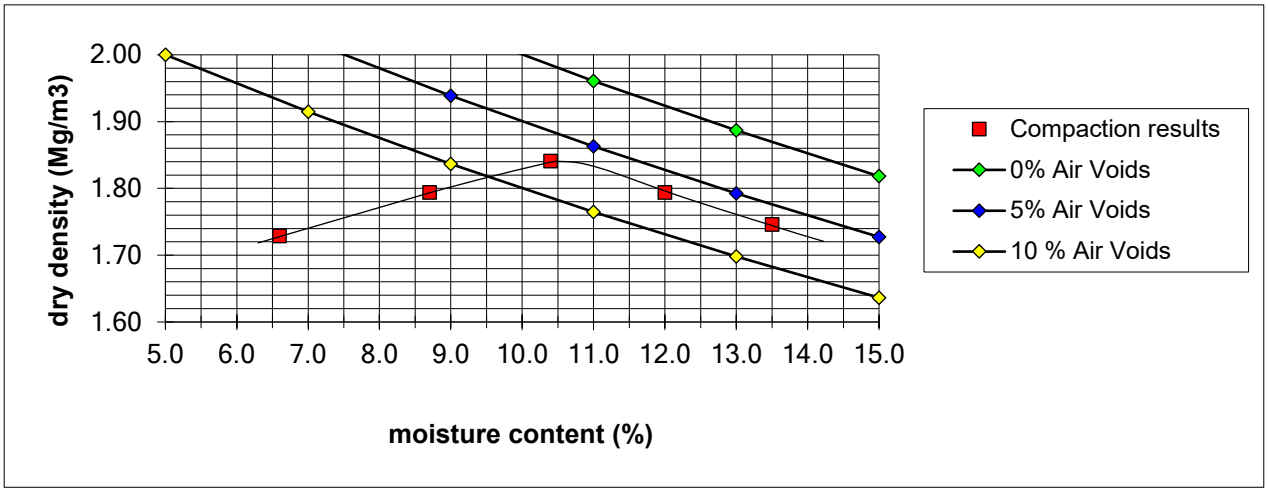
DRY DENSITY/MOISTURE CONTENT RELATIONSHIP 2.5kg RAMMER
BS 1377: PART 4: 1990
PARTICLE DENSITY METHOD BS 1377: PART 2: 1990 Clause 8.2

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/25B |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | TP152 B 0.50 | DATE SAMPLED | 12-Jan-22 |
| LAB SAMPLE No | 109356 | DATE RECEIVED | 09-Feb-22 |
| DATE TESTED | 17-Feb-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Brown slightly silty SAND with frequent gravel |
| ADVISED SOURCE | Site Investigation Sample |
| PRE TREATMENT | Air Dried/Single Sample |

| Point Number | | Moisture Content (%) | Dry Density (Mg/m3) |
|---|---|---|---|
| 1 | | 6.6 | 1.729 |
| 2 | | 8.7 | 1.794 |
| 3 | | 10.4 | 1.841 |
| 4 | | 12.0 | 1.794 |
| 5 | | 13.5 | 1.746 |
| | Optimum | 11.0 | |
| | Maximum | | 1.84 |
| | Particle Density | 2.5 (Assumed) | |




REMARKS/ABNORMALITIES
Percentage of material retained on 37.5mm sieve = 2%
Percentage of material retained on 20mm sieve = 7%

SIGNED

NAME O.P. Davies BA (Hons) (Laboratory Manager) DATE 24-Feb-22

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

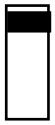

## TEST CERTIFICATE

DETERMINATION OF THE ONE-DIMENSIONAL CONSOLIDATION PROPERTIES

BS 1377 : PART 5 : Clause 3 : 1990

| | |
|---|---|
| **CLIENT** | e3p |
| **SITE** | Cherryfield Drive |
| **JOB NUMBER** | MRN 4287/25B |

| | | | |
|---|---|---|---|
| **SAMPLE LABEL** | WS116 U 0.50-1 | **DATE SAMPLED** | 11-Jan-22 |
| **LAB SAMPLE No.** | 109353 | **DATE RECEIVED** | 09-Feb-22 |
| **DATE TESTED** | 17-Feb-22 | **SAMPLED BY** | Client |
| **MATERIAL** | Stiff brown silty sandy CLAY | | |
| **ADVISED SOURCE** | Site Investigation Sample | | |

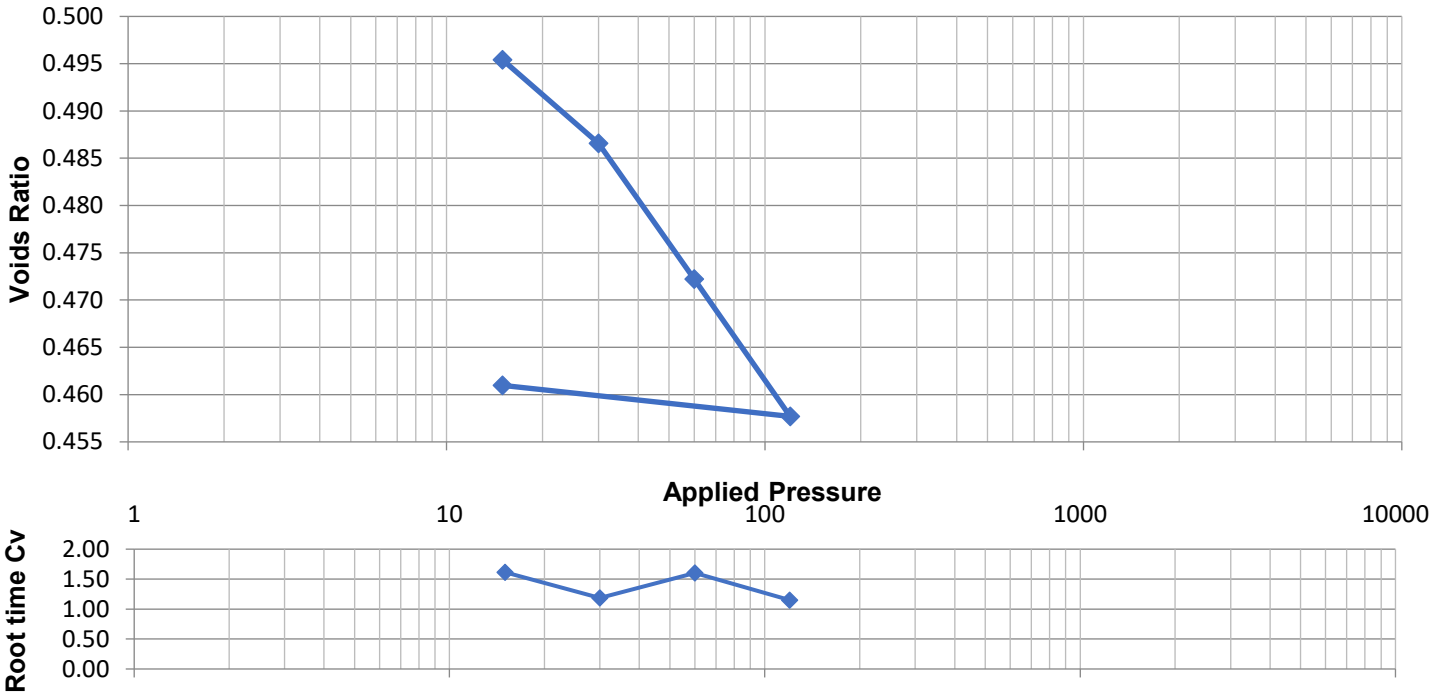
Specimen Location 

| | | | |
|---|---|---|---|
| Sample Length (mm) | 470 | Specimen depth from top of Sample (mm) | 50 |
| Sample Orientation | Vertical | Specimen Condition | Undisturbed |

### INITIAL CONDITIONS

| | | | | | |
|---|---|---|---|---|---|
| Height | 20.2 | mm | Particle density | 2.65 | Ass |
| Diameter | 74.8 | mm | Initial void ratio | 0.51 | |
| Weight wet | 184.0 | g | Deg. of sat. | 95 | % |
| Moist. cont. | 18 | % | Swell. press. | 5 | kN/m2 |
| Bulk Density | 2.08 | Mg/m3 | Dry density | 1.76 | Mg/m3 |

| Load No. | Applied Pressure kPa | Sample Height mm | Void Ratio | Mv m2/MN | Temp °C | Cv t90 root m2/yr | Cv t50 log m2/yr |
|---|---|---|---|---|---|---|---|
| 1 | 15 | 19.99 | 0.495 | 0.62 | 20 | 1.61 | 1.01 |
| 2 | 30 | 19.87 | 0.487 | 0.40 | 20 | 1.19 | 0.58 |
| 3 | 60 | 19.68 | 0.472 | 0.33 | 20 | 1.60 | 1.29 |
| 4 | 120 | 19.48 | 0.458 | 0.17 | 20 | 1.15 | 1.48 |
| 5 | 15 | 19.53 | 0.461 | 0.02 | 20 | | |
| 6 | | | | | | | |
| 7 | | | | | | | |




Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 24 February 2022

**MURRAY RIX**
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

# TEST CERTIFICATE

DETERMINATION OF THE ONE-DIMENSIONAL CONSOLIDATION PROPERTIES
BS 1377 : PART 5 : Clause 3 : 1990

| | |
|---|---|
| **CLIENT** | e3p |
| **SITE** | Cherryfield Drive |
| **JOB NUMBER** | MRN 4287/25B |

| | | | |
|---|---|---|---|
| **SAMPLE LABEL** | WS138 U 2.00-3.00 | **DATE SAMPLED** | 12-Jan-22 |
| **LAB SAMPLE No.** | 109359 | **DATE RECEIVED** | 09-Feb-22 |
| **DATE TESTED** | 17-Feb-22 | **SAMPLED BY** | Client |
| **MATERIAL** | Stiff brown silty sandy CLAY | | |
| **ADVISED SOURCE** | Site Investigation Sample | | |

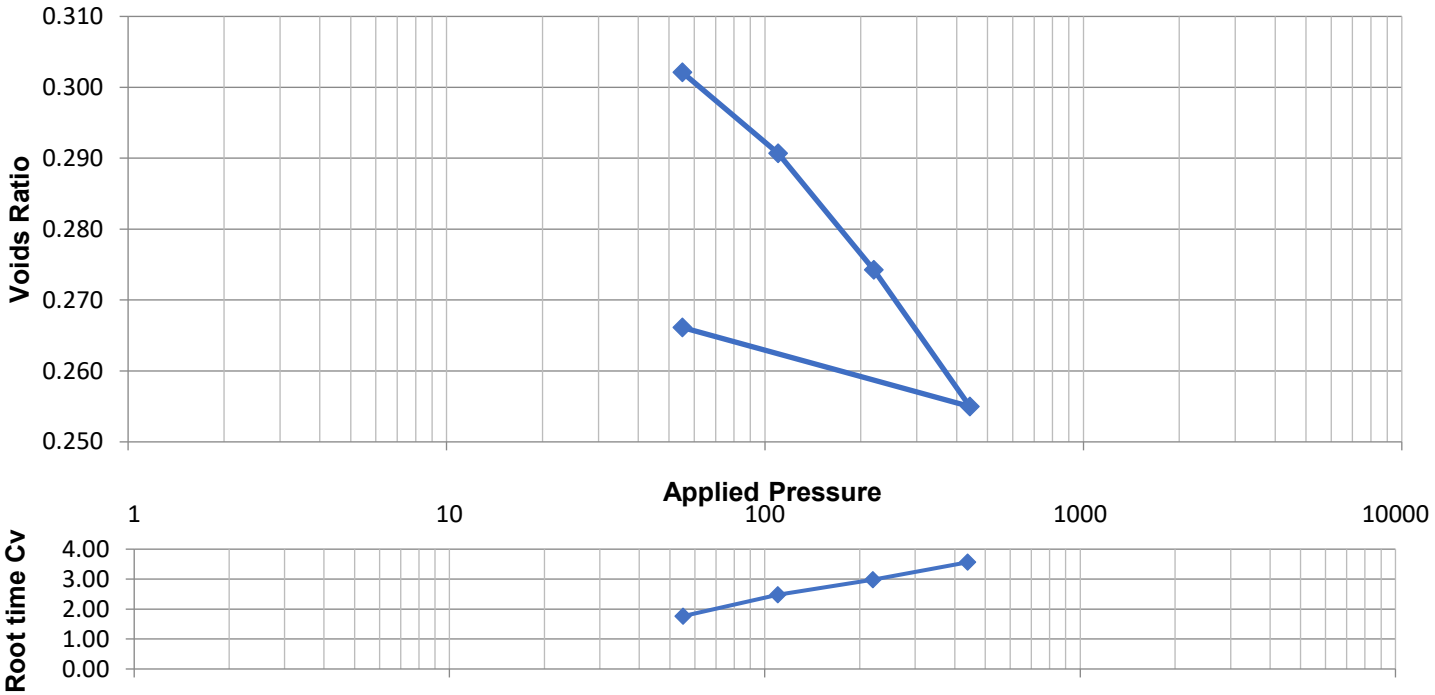
Specimen Location

| | | | |
|---|---|---|---|
| Sample Length (mm) | 500 | Specimen depth from top of Sample (mm) | 150 |
| Sample Orientation | Vertical | Specimen Condition | Undisturbed |

## INITIAL CONDITIONS

| | | | | | |
|---|---|---|---|---|---|
| Height | 20.3 | mm | Particle density | 2.65 | Ass |
| Diameter | 74.9 | mm | Initial void ratio | 0.33 | |
| Weight wet | 199.2 | g | Deg. of sat. | 97 | % |
| Moist. cont. | 12 | % | Swell. press. | 5 | kN/m2 |
| Bulk Density | 2.23 | Mg/m3 | Dry density | 1.99 | Mg/m3 |

| Load No. | Applied Pressure kPa | Sample Height mm | Void Ratio | Mv m2/MN | Temp °C | Cv t90 root m2/yr | Cv t50 log m2/yr |
|---|---|---|---|---|---|---|---|
| 1 | 55 | 19.84 | 0.302 | 0.39 | 20 | 1.76 | 1.76 |
| 2 | 110 | 19.66 | 0.291 | 0.16 | 20 | 2.48 | 2.41 |
| 3 | 220 | 19.41 | 0.274 | 0.12 | 20 | 2.98 | 2.77 |
| 4 | 440 | 19.12 | 0.255 | 0.07 | 20 | 3.56 | 3.04 |
| 5 | 55 | 19.29 | 0.266 | 0.02 | 20 | | |
| 6 | | | | | | | |
| 7 | | | | | | | |




Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 24 February 2022

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS 1377 : PART 7: Clause 8 Single Stage

| | |
|---|---|
| **CLIENT** | e3p |
| **SITE** | Cherryfield Drive |
| **JOB NUMBER** | MRN 4287/25B |

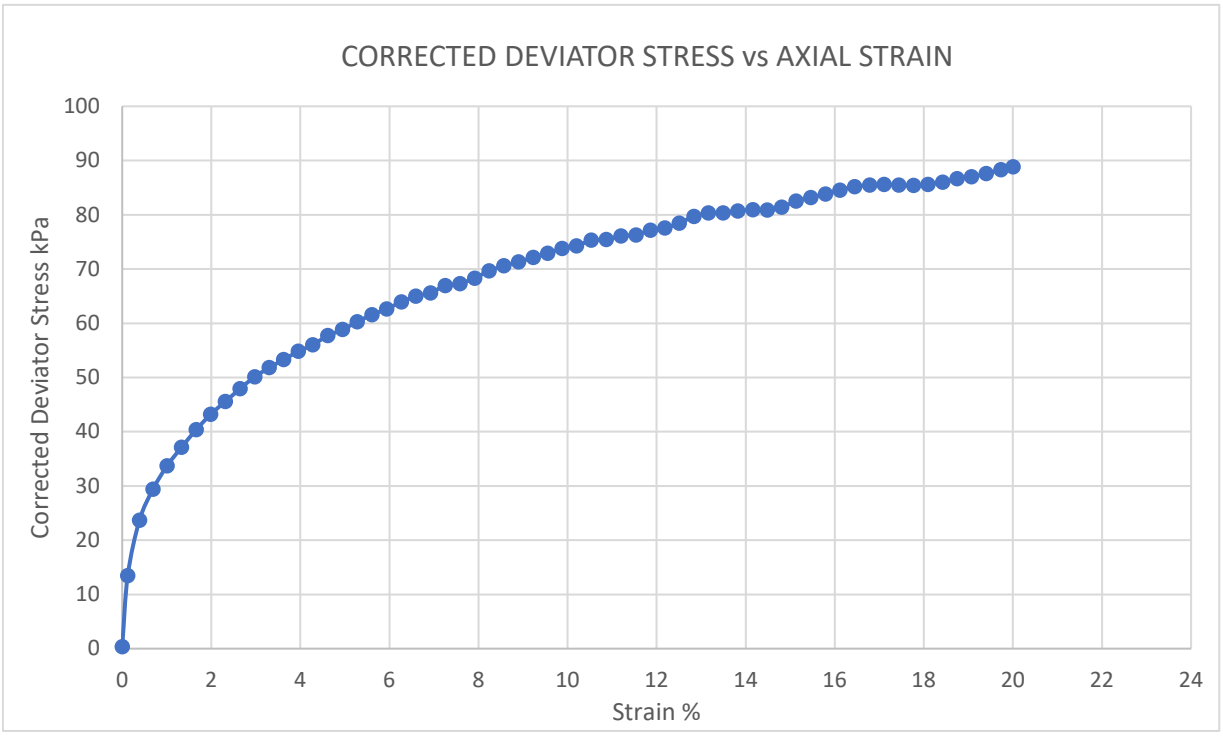
| | | | |
|---|---|---|---|
| **SAMPLE LABEL** | WS113 U 1.5-2 | **DATE SAMPLED** | 11-Jan-22 |
| **LAB SAMPLE No.** | 109343 | **DATE RECEIVED** | 09-Feb-22 |
| **DATE TESTED** | 23-Feb-22 | **SAMPLED BY** | Client |
| **MATERIAL** | Firm brown silty sandy CLAY | | |
| **ADVISED SOURCE** | Site Investigation Sample | | |

