Phase II Geoenvironmental Site Assessment

Site: Ryebank Road, Chorlton
Reference: 17-403-R1-4
Date: February 25



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EXECUTIVE SUMMARY

Site Address	Land north of Ryebank Road / Longford Road, Chorlton, Manchester, M21 9LU
Grid Reference	E 381090, N 394580
Site Area	4.6 Ha.
Proposed Development	E3P understand that the proposed development comprises a residential development including access, car parking provision, landscaping, sustainable drainage features and other associated works.
Current Site Use	The subject site is an irregularly shaped parcel of land located to the north of Ryebank Road / Longford Road in Chorlton referred to as Ryebank Fields. The site is surfaced by overgrown grasses and semi mature and mature trees, which are notably dense around the perimeter of the site. The Nico ditch is known to intersect the centre of the site which is a linear earthwork stretching across Manchester (9.7 km). There are no structures present on site, however an area of hardstanding is present to the southeast of the site. A bund surfaced by grass is located adjacent to the area of hard standing in the southeast of the site. A number of pedestrian paths intersect the site. The site is predominantly flat in topography but gradually falls from south to north.
Site History	Historical mapping suggests that the site was undeveloped agricultural land with Longford Brook traversing the site west to east. In the late 1800's a pond was present in the centre of the site with a small structure in the south-western corner. In the early 1900's residential properties were present in the south-east of the site; furthermore, a brick works is present along the eastern boundary of the site. Mapping from 1930 to 1938 identifies a clay pit and two ponds in the north of the site, with embankments present across the entire site likely to be indicative of areas of excavation. Mapping from 1950 show all previous features to no longer be present indicating these have been infilled, with a drain traversing the site west to east. An unspecified building was present in the west of the site from mapping dated 1971-1981 and was demolished at some point between 2003 and 2005.

ENVIRONMENTAL SETTING

Geology	**Superficial Geology**	Glaciofluvial Sheet Deposits (Northwest) – SAND and GRAVEL Glacial Till (Majority of site) – SAND, GRAVEL and CLAY)
	Bedrock Geology	Wilmslow Sandstone Formation – SANDSTONE
Geomorphology	The site is predominantly underlain by till (Diamicton), historically glaciogenic in origin, with geomorphologies associated with glacial and inter-glacial periods during the Quaternary. The underlying bedrock mainly comprises SANDSTONE (Wilmslow Sandstone Formation). These sedimentary rocks are fluvial, lacustrine and marine in origin. The site has previously undergone extensive quarrying during its use as a clay pit for adjacent brick works in the early 20th century. Following its excavation, the site had been infilled with incinerated ash and other materials in order to create a level platform.	

Hydrogeology	The site is predominantly underlain by a Secondary Undifferentiated aquifer with a Secondary A aquifer in the northwest of the site within the drift geology, overlying a Principal aquifer (bedrock geology).
	There are three groundwater abstraction points situated within 1 km of the site which are operated by Trafford Metal Finishers Manchester Ltd utilised as process water. The three abstraction licenses relate to these boreholes.
Hydrology	The Nico Ditch (referred to as a drain) intersects the centre of the site however it is noted to be dry. A drain is located 156 m west of the site. Moreover, United Utilities has indicated that the route of the Thirlmere Aqueduct runs across the northern boundary of the site. Longford Brook (culverted) is located circa 210 m west of the site. Longford Brook historically flowed through the site; however, it has since been diverted.
	The site is located within Flood Zone 1 - low risk of flooding.
Utility Locations	A full GPR survey has not been completed; a review of online service records identified an intermediate pressure gas main to dissect the site north to south, with a low-pressure gas main present in the southwest of the site. BT and electricity service infrastructure are present in the south-western corner of the site. United Utilities has noted the presence of a surface water sewer in the south of the site with an overflow sewer within the north of the site. Adjacent to the northern boundary are three trunk mains, one of which is named the Thirlmere Aqueduct and an LDTM Treated Water Trunk Main.
Landfill Sites and Waste Sites	There are no current or historical recorded landfill sites within 250 m of the subject site. However, mapping circa in the early to mid-20th century indicates that the site has been subject to historical infilling (pits, quarries, pond, marsh, river, streams). Historical mapping shows significant topographical changes, steep slopes, infilled clay pits and ponds within the site boundary. There are also ten locations of potentially infilled land within 250 m of the site from historical mapping dating 1848 to 1955.
Radon	Radon Class 1 - less than 1% of homes are estimated to be at or above the Action Level. No radon protection measures required.
Unexploded Ordnance	Moderate risk UXO area. Preliminary and detailed UXO risk assessments have been completed for the subject site. The recommended risk mitigation measures include UXO safety awareness briefings prior to all intrusive works, on-site supervision with EOD engineer during all site investigation works and open excavations, and intrusive magnetometer probe survey for all pile positions.
PFAS	No potential current or historical sources of PFAS have been identified on site. No further risk assessment is required.
Hazardous Installations	No hazardous installations that could potentially prejudice the proposed construction of a residential development have been identified within the influencing distance of the subject site.

PREVIOUS INVESTIGATION

Previous Site Investigation	E3P conducted an initial phase of intrusive site investigation in December 2019, the results of which have been incorporated into this report to provide a comprehensive assessment of the information gathered thus far. A subsequent investigation was carried out in July 2024 to further supplement the findings from the initial phase.

E3P GROUND INVESTIGATION

Ground Investigation Works	E3P has completed supplementary intrusive ground investigation comprising: • 32 x mechanically excavated trial pits; • 19 x window sample probeholes; • 6 x hand excavated trial pits; • 18 x static piezocone penetration tests (CPTUs); • 6 x cable percussive boreholes; and • Construction of environmental monitoring installations.
Ground Conditions	**Made Ground – 0.00 m bgl to 13.50 m bgl** Made Ground deposits were encountered within all exploratory hole locations from ground level to a maximum proven depth of 13.50 m bgl (CP202). The depth of Made Ground could not be determined within the majority of locations due to substantial depths of Made Ground and obstructions. The full depth of Made Ground was proven within seven locations where the cable percussive boreholes were advanced to depths in excess of 7.50 m bgl and within one window sample borehole (WS203) where the underlying natural superficial deposits were encountered. Made Ground generally comprised a reworked topsoil from ground level to a maximum proven depth of 0.30 m bgl. Reworked topsoil comprised brown slightly sandy gravelly clay with frequent rootlets, with gravel of sandstone and mudstone and rare to frequent fragments of brick and concrete. Within the 2019 site investigation cobble sized fragments of brick and concrete were encountered throughout the topsoil. Reworked topsoil was not encountered within TP129, TP130, WS112 and CP204 in the south of the site, which comprised asphalt to a maximum proven depth of 0.20 m bgl. Underlying the reworked topsoil and asphalt, Made Ground was predominantly granular, comprising either a black fine to medium gravelly sand or sandy gravel. Gravel is generally comprised largely of ash material with sandstone and mudstone, and frequent fragments of asphalt, brick, concrete, metal, and glass, with occasional cobbles of brick and concrete. During the 2019 investigation, isolated areas of reworked clay were identified in TP102, WS102, WS103, WS108 and WS112, encountered at depths of between 0.20-2.50 m bgl to a maximum depth of 3.45 m bgl and comprised a firm to stiff brown gravelly clay, with gravel of brick and concrete. White ash (likely calcium carbonate/incineration by-products) in the form of a grey-blue clayey sand was encountered in pockets throughout the granular Made Ground mainly located in the northern sector of the site in TP111, TP113, TP115, TP120, TP129, to depths of between 1.20 m bgl and 2.20 m bgl. The white ash material was also encountered as bands in TP103 between 2.10 m and 2.40 m bgl, WS105 between 3.60 m and 4.00 m bgl and WS111 between 2.00 m and 2.80 m bgl.

	Interbedded clay was encountered within the 2024 investigation within TP201 and TP202, as well as WS201-WS203, WS205, WS207, CP201 and HP205. This clay generally comprised of a firm dark grey to brown gravelly clay, with gravel of mudstone with frequent fragments of brick, concrete, clinker, timber and ash inclusions. Strong hydrocarbon odours were noted throughout the site at depths typically in excess of 1.50 m bgl.
Ground Conditions *…Continued*	**Superficial – 7.50 m bgl to >13.50 m bgl** Superficial deposits were encountered within seven locations and were typically encountered at the base of the historic clay pits at depths between 7.50 m bgl and 13.50 m bgl. Typically, superficial deposits were only encountered within the cable percussive holes however, one location (WS203) in the southwest of the site which encountered natural superficial deposits at a shallower depth of 1.50 m bgl. Superficial deposits were proven to a maximum depth of 17.83 m bgl within CP202 with the presence of very stiff sandy CLAY. Natural superficial deposits encountered typically comprised a very stiff very high strength brown sandy CLAY with occasional boulders of sandstone. Shallower superficial deposits were encountered within WS203 in the southwest of the site (located outside of the historically mapped clay pit) from 1.50 m bgl, which comprised a very soft to soft extremely low to very low strength brown sandy gravelly clay, with gravel of sandstone, mudstone and coal.
	Solid The solid geology was not encountered during the ground investigation. A BGS borehole record (BGS Reference: SJ89NW762) circa 600 m north of the site identified SANDSTONE bedrock at 27.00 m bgl.
	Groundwater Groundwater strikes were recorded between 1.20 – 13.00 m bgl.

CONTAMINATED LAND ASSESSMENT

Human Health	The Tier 2 human health risk assessment identified elevated concentrations of heavy metals, non-volatile PAHs, naphthalene, TPH C12-C35 and asbestos fibres. The risk to chronic human health associated with the elevated concentrations of inorganic heavy metals, non-volatile PAH and TPH 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. Elevated total mercury has been identified within Made Ground deposits within TP116, TP119, CP201, CP203 and WS204. As a conservative approach, the GAC for elemental mercury has been utilised in the absence of mercury speciation testing. If further testing confirms that no elemental mercury is present, a higher GAC can be used (30 mg/kg) therefore the samples currently exceeding for elemental mercury will fall below the threshold for organic mercury therefore no residual risk. Further speciation testing is required to confirm the above.

Human Health

...Continued

With regards to the elevated naphthalene, TPH C12-C21 and VOCs/SVOCs, these present potential volatilisation to indoor air risk. These have been identified within localised areas (TP116, TP119, WS201, WS204 and CP203) at depths between 0.10 m bgl and 5.00 m bgl. Due to the depth of the exceedances (>5.00 m bgl) with no specific source identified, the potential exposure to residual vapour will require mitigation by installing vapour mitigation measures within all affected plots. The details of the vapour mitigation measures will be included within the Ground Gas Design Report.

Asbestos in the form of loose chrysotile, amosite and crocidolite fibres has been identified in the Made Ground across the site at depths between 0.50 – 5.00 m bgl. Quantification has been carried out on all positive samples which indicates volumes of asbestos between 1.18% (WS101) to 0.01% (WS112). Asbestos quantification within WS110 has identified trace fibres (<0.001%). Impacted soils should be managed according to the asbestos risk mitigation conceptual site model. Visual asbestos, if identified, will require handpicking by specially trained personnel with removal to a licenced facility. Where soils are to be removed from site and are impacted by asbestos fibres and/or fragments, these soils will require removal to a suitable licenced facility.