### INITIAL CONDITIONS

Specimen Location

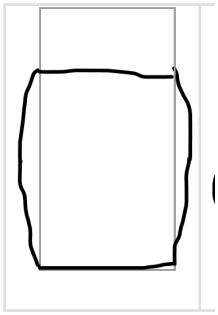


| | | | |
|---|---|---|---|
| Sample Length (mm) | 690 | Specimen depth from top of Sample (mm) | 150 |
| Sample Orientation | Vertical | Specimen Condition | Undisturbed |
| Specimen Length (mm) | 147 | Specimen Moisture Content (%) | 16 |
| Specimen Diameter (mm) | 72 | Specimen Bulk Density (Mg/m3) | 2.26 |
| Membrane Thickness (mm) | 0.4 | Specimen Dry Density (Mg/m3) | 1.94 |
| Membrane Correction | 2.10 | | |




**TEST TYPE**
SINGLE STAGE

**SKETCH OF SPECIMEN AT FAILURE**



PLASTIC

| Cell Pressure (kPa) | Failure Strain (%) | Rate of Strain (%/min) | Corrected Deviator Stress (kPa) | Shear Strength Cu (kPa) |
|---|---|---|---|---|
| 35 | 20 | 2 | 88 | 44 |

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager)

Signed 

Date 24 February 2022

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

## TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS 1377 : PART 7: Clause 8 Single Stage

| | |
|---|---|
| **CLIENT** | e3p |
| **SITE** | Cherryfield Drive |
| **JOB NUMBER** | MRN 4287/25B |

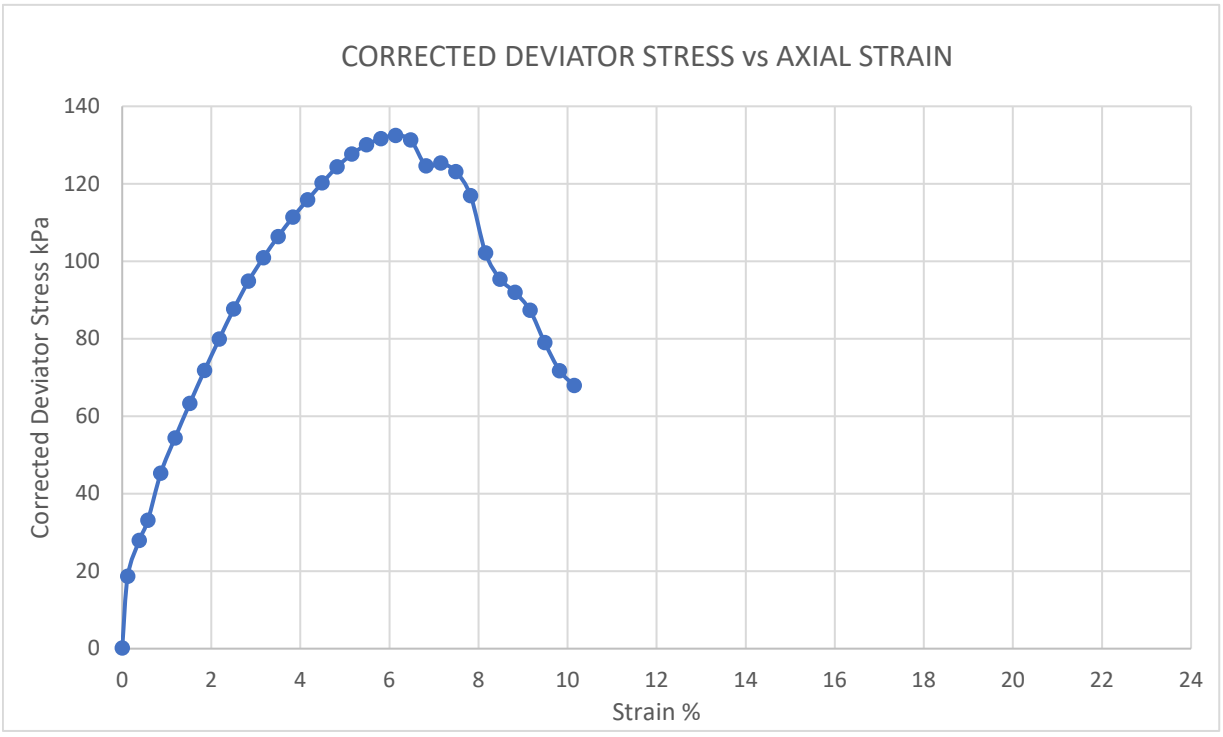
| | | | |
|---|---|---|---|
| **SAMPLE LABEL** | WS143 U 0.5-1 | **DATE SAMPLED** | 13-Jan-22 |
| **LAB SAMPLE No.** | 109347 | **DATE RECEIVED** | 09-Feb-22 |
| **DATE TESTED** | 23-Feb-22 | **SAMPLED BY** | Client |
| **MATERIAL** | Stiff brown silty sandy CLAY | | |
| **ADVISED SOURCE** | Site Investigation Sample | | |

### INITIAL CONDITIONS

Specimen Location

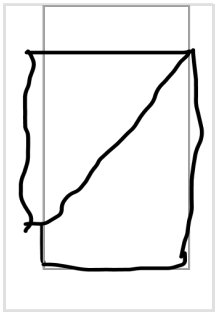


| | | | |
|---|---|---|---|
| Sample Length (mm) | 480 | Specimen depth from top of Sample (mm) | 270 |
| Sample Orientation | Vertical | Specimen Condition | Undisturbed |
| Specimen Length (mm) | 161 | Specimen Moisture Content (%) | 22 |
| Specimen Diameter (mm) | 81 | Specimen Bulk Density (Mg/m3) | 2.18 |
| Membrane Thickness (mm) | 0.4 | Specimen Dry Density (Mg/m3) | 1.79 |
| Membrane Correction | 1.14 | | |




**TEST TYPE**
SINGLE STAGE

**SKETCH OF SPECIMEN AT FAILURE**



SIMPLE_SHEAR

| Cell Pressure (kPa) | Failure Strain (%) | Rate of Strain (%/min) | Corrected Deviator Stress (kPa) | Shear Strength Cu (kPa) |
|---|---|---|---|---|
| 15 | 6 | 2 | 132 | 66 |

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 24 February 2022

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS 1377 : PART 7: Clause 8 Single Stage

| | |
|---|---|
| **CLIENT** | e3p |
| **SITE** | Cherryfield Drive |
| **JOB NUMBER** | MRN 4287/25B |

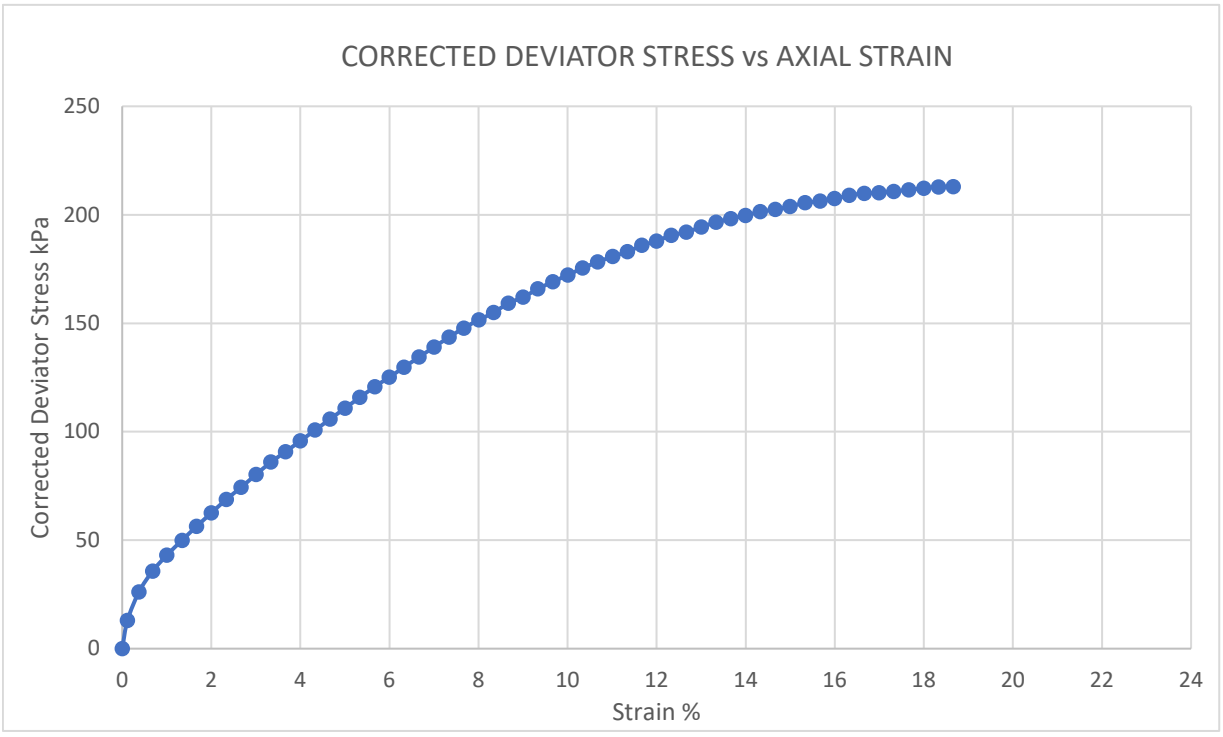
| | | | |
|---|---|---|---|
| **SAMPLE LABEL** | WS116 U 0.50-1 | **DATE SAMPLED** | 11-Jan-22 |
| **LAB SAMPLE No.** | 109353 | **DATE RECEIVED** | 09-Feb-22 |
| **DATE TESTED** | 23-Feb-22 | **SAMPLED BY** | Client |
| **MATERIAL** | Stiff brown silty sandy CLAY | | |
| **ADVISED SOURCE** | Site Investigation Sample | | |

### INITIAL CONDITIONS

Specimen Location

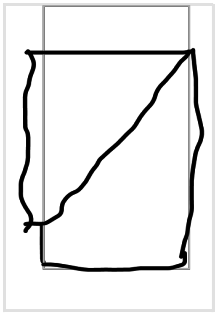


| | | | |
|---|---|---|---|
| Sample Length (mm) | 470 | Specimen depth from top of Sample (mm) | 120 |
| Sample Orientation | Vertical | Specimen Condition | Undisturbed |
| Specimen Length (mm) | 160 | Specimen Moisture Content (%) | 18 |
| Specimen Diameter (mm) | 79 | Specimen Bulk Density (Mg/m3) | 2.32 |
| Membrane Thickness (mm) | 0.4 | Specimen Dry Density (Mg/m3) | 1.96 |
| Membrane Correction | 1.91 | | |




**TEST TYPE**
SINGLE STAGE

**SKETCH OF SPECIMEN AT FAILURE**



SIMPLE_SHEAR

| Cell Pressure (kPa) | Failure Strain (%) | Rate of Strain (%/min) | Corrected Deviator Stress (kPa) | Shear Strength Cu (kPa) |
|---|---|---|---|---|
| 15 | 20 | 2 | 215 | 107 |

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 24 February 2022

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS 1377 : PART 7: Clause 8 Single Stage

| | |
|---|---|
| **CLIENT** | e3p |
| **SITE** | Cherryfield Drive |
| **JOB NUMBER** | MRN 4287/25B |

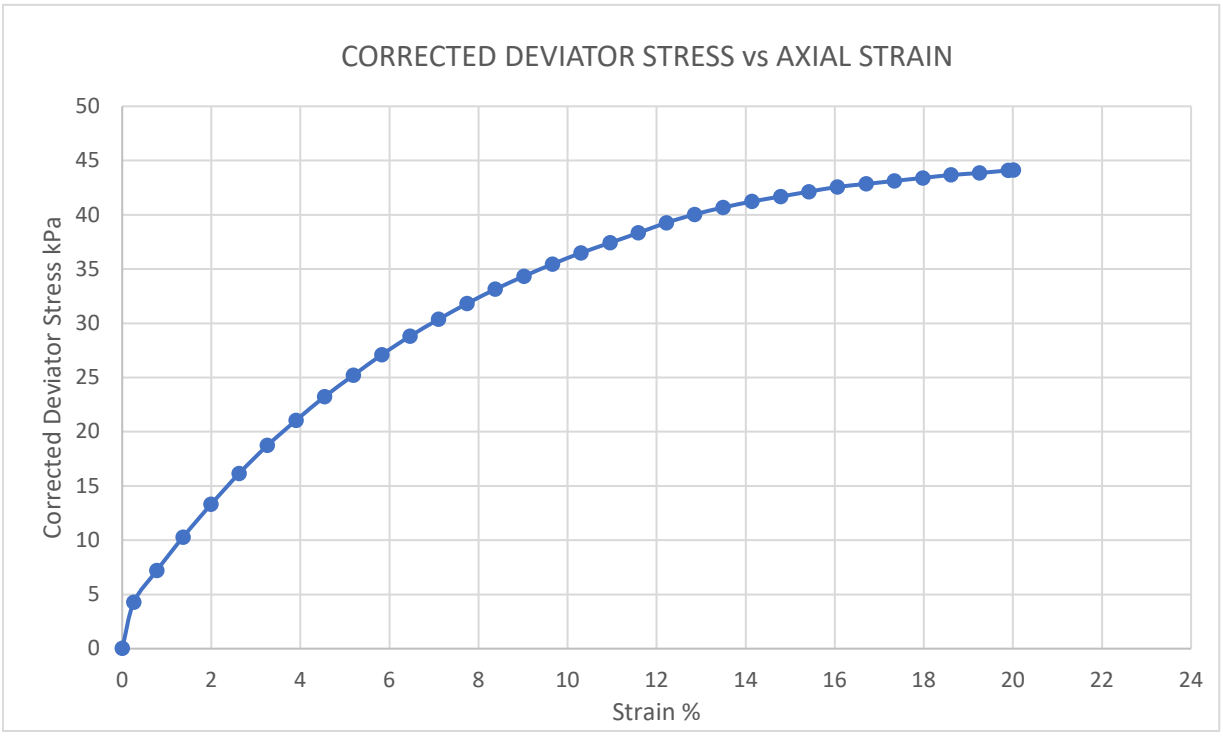
| | | | |
|---|---|---|---|
| **SAMPLE LABEL** | WS130 U 1.50-2.00 | **DATE SAMPLED** | 12-Jan-22 |
| **LAB SAMPLE No.** | 109357 | **DATE RECEIVED** | 09-Feb-22 |
| **DATE TESTED** | 23-Feb-22 | **SAMPLED BY** | Client |
| **MATERIAL** | Soft brown silty sandy CLAY | | |
| **ADVISED SOURCE** | Site Investigation Sample | | |

### INITIAL CONDITIONS

Specimen Location

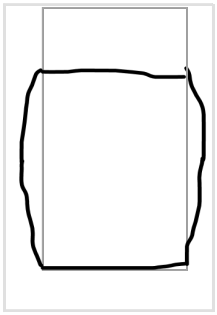


| | | | |
|---|---|---|---|
| Sample Length (mm) | 500 | Specimen depth from top of Sample (mm) | 300 |
| Sample Orientation | Vertical | Specimen Condition | Undisturbed |
| Specimen Length (mm) | 141 | Specimen Moisture Content (%) | 15 |
| Specimen Diameter (mm) | 73 | Specimen Bulk Density (Mg/m3) | 1.22 |
| Membrane Thickness (mm) | 0.4 | Specimen Dry Density (Mg/m3) | 1.06 |
| Membrane Correction | 1.96 | | |




**TEST TYPE**
SINGLE STAGE

**SKETCH OF SPECIMEN AT FAILURE**



PLASTIC

| Cell Pressure (kPa) | Failure Strain (%) | Rate of Strain (%/min) | Corrected Deviator Stress (kPa) | Shear Strength Cu (kPa) |
|---|---|---|---|---|
| 35 | 20 | 2 | 44 | 22 |

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed Date 24 February 2022

# MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

BS 1377 : PART 7: Clause 8 Single Stage

| | |
|---|---|
| **CLIENT** | e3p |
| **SITE** | Cherryfield Drive |
| **JOB NUMBER** | MRN 4287/25B |

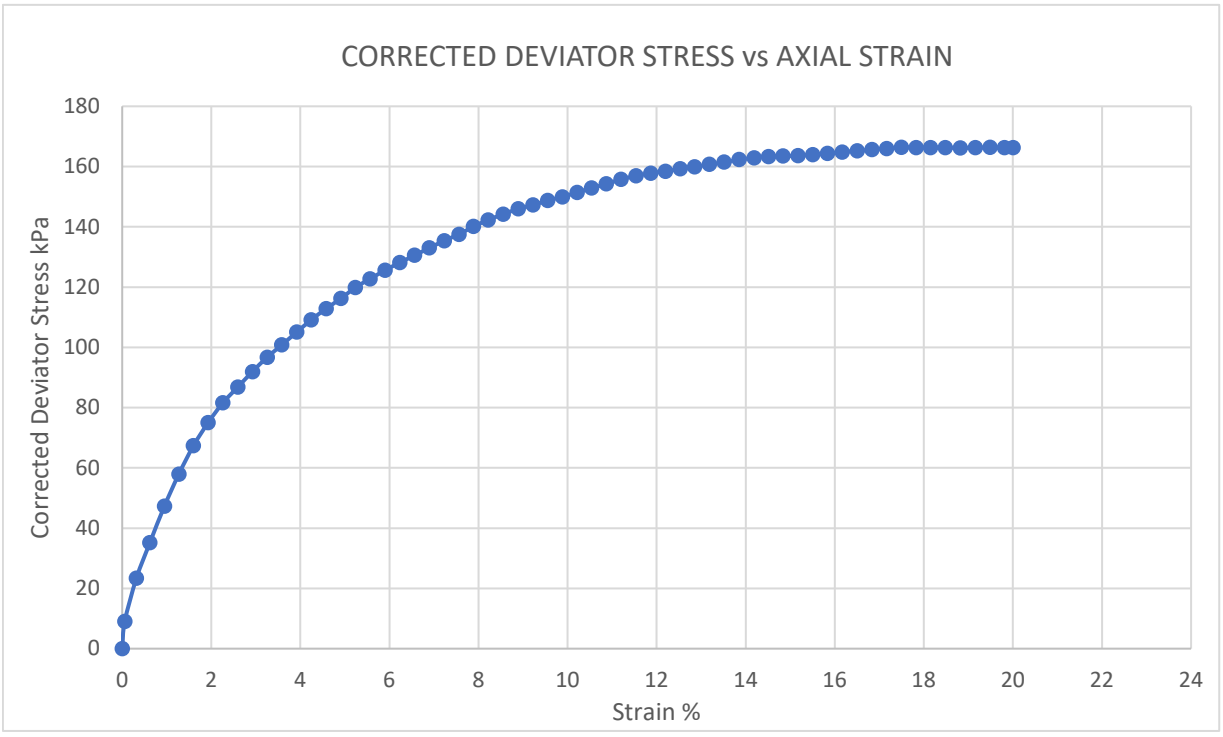
| | | | |
|---|---|---|---|
| **SAMPLE LABEL** | WS159 U 0.5-1 | **DATE SAMPLED** | 24-Jan-22 |
| **LAB SAMPLE No.** | 109363 | **DATE RECEIVED** | 09-Feb-22 |
| **DATE TESTED** | 23-Feb-22 | **SAMPLED BY** | Client |
| **MATERIAL** | Soft brown silty sandy CLAY | | |
| **ADVISED SOURCE** | Site Investigation Sample | | |

### INITIAL CONDITIONS

Specimen Location

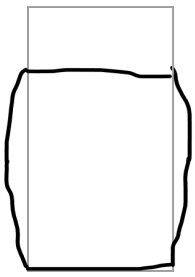


| | | | |
|---|---|---|---|
| Sample Length (mm) | 500 | Specimen depth from top of Sample (mm) | 120 |
| Sample Orientation | Vertical | Specimen Condition | Undisturbed |
| Specimen Length (mm) | 171 | Specimen Moisture Content (%) | 16 |
| Specimen Diameter (mm) | 83 | Specimen Bulk Density (Mg/m3) | 2.23 |
| Membrane Thickness (mm) | 0.4 | Specimen Dry Density (Mg/m3) | 1.92 |
| Membrane Correction | 1.83 | | |




**TEST TYPE**
SINGLE STAGE

**SKETCH OF SPECIMEN AT FAILURE**



PLASTIC

| Cell Pressure (kPa) | Failure Strain (%) | Rate of Strain (%/min) | Corrected Deviator Stress (kPa) | Shear Strength Cu (kPa) |
|---|---|---|---|---|
| 15 | 19 | 2 | 166 | 83 |

Remarks/Abnormalities

Name O.P Davies BA (Hons) (Laboratory Manager) Signed  Date 24 February 2022

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

# TEST REPORT

**Client** e3p

**Address** Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

**Contract** Cherryfield Drive

**Job Number** MRN 4287/27
**Date of Issue** 03 March 2022
**Pages** 1 of 11

Approved Signatories

S J Hutchings, O P Davies

Notes

1 All remaining samples and remnants from this contract will be disposed 28 days from the date of this report unless you notify us to the contrary.

2 Result certificates, in this report, not bearing a UKAS mark, are not included in our UKAS accreditation schedule.

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

4 Certified that the samples have been examined and tested in accordance with the terms of the contract/order and unless otherwise stated conform to the standards/specifications quoted.

5 The results included within the report are representative of the samples submitted for analysis.

6 This certificate should not be reproduced, except in full, without the express permission of the laboratory.

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS
ASTM D7012 - 14 Method C

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE REFERENCE | CP/RB101 6.70-6.91 | DATE RECEIVED | 01-Mar-22 |
| SAMPLE NUMBER | 109806 | DATE SAMPLED | Not advised |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

DIMENSIONS

| | | | |
|---|---|---|---|
| TESTED BY | SC | DIAMETER (mm) | 90 |
| LENGTH AFTER PREPARATION (mm) | 110 | LENGTH/DIAMETER RATIO | 1.22 |

| | | | |
|---|---|---|---|
| METHOD OF END PREPARATION | Saw / Grinding | TIME IN WATER PRIOR TO TEST | 0 Hours |
| DATE OF DRILLING | Not advised | DRILLED BY | Others |
| MATERIAL | Rock Core | SAMPLE LOCATION | Not advised |

| | |
|---|---|
| DESCRIPTION OF CORE AFTER TEST | Split vertically from top to bottom, with no visible end effects |

COMPRESSIVE STRENGTH

| | | | |
|---|---|---|---|
| LOAD AT FAILURE (kN) | 16.7 | MEASURED COMPRESSIVE STRENGTH (N/mm2) | 2.6 |

| | |
|---|---|
| COMPRESSIVE STRENGTH (MPa) | **2.6** |

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
Length/diameter ratio was outside the requirements of the Standard.

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS
ASTM D7012 - 14 Method C

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE REFERENCE | CP/RB101 7.50-7.96 | DATE RECEIVED | 01-Mar-22 |
| SAMPLE NUMBER | 109807 | DATE SAMPLED | Not advised |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

DIMENSIONS

| | | | |
|---|---|---|---|
| TESTED BY | SC | DIAMETER (mm) | 90 |
| LENGTH AFTER PREPARATION (mm) | 183 | LENGTH/DIAMETER RATIO | 2.03 |

| | | | |
|---|---|---|---|
| METHOD OF END PREPARATION | Saw / Grinding | TIME IN WATER PRIOR TO TEST | 0 Hours |
| DATE OF DRILLING | Not advised | DRILLED BY | Others |
| MATERIAL | Rock Core | SAMPLE LOCATION | Not advised |

| | |
|---|---|
| DESCRIPTION OF CORE AFTER TEST | Split vertically from top to bottom, with no visible end effects |

COMPRESSIVE STRENGTH

| | | | |
|---|---|---|---|
| LOAD AT FAILURE (kN) | 82.4 | MEASURED COMPRESSIVE STRENGTH (N/mm2) | 13.0 |

| | |
|---|---|
| COMPRESSIVE STRENGTH (MPa) | **13.0** |

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
None

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS
ASTM D7012 - 14 Method C

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE REFERENCE | CP/RB101 11.10-11.15 | DATE RECEIVED | 01-Mar-22 |
| SAMPLE NUMBER | 109809 | DATE SAMPLED | Not advised |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

DIMENSIONS

| | | | |
|---|---|---|---|
| TESTED BY | SC | DIAMETER (mm) | 90 |
| LENGTH AFTER PREPARATION (mm) | 127 | LENGTH/DIAMETER RATIO | 1.41 |

| | | | |
|---|---|---|---|
| METHOD OF END PREPARATION | Saw / Grinding | TIME IN WATER PRIOR TO TEST | 0 Hours |
| DATE OF DRILLING | Not advised | DRILLED BY | Others |
| MATERIAL | Rock Core | SAMPLE LOCATION | Not advised |

| | |
|---|---|
| DESCRIPTION OF CORE AFTER TEST | Split vertically from top to bottom, with no visible end effects |

COMPRESSIVE STRENGTH

| | | | |
|---|---|---|---|
| LOAD AT FAILURE (kN) | 29.4 | MEASURED COMPRESSIVE STRENGTH (N/mm2) | 4.6 |

| | |
|---|---|
| COMPRESSIVE STRENGTH (MPa) | **4.6** |

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
Length/diameter ratio was outside the requirements of the Standard.

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

## TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS

ASTM D7012 - 14 Method C

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE REFERENCE | CP/RB102 6.10-6.40 | DATE RECEIVED | 01-Mar-22 |
| SAMPLE NUMBER | 109811 | DATE SAMPLED | Not advised |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

DIMENSIONS

| | | | |
|---|---|---|---|
| TESTED BY | SC | DIAMETER (mm) | 89.5 |
| LENGTH AFTER PREPARATION (mm) | 181 | LENGTH/DIAMETER RATIO | 2.02 |

| | | | |
|---|---|---|---|
| METHOD OF END PREPARATION | Saw / Grinding | TIME IN WATER PRIOR TO TEST | 0 Hours |
| DATE OF DRILLING | Not advised | DRILLED BY | Others |
| MATERIAL | Rock Core | SAMPLE LOCATION | Not advised |

| | |
|---|---|
| DESCRIPTION OF CORE AFTER TEST | Split vertically from top to bottom, with no visible end effects |

COMPRESSIVE STRENGTH

| | | | |
|---|---|---|---|
| LOAD AT FAILURE (kN) | 78.0 | MEASURED COMPRESSIVE STRENGTH (N/mm2) | 12.4 |

| | |
|---|---|
| COMPRESSIVE STRENGTH (MPa) | **12.4** |

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
None

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS
ASTM D7012 - 14 Method C

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE REFERENCE | CP/RB102 10.40-10.60 | DATE RECEIVED | 01-Mar-22 |
| SAMPLE NUMBER | 109815 | DATE SAMPLED | Not advised |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

DIMENSIONS

| | | | |
|---|---|---|---|
| TESTED BY | SC | DIAMETER (mm) | 89 |
| LENGTH AFTER PREPARATION (mm) | 142 | LENGTH/DIAMETER RATIO | 1.60 |

| | | | |
|---|---|---|---|
| METHOD OF END PREPARATION | Saw / Grinding | TIME IN WATER PRIOR TO TEST | 0 Hours |
| DATE OF DRILLING | Not advised | DRILLED BY | Others |
| MATERIAL | Rock Core | SAMPLE LOCATION | Not advised |

| | |
|---|---|
| DESCRIPTION OF CORE AFTER TEST | Split vertically from top to bottom, with no visible end effects |

COMPRESSIVE STRENGTH

| | | | |
|---|---|---|---|
| LOAD AT FAILURE (kN) | 34.1 | MEASURED COMPRESSIVE STRENGTH (N/mm2) | 5.5 |

| | |
|---|---|
| COMPRESSIVE STRENGTH (MPa) | **5.5** |

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
Length/diameter ratio was outside the requirements of the Standard.

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS
ASTM D7012 - 14 Method C

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE REFERENCE | CP/RB103 6.55-6.78 | DATE RECEIVED | 01-Mar-22 |
| SAMPLE NUMBER | 109818 | DATE SAMPLED | Not advised |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

DIMENSIONS

| | | | |
|---|---|---|---|
| TESTED BY | SC | DIAMETER (mm) | 90 |
| LENGTH AFTER PREPARATION (mm) | 183 | LENGTH/DIAMETER RATIO | 2.03 |

| | | | |
|---|---|---|---|
| METHOD OF END PREPARATION | Saw / Grinding | TIME IN WATER PRIOR TO TEST | 0 Hours |
| DATE OF DRILLING | Not advised | DRILLED BY | Others |
| MATERIAL | Rock Core | SAMPLE LOCATION | Not advised |

| | |
|---|---|
| DESCRIPTION OF CORE AFTER TEST | Split vertically from top to bottom, with no visible end effects |

COMPRESSIVE STRENGTH

| | | | |
|---|---|---|---|
| LOAD AT FAILURE (kN) | 56.6 | MEASURED COMPRESSIVE STRENGTH (N/mm2) | 8.9 |

| | |
|---|---|
| COMPRESSIVE STRENGTH (MPa) | **8.9** |

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
None

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF THE COMPRESSIVE STRENGTH OF INTACT ROCK CORE SPECIMENS
ASTM D7012 - 14 Method C

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE REFERENCE | CP/RB103 8.33-8.65 | DATE RECEIVED | 01-Mar-22 |
| SAMPLE NUMBER | 109819 | DATE SAMPLED | Not advised |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

DIMENSIONS

| | | | |
|---|---|---|---|
| TESTED BY | SC | DIAMETER (mm) | 90 |
| LENGTH AFTER PREPARATION (mm) | 180 | LENGTH/DIAMETER RATIO | 2.00 |

| | | | |
|---|---|---|---|
| METHOD OF END PREPARATION | Saw / Grinding | TIME IN WATER PRIOR TO TEST | 0 Hours |
| DATE OF DRILLING | Not advised | DRILLED BY | Others |
| MATERIAL | Rock Core | SAMPLE LOCATION | Not advised |

| | |
|---|---|
| DESCRIPTION OF CORE AFTER TEST | Split vertically from top to bottom, with no visible end effects |

COMPRESSIVE STRENGTH

| | | | |
|---|---|---|---|
| LOAD AT FAILURE (kN) | 56.6 | MEASURED COMPRESSIVE STRENGTH (N/mm2) | 8.9 |

| | |
|---|---|
| COMPRESSIVE STRENGTH (MPa) | **8.9** |

Comments / Deviation from standard method / Abnormalities noted during visual inspection.
None

NAME O.P. Davies BA (Hons) (Laboratory Manager) SIGNED  DATE 03-Mar-22

# M U R R A Y  R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | CP/RB101 | DATE SAMPLED | Not advised |
| LAB SAMPLE No | 109808, 109810 | DATE RECEIVED | 01-Mar-22 |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Rock Core |
| ADVISED SOURCE | Site Investigation Sample |

| Depth (m) | Test Type | D (mm) | *W (mm) | Load (P) (kN) | $D_e^2$ ($mm^2$) | $D_e$ (mm) | Is (MPa) | F | $I_{s(50)}$ (MPa) |
|---|---|---|---|---|---|---|---|---|---|
| 10.28-10.40 | D | 90.0 | | 2.6 | 8100.00 | 90.00 | 0.32 | 1.30 | 0.42 |
| 11.50-11.65 | D | 90.0 | | 0.6 | 8100.00 | 90.00 | 0.07 | 1.30 | 0.10 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | CP/RB102 | DATE SAMPLED | Not advised |
| LAB SAMPLE No | 109812-14, 109816 | DATE RECEIVED | 01-Mar-22 |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Rock Core |
| ADVISED SOURCE | Site Investigation Sample |

| Depth (m) | Test Type | D (mm) | *W (mm) | Load (P) (kN) | $D_e^2$ ($mm^2$) | $D_e$ (mm) | Is (MPa) | F | $I_{s(50)}$ (MPa) |
|---|---|---|---|---|---|---|---|---|---|
| 6.66-6.77 | D | 90.0 | | 2.6 | 8100.00 | 90.00 | 0.32 | 1.30 | 0.42 |
| 8.25-8.40 | D | 90.0 | | 2.3 | 8100.00 | 90.00 | 0.28 | 1.30 | 0.37 |
| 9.38-9.50 | D | 89.0 | | 0.1 | 7921.00 | 89.00 | 0.01 | 1.30 | 0.02 |
| 11.00-11.10 | D | 88.0 | | 0.5 | 7744.00 | 88.00 | 0.06 | 1.29 | 0.08 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 03-Mar-22

# M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870


## TEST CERTIFICATE

DETERMINATION OF POINT LOAD STRENGTH INDEX OF ROCK
METHOD IN ACCORDANCE WITH ASTM STANDARD D 5731

| | |
|---|---|
| CLIENT | e3p |
| SITE | Cherryfield Drive |
| JOB NUMBER | MRN 4287/27 |

| | | | |
|---|---|---|---|
| SAMPLE LABEL | CP/RB103 | DATE SAMPLED | Not advised |
| LAB SAMPLE No | 109817, 109820 | DATE RECEIVED | 01-Mar-22 |
| DATE TESTED | 02-Mar-22 | SAMPLED BY | Client |

| | |
|---|---|
| MATERIAL | Rock Core |
| ADVISED SOURCE | Site Investigation Sample |

| Depth (m) | Test Type | D (mm) | *W (mm) | Load (P) (kN) | $D_e^2$ ($mm^2$) | $D_e$ (mm) | Is (MPa) | F | $I_{s(50)}$ (MPa) |
|---|---|---|---|---|---|---|---|---|---|
| 5.13-5.31 | D | 90.0 | | 14.1 | 8100.00 | 90.00 | 1.74 | 1.30 | 2.27 |
| 10.20-10.40 | D | 90.0 | | 2.6 | 8100.00 | 90.00 | 0.32 | 1.30 | 0.42 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | | | | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*W Entry required if test type is not Diametrical

REMARKS

SIGNED

NAME O.P. Davies BA (Hons)
(Laboratory Manager)

DATE 03-Mar-22

# LABORATORY REPORT

**Contract Number: PSL23/9894**

Report Date: 14 December 2023

Client's Reference: 15-280

Client Name: E3P
Taylor Road
Urmston
Manchester
M41 7JQ

**For the attention of: I.Diack/R.Hodnett**

Contract Title: Cherryfield Drive, Kirkby

Date Received: 23/11/2023
Date Commenced: 23/11/2023
Date Completed: 14/12/2023

**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:

L Knight (Assistant Laboratory Manager)
R Berriman (Associate Director)
S Royle (Laboratory Manager)



A Watkins (Managing Director)
S Eyre (Senior Technical Coordinator)
A Fry (Section Manager)



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Doncaster,
DN4 0AR
Tel: 01302 768098
Email: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

# SUMMARY OF LABORATORY SOIL DESCRIPTIONS

| Hole Number | Sample Number | Sample Type | Top Depth m | Base Depth m | Description of Sample |
|---|---|---|---|---|---|
| TP205 | | Bulk | 1.70 | | Reddish brown gravelly very sandy CLAY. |
| TP210 | | Bulk | 0.90 | | Brown sandy silty GRAVEL with cobbles. |
| WS202 | | Liner | 1.50 | 2.00 | Stiff brown slightly gravelly very sandy CLAY. |
| WS204 | | Liner | 1.50 | 2.00 | Brown slightly gravelly very sandy CLAY. |
| WS206 | | Tub | 2.00 | 2.45 | Brown slightly gravelly very sandy CLAY. |
| | | | | | |
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UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

Cherryfield Drive, Kirkby

Contract No: PSL23/9894

Client Ref: 15-280

# SUMMARY OF SOIL CLASSIFICATION TESTS

**(BS1377 : PART 2 : 1990)**

| Hole Number | Sample Number | Sample Type | Top Depth m | Base Depth m | Moisture Content % Clause 3.2 | Linear Shrinkage % Clause 6.5 | Particle Density $Mg/m^3$ Clause 8.2 | Liquid Limit % Clause 4.3/4 | Plastic Limit % Clause 5.3 | Plasticity Index % Clause 5.4 | Passing .425mm % | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TP205 | | Bulk | 1.70 | | 14 | | | 33 | 15 | 18 | 77 | Low Plasticity CL |
| WS202 | | Liner | 1.50 | 2.00 | 14 | | | 31 | 14 | 17 | 95 | Low Plasticity CL |
| WS204 | | Liner | 1.50 | 2.00 | 21 | | | 32 | 17 | 15 | 94 | Low Plasticity CL |
| WS206 | | Tub | 2.00 | 2.45 | 18 | | | 29 | 14 | 15 | 93 | Low Plasticity CL |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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| | | | | | | | | | | | | |