Controlled Waters

The Tier 2 controlled waters risk assessment identified elevated concentrations of heavy metals, TPH, PAHs, and VOCs/SVOCs.

Low-permeability clay has been encountered beneath the Made Ground within the infilled clay pits, providing some protection to the underlying principal aquifer. BGS borehole records indicate that the bedrock (principal aquifer) is located approximately 27 m bgl, resulting in an approximate 10-15 m cover of low-permeability clay, which reduces downward migration. However, exceedances identified in groundwater samples taken from natural response zones (CP201 and CP204) beneath the infilled clay pits indicate that some downward migration may be occurring on-site.

If low-permeability clay deposits are still present in the location of the Nico Ditch and culverted brook, they will provide some protection against contamination migration. Additionally, depending on the construction of the culvert, any concrete lining may also help prevent contamination migration to surface water.

The site is currently unsurfaced therefore allows for unrestricted rainfall infiltration, which increases the risk of contaminant mobilisation into the groundwater. The proposed development will make 60% of the site impermeable, reducing the infiltration significantly. This reduction will decrease the risk of contaminant leaching into deeper aquifers, as less water will be available to dissolve and transport pollutants. The introduction of impermeable surfacing provides an effective engineering control, reducing groundwater contamination risks.

The risk to controlled water receptors is considered moderate. Due to the presence of heavy metals and organic hydrocarbon compounds in the perched groundwater, careful consideration of risks to site operatives and the potential requirement for water pretreatment will be necessary.

Given the presence of the culverted Longford Brook and the Nico Ditch across the centre of the site, a DQRA is recommended to determine practicable and deliverable remediation targets for the soils (considered a secondary source).

Ground Gas	The ground gas assessment conducted so far has classified the site into CS1, CS2, and CS3 based on GSV values. Considering the characteristics of the site and the presence of infilled clay pits throughout most of the development area, a minimum classification of CS3 should be applied to all proposed buildings to mitigate the risk of gas intrusion and accumulation. The vapour risk assessment confirms that all properties should be constructed with the installation of mitigation measures that protect against aromatic hydrocarbons and chlorinated compounds, as well as ground gases. Following remediation and enabling works it would be beneficial to complete post remediation ground gas and vapour monitoring to confirm the residual site condition which will fully inform the design of the mitigation measures to ensure no intrusion of geogenic methane and CO2, and aromatic hydrocarbon compounds. The details of the ground gas mitigation requirements will be detailed within a Gas Protection Design Report.
Potable Water Infrastructure	A UKWIR Risk Assessment will be required to confirm the most suitable potable water supply pipework. Chemical analysis suggests that barrier pipe is likely to be required.

GEOTECHNICAL ASSESSMENT

Underground Obstructions & Subterranean hazards	Notable concrete and brick obstructions have been discovered within the Made Ground. All subterranean obstructions will need to be excavated and removed beneath new structures and infrastructure. This will facilitate the construction of the proposed structures as intended.
Allowable Bearing Capacity	The natural clay soils are firm to medium strength to very stiff, with very high strength between depths of 8.00 – 17.50 m bgl with an ABC in the range of 149 – 426 kN/m^2. Soft clay was identified in WS203 between 2.00 – 5.00 m bgl with an ABC of 18 – 68 kN/m^2.
Foundation Options	The suitable target founding stratum has been identified as the underlying stiff to very stiff glacial clays. It is advisable to consult with geotechnical engineers and foundation specialists who can assess the specific ground conditions and design an appropriate foundation solution to meet the project's requirements. Depending on development levels, plots in the area of the former clay pits where deep Made Ground has been identified may require a driven pile foundation. 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 geotechnical foundation schedule is prepared for the development, taking account of the physical change of natural clay soils and the current/proposed locations of trees.

Foundation Options *...Continued*	Where piled foundations are utilised, a detailed piling risk assessment will be required to confirm there is no increased risk to controlled waters and the gas/vapour regime where new pathways are created.
Quarry High Walls	The investigation to locate the high walls associated with the infilled clay pits was restricted by dense vegetation, the Nico Ditch and sewer and gas pipelines, which required a buffer zone. The high walls represent a risk associated with exaggerated differential settlement to structures and infrastructure. Vegetation clearance will be required to permit further investigation and to delineate the extent of the clay pits.
Heave Precautions Near Trees	Given that the underlying clay is classified low volume change potential, heave precautions should be designed accordingly.
Building Floor Slabs	Ground-bearing floor slabs are not viable given the depths or reworked Made Ground.
Soakaway Drainage	Soakaway drainage is unlikely to be suitable due to the presence of deep Made Ground and cohesive superficial deposits.
Sulphate Assessment	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). The Made Ground deposits in WS102, TP201, WS201, WS202, WS203, WS207 and CP203 were classified as DS-2, AC-1s. Class DS-3, AC-2s has been identified in Made Ground soils in WS205 at 2.00 m bgl.
Highway & Infrastructure Construction	Where a proposed highway or infrastructure is to be constructed, remediation works will be required to ensure the site is engineered to a suitable geotechnical design specification.
External Areas & Infrastructure	Developing infilled clay pits from the early to mid-20th century poses significant risks to infrastructure due to poorly compacted and variable fill materials, leading to potential settlement. Differential settlement is a key concern, particularly due to variations in fill thickness and composition, as well as the effects of surcharge loads. Changes in groundwater levels can further exacerbate settlement risks, particularly in cohesive or organic layers. Comprehensive geotechnical settlement analysis is required to understand potential risks and ensure a suitable enabling earthworks design.
CBR Design %	Granular soils can be re-engineered to ensure 5% within the subgrade during favourable climatic conditions. 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.