**SYMBOLS :** **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

**Cherryfield Drive, Kirkby**

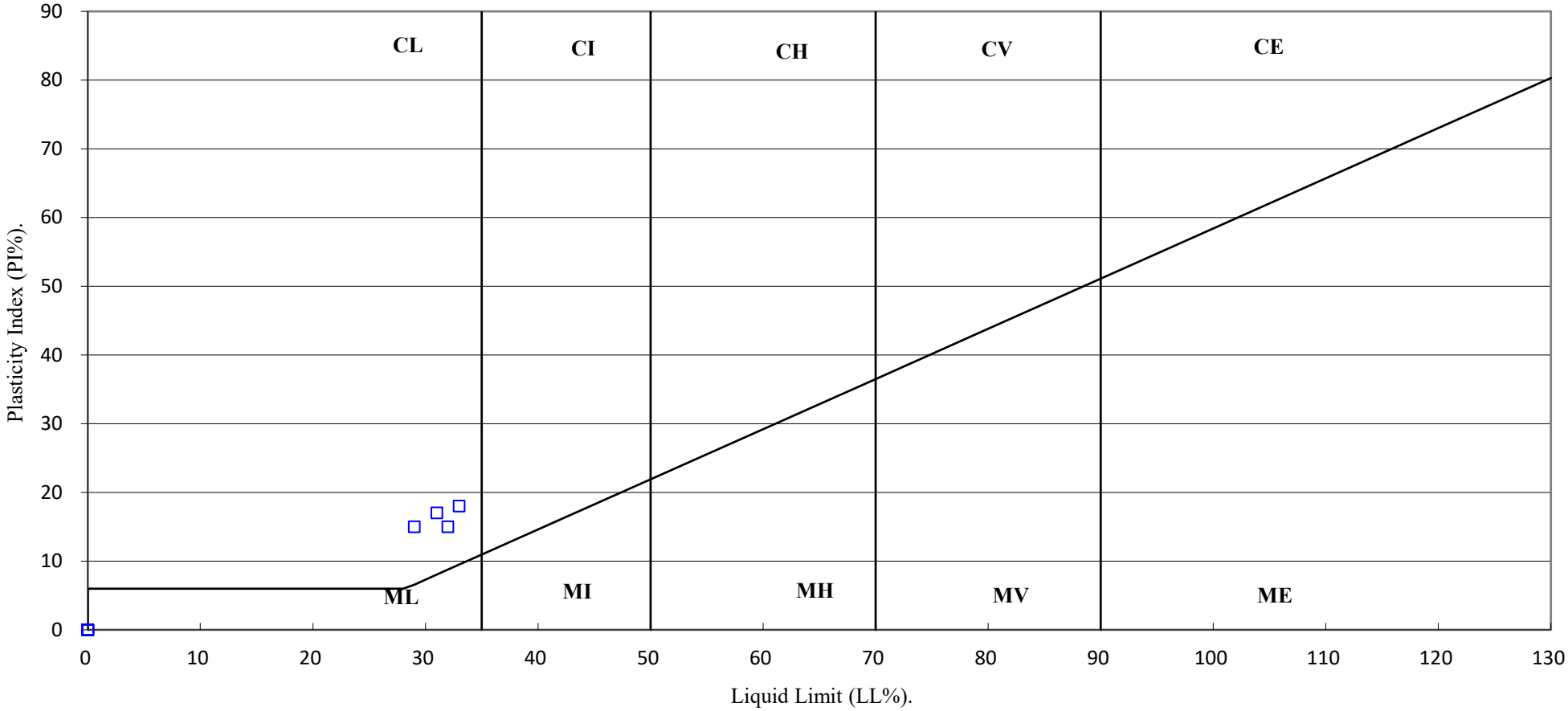
**Contract No:**

**PSL23/9894**

**Client Ref:**

**15-280**

# PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.




| | | |
|---|---|---|
| UKAS TESTING 4043 | PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY | **Cherryfield Drive, Kirkby** |

| |
|---|
| **Contract No:** |
| **PSL23/9894** |
| **Client Ref:** |
| **15-280** |

# PARTICLE SIZE DISTRIBUTION TEST

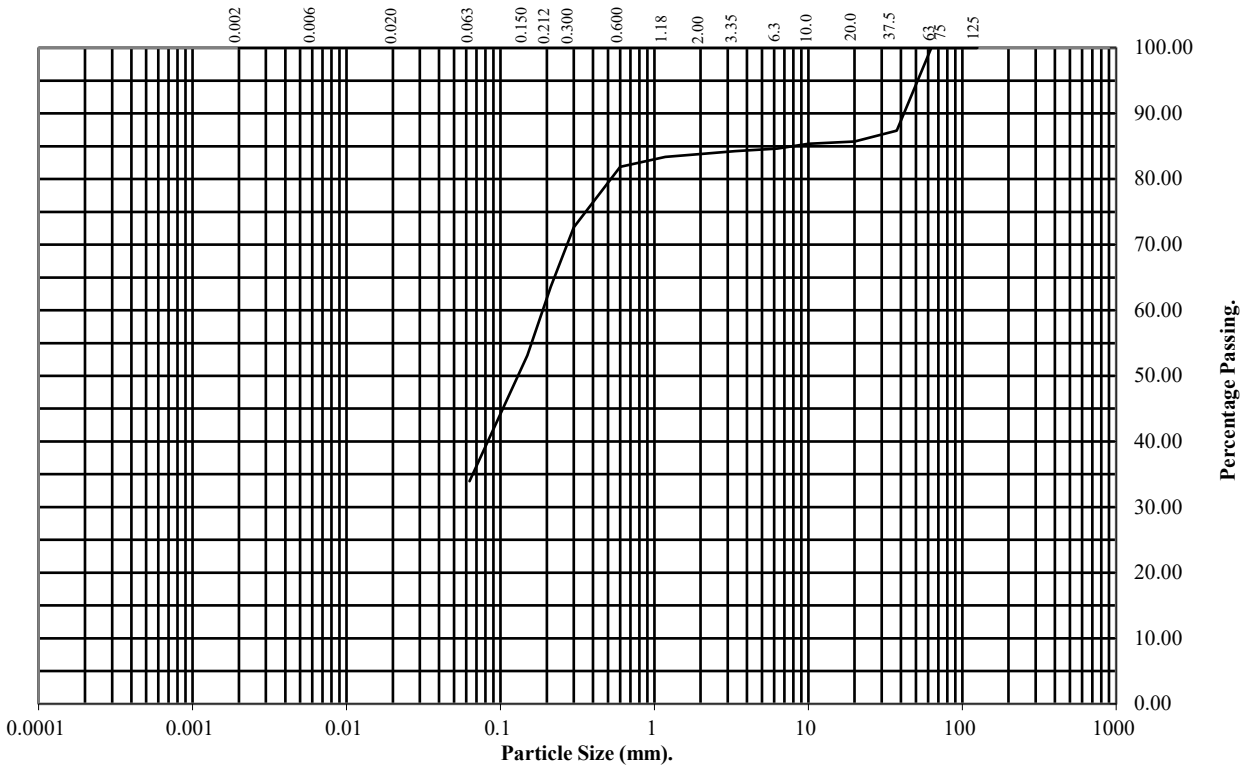
**BS1377 : Part 2 : 1990**

Wet Sieve, Clause 9.2

**Hole Number:** TP205 **Top Depth (m):** 1.70

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

**Sample Type:** Bulk




| BS Test Sieve (mm) | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 100 |
| 63 | 100 |
| 37.5 | 87 |
| 20 | 86 |
| 10 | 85 |
| 6.3 | 85 |
| 3.35 | 84 |
| 2 | 84 |
| 1.18 | 83 |
| 0.6 | 82 |
| 0.3 | 73 |
| 0.212 | 64 |
| 0.15 | 53 |
| 0.063 | 34 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 0 |
| Gravel | 16 |
| Sand | 50 |
| Silt/Clay | 34 |

**Remarks:**
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

**Cherryfield Drive, Kirkby**

**Contract No:** PSL23/9894

**Client Ref:** 15-280

# PARTICLE SIZE DISTRIBUTION TEST

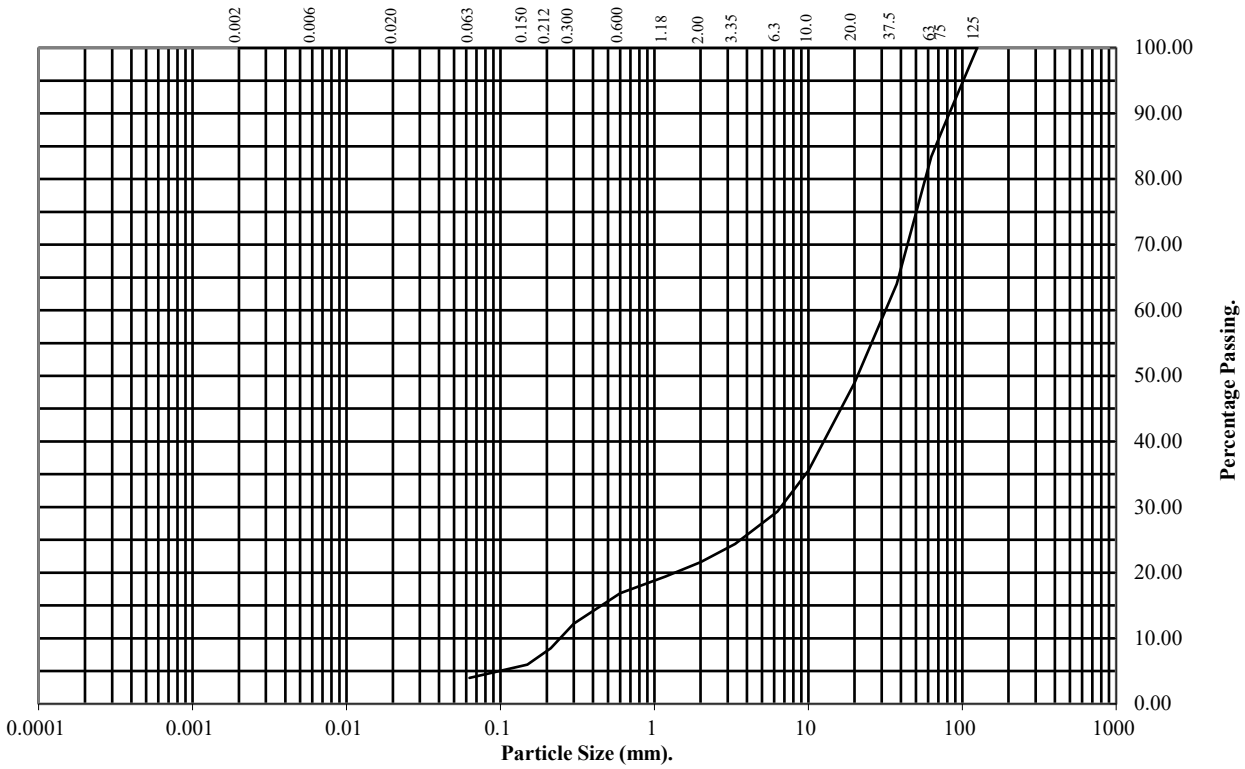
**BS1377 : Part 2 : 1990**

Wet Sieve, Clause 9.2

**Hole Number:** TP210 **Top Depth (m):** 0.90

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

**Sample Type:** Bulk




| BS Test Sieve (mm) | Percentage Passing |
|---|---|
| 125 | 100 |
| 75 | 88 |
| 63 | 83 |
| 37.5 | 64 |
| 20 | 49 |
| 10 | 36 |
| 6.3 | 29 |
| 3.35 | 24 |
| 2 | 22 |
| 1.18 | 19 |
| 0.6 | 17 |
| 0.3 | 12 |
| 0.212 | 8 |
| 0.15 | 6 |
| 0.063 | 4 |

| Soil Fraction | Total Percentage |
|---|---|
| Cobbles | 17 |
| Gravel | 61 |
| Sand | 18 |
| Silt/Clay | 4 |

**Remarks:**
See Summary of Soil Descriptions

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

**Cherryfield Drive, Kirkby**

**Contract No:** PSL23/9894

**Client Ref:** 15-280

# ONE DIMENSIONAL CONSOLIDATION TEST

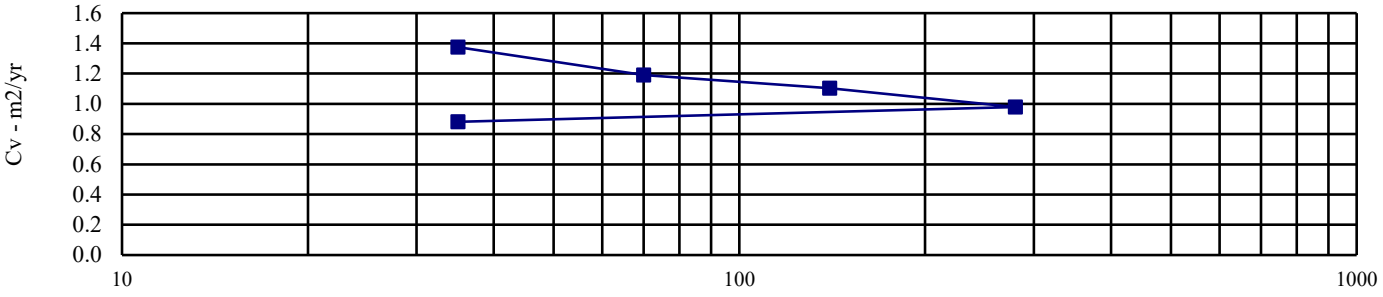
**BS 1377: Part 5: 1990: Clause 3**

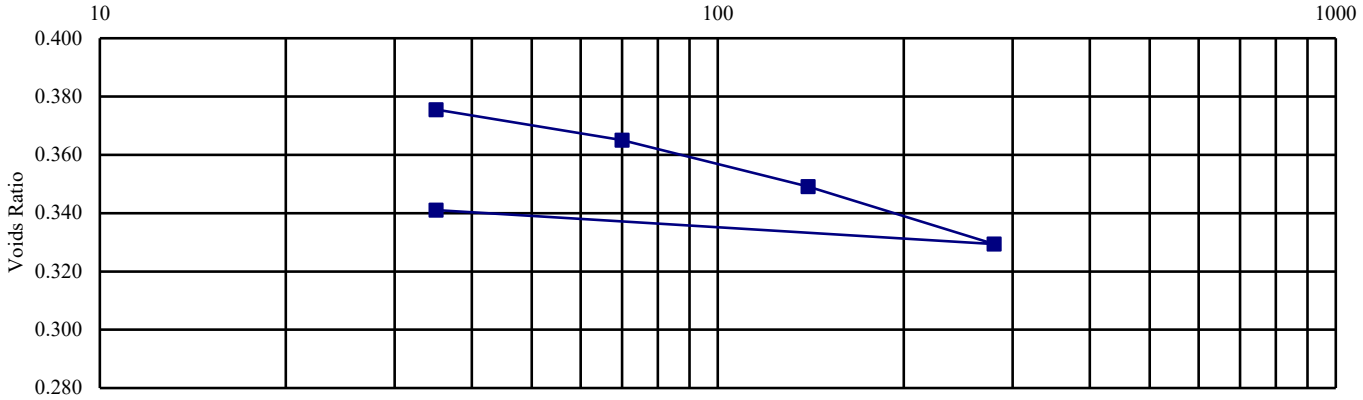
**Hole Number:** WS202 **Top Depth (m):** 1.50

**Sample Number:** **Base Depth (m) :** 2.00

**Sample Type:** Liner

| Initial Conditions | | Pressure Range kPa | | Mv m2/MN | Cv m2/yr | Specimen location within tube: | Top |
|---|---|---|---|---|---|---|---|
| Moisture Content (%): | 14 | | | | | | |
| Bulk Density (Mg/m3): | 2.17 | 0 | 35 | 0.482 | 1.375 | Method used to determine CV: | T90 |
| Dry Density (Mg/m3): | 1.89 | 35 | 70 | 0.218 | 1.190 | | |
| Voids Ratio: | 0.399 | 70 | 140 | 0.167 | 1.104 | Nominal temperature during test ' C: | 20 |
| Degree of saturation: | 95.3 | 140 | 280 | 0.105 | 0.978 | | |
| Height (mm): | 20.04 | 280 | 35 | 0.036 | 0.881 | Remarks: See summary of soil descriptions | |
| Diameter (mm) | 75.03 | | | | | | |
| Particle Density (Mg/m3): Assumed | 2.65 | | | | | | |




UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

**Cherryfield Drive, Kirkby**

**Contract No:** PSL23/9894

**Client Ref:** 15-280

# UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION

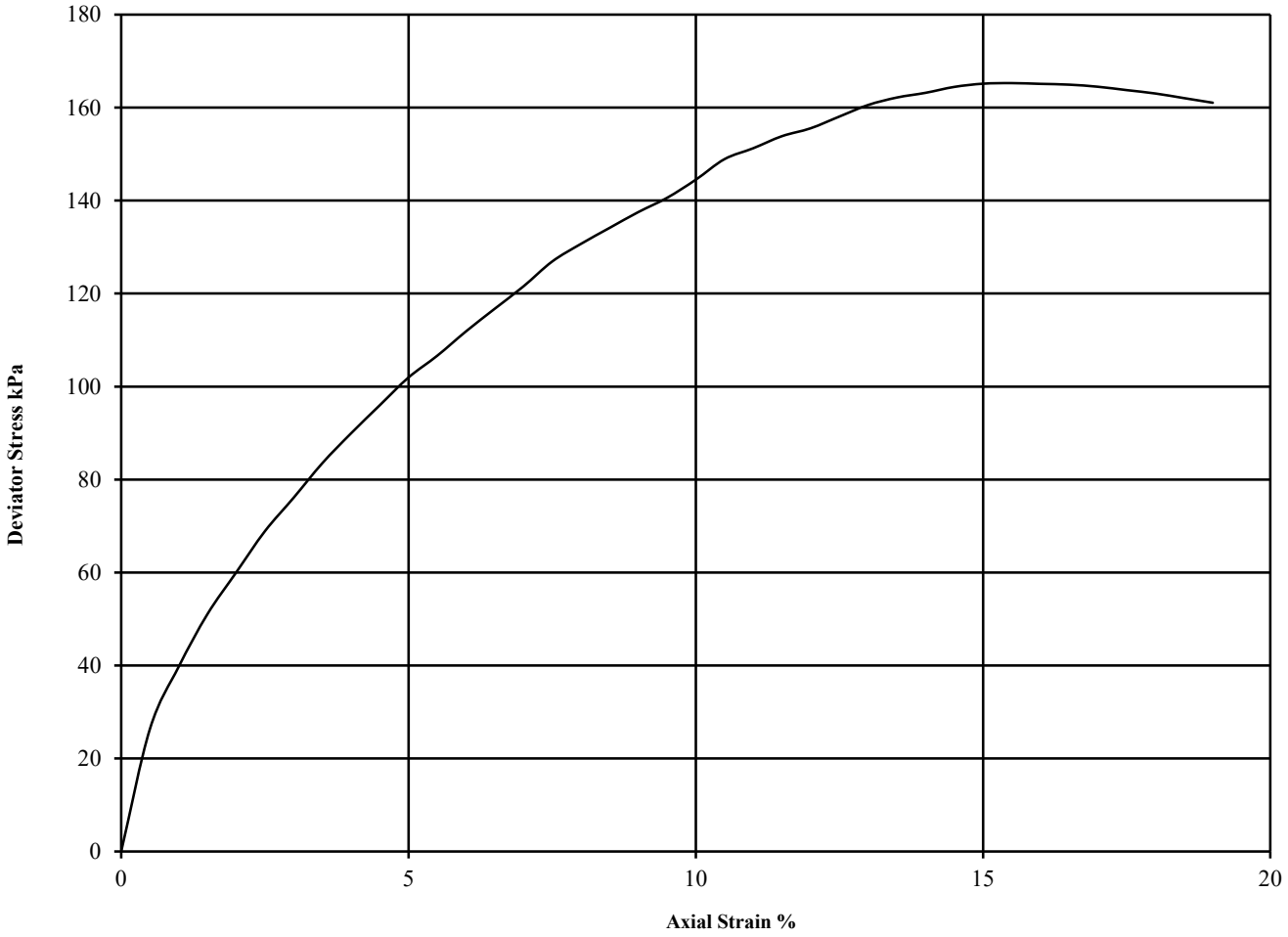
## WITHOUT MEASUREMENT OF PORE PRESSURE

**BS1377 : Part7 : 1990: Clause 8**

**Hole Number:** WS202 **Top Depth (m):** 1.50

**Sample Number:** **Base Depth (m):** 2.00

**Sample Type** Liner




| Diameter (mm): | | 83 | Height (mm): | | 166 | Test: | UU Single Stage | | Remarks: |
|---|---|---|---|---|---|---|---|---|---|
| Specimen | Moisture Content (%) | Bulk Density (Mg/m3) | Dry Density (Mg/m3) | Cell Pressure (kPa) $\theta_3$ | Corr. Max. Deviator Stress (kPa) $(\theta_1-\theta_3)_f$ | Shear Strength Cu (kPa) $^1/_2(\theta_1-\theta_3)_f$ | Failure Strain (%) | Mode of Failure | Undisturbed Sample<br>Sample taken from top of tube<br>Rate of strain = 2 %/min<br>Latex Membrane used 0.2 mm thick,<br>Correction applied 0.41 |
| 1 | 15 | 2.23 | 1.94 | 30 | 165 | 83 | 15.5 | Intermediate | See summary of soil descriptions |