Enabling Earthworks	Development levels are unlikely to change significantly; however, an element of cut-and-fill works will likely be required to prepare the development platform. As part of the earthworks design, materials should be assessed and characterised prior to re-use in the construction of upfill to a geotechnical design. All future earthworks should be completed in accordance with a Geotechnical Design Report (GDR) that will consider the ground model within the context of the potential for settlement induced by surcharge from earthworks, dynamic and permanent loading of the development and all known hazards.
Civil Engineering Excavations	Trench collapse is considered possible in areas of deep Made Ground and granular deposits, particularly during wet conditions, it is considered that all excavations are supported or battered back in accordance with the guidance contained in CIRIA R97 or through structural engineer design
Waste Characterisation	Any material that is to be disposed off-site should undergo assessment using Technical Guidance WM3: *Waste Classification – Guidance on the classification and assessment of waste*. This can be done upon request and in line with the Environment Agency sampling frequencies.

RECOMMENDATIONS

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

- Further investigation of inaccessible areas and delineation of clay pits.
- DQRA for controlled waters.
- Arboricultural survey.
- Settlement Analysis for earthworks design.
- Geotechnical Design Report (GDR).
- Asbestos in Soil Construction Phase Risk Assessment and Management Plan
- Geotechnical Earthworks Strategy (infrastructure).
- Remediation and enabling works strategy.
- Ground Gas and Vapour Protection Design Report.
- Construction Phase Surface Water Management Plan.

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17-403-007 - Depth of Made Ground Plan
17-403-010 - Conceptual Site Model
17-403-014 - Contamination Exceedances Plan – Human Health
17-403-024 - Combined Plan (Historical Features, EHLP and Proposed Development)
17-403-027 - Contamination Exceedances Plan – Controlled Waters
17-403-031 - Exploratory Hole Location Plan (Site Constraints)

1. INTRODUCTION

1.1. BACKGROUND

E3P has been commissioned by Step Places, Southway Housing Trust and Manchester Metropolitan University (the client) to undertake a supplementary Phase II Geoenvironmental Site Assessment on a parcel of land to the north of Ryebank Road and Longford Road, Chorlton (Ryebank Road, Chorlton-cum-Hardy, Manchester M21 9LU).

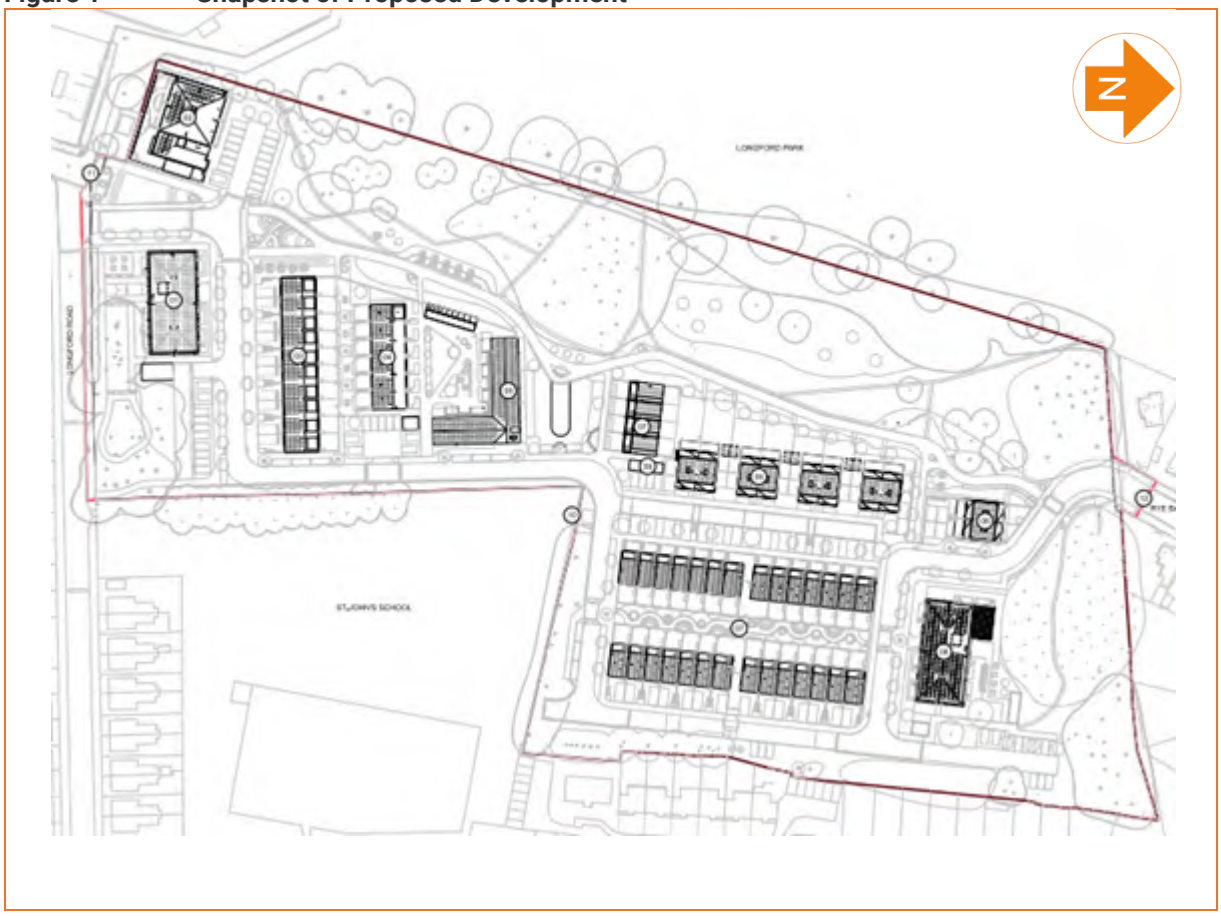
The report is required to determine potential contaminated land liabilities, remediation requirements, and geotechnical engineering works that will be required as part of the proposed development of a low-rise residential development.