UKAS TESTING 4043

PSL PROFESSIONAL SOILS LABORATORY A PHENNA GROUP COMPANY

**Cherryfield Drive, Kirkby**

**Contract No:** PSL23/9894

**Client Ref:** 15-280

# APPENDIX XI
# GROUND GAS MONITORING RESULTS

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS101 | 23/02/2022 | 6.8 | 6.8 | 0.0068 | 8.5 | 8.5 | 0.0085 | 0.1 | 1008 | Falling | 0.1 | 0.1 | 0.50 - 2.00 | 1.75 | Dry |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 0.1 | 1008 | Rising | 0.1 | 0.1 | | 1.75 | Dry |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1023 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.4 | 1014 | Falling | 0.1 | 0.1 | | 1.86 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | Table 9.10 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 1.86 | Dry |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1010 | Steady | 0.1 | 0.1 | | 1.85 | 1.65 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1017 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1023 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1029 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1011 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1009 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 1.79 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Rising | 0.1 | 0.1 | | 1.8 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 1.8 | 1.8 | 0.0018 | 17.9 | 1008 | Rising | 0.1 | 0.1 | | 1.72 | Dry |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.3 | 1020 | Falling | 0.1 | 0.1 | | 1.7 | Dry |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 991 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 1002 | Rising | 0.1 | 0.1 | | 1.7 | Dry |
| | 03/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1025 | Rising | 0.1 | 0.1 | | 1.7 | Dry |
| WS102 | 23/02/2022 | 3.7 | 3.7 | 0.0037 | 10.8 | 10.8 | 0.0108 | 1.4 | 1008 | Falling | 0.1 | 0.1 | 1.00 - 3.00 | 2.55 | Dry |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 3.1 | 1008 | Rising | 0.1 | 0.1 | | 2.55 | Dry |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1013 | Falling | 0.1 | 0.1 | | 2.69 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.69 | Dry |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1015 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1022 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1014 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1017 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1009 | Falling | 0.1 | 0.1 | | 2.75 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1003 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.2 | 0.0003 | 19.9 | 1006 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 990 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.2 | 990 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 990 | Rising | 0.1 | 0.1 | | 2.7 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 990 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.2 | 0.0003 | 19.9 | 990 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 03/02/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.2 | 0.0003 | 20.3 | 990 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| WS103 | Location destroyed | | | | | | | | | | | | | | |
| WS105 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 6.9 | 6.9 | 0.0069 | 4.3 | 1008 | Falling | 0.1 | 0.1 | 0.50 - 2.50 | 2.2 | 1.5 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 4.3 | 1008 | Rising | 0.1 | 0.1 | | 2.2 | 1.5 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1023 | Steady | 0.1 | 0.1 | | 2.25 | 2 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1013 | Falling | 0.1 | 0.1 | | 2.24 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Steady | 0.1 | 0.1 | | 2.25 | 2.2 |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.24 | Dry |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1012 | Steady | 0.1 | 0.1 | | 2.25 | 2 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1016 | Rising | 0.1 | 0.1 | | 2.25 | 1.9 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1017 | Steady | 0.1 | 0.1 | | 2.25 | 2 |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1022 | Steady | 0.1 | 0.1 | | 2.23 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1023 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1013 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Steady | 0.1 | 0.1 | | 2.25 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1008 | Steady | 0.1 | 0.1 | | 2.25 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1002 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 2.5 | 2.4 | 0.0025 | 18 | 1006 | Rising | 0.1 | 0.1 | | 2.2 | 1.65 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.4 | 1018 | Falling | 0.1 | 0.1 | | 2.23 | 1.8 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 999 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 997 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 1.3 | 1.1 | 0.0013 | 18.8 | 1001 | Rising | 0.1 | 0.1 | | 2.23 | 1.15 |
| | 03/02/2023 | 0.1 | 0.1 | 0.0001 | 1.8 | 1.5 | 0.0018 | 18.8 | 1025 | Rising | 0.1 | 0.1 | | 2.23 | 1.67 |
| WS106 | 23/02/2022 | 0.4 | 0.4 | 0.0004 | 6.2 | 6.2 | 0.0062 | 10.7 | 1008 | Falling | 0.1 | 0.1 | 1.00 - 3.00 | 2.8 | 2.3 |
| | 14/03/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Rising | 0.1 | 0.1 | | 2.88 | 2.55 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | | 2.85 | 2.65 |
| | 30/03/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 19.6 | 1013 | Falling | 0.1 | 0.1 | | 2.87 | 2.7 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 06/05/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.87 | Dry |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Rising | 0.1 | 0.1 | | 2.85 | Dry |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1015 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1020 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1014 | Rising | 0.1 | 0.1 | | 2.85 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1017 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 2.87 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1003 | Rising | 0.1 | 0.1 | | 2.9 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 7.7 | 7.6 | 0.0077 | 8.6 | 1007 | Rising | 0.1 | 0.1 | | 2.9 | Dry |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 990 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.2 | 1017 | Falling | 0.1 | 0.1 | | 2.88 | 2.82 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 2.9 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 998 | Rising | 0.1 | 0.1 | | 2.9 | Dry |
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 5 | 4.7 | 0.005 | 14.8 | 1000 | Rising | 0.1 | 0.1 | | 2.88 | 2.43 |
| | 03/02/2023 | 0.1 | 0.1 | 0.0001 | 3.8 | 3.6 | 0.0038 | 17.1 | 1025 | Rising | 0.1 | 0.1 | | 2.88 | Dry |
| WS108 | 23/02/2022 | 46.1 | 46.1 | 0.0461 | 7.8 | 7.5 | 0.0078 | 2.5 | 1008 | Falling | 0.1 | 0.1 | 0.80 - 2.80 | 2.6 | 1.5 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Rising | 0.1 | 0.1 | | 2.7 | 2 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | | 2.7 | 2.3 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1013 | Falling | 0.1 | 0.1 | | 2.68 | 2.15 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.7 | 2.6 |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.68 | 2.42 |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | 2.4 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Rising | 0.1 | 0.1 | | 2.7 | 2.4 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1022 | Steady | 0.1 | 0.1 | | 2.69 | 2.56 |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1022 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1014 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1017 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1008 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1003 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 04/11/2022 | 9.6 | 3.4 | 0.0096 | 10.3 | 6.9 | 0.0103 | 14.6 | 1006 | Rising | 0.1 | 0.1 | | 2.65 | 2.37 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 990 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.3 | 1018 | Falling | 0.1 | 0.1 | | 2.64 | 1.98 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 998 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 19/01/2023 | 5.2 | 5.2 | 0.0052 | 4.6 | 4.6 | 0.0046 | 3 | 1001 | Rising | 0.1 | 0.1 | | 2.64 | 1.6 |
| | 03/02/2023 | 15.2 | 12.7 | 0.0152 | 9.5 | 9 | 0.0095 | 3.3 | 1024 | Rising | 0.1 | 0.1 | | 2.64 | 1.98 |
| WS110 | 23/02/2022 | Location damaged and well repaired for following visit | | | | | | | | | | | 1.00-2.00 | | |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Rising | 0.1 | 0.1 | | 1.75 | 0.8 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1023 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1014 | Falling | 0.1 | 0.1 | | 1.86 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 1.86 | Dry |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1016 | Rising | 0.1 | 0.1 | | 1.85 | Dry |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1016 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1022 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1014 | Rising | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1017 | Falling | 0.1 | 0.1 | | 1.85 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1007 | Falling | 0.1 | 0.1 | | 1.85 | dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 1.79 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1003 | Rising | 0.1 | 0.1 | | 1.8 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 1.5 | 1.2 | 0.0015 | 19 | 1006 | Rising | 0.1 | 0.1 | | 1.72 | Dry |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 990 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.3 | 1017 | Falling | 0.1 | 0.1 | | 1.7 | Dry |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 1.8 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 998 | Rising | 0.1 | 0.1 | | 1.8 | Dry |
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 1.3 | 1 | 0.0013 | 18.9 | 1000 | Rising | 0.1 | 0.1 | | 1.7 | 0.57 |
| | 03/02/2023 | 0.1 | 0.1 | 0.0001 | 1 | 0.6 | 0.001 | 19.9 | 1024 | Rising | 0.1 | 0.1 | | 1.7 | Dry |
| WS111 | 23/02/2022 | 6.2 | 6.2 | 0.0062 | 5.3 | 5.3 | 0.0053 | 6.4 | 1008 | Falling | 0.1 | 0.1 | 0.50-3.00 | 2.55 | 2.6 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Rising | 0.1 | 0.1 | | 2.55 | 3.17 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1013 | Falling | 0.1 | 0.1 | | 2.69 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.69 | Dry |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1016 | Rising | 0.1 | 0.1 | | 2.7 | 3.15 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1016 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1022 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1023 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1013 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1009 | Falling | 0.1 | 0.1 | | 2.75 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 997 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1002 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 0.9 | 0.9 | 0.0009 | 19.2 | 1006 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.3 | 1017 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 999 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 997 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 2.7 | 2.3 | 0.0027 | 17.2 | 1001 | Rising | 0.1 | 0.1 | | 2.7 | 2.03 |
| | 03/02/2023 | 0.1 | 0.1 | 0.0001 | 0.9 | 0.7 | 0.0009 | 19.6 | 1024 | Rising | 0.1 | 0.1 | | 2.7 | 2.58 |
| | 23/02/2022 | 0.1 | 0.1 | 0.0164 | 3.1 | 3.1 | 0.1984 | 13.1 | 1009 | Falling | 6.4 | 0.1 | | Location destroyed | 1.5 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 13.1 | 1009 | Rising | 0.1 | 0.1 | | 2.2 | 1.35 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.2 | 1.55 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 2.25 | 1.02 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.24 | 1.75 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1019 | Steady | 0.1 | 0.1 | | 2.25 | 1.67 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.24 | 1.5 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Steady | 0.1 | 0.1 | | 2.25 | 1.3 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1016 | Steady | 0.1 | 0.1 | | 2.25 | 1.65 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1018 | Rising | 0.1 | 0.1 | | 2.25 | 1.6 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1020 | Falling | 0.1 | 0.1 | | 2.23 | 1.75 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS113 | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1028 | Falling | 0.1 | 0.1 | 1.00 - 2.00 | 2.25 | 1.6 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 2.25 | 1.75 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1008 | Steady | 0.1 | 0.1 | | 2.25 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1005 | Falling | 0.1 | 0.1 | | 2.25 | 1.2 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Rising | 0.1 | 0.1 | | 2.25 | 1.6 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 994 | Falling | 0.1 | 0.1 | | 2.25 | 1.24 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Falling | 0.1 | 0.1 | | 2.2 | 1.7 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1021 | Steady | 0.1 | 0.1 | | 2.25 | 1.51 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 2.23 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 991 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.3 | 0.0003 | 19.8 | 994 | Rising | 0.1 | 0.1 | | 2.25 | 1.28 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.4 | 0.4 | 0.0004 | 20.1 | 1020 | Steady | 0.1 | 0.1 | | 2.23 | 1.52 |
| | 21/12/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.4 | 0.0004 | 20.2 | 1001 | Falling | 0.1 | 0.1 | | 2.23 | 1.4 |
| | 09/01/2024 | 0.1 | 0.1 | 0.0001 | 0.4 | 0.4 | 0.0004 | 20 | 1031 | Steady | 0.1 | 0.1 | | 1.86 | 0.43 |
| | 23/01/2024 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 19.9 | 1007 | Falling | 0.1 | 0.1 | | 1.86 | 0.69 |
| | 08/02/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 987 | Falling | 0.1 | 0.1 | | 1.86 | 0.38 |
| | 23/02/2024 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.3 | 0.0003 | 20 | 979 | Rising | 0.1 | 0.1 | | 1.86 | 0.43 |
| | 04/03/2024 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 20.3 | 1001 | Falling | 0.1 | 0.1 | | 1.86 | 0.35 |
| WS114 | Monitoring Location Destroyed | | | | | | | | | | | | | | |
| WS115 | 22/02/2022 | Monitoring Location Flooded | | | | | | | | | | | 1.00-2.00 | - | - |
| | 15/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Rising | 0.1 | 0.1 | | 2.85 | 1.13 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.87 | 1.35 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 2.85 | 1.28 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.87 | 1.65 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1019 | Steady | 0.1 | 0.1 | | 2.85 | 1.62 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.85 | 1.5 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1010 | Steady | 0.1 | 0.1 | | 2.85 | 1.45 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1016 | Steady | 0.1 | 0.1 | | 2.85 | 1.6 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1019 | Rising | 0.1 | 0.1 | | 2.85 | 1.57 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1020 | Falling | 0.1 | 0.1 | | 2.85 | 1.75 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1028 | Falling | 0.1 | 0.1 | | 2.85 | 1.65 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1012 | Falling | 0.1 | 0.1 | | 2.85 | 1.7 |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1011 | Steady | 0.1 | 0.1 | | 2.9 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1008 | Steady | 0.1 | 0.1 | | 2.87 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1005 | Falling | 0.1 | 0.1 | | 2.9 | 1.36 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Rising | 0.1 | 0.1 | | 2.9 | 1.55 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 994 | Falling | 0.1 | 0.1 | | 2.9 | 1.18 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Falling | 0.1 | 0.1 | | 2.88 | 1.6 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1020 | Steady | 0.1 | 0.1 | | 2.9 | 1.6 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 991 | Falling | 0.1 | 0.1 | | 2.88 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 20.1 | 993 | Rising | 0.1 | 0.1 | | 2.88 | 1.14 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1020 | Steady | 0.1 | 0.1 | | 2.6 | 1.29 |
| | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 4.7 | 4.6 | 0.0047 | 14.3 | 1007 | Falling | 0.1 | 0.1 | | 2.7 | 1.2 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS117 | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Rising | 0.1 | 0.1 | 1.00 - 2.50 | 2.7 | 1.1 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.68 | 1.4 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | 1.45 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.68 | 1.95 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | 2.22 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | 1.85 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1010 | Steady | 0.1 | 0.1 | | 2.7 | 1.85 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1016 | Steady | 0.1 | 0.1 | | 2.69 | 2.2 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | 2.2 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1021 | Falling | 0.1 | 0.1 | | 2.7 | 2.35 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1029 | Falling | 0.1 | 0.1 | | 2.7 | 2.3 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1012 | Falling | 0.1 | 0.1 | | 2.7 | 2.35 |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1011 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1008 | Steady | 0.1 | 0.1 | | 2.65 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1007 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 994 | Falling | 0.1 | 0.1 | | 2.65 | 2.35 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Falling | 0.1 | 0.1 | | 2.64 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0 | 0.1 | 0.1 | - | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.65 | 2 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 991 | Falling | 0.1 | 0.1 | | 2.64 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 20.1 | 993 | Rising | 0.1 | 0.1 | | 2.64 | 1.36 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.1 | 0.0003 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 1.75 | 1.63 |
| WS118 | 22/02/2022 | Monitoring well damaged and repaired for next visit. | | | | | | | | | | | 1.00-2.00 | - | - |
| | 15/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Falling | 0.1 | 0.1 | | 1.85 | 1.6 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 1.86 | 1.7 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1013 | Steady | 0.1 | 0.1 | | 1.85 | 1.58 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Steady | 0.1 | 0.1 | | 1.86 | Dry |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 1.85 | 1.75 |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1016 | Rising | 0.1 | 0.1 | | 1.85 | 1.7 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1016 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1020 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1023 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1013 | Rising | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1016 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1009 | Falling | 0.1 | 0.1 | | 1.79 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 987 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1004 | Rising | 0.1 | 0.1 | | 1.72 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.1 | 0.0003 | 20.2 | 1007 | Rising | 0.1 | 0.1 | | 1.8 | 1.58 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 989 | Falling | 0.1 | 0.1 | | 1.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.3 | 1018 | Steady | 0.1 | 0.1 | | 1.8 | Dry |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 1.8 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 998 | Rising | 0.1 | 0.1 | | 1.7 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 19.7 | 1001 | Rising | 0.1 | 0.1 | | 1.7 | 1.2 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 2.55 | 1.41 |
| WS119 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 2.1 | 2.1 | 0.0021 | 18.4 | 1006 | Falling | 0.1 | 0.1 | 0.50 - 3.50 | 2.55 | 0.6 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Rising | 0.1 | 0.1 | | 2.7 | 1 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1022 | Steady | 0.1 | 0.1 | | 2.69 | 1.45 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | 1.25 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.69 | 2 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | 1.58 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | 1.75 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1010 | Steady | 0.1 | 0.1 | | 2.7 | 1.5 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | 1.95 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | 2.05 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 2.7 | 2.45 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1029 | Falling | 0.1 | 0.1 | | 2.7 | 2.55 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Falling | 0.1 | 0.1 | | 2.7 | 2.55 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1023 | Falling | 0.1 | 0.1 | | 2.75 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1009 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 995 | Falling | 0.1 | 0.1 | | 2.7 | 2.6 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1004 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | 2.46 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 991 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 994 | Rising | 0.1 | 0.1 | | 2.7 | 1.73 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | Location destroyed | 1.91 |
| WS120 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 19.1 | 1008 | Falling | 0.1 | 0.1 | 1.00 - 2.00 | 2.2 | 1.2 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Rising | 0.1 | 0.1 | | 2.2 | 1.22 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.25 | 1.35 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1014 | Falling | 0.1 | 0.1 | | 2.24 | 1.32 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Steady | 0.1 | 0.1 | | 2.25 | 1.15 |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.24 | 1.28 |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Steady | 0.1 | 0.1 | | 2.25 | 1 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1015 | Rising | 0.1 | 0.1 | | 2.25 | 1.1 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1016 | Steady | 0.1 | 0.1 | | 2.25 | 1.35 |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1020 | Steady | 0.1 | 0.1 | | 2.23 | 1.5 |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1014 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1016 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1009 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 2.25 | 1.16 |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1004 | Rising | 0.1 | 0.1 | | 2.25 | 1.4 |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1007 | Rising | 0.1 | 0.1 | | 2.2 | 1.04 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 989 | Falling | 0.1 | 0.1 | | 2.25 | 1.4 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.2 | 1018 | Falling | 0.1 | 0.1 | | 2.23 | 1.03 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 2.25 | 1.4 |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 998 | Rising | 0.1 | 0.1 | | 2.25 | 1.4 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.3 | 0.0003 | 19.9 | 996 | Rising | 0.1 | 0.1 | | 2.23 | 1.12 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.4 | 0.4 | 0.0004 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.23 | 1.26 |
| WS121 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 2.2 | 2.1 | 0.0022 | 14.6 | 1006 | Falling | 0.1 | 0.1 | 0.50 - 1.50 | 2.8 | 0.6 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 1019 | Rising | 0.1 | 0.1 | | 2.88 | 0.91 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | | 2.85 | 1.05 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Falling | 0.1 | 0.1 | | 2.87 | 1 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.85 | 1.2 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1018 | Steady | 0.1 | 0.1 | | 2.87 | 1.2 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.85 | 1.1 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Steady | 0.1 | 0.1 | | 2.85 | 1 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1021 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1020 | Rising | 0.1 | 0.1 | | 2.85 | Dry |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1021 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1029 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1012 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1023 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1009 | Steady | 0.1 | 0.1 | | 2.9 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1007 | Falling | 0.1 | 0.1 | | 2.87 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Rising | 0.1 | 0.1 | | 2.9 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 995 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1021 | Steady | 0.1 | 0.1 | | 2.88 | Dry |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 991 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 992 | Rising | 0.1 | 0.1 | | 2.88 | 0.94 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1020 | Steady | 0.1 | 0.1 | | 2.88 | 1.06 |
| WS122 | Monitoring location destroyed. | | | | | | | | | | | | | | |
| WS123 | 23/02/2022 | Monitoring location damaged and repaired for next visit | | | | | | | | | | | 0.50 – 3.00 | - | - |
| | 15/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1019 | Falling | 0.1 | 0.1 | | 2.7 | 1.72 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | | 2.68 | 1.9 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1005 | Steady | 0.1 | 0.1 | | 2.7 | 1.9 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Steady | 0.1 | 0.1 | | 2.68 | 2.25 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | 2.3 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | 2.2 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1009 | Steady | 0.1 | 0.1 | | 2.7 | 1.95 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1021 | Steady | 0.1 | 0.1 | | 2.69 | 2.2 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1018 | Rising | 0.1 | 0.1 | | 2.7 | 2.08 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1020 | Falling | 0.1 | 0.1 | | 2.7 | 2.35 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1028 | Falling | 0.1 | 0.1 | | 2.7 | 2.2 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Falling | 0.1 | 0.1 | | 2.7 | 2.35 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 2.7 | 2.45 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1009 | Steady | 0.1 | 0.1 | | 2.65 | dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1005 | Falling | 0.1 | 0.1 | | 2.65 | 1.97 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1011 | Rising | 0.1 | 0.1 | | 2.65 | 2.25 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 995 | Falling | 0.1 | 0.1 | | 2.65 | 1.8 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1006 | Falling | 0.1 | 0.1 | | 2.64 | 2.3 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.65 | 1.72 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 993 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 992 | Falling | 0.1 | 0.1 | | 2.64 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 992 | Rising | 0.1 | 0.1 | | 2.64 | 1.15 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1020 | Steady | 0.1 | 0.1 | | 1.75 | 1.59 |
| WS124 | 23/02/2022 | 13.7 | 13.7 | 0.0137 | 5.4 | 5.2 | 0.0054 | 0.1 | 1009 | Falling | 0.1 | 0.1 | 1.00 - 4.00 | 1.75 | 2.4 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1018 | Rising | 0.1 | 0.1 | | 1.85 | 2.42 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 1.86 | 2.65 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 1.85 | 2.4 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Steady | 0.1 | 0.1 | | 1.86 | 3.1 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1019 | Steady | 0.1 | 0.1 | | 1.85 | 2.58 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 1.85 | 2.85 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Steady | 0.1 | 0.1 | | 1.85 | 2.6 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 1.85 | 3.05 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1019 | Rising | 0.1 | 0.1 | | 1.85 | 3 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 1.85 | 3.45 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1027 | Falling | 0.1 | 0.1 | | 1.85 | 3.55 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1012 | Falling | 0.1 | 0.1 | | 1.85 | 3.55 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 1.85 | 3.7 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1008 | Steady | 0.1 | 0.1 | | 1.79 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1005 | Falling | 0.1 | 0.1 | | 1.8 | 2.8 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1012 | Rising | 0.1 | 0.1 | | 1.72 | 3.2 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 994 | Falling | 0.1 | 0.1 | | 1.8 | 2.87 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1007 | Falling | 0.1 | 0.1 | | 1.7 | 3.4 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 1.8 | 3.4 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 993 | Falling | 0.1 | 0.1 | | 1.8 | 3.2 |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 992 | Falling | 0.1 | 0.1 | | 1.7 | 3.15 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 993 | Rising | 0.1 | 0.1 | | 1.7 | 1.76 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1020 | Steady | 0.1 | 0.1 | | 2.55 | 2.06 |
| WS125 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 2.1 | 2 | 0.0021 | 16.2 | 1006 | Falling | 0.1 | 0.1 | 0.50 - 1.00 | 2.55 | 0.55 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | 0.87 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.69 | 0.95 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | 0.97 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Steady | 0.1 | 0.1 | | 2.69 | Dry |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1019 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | 0.9 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1010 | Steady | 0.1 | 0.1 | | 2.7 | 0.9 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1020 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1028 | Falling | 0.1 | 0.1 | | 2.7 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS125 | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Falling | 0.1 | 0.1 | 0.60 - 1.60 | 2.7 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1023 | Falling | 0.1 | 0.1 | | 2.75 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1008 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1007 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1009 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 995 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 991 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Rising | 0.1 | 0.1 | | 2.7 | 1 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1020 | Steady | 0.1 | 0.1 | | Location destroyed | 0.97 |
| WS126 | 22/02/2022 | 0.4 | 0.4 | 0.0004 | 1 | 1 | 0.001 | 18 | 1008 | Rising | 0.1 | 0.1 | 0.60 - 1.60 | 2.2 | 1.15 |
| | 14/03/2022 | 0.4 | 0.4 | 0.0004 | 1 | 1 | 0.001 | 19.5 | 1019 | Falling | 0.1 | 0.1 | | 2.2 | Dry |
| | 21/03/2022 | 0.4 | 0.4 | 0.0004 | 0.7 | 0.7 | 0.0007 | 18.9 | 1024 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 30/03/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 2.24 | Dry |
| | 19/04/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 20 | 1017 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 05/05/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 18.7 | 1019 | Steady | 0.1 | 0.1 | | 2.24 | Dry |
| | 16/05/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 19.9 | 1011 | Steady | 0.1 | 0.1 | | 2.25 | 1.3 |
| | 31/05/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Steady | 0.1 | 0.1 | | 2.25 | 1.15 |
| | 15/06/2022 | 0.4 | 0.4 | 0.0004 | 0.1 | 0.1 | 0.0001 | 20.3 | 1017 | Steady | 0.1 | 0.1 | | 2.25 | Dry |
| | 05/07/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 18.6 | 1019 | Rising | 0.4 | 0.1 | | 2.23 | Dry |
| | 01/08/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 20.6 | 1020 | Falling | 0.4 | 0.1 | | 2.25 | Dry |
| | 10/08/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 20.7 | 1028 | Falling | 0.4 | 0.1 | | 2.25 | Dry |
| | 18/08/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 20.7 | 1010 | Falling | 0.4 | 0.1 | | 2.25 | Dry |
| | 01/09/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 20.7 | 1020 | Falling | 0.4 | 0.1 | | 2.25 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1008 | Steady | 0.1 | 0.1 | | 2.25 | Dry |
| | 04/10/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 18.1 | 1006 | Falling | 0.4 | 0.1 | | 2.25 | Dry |
| | 17/10/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 20.1 | 1013 | Rising | 0.4 | 0.1 | | 2.25 | Dry |
| | 03/11/2022 | 0.4 | 0.4 | 0.0016 | 3.2 | 3.2 | 0.0128 | 16.8 | 994 | Falling | 0.4 | 0.1 | | 2.2 | Dry |
| | 14/11/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 20.1 | 1008 | Falling | 0.4 | 0.1 | | 2.25 | Dry |
| | 06/12/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 19.5 | 1021 | Steady | 0.4 | 0.4 | | 2.23 | Dry |
| | 19/12/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 20.1 | 994 | Falling | 0.4 | 0.4 | | 2.25 | Dry |
| | 28/12/2022 | 0.4 | 0.4 | 0.0016 | 0.1 | 0.1 | 0.0004 | 19.8 | 993 | Falling | 0.4 | 0.4 | | 2.25 | Dry |
| | 18/01/2023 | 0.4 | 0.4 | 0.0016 | 2.1 | 2.1 | 0.0084 | 18.2 | 993 | Rising | 0.4 | 0.4 | | 2.23 | 1.35 |
| | 02/02/2023 | 0.4 | 0.4 | 0.0016 | 1.7 | 1.7 | 0.0068 | 19 | 1020 | Steady | 0.4 | 0.4 | | 2.23 | 1.43 |
| | 22/02/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.2 | 1010 | Rising | 0.1 | 0.1 | | 2.8 | 1.2 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1018 | Falling | 0.1 | 0.1 | | 2.88 | 1.58 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1023 | Rising | 0.1 | 0.1 | | 2.85 | 1.8 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1008 | Steady | 0.1 | 0.1 | | 2.87 | 1.58 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1017 | Falling | 0.1 | 0.1 | | 2.85 | 2.1 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1019 | Steady | 0.1 | 0.1 | | 2.87 | 1.8 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1011 | Steady | 0.1 | 0.1 | | 2.85 | 1.85 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1009 | Steady | 0.1 | 0.1 | | 2.85 | 1.8 |
| | 15/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1017 | Steady | 0.1 | 0.1 | | 2.85 | 2.1 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS128 | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1019 | Rising | 0.1 | 0.1 | 1.00-3.00 | 2.85 | 1.85 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1018 | Falling | 0.1 | 0.1 | | 2.85 | 2.2 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1020 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1009 | Steady | 0.1 | 0.1 | | 2.9 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1007 | Falling | 0.1 | 0.1 | | 2.87 | 1.5 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1013 | Rising | 0.1 | 0.1 | | 2.9 | 1.85 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 1.5 | 1.5 | 0.0015 | 18.7 | 995 | Falling | 0.1 | 0.1 | | 2.9 | 1.35 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Falling | 0.1 | 0.1 | | 2.9 | 1.85 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1022 | Steady | 0.1 | 0.1 | | 2.88 | 1.57 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 994 | Falling | 0.1 | 0.1 | | 2.9 | 2.1 |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 993 | Falling | 0.1 | 0.1 | | 2.9 | 1.95 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.9 | 0.9 | 0.0009 | 19.2 | 993 | Rising | 0.1 | 0.1 | | 2.88 | 1.46 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 1.1 | 1 | 0.0011 | 19.1 | 1020 | Steady | 0.1 | 0.1 | | 2.88 | 1.6 |
| WS129 | Monitoring Well Destroyed. | | | | | | | | | | | | | | |
| WS130 | 22/02/2022 | Monitoring Well Damaged and Repaired for Following Visit | | | | | | | | | | | 1.00- 3.00 | - | - |
| | 15/02/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Falling | 0.1 | 0.1 | | 2.7 | 1.63 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | | 2.68 | 1.95 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1008 | Steady | 0.1 | 0.1 | | 2.7 | 1.7 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Steady | 0.1 | 0.1 | | 2.68 | 2.1 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1019 | Steady | 0.1 | 0.1 | | 2.7 | 1.87 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1011 | Steady | 0.1 | 0.1 | | 2.7 | 2 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1009 | Steady | 0.1 | 0.1 | | 2.7 | 1.8 |
| | 15/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1017 | Steady | 0.1 | 0.1 | | 2.69 | 2 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | 2.13 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1020 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1010 | Steady | 0.1 | 0.1 | | 2.65 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1013 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 995 | Falling | 0.1 | 0.1 | | 2.65 | 2.1 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Falling | 0.1 | 0.1 | | 2.64 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1022 | Steady | 0.1 | 0.1 | | 2.65 | Dry |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 994 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 993 | Falling | 0.1 | 0.1 | | 2.64 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.9 | 0.9 | 0.0009 | 19.1 | 992 | Rising | 0.1 | 0.1 | | 2.64 | 2 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 1 | 0.9 | 0.001 | 19.1 | 1020 | Steady | 0.1 | 0.1 | | 1.75 | 2.08 |
| | 22/02/2022 | 0.1 | 0.1 | 0.0001 | 0.4 | 0.2 | 0.0004 | 18.8 | 1010 | Rising | 0.1 | 0.1 | | 1.75 | 1.35 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1019 | Falling | 0.1 | 0.1 | | 1.85 | 1.92 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Rising | 0.1 | 0.1 | | 1.86 | 2.25 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Steady | 0.1 | 0.1 | | 1.85 | 2.4 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Falling | 0.1 | 0.1 | | 1.86 | 2.8 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS132 | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1019 | Steady | 0.1 | 0.1 | 1.00 - 4.00 | 1.85 | 2.66 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1011 | Steady | 0.1 | 0.1 | | 1.85 | 2.5 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Steady | 0.1 | 0.1 | | 1.85 | 2.3 |
| | 15/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1017 | Steady | 0.1 | 0.1 | | 1.85 | 2.3 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1020 | Rising | 0.1 | 0.1 | | 1.85 | 3.02 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 1.85 | 3.5 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 1.85 | 3.65 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 1.85 | 3.75 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 1.85 | 3.8 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1007 | Steady | 0.1 | 0.1 | | 1.79 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 1.8 | 3.02 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1012 | Rising | 0.1 | 0.1 | | 1.72 | 3.45 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 994 | Falling | 0.1 | 0.1 | | 1.8 | 2 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1007 | Falling | 0.1 | 0.1 | | 1.7 | 3.7 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1022 | Steady | 0.1 | 0.1 | | 1.8 | 2.55 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 993 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 993 | Falling | 0.1 | 0.1 | | 1.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 1 | 1 | 0.001 | 18.6 | 994 | Rising | 0.1 | 0.1 | | 1.7 | 1.52 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 1.2 | 1.2 | 0.0012 | 19 | 1020 | Steady | 0.1 | 0.1 | | 2.55 | 2.15 |
| WS133 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 2.3 | 2.2 | 0.0023 | 13.4 | 1007 | Falling | 0.1 | 0.1 | 0.50 - 3.90 | 2.55 | 1.4 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1019 | Rising | 0.1 | 0.1 | | 2.7 | 0.92 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | | 2.69 | 1 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1005 | Falling | 0.1 | 0.1 | | 2.7 | 1.55 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Steady | 0.1 | 0.1 | | 2.69 | 1.55 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | 1.25 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Steady | 0.1 | 0.1 | | 2.7 | 1.35 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1018 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1020 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1028 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 2.75 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1009 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | 1.43 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1011 | Rising | 0.1 | 0.1 | | 2.7 | 1.55 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 994 | Falling | 0.1 | 0.1 | | 2.7 | 1 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Steady | 0.1 | 0.1 | | 2.7 | 1.48 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 20 | 1006 | Rising | 0.1 | 0.1 | | 2.7 | 0.86 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 20.3 | 1006 | Steady | 0.1 | 0.1 | | Location destroyed | 1.17 |
| | 22/02/2022 | Monitoring Well Flooded | | | | | | | | | | | | - | - |
| | 15/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1019 | Falling | 0.1 | 0.1 | | 2.2 | 0.55 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS135 | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1023 | Steady | 0.1 | 0.1 | 0.50 - 3.00 | 2.25 | 0.75 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1005 | Steady | 0.1 | 0.1 | | 2.24 | 0.8 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.25 | 1.1 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.24 | 1 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.25 | 0.85 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Steady | 0.1 | 0.1 | | 2.25 | 0.7 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 2.25 | 1.05 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1018 | Rising | 0.1 | 0.1 | | 2.23 | Dry |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1009 | Steady | 0.1 | 0.1 | | 2.25 | dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1011 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 995 | Falling | 0.1 | 0.1 | | 2.2 | Dry |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1006 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1020 | Steady | 0.1 | 0.1 | | 2.23 | Dry |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 992 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 20 | 993 | Rising | 0.1 | 0.1 | | 2.23 | 1.14 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 2.23 | 1.2 |
| WS136 | 22/02/2022 | Monitoring Well Flooded. | | | | | | | | | | | 0.50 - 3.50 | - | - |
| | 15/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1020 | Falling | 0.1 | 0.1 | | 2.88 | 1.6 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.85 | 1.6 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Steady | 0.1 | 0.1 | | 2.87 | 1.9 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.85 | 2.4 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1018 | Steady | 0.1 | 0.1 | | 2.87 | 2.7 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1011 | Steady | 0.1 | 0.1 | | 2.85 | 2.15 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Steady | 0.1 | 0.1 | | 2.85 | 1.9 |
| | 15/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1017 | Steady | 0.1 | 0.1 | | 2.85 | 2.5 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1020 | Rising | 0.1 | 0.1 | | 2.85 | 2.98 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1009 | Steady | 0.1 | 0.1 | | 2.9 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.87 | 2.75 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1013 | Rising | 0.1 | 0.1 | | 2.9 | 2.95 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.5 | 0.0008 | 19.8 | 995 | Falling | 0.1 | 0.1 | | 2.9 | 1.02 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Falling | 0.1 | 0.1 | | 2.9 | 3 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1020 | Steady | 0.1 | 0.1 | | 2.88 | 1.97 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 995 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 994 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.4 | 0.2 | 0.0004 | 20 | 993 | Rising | 0.1 | 0.1 | | 2.88 | 0.87 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.4 | 0.2 | 0.0004 | 20.2 | 1020 | Steady | 0.1 | 0.1 | | 2.88 | 1.46 |
| WS137 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 1.6 | 1.3 | 0.0016 | 16.5 | 1012 | Falling | 0.1 | 0.1 | 2.00 - 3.00 | 2.6 | 2.1 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1018 | Rising | 0.1 | 0.1 | | 2.7 | 2.08 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1022 | Steady | 0.1 | 0.1 | | 2.7 | 2.2 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 2.68 | 2.1 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | 2.2 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.68 | 2.12 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | 2 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Steady | 0.1 | 0.1 | | 2.7 | 2.15 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | 2.25 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1019 | Rising | 0.1 | 0.1 | | 2.69 | Dry |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 20/09/2022 | Unable to access location | | | | | | | | | | | | - | - |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.65 | 2.02 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1012 | Rising | 0.1 | 0.1 | | 2.65 | 2.05 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 994 | Falling | 0.1 | 0.1 | | 2.65 | 1.83 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1007 | Falling | 0.1 | 0.1 | | 2.65 | 2.1 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.64 | 2.04 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 993 | Falling | 0.1 | 0.1 | | 2.65 | 2.05 |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 992 | Falling | 0.1 | 0.1 | | 2.65 | 2 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0031 | 0.4 | 0.2 | 0.0124 | 20.1 | 994 | Rising | 3.1 | 0.1 | | 2.64 | 0.95 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.1 | 0.0005 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 2.64 | 1.21 |
| WS138 | 22/02/2022 | 0.1 | 0.1 | 0.0253 | 1.4 | 1.4 | 0.3542 | 15.7 | 1006 | Rising | 25.3 | 0.1 | 1.00 - 4.00 | 1.75 | 1.2 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1019 | Falling | 0.1 | 0.1 | | 1.75 | 1.05 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1024 | Rising | 0.1 | 0.1 | | 1.85 | 1.4 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 1.86 | 1.11 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1017 | Falling | 0.1 | 0.1 | | 1.85 | 1.85 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1018 | Steady | 0.1 | 0.1 | | 1.86 | 1.15 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1011 | Steady | 0.1 | 0.1 | | 1.85 | 1.5 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Steady | 0.1 | 0.1 | | 1.85 | 1.7 |
| | 15/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1017 | Steady | 0.1 | 0.1 | | 1.85 | 2.1 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1019 | Rising | 0.1 | 0.1 | | 1.85 | 2 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1018 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1026 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1010 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1020 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1006 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 1.79 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1013 | Rising | 0.1 | 0.1 | | 1.8 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.2 | 0.0003 | 20 | 995 | Falling | 0.1 | 0.1 | | 1.72 | 2 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1021 | Steady | 0.1 | 0.1 | | 1.7 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 995 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 994 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 20.1 | 993 | Rising | 0.1 | 0.1 | | 1.7 | 1.78 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.1 | 0.0003 | 20.2 | 1020 | Steady | 0.1 | 0.1 | | 1.7 | 1.97 |
| WS140 | 22/02/2022 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.3 | 0.0003 | 18.6 | 1006 | Rising | 0.1 | 0.1 | 1.00 - 3.00 | 2.55 | 2.05 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.4 | 1019 | Falling | 0.1 | 0.1 | | 2.55 | 2.53 |
| | 21/03/2022 | 0.1 | 0.1 | -0.0003 | 0.1 | 0.1 | -0.0003 | 18.9 | 1024 | Rising | -0.3 | 0.1 | | 2.7 | 2.7 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Steady | 0.1 | 0.1 | | 2.69 | 2.57 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1017 | Falling | 0.1 | 0.1 | | 2.7 | 2.85 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1018 | Steady | 0.1 | 0.1 | | 2.69 | 2.78 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1011 | Steady | 0.1 | 0.1 | | 2.7 | 2.5 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Steady | 0.1 | 0.1 | | 2.7 | 2.7 |
| | 15/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1017 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1018 | Rising | 0.1 | 0.1 | | 2.7 | 2.92 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1018 | Falling | 0.1 | 0.1 | | 2.7 | 2.8 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1026 | Falling | 0.1 | 0.1 | | 2.7 | 2.75 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.7 | 2.7 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1020 | Falling | 0.1 | 0.1 | | 2.7 | 2.8 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1006 | Steady | 0.1 | 0.1 | | 2.75 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | 2.87 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1013 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.8 | 0.0008 | 16 | 994 | Falling | 0.1 | 0.1 | | 2.7 | 2.69 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | 2.73 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 995 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 994 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.6 | 0.6 | 0.0006 | 19 | 993 | Rising | 0.1 | 0.1 | | 2.7 | 2.34 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.6 | 0.6 | 0.0006 | 19.4 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | 2.63 |
| WS141 | 22/02/2022 | Monitoring Well Damaged, Repaired for Following Visit. | | | | | | | | | | | 1.00 - 3.00 | - | - |
| | 15/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Falling | 0.1 | 0.1 | | 2.2 | 1.58 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1022 | Steady | 0.1 | 0.1 | | 2.2 | 1.9 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Steady | 0.1 | 0.1 | | 2.25 | 1.9 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.24 | 2.35 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.25 | 2.55 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1012 | Steady | 0.1 | 0.1 | | 2.24 | 2.2 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1009 | Steady | 0.1 | 0.1 | | 2.25 | 2.4 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1020 | Steady | 0.1 | 0.1 | | 2.25 | 2.4 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1019 | Rising | 0.1 | 0.1 | | 2.25 | 2.52 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1018 | Falling | 0.1 | 0.1 | | 2.23 | 2.75 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 2.25 | 2.6 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1010 | Falling | 0.1 | 0.1 | | 2.25 | 2.75 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1020 | Falling | 0.1 | 0.1 | | 2.25 | 2.8 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1007 | Steady | 0.1 | 0.1 | | 2.25 | dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.25 | 2.62 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1013 | Rising | 0.1 | 0.1 | | 2.25 | 2.8 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 2.4 | 2.4 | 0.0024 | 18.4 | 994 | Falling | 0.1 | 0.1 | | 2.25 | 1.92 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Falling | 0.1 | 0.1 | | 2.2 | 2.9 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.25 | 2 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 995 | Falling | 0.1 | 0.1 | | 2.23 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 994 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 1.6 | 1.6 | 0.0016 | 18.3 | 994 | Rising | 0.1 | 0.1 | | 2.25 | 1.65 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 2.2 | 2.2 | 0.0022 | 18.6 | 1020 | Steady | 0.1 | 0.1 | | 2.23 | 1.9 |
| WS142 | 22/02/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.2 | 1007 | Rising | 0.1 | 0.1 | 1.00 - 3.00 | 2.23 | 1.3 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1019 | Falling | 0.1 | 0.1 | | 2.8 | 1.67 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1024 | Rising | 0.1 | 0.1 | | 2.88 | 1.9 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 2.85 | 1.81 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1017 | Falling | 0.1 | 0.1 | | 2.87 | 2.25 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1019 | Steady | 0.1 | 0.1 | | 2.85 | 1.94 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1011 | Steady | 0.1 | 0.1 | | 2.87 | 2 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Steady | 0.1 | 0.1 | | 2.85 | 1.8 |
| | 15/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1017 | Steady | 0.1 | 0.1 | | 2.85 | 2.1 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.6 | 1019 | Rising | 0.1 | 0.1 | | 2.85 | 1.98 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1018 | Falling | 0.1 | 0.1 | | 2.85 | 2.25 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 2.85 | 2.1 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1010 | Falling | 0.1 | 0.1 | | 2.85 | 2.2 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1020 | Falling | 0.1 | 0.1 | | 2.85 | 2.3 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1008 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.9 | 1.75 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1013 | Rising | 0.1 | 0.1 | | 2.87 | 2.05 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 1.1 | 1 | 0.0011 | 19.2 | 994 | Falling | 0.1 | 0.1 | | 2.9 | 1.75 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Falling | 0.1 | 0.1 | | 2.9 | 2.2 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1021 | Steady | 0.1 | 0.1 | | 2.9 | 1.72 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 995 | Falling | 0.1 | 0.1 | | 2.88 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 994 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.8 | 0.0008 | 19.4 | 993 | Rising | 0.1 | 0.1 | | 2.9 | 1.41 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.5 | 0.0005 | 19.9 | 1020 | Steady | 0.1 | 0.1 | | 2.88 | 1.68 |
| WS144 | 22/02/2022 | Unable to access location | | | | | | | | | | | | - | - |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1020 | Steady | 0.1 | 0.1 | | 2.6 | 2.09 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1021 | Falling | 0.1 | 0.1 | | 2.7 | 2.25 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 2.7 | 2.18 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Steady | 0.1 | 0.1 | | 2.68 | 2.6 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1019 | Steady | 0.1 | 0.1 | | 2.7 | 2.28 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1010 | Steady | 0.1 | 0.1 | | 2.68 | 2.35 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Steady | 0.1 | 0.1 | | 2.7 | 2.1 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | 2.65 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | 2.37 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 2.69 | 2.7 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1030 | Falling | 0.1 | 0.1 | | 2.7 | 2.7 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1013 | Falling | 0.1 | 0.1 | 1.00 - 3.00 | 2.7 | 2.7 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1023 | Falling | 0.1 | 0.1 | | 2.7 | 2.7 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1008 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1007 | Falling | 0.1 | 0.1 | | 2.7 | 2.12 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Rising | 0.1 | 0.1 | | 2.65 | 2.5 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.8 | 0.0008 | 19.6 | 995 | Falling | 0.1 | 0.1 | | 2.65 | 1.98 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1004 | Falling | 0.1 | 0.1 | | 2.65 | 2.65 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1022 | Steady | 0.1 | 0.1 | | 2.65 | 2.1 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Falling | 0.1 | 0.1 | | 2.64 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 995 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.7 | 0.7 | 0.0007 | 19.8 | 992 | Rising | 0.1 | 0.1 | | 2.65 | 1.9 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.7 | 0.7 | 0.0007 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.64 | 2.1 |
| WS147 | 23/02/2022 | 0.1 | 0.1 | 0.0033 | 0.1 | 0.1 | 0.0033 | 18.1 | 1009 | Falling | 3.3 | 0.1 | 1.00 - 2.00 | 2.64 | 1.35 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 1018 | Rising | 0.1 | 0.1 | | 1.75 | 1.28 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1022 | Steady | 0.1 | 0.1 | | 1.75 | 1.4 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 1.85 | 1.07 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Steady | 0.1 | 0.1 | | 1.86 | 1.25 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 1.85 | 1.26 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 1.86 | 1.2 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Steady | 0.1 | 0.1 | | 1.85 | 1.35 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1020 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1020 | Rising | 0.1 | 0.1 | | 1.85 | 1.35 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 1.85 | 1.1 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1028 | Falling | 0.1 | 0.1 | | 1.85 | 1.1 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 1.85 | 1.25 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1022 | Falling | 0.1 | 0.1 | | 1.85 | 1.45 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1008 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1005 | Falling | 0.1 | 0.1 | | 1.85 | 1.31 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1012 | Rising | 0.1 | 0.1 | | 1.79 | 1.45 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 994 | Falling | 0.1 | 0.1 | | 1.8 | 1.25 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1007 | Falling | 0.1 | 0.1 | | 1.72 | 1.05 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 1.8 | 1.34 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 994 | Falling | 0.1 | 0.1 | | 1.7 | 1.3 |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 992 | Falling | 0.1 | 0.1 | | 1.8 | 1.2 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0079 | 0.1 | 0.1 | 0.0079 | 20.1 | 994 | Rising | 7.9 | 0.1 | | 1.8 | 0.6 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1020 | Steady | 0.1 | 0.1 | | 1.7 | 1.07 |
| WS148 | Unable to be located – Assumed Destroyed. | | | | | | | | | | | | | | |
| | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.4 | 1008 | Falling | 0.1 | 0.1 | | 2.55 | Dry |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Rising | 0.1 | 0.1 | | 2.55 | Dry |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1007 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1007 | Falling | 0.1 | 0.1 | | 2.69 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1018 | Steady | 0.1 | 0.1 | | 2.69 | Dry |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1016 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1015 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1022 | Rising | 0.1 | 0.1 | | 2.7 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS149A | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | 0.50 - 1.00 | 2.7 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1021 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1015 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1016 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | Unable to Access Location | | | | | | | | | | | | - | - |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1004 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.8 | 0.0008 | 19.1 | 995 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 989 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 998 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 20.1 | 993 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.8 | 0.0008 | 19.7 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| WS151 | 24/02/2022 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.7 | 0.0008 | 17.8 | 999 | Rising | 0.1 | 0.1 | 1.00 - 2.00 | Location destroyed | 1.25 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.2 | 1.62 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1021 | Falling | 0.1 | 0.1 | | 2.2 | 1.85 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 2.25 | 1.57 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1020 | Steady | 0.1 | 0.1 | | 2.24 | 1.8 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.1 | 1018 | Steady | 0.1 | 0.1 | | 2.25 | 1.63 |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1016 | Steady | 0.1 | 0.1 | | 2.24 | 1.7 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Rising | 0.1 | 0.1 | | 2.25 | 1.8 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1015 | Steady | 0.1 | 0.1 | | 2.25 | 1.45 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1020 | Rising | 0.1 | 0.1 | | 2.25 | 1.68 |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 2.23 | 1.75 |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1021 | Falling | 0.1 | 0.1 | | 2.25 | 1.1 |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Rising | 0.1 | 0.1 | | 2.25 | 1.35 |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Falling | 0.1 | 0.1 | | 2.25 | 1.65 |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1008 | Falling | 0.1 | 0.1 | | 2.25 | dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.2 | 1005 | Falling | 0.1 | 0.1 | | 2.25 | 1.41 |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1004 | Rising | 0.1 | 0.1 | | 2.25 | 1.65 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 994 | Falling | 0.1 | 0.1 | | 2.25 | 1.16 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 989 | Falling | 0.1 | 0.1 | | 2.2 | 1.7 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.25 | 1.59 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 2.23 | 1.85 |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 998 | Rising | 0.1 | 0.1 | | 2.25 | 1.7 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Rising | 0.1 | 0.1 | | 2.25 | 1.39 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.3 | 0.0003 | 20.1 | 1020 | Steady | 0.1 | 0.1 | | 2.23 | 1.26 |
| | 22/02/2022 | Unable to Access Location | | | | | | | | | | | | - | - |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.8 | 1.41 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1021 | Falling | 0.1 | 0.1 | | 2.88 | 1.75 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 2.85 | 1.58 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Steady | 0.1 | 0.1 | | 2.87 | 2.2 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1019 | Steady | 0.1 | 0.1 | | 2.85 | 1.99 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1010 | Steady | 0.1 | 0.1 | | 2.87 | 2.05 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS152 | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1008 | Steady | 0.1 | 0.1 | 0.50- 2.50 | 2.85 | 1.75 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1020 | Steady | 0.1 | 0.1 | | 2.85 | 2.2 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1020 | Rising | 0.1 | 0.1 | | 2.85 | 2.32 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 2.85 | 2.6 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1030 | Falling | 0.1 | 0.1 | | 2.85 | 2.5 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1013 | Falling | 0.1 | 0.1 | | 2.85 | 2.35 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1023 | Falling | 0.1 | 0.1 | | 2.85 | 2.55 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1008 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1007 | Falling | 0.1 | 0.1 | | 2.9 | 2.08 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Rising | 0.1 | 0.1 | | 2.87 | 2.4 |
| | 03/11/2022 | 0.8 | 0.8 | 0.0008 | 4.8 | 4.8 | 0.0048 | 6.7 | 995 | Falling | 0.1 | 0.1 | | 2.9 | 1.55 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1004 | Falling | 0.1 | 0.1 | | 2.9 | 2.5 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1021 | Steady | 0.1 | 0.1 | | 2.9 | 1.78 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Falling | 0.1 | 0.1 | | 2.88 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 995 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.7 | 0.7 | 0.0007 | 19.8 | 992 | Rising | 0.1 | 0.1 | | 2.9 | 1.78 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.8 | 0.0008 | 19.5 | 1019 | Steady | 0.1 | 0.1 | | 2.88 | 1.43 |
| WS153A | 22/02/2022 | 0.1 | 0.1 | 0.0001 | 0.7 | 0.7 | 0.0007 | 18.9 | 999 | Rising | 0.1 | 0.1 | 0.50 - 1.00 | 2.88 | 0.5 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Falling | 0.1 | 0.1 | | 2.6 | 0.82 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1021 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Falling | 0.1 | 0.1 | | 2.68 | Dry |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.1 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1016 | Steady | 0.1 | 0.1 | | 2.68 | Dry |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1014 | Rising | 0.1 | 0.1 | | 2.7 | 0.7 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1011 | Falling | 0.1 | 0.1 | | 2.69 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1021 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1008 | Falling | 0.1 | 0 | | 2.7 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.2 | 1006 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 995 | Falling | 0.1 | 0.1 | | 2.65 | 0.85 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 988 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.65 | Dry |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1001 | Rising | 0.1 | 0.1 | | 2.64 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 999 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Rising | 0.1 | 0.1 | | 2.65 | 0.7 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.8 | 0.8 | 0.0008 | 19.1 | 1021 | Steady | 0.1 | 0.1 | | 2.64 | Dry |
| | Monitoring Well Flooded | | | | | | | | | | | | | - | - |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Falling | 0.1 | 0.1 | | 1.75 | 1.45 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1021 | Rising | 0.1 | 0.1 | | 1.75 | 1.5 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1006 | Steady | 0.1 | 0.1 | | 1.85 | 1.02 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS157 | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Falling | 0.1 | 0.1 | 1.00 - 2.00 | 1.86 | 1.8 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.1 | 1018 | Steady | 0.1 | 0.1 | | 1.85 | 1.15 |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1016 | Steady | 0.1 | 0.1 | | 1.86 | 1.6 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1014 | Rising | 0.1 | 0.1 | | 1.85 | 1.4 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1015 | Steady | 0.1 | 0.1 | | 1.85 | 1.75 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1020 | Rising | 0.1 | 0.1 | | 1.85 | 1.43 |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 1.85 | 1.75 |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1021 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Rising | 0.1 | 0.1 | | 1.85 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 1.85 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.2 | 1006 | Falling | 0.1 | 0.1 | | 1.85 | 1.08 |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Rising | 0.1 | 0.1 | | 1.79 | 1.4 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 20.3 | 994 | Falling | 0.1 | 0.1 | | 1.8 | 1.6 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 988 | Falling | 0.1 | 0.1 | | 1.72 | 1.35 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 1.8 | 1.02 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1001 | Rising | 0.1 | 0.1 | | 1.7 | 1.6 |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 999 | Rising | 0.1 | 0.1 | | 1.8 | 1.4 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Rising | 0.1 | 0.1 | | 1.8 | 1.32 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 20.2 | 1020 | Steady | 0.1 | 0.1 | | 1.7 | 1.52 |
| WS161 | 24/02/2022 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.5 | 0.0005 | 18.7 | 999 | Rising | 0.1 | 0.1 | 0.50 - 1.50 | 1.7 | 0.65 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.55 | 0.58 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1021 | Falling | 0.1 | 0.1 | | 2.55 | 0.8 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Steady | 0.1 | 0.1 | | 2.7 | 0.88 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.69 | 1.15 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.1 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | 1.28 |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1016 | Steady | 0.1 | 0.1 | | 2.69 | 1.05 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1014 | Rising | 0.1 | 0.1 | | 2.7 | 0.9 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | 1.25 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1021 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1011 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1021 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1015 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1008 | Falling | 0.1 | 0.1 | | 2.7 | dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.75 | 1.2 |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1005 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 994 | Falling | 0.1 | 0.1 | | 2.7 | 1.25 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 988 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | 0.81 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1001 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 999 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Rising | 0.1 | 0.1 | | 2.7 | 0.53 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 1.6 | 1.2 | 0.0016 | 18.4 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | 0.69 |
| | 24/02/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 998 | Rising | 0.1 | 0.1 | | 2.7 | 1.75 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS169 | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Steady | 0.1 | 0.1 | 1.00 - 2.00 | Location destroyed | 1.63 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1021 | Falling | 0.1 | 0.1 | | 2.2 | 1.75 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Steady | 0.1 | 0.1 | | 2.2 | 1.4 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1020 | Steady | 0.1 | 0.1 | | 2.25 | 1.7 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.1 | 1018 | Steady | 0.1 | 0.1 | | 2.24 | 1.57 |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1016 | Steady | 0.1 | 0.1 | | 2.25 | 1.5 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1014 | Rising | 0.1 | 0.1 | | 2.24 | 1.45 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1015 | Steady | 0.1 | 0.1 | | 2.25 | 1.8 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1021 | Rising | 0.1 | 0.1 | | 2.25 | 1.76 |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1021 | Falling | 0.1 | 0.1 | | 2.23 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Rising | 0.1 | 0.1 | | 2.25 | Dry |
| | 06/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1015 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1008 | Falling | 0.1 | 0.1 | | 2.25 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 2.25 | 1.13 |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1004 | Rising | 0.1 | 0.1 | | 2.25 | 1.5 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 994 | Falling | 0.1 | 0.1 | | 2.25 | 1.62 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 989 | Falling | 0.1 | 0.1 | | 2.25 | 1.4 |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1021 | Steady | 0.1 | 0.1 | | 2.2 | 1.04 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1000 | Rising | 0.1 | 0.1 | | 2.25 | 1.75 |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 998 | Rising | 0.1 | 0.1 | | 2.23 | 1.6 |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 992 | Rising | 0.1 | 0.1 | | 2.25 | 1.43 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.5 | 0.0005 | 19.6 | 1021 | Steady | 0.1 | 0.1 | | 2.25 | 1.12 |
| WS171 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 1.3 | 1.3 | 0.0013 | 17.3 | 1007 | Falling | 0.1 | 0.1 | 1.00- 2.50 | 2.23 | 1.2 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Rising | 0.1 | 0.1 | | 2.23 | Dry |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1022 | Steady | 0.1 | 0.1 | | 2.8 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 2.88 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1019 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1018 | Steady | 0.1 | 0.1 | | 2.87 | Dry |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Steady | 0.1 | 0.1 | | 2.87 | 2.2 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.4 | 1016 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1020 | Rising | 0.1 | 0.1 | | 2.85 | Dry |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1022 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1029 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1010 | Steady | 0.1 | 0.1 | | 2.85 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1007 | Falling | 0.1 | 0.1 | | 2.85 | Dry |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1010 | Rising | 0.1 | 0.1 | | 2.9 | Dry |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 995 | Falling | 0.1 | 0.1 | | 2.87 | Dry |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1005 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1020 | Steady | 0.1 | 0.1 | | 2.9 | 2.15 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 992 | Falling | 0.1 | 0.1 | | 2.9 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 991 | Falling | 0.1 | 0.1 | | 2.88 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 993 | Rising | 0.1 | 0.1 | | 2.9 | 1.12 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.2 | 1020 | Steady | 0.1 | 0.1 | | 2.9 | 1.12 |
| CP/RB101 | 23/02/2022 | 4.4 | 4.4 | 0.0044 | 9.5 | 9.5 | 0.0095 | 0.2 | 1008 | Falling | 0.1 | 0.1 | 3.00- 5.00 | 2.88 | 3.3 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Rising | 0.1 | 0.1 | | 2.88 | 3.25 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1023 | Steady | 0.1 | 0.1 | | 2.6 | 3.6 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1013 | Falling | 0.1 | 0.1 | | 2.7 | 4.4 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1018 | Steady | 0.1 | 0.1 | | 2.7 | 4 |
| | 06/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1018 | Steady | 0.1 | 0.1 | | 2.68 | Dry |
| | 17/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1015 | Steady | 0.1 | 0.1 | | 2.7 | 3.75 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1016 | Rising | 0.1 | 0.1 | | 2.68 | 3.5 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1016 | Steady | 0.1 | 0.1 | | 2.7 | 3.95 |
| | 06/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1022 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1023 | Falling | 0.1 | 0.1 | | 2.69 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1013 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1002 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1006 | Rising | 0.1 | 0.1 | | 2.65 | 4.23 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Falling | 0.1 | 0.1 | | 2.65 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.3 | 1018 | Falling | 0.1 | 0.1 | | 2.65 | 3.35 |
| | 19/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 999 | Rising | 0.1 | 0.1 | | 2.65 | Dry |
| | 28/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 997 | Rising | 0.1 | 0.1 | | 2.64 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.2 | 0.0005 | 20.1 | 1001 | Rising | 0.1 | 0.1 | | 2.65 | 2.75 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.5 | 0.0005 | 20.2 | 1025 | Rising | 0.1 | 0.1 | | 2.65 | 2.76 |
| CP/RB102 | 23/02/2022 | 0.1 | 0.1 | 0.0001 | 4.1 | 2.6 | 0.0041 | 15.8 | 1011 | Falling | 0.1 | 0.1 | 3.00- 4.00 | 2.64 | 3.3 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1020 | Rising | 0.1 | 0.1 | | 2.64 | 3.05 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1024 | Steady | 0.1 | 0.1 | | 1.75 | 3.25 |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1006 | Falling | 0.1 | 0.1 | | 1.75 | 3.1 |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1018 | Steady | 0.1 | 0.1 | | 1.85 | 3.55 |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 1018 | Steady | 0.1 | 0.1 | | 1.86 | 3.16 |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 1.85 | 3.35 |
| | 31/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1009 | Steady | 0.1 | 0.1 | | 1.86 | 3.1 |
| | 16/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1021 | Steady | 0.1 | 0.1 | | 1.85 | 3.45 |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.5 | 1019 | Rising | 0.1 | 0.1 | | 1.85 | 3.1 |
| | 01/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1019 | Falling | 0.1 | 0.1 | | 1.85 | 3.45 |
| | 10/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1027 | Falling | 0.1 | 0.1 | | 1.85 | 3.5 |
| | 18/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1011 | Falling | 0.1 | 0.1 | | 1.85 | 3.4 |
| | 01/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1021 | Falling | 0.1 | 0.1 | | 1.85 | 3.5 |
| | 20/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1010 | Steady | 0.1 | 0.1 | | 1.85 | Dry |
| | 04/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 1006 | Falling | 0.1 | 0.1 | | 1.85 | 3.45 |
| | 17/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1011 | Rising | 0.1 | 0.1 | | 1.85 | 3.6 |
| | 03/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 995 | Falling | 0.1 | 0.1 | | 1.79 | 3.06 |
| | 14/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1006 | Falling | 0.1 | 0.1 | | 1.8 | Dry |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 07/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.4 | 1022 | Steady | 0.1 | 0.1 | | 1.72 | 3.05 |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 993 | Falling | 0.1 | 0.1 | | 1.8 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.8 | 993 | Falling | 0.1 | 0.1 | | 1.7 | Dry |
| | 19/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1020 | Rising | 0.1 | 0.1 | | 1.8 | 3.13 |
| | 03/02/2023 | 0.1 | 0.1 | 0.0001 | 0.9 | 0.9 | 0.0009 | 19.1 | 1020 | Steady | 0.1 | 0.1 | | 1.8 | 2.76 |
| CP/RB103 | 23/02/2022 | 0.3 | 0.3 | 0.0003 | 6 | 6 | 0.006 | 0.2 | 1008 | Falling | 0.1 | 0.1 | 3.00- 4.00 | 1.7 | 3.1 |
| | 14/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1019 | Rising | 0.1 | 0.1 | | 1.7 | 3.3 |
| | 21/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.9 | 1021 | Steady | 0.1 | 0.1 | | 2.55 | Dry |
| | 30/03/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 1007 | Falling | 0.1 | 0.1 | | 2.55 | Dry |
| | 19/04/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1019 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1019 | Steady | 0.1 | 0.1 | | 2.69 | Dry |
| | 16/05/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | 3.15 |
| | 01/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1016 | Rising | 0.1 | 0.1 | | 2.69 | 3.2 |
| | 17/06/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1017 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/07/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.8 | 1020 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 02/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1009 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 11/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.8 | 1023 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 19/08/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.6 | 1013 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 05/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.7 | 1012 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 21/09/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 1009 | Falling | 0.1 | 0.1 | | 2.7 | dry |
| | 05/10/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18 | 997 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/10/2022 | 0.1` | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 1002 | Rising | 0.1 | 0.1 | | 2.75 | Dry |
| | 04/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 1007 | Rising | 0.1 | 0.1 | | 2.7 | 3.1 |
| | 15/11/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 991 | Falling | 0.1 | 0.1 | | 2.7 | Dry |
| | 06/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.6 | 1020 | Steady | 0.1 | 0.1 | | 2.7 | Dry |
| | 20/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.1 | 999 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 29/12/2022 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 997 | Rising | 0.1 | 0.1 | | 2.7 | Dry |
| | 18/01/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20 | 992 | Rising | 0.1 | 0.1 | | 2.7 | 3.23 |
| | 02/02/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.3 | 1021 | Steady | 0.1 | 0.1 | | 2.7 | 3.11 |
| WS201 | 27/11/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 19.1 | 999 | Rising | 0.1 | 0.1 | 0.50 - 3.00 | 3.62 | Dry |
| | 08/12/2023 | 66.3 | 65.9 | 0.0663 | 22 | 22 | 0.022 | 0.1 | 995 | Rising | 0.1 | 0.1 | | 3.62 | Dry |
| | 21/12/2023 | 68.3 | 67.9 | 0.0683 | 21.5 | 21.5 | 0.0215 | 0.1 | 995 | Falling | 0.1 | 0.1 | | 3.6 | Dry |
| | 09/01/2024 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.2 | 0.0002 | 20 | 1031 | Steady | 0.1 | 0.1 | | 3.6 | Dry |
| | 23/01/2024 | 13.3 | 13.3 | 0.0399 | 6.8 | 6.8 | 0.0204 | 6.9 | 1009 | Falling | 0.3 | 0.1 | | 3.6 | Dry |
| | 08/02/2024 | 69.3 | 69.1 | 0.0693 | 21.3 | 21.3 | 0.0213 | 0.1 | 987 | Falling | 0.1 | 0.1 | | 3.6 | 3.57 |
| | 23/02/2024 | 1.6 | 0.1 | 0.0016 | 0.7 | 0.4 | 0.0007 | 20.1 | 979 | Rising | 0.1 | 0.1 | | 3.6 | 3.16 |
| | 04/03/2024 | 25.4 | 25.2 | 0.0254 | 10.7 | 10.7 | 0.0107 | 3.8 | 1002 | Falling | 0.1 | 0.1 | | 3.6 | 3.28 |
| WS202 | 27/11/2023 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.2 | 0.0005 | 19 | 999 | Rising | 0.1 | 0.1 | 2.00-3.00 | 2.35 | 2.01 |
| | 08/12/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.1 | 994 | Rising | 0.1 | 0.1 | | 2.32 | 2.09 |
| | 21/12/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 20.5 | 999 | Falling | 0.1 | 0.1 | | 2.3 | 2.1 |
| | 09/01/2024 | 0.1 | 0.1 | 0.0004 | 0.3 | 0.1 | 0.0012 | 19.8 | 1032 | Steady | 0.4 | 0.1 | | 2.29 | 1.49 |
| | 23/01/2024 | 0.1 | 0.1 | 0.002 | 0.3 | 0.1 | 0.006 | 20.3 | 1008 | Falling | 2.0 | 0.1 | | 2.28 | 1.88 |
| | 08/02/2024 | 0.1 | 0.1 | 0.0001 | 0.5 | 0.2 | 0.0005 | 19.8 | 986 | Falling | 0.1 | 0.1 | | 2.28 | 1.92 |
| | 23/02/2024 | 0.1 | 0.1 | 0.0012 | 0.5 | 0.5 | 0.006 | 18.7 | 979 | Rising | 1.2 | 0.1 | | 2.25 | 1.63 |
| | 04/03/2024 | 0.1 | 0.1 | 0.001 | 0.4 | 0.1 | 0.004 | 20.3 | 1001 | Falling | 1.0 | 0.1 | | 2.26 | 1.76 |