1.2. PROPOSED DEVELOPMENT

E3P understand that the proposed development comprises a residential development including access, car parking provision, landscaping, sustainable drainage features and other associated works. Drawing 17--403-002 (APPENDIX IV) identifies the proposed development layout.

A snapshot of the proposed development layout is indicated in Figure 1.

Figure 1 Snapshot of Proposed Development



1.3. OBJECTIVES AND SCOPE

Building on the findings from previous site investigation works, the aim of the supplementary intrusive investigation is to further assess contamination and ground conditions for the proposed residential development. The objectives are as follows:

- Additional trial pits and boreholes to assess the extent and nature of the infill materials and identify any residual contamination, including PAHs, TPHs, and other potential pollutants.
- Further analysis of soil properties, including compaction, shear strength, and permeability to guide foundation design and proposed earthworks.
- Laboratory analysis of soil and groundwater samples to quantify contamination levels and assess the risk of contaminant migration.
- Monitoring of groundwater levels and nature of contamination present to evaluate the risk of contamination spread.
- Based on the findings, provide recommendations for remediation and earthworks to ensure the site is suitable for residential development.

This investigation will provide additional data to complement previous works and inform the safe and effective development of the site.

1.4. SCOPE OF WORKS

The scope of work carried out during the supplementary investigation includes the elements summarised in Table 1.

Table 1 Scope of Works

GROUND INVESTIGATION
Window sample boreholes with the construction of environmental monitoring installations
Deep cable percussive boreholes with the construction of environmental monitoring installations
Static Piezocone Penetration Tests (CPTUs)
Mechanically excavated trial pits
Hand-dug trial pits
Soil sampling

TESTING AND MONITORING

- In-situ geotechnical testing
- Chemical and geotechnical analysis
- Groundwater monitoring
- Traditional spot ground gas monitoring
- Continuous ground gas monitoring

ASSESSMENT AND REPORTING

- Factual and interpretative reporting
- Contamination risk assessment and conceptual site model
- Geotechnical assessment and interpretation

1.5. PREVIOUS REPORTS

The following previous reports have been completed for the site:

Table 2 Previous Reports

AUTHOR	TITLE / REFERENCE	CLIENT	DATE
E3P	Phase I Geoenvironmental Site Assessment (Report Ref: 13-533-R1-2)	Manchester Metropolitan University	March 2020
E3P	E3P Phase II Geoenvironmental Site Assessment (Report Ref: 13-533-R2-2)	Manchester Metropolitan University	March 2020
E3P	E3P Human Health Risk Assessment Report (Report Ref: 13-533-R3-3)	Manchester Metropolitan University	August 2020
E3P	E3P Ground Gas and Vapour Assessment Report (Report Ref: 13-533-R4-1)	Manchester Metropolitan University	October 2020
E3P	E3P Remediation and Enabling Works Strategy (Report Ref: 13-533-R5-1)	Manchester Metropolitan University	October 2020

The key findings of the previous site investigation reports have been integrated into this report to provide full characterisation of the site.

1.6. LIMITATIONS

The limitations of this report are presented in APPENDIX I.

1.7. RISK CLASSIFICATION

The description of risk classification and the likely action required as set out in CIRIA C552 are included in APPENDIX III.

1.8. 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 report's contents, written approval must be sought from E3P; a charge may be levied against such consent.

2. E3P GROUND INVESTIGATION

2.1. GENERAL OVERVIEW

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

Exploratory fieldwork was completed between the 3rd and 5th of December 2019, with a secondary phase of investigation completed between the 1st and 16th July 2024.