| WELL | DATE | CH4 PEAK (%V/V) | CH4 STEADY (%V/V) | CH4 GSV (l/hr) | CO2 PEAK (%V/V) | CO2 STEADY (%V/V) | CO2 GSV (l/hr) | O2 (%V/V) | ATMOS (mb) | ATMOS. DYNAMIC | PEAK FLOW (l/hr) | STEADY FLOW (l/hr) | RESPONSE ZONE (m bgl) | DEPTH TO BASE (m bgl) | DEPTH TO WATER (m bgl) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| WS204 | 27/11/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.7 | 999 | Rising | 0.1 | 0.1 | 1.50 - 3.00 | 1.92 | 1.69 |
| | 08/12/2023 | 0.1 | 0.1 | 0.0001 | 0.3 | 0.1 | 0.0003 | 18.7 | 994 | Rising | 0.1 | 0.1 | | 1.91 | 1.1 |
| | 21/12/2023 | 0.1 | 0.1 | 0.0001 | 0.2 | 0.1 | 0.0002 | 20.6 | 999 | Falling | 0.1 | 0.1 | | 1.92 | 1.3 |
| | 09/01/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19 | 1031 | Steady | 0.1 | 0.1 | | 1.9 | 1.14 |
| | 23/01/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.9 | 1007 | Falling | 0.1 | 0.1 | | 1.9 | 1.48 |
| | 08/02/2024 | 0.1 | 0.1 | 0.0001 | 0.4 | 0.4 | 0.0004 | 19.1 | 985 | Falling | 0.1 | 0.1 | | 1.9 | 1.31 |
| | 23/02/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.7 | 978 | Rising | 0.1 | 0.1 | | 1.89 | 1.01 |
| | 04/03/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 19.5 | 1001 | Falling | 0.1 | 0.1 | | 1.89 | 1.18 |
| WS206 | 27/11/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 17.8 | 999 | Rising | 0.1 | 0.1 | 1.00 - 2.50 | 1.49 | 0.62 |
| | 08/12/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 18.1 | 995 | Rising | 0.1 | 0.1 | | 1.48 | 1.12 |
| | 21/12/2023 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 11.2 | 999 | Falling | 0.1 | 0.1 | | 1.48 | 1.46 |
| | 09/01/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 14 | 1032 | Steady | 0.1 | 0.1 | | 1.48 | 1.46 |
| | 23/01/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 9.2 | 1011 | Falling | 0.1 | 0.1 | | 1.48 | 1.46 |
| | 08/02/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 10.3 | 987 | Falling | 0.1 | 0.1 | | 1.48 | 1.47 |
| | 23/02/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 14.2 | 978 | Rising | 0.1 | 0.1 | | 1.48 | 1.45 |
| | 04/03/2024 | 0.1 | 0.1 | 0.0001 | 0.1 | 0.1 | 0.0001 | 11.8 | 1001 | Falling | 0.1 | 0.1 | | 1.48 | 1.47 |