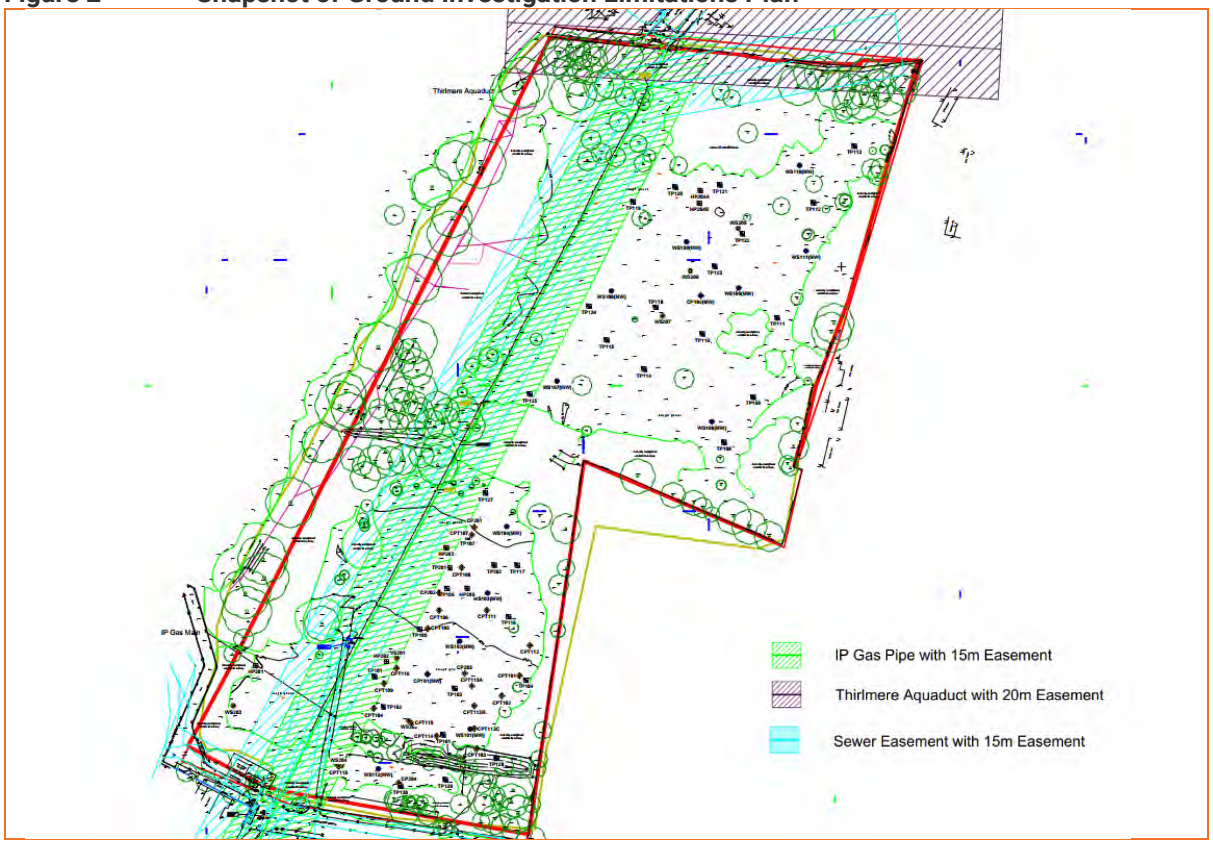
2.2. LIMITATIONS OF THE INVESTIGATION

The phases of the investigation were limited in the west, along the northern boundary and periphery of the site due to the presence of dense vegetation. An Aspen Grove is present in the north of the site, which was inaccessible to machinery during the works due to the densely vegetated nature of the area. Further to this, sewer and gas pipelines were present to the west of the site, which required a buffer zone limiting investigation in this area. The Thirlmere aqueduct to the north of the site had a buffer zone of 20m.

Dense vegetation along the route of the Nico Ditch meant that vehicular access to the north was limited.

A snapshot of the plan showing the limitations of the ground investigation in plan form has been included in Figure 2.

Figure 2 Snapshot of Ground Investigation Limitations Plan



2.3. SCOPE OF GROUND INVESTIGATION

Following a review of historical mapping, previous site investigation data and anecdotal site information, the below areas have been identified as potential sources of ground contamination or have potential risks associated with the proposed redevelopment of the site and have been targeted where practical during the 2024 site investigation works.

- Investigation of the former ponds in the north and south;
- Investigation in the area of former residential units in the southeast;
- Investigation, including determination of the nature and depth of the former clay pits in the north and south;
- Investigation of the potential highwall associated with the former clay pits;
- Investigation along the route of the former Longford Brook; and
- Investigation of general ground conditions.

The following methods of investigation have been used to inform the overall site assessment and are intended to target specific sources where possible.

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 boreholes were advance to investigate deeper soil horizons with in-situ geotechnical testing to determine relative undrained strengths of natural clay deposits.

Static Piezocone Penetration Tests (CPTUs) were undertaken to investigate the potential highwall associated with the former clay pits and to obtain information on soil mechanics across the site.

Hand excavated pits were advanced within areas where machinery movements were limited to investigate the ground conditions and retrieve environmental samples.

The sampling locations are illustrated in Drawing 17-403-005 (APPENDIX IV). The ground conditions encountered are indicated on the logs, which are provided in APPENDIX VI.

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

2.4. 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 VI, presented in Table 45 and discussed in Section 5.

2.5. IN-SITU CONE PENETRATION TESTING (CPT)

To support the in-situ geotechnical information, Static Piezocone Penetration Tests (CPTUs) were also advanced across the site. The tests were carried out in accordance with the International Standard for Electrical Cone and Piezocone Penetration Test (ISO 22476-1:2012).

The In-Situ CPTU data is presented in the report within APPENDIX XV.

2.6. LABORATORY ANALYSIS

Selected soil samples were submitted for a range of chemical analysis, summarised in Table 3.

Table 3 Summary of Laboratory Analysis

CHEMICAL ANALYSIS
Metals
pH, total sulphate, water-soluble sulphate (2:1 extract)
Sulphide
Cyanide
Phenols
Total and speciated polycyclic aromatic hydrocarbons (PAHs)
Semi-Volatile Organic Compounds (SVOCs)
Volatile Organic Compounds (VOCs)
Asbestos identification and quantification
Speciated and banded total petroleum hydrocarbons (TPHs)
Total Organic Carbon (TOC)
Polychlorinated biphenyls (PCBs)
GEOTECHNICAL ANALYSIS
Atterberg limits determinations
Moisture content
Optimum Moisture Content / Dry Density Relationship (4.5kg Rammer)
Single stage triaxial tests
Oedometer tests
Particle Size Distribution
Determination of Void Ratio and Total Porosity

2.7. STORAGE, PRESERVATION AND TRANSPORT OF SAMPLES

Measures taken to ensure the quality and integrity of the collected samples, from collection to receipt of the samples by the laboratory, are summarised in Table 4.

Table 4 Sample Integrity Information

SUBJECT	CHEMICAL SAMPLING	
Storage	**Soil**	**Groundwater**
	Glass jars supplied by the laboratory were used for the collection of soil samples to be analysed for VOCs. Plastic tubs were used to collect soil samples for metals analysis, and asbestos screening.	Glass vials supplied by the laboratory were used for the collection of samples to be analysed for VOCs. Samples to be analysed for lower volatility compounds were stored in laboratory-prepared glass jars.
Preservation	Soil and groundwater sample containers were filled to minimise headspace prior to sealing and stored at a low temperature within cool boxes with cooling aids to minimise the loss of volatile contaminants and reduce microbial activity during the collection of samples.	
Sample Integrity	**Soil**	**Groundwater**
	Dedicated disposable nitrile gloves were worn and changed between sample collections to prevent cross-contamination.	Groundwater samples were collected using dedicated plastic tubing, which was changed between monitoring well locations to prevent cross-contamination.
Transport	Samples were stored and shipped in dedicated sample boxes provided by the laboratory. Sample details were recorded on the laboratory chain of custody form enclosed with the samples prior to dispatch. Scheduling information for the samples was confirmed with the laboratory via email.	

Chemical analysis has been undertaken by an accredited laboratory with the testing results summarised and discussed in Section 4 and the testing certificates included in APPENDIX VII.

Geotechnical samples were collected as required per location immediately after excavation, labelled and sealed to minimise moisture loss. The geotechnical samples were collected and couriered by a dedicated courier to an accredited geotechnical testing laboratory. The testing results are summarised and discussed in Section 5 and the testing certificates included in APPENDIX VIII.

3. GROUND AND GROUNDWATER CONDITIONS

3.1. SUMMARY OF GROUND CONDITIONS

The ground investigation generally confirms the published geology and identifies the strata set out in Table 5.

Table 5 Summary of Strata

HOLE	DEPTH TO STRATUM (M BGL)			
	MADE GROUND	SOFT CLAY	FIRM CLAY	STIFF CLAY
TP101	0.00 to > 2.40	–	–	–
TP102	0.00 to > 2.30	–	–	–
TP103	0.00 to > 2.40	–	–	–
TP104	0.00 to > 2.10	–	–	–
TP105	0.00 to > 2.20	–	–	–
TP106	0.00 to > 1.70	–	–	–
TP107	0.00 to > 2.40	–	–	–
TP108	0.00 to > 2.20	–	–	–
TP109	0.00 to > 2.20	–	–	–
TP110	0.00 to > 2.20	–	–	–
TP111	0.00 to > 1.80	–	–	–
TP112	0.00 to > 1.90	–	–	–
TP113	0.00 to > 2.00	–	–	–
TP114	0.00 to > 2.30	–	–	–
TP115	0.00 to > 2.20	–	–	–
TP116	0.00 to > 2.40	–	–	–
TP117	0.00 to > 1.60	–	–	–
TP118	0.00 to > 1.90	–	–	–
TP119	0.00 to > 1.80	–	–	–
TP120	0.00 to > 2.20	–	–	–
TP121	0.00 to > 2.20	–	–	–
TP122	0.00 to > 3.00	–	–	–
TP123	0.00 to > 2.20	–	–	–
TP124	0.00 to > 2.20	–	–	–
TP125	0.00 to > 2.10	–	–	–
TP126	0.00 to > 2.30	–	–	–
TP127	0.00 to > 2.00	–	–	–
TP128	0.00 to > 3.20	–	–	–
TP129	0.00 to > 1.90	–	–	–
TP130	0.00 to > 2.20	–	–	–
WS101	0.00 to > 5.45	–	–	–
WS102	0.00 to > 5.45	–	–	–
WS103	0.00 to > 5.45	–	–	–

HOLE	DEPTH TO STRATUM (M BGL)			
	MADE GROUND	SOFT CLAY	FIRM CLAY	STIFF CLAY
WS104	0.00 to > 5.45	–	–	–
WS105	0.00 to > 4.00	–	–	–
WS106	0.00 to > 3.00	–	–	–
WS107	0.00 to > 4.45	–	–	–
WS108	0.00 to > 4.45	–	–	–
WS109	0.00 to > 4.45	–	–	–
WS110	0.00 to > 3.00	–	–	–
WS111	0.00 to > 4.00	–	–	–
WS112	0.00 to > 3.45	–	–	–
CP101	0.00–12.70	–	–	12.70–14.90
CP102	0.00–10.20	–	–	10.20–14.16
WS201	0.00 to > 4.45	–	–	–
WS202	0.00 to > 5.15	–	–	–
WS203	0.00 –1.50	1.50–4.45	4.45–5.45	–
WS204	0.00 to > 5.45	–	–	–
WS205	0.00 to > 4.80	–	–	–
WS206	0.00 to > 3.41	–	–	–
WS207	0.00 to > 4.80	–	–	–
TP201	0.00 to > 2.10	–	–	–
TP202	0.00 to > 2.30	–	–	–
CP201	0.00 –10.50	–	–	10.50–15.67
CP202	0.00 –13.50	–	–	13.50–17.83
CP203	0.00 –13.20	–	–	13.20–14.15
CP204	0.00 – 7.50	–	–	7.50–10.50
HP201	0.00 to > 1.00	–	–	–
HP202	0.00 to > 1.00	–	–	–
HP203	0.00 to > 1.00	–	–	–
HP204A	0.00 to > 0.30	–	–	–
HP204B	0.00 to > 0.40	–	–	–
HP205	0.00 to > 1.00	–	–	–

Where Static Piezocone Penetration Tests (CPTUs) were undertaken, the ground conditions are inferred based on the soil behaviour type presented in APPENDIX XV. An interpretation of results has not been included within Table 5 as the inferred ground conditions will typically not be representative due to the presence of Made Ground across the site.

3.2. MADE GROUND

Made Ground deposits were encountered within all exploratory hole locations from ground level to a maximum proven depth of 13.50 m bgl (CP202). The depth of Made Ground could not be determined within the majority of locations due to substantial depths of Made Ground and obstructions. The full depth of Made Ground was only proven within seven locations where the cable percussive boreholes were advanced to depths in excess of 7.50 m bgl and within one window sample borehole (WS203) where the underlying natural superficial deposits were encountered.

Made Ground generally comprised a reworked topsoil from ground level to a maximum proven depth of 0.30 m bgl. Reworked topsoil comprised brown slightly sandy gravelly clay with frequent rootlets, with gravel of sandstone and mudstone and rare to frequent fragments of brick, plastic and concrete. Within the 2019 site investigation cobble sized fragments of brick and concrete were encountered throughout the topsoil.

Reworked topsoil was not encountered within TP129, TP130, WS112 and CP204 in the south of the site which comprised asphalt to maximum proven depth of 0.20 m bgl.

Underlying the reworked topsoil and asphalt, Made Ground was predominantly granular comprising either a black fine to medium gravelly sand or a sandy gravel. Gravel generally comprised sandstone and mudstone with frequent fragments of asphalt, brick, concrete, plastic, metal and glass with occasional cobbles of brick and concrete.

During the 2019 investigation, isolated areas of reworked clay were identified in TP102, WS102, WS103, WS108 and WS112, encountered at depths of between 0.20-2.50 m bgl to a maximum depth of 3.45 m bgl and comprised a firm to stiff brown gravelly clay, with gravel of brick and concrete.

White ash in the form of a grey-blue clayey sand was encountered in pockets throughout the granular Made Ground mainly located in the northern sector of the site in TP111, TP113, TP115, TP120, TP129, to depths of between 1.20 m bgl and 2.20 m bgl. The white ash material was also encountered as bands in TP103 between 2.10 m and 2.40 m bgl, WS105 between 3.60 m and 4.00 m bgl and WS111 between 2.00 m and 2.80 m bgl.

Interbedded clay was encountered within the 2024 investigation within TP201 and TP202, as well as WS201-WS203, WS205, WS207, CP201 and HP205. This clay generally comprised of a firm dark grey to brown gravelly clay, with gravel of mudstone with frequent fragments of brick, concrete, clinker, timber and ash inclusions

Strong hydrocarbon odours were noted throughout the site at depths typically in excess of 1.50 m bgl.

3.3. SUPERFICIAL DEPOSITS

Superficial deposits were encountered within seven locations and were typically encountered at the base of the historic clay pits at depths between 7.50 m bgl and 13.50 m bgl. Typically, superficial deposits were only encountered within the cable percussive holes however one location (WS203) in the southwest of the site which encountered natural superficial deposits at a shallower depth of 1.50 m bgl. Superficial deposits were proven to a maximum depth of 17.83 m bgl within CP202 with the presence of very stiff sandy CLAY.

Natural superficial deposits encountered typically comprised of a very stiff very high strength brown sandy CLAY with occasional boulders of sandstone.

Shallower superficial deposits were encountered within WS203 in the southwest of the site (located outside of the historically mapped clay pit) from 1.50 m bgl, which comprised of a very soft to soft extremely low to very low strength brown sandy gravelly clay, with gravel of sandstone, mudstone and coal.

3.4. SOLID GEOLOGY

The solid bedrock geology was not encountered during either phase of the site investigation.

A BGS borehole record (BGS Reference: SJ89NW762) circa 600 m north of the site identified SANDSTONE bedrock at 27.00 m bgl.

3.5. GROUNDWATER

Groundwater strikes were encountered throughout both phases of investigation with varying ingress from slow to fast. The depth of the strikes are shown on the exploratory hole records in APPENDIX VI and are summarised in Table 6.

Table 6 Summary Groundwater Strikes

LOCATION	DEPTH TO STRIKE (m)	NOTES
TP101	1.90	Rapid Ingress
TP102	2.10	Rapid Ingress
TP103	2.10	Rapid Ingress
TP104	2.10	Rapid Ingress
TP105	2.20	Rapid Ingress
TP106	1.60	Rapid Ingress
TP107	2.30	Rapid Ingress
TP108	2.20	Rapid Ingress
TP109	2.00	Rapid Ingress
TP110	2.10	Rapid Ingress
TP113	1.80	Rapid Ingress
TP114	2.20	Rapid Ingress
TP115	2.10	Rapid Ingress
TP116	2.00	Rapid Ingress
TP117	1.40	Rapid Ingress
TP120	2.10	Rapid Ingress
TP122	2.90	Rapid Ingress
TP123	2.00	Rapid Ingress
TP124	2.10	Rapid Ingress
TP125	2.10	Rapid Ingress
TP126	2.20	Rapid Ingress
TP127	1.70	Rapid Ingress
TP129	1.90	Rapid Ingress
TP130	2.00	Rapid Ingress
WS101	4.30	Slow Ingress
WS102	4.00	Slow Ingress
WS103	1.20	Slow Ingress

LOCATION	DEPTH TO STRIKE (m)	NOTES
WS104	1.20	Slow Ingress
WS107	3.00	Slow Ingress
WS111	1.20	Slow Ingress
CP101	2.00	Rapid Ingress
CP102	2.30	Rapid Ingress
TP201	1.55	Slow Ingress
TP202	1.90	Slow to Moderate Ingress
WS201	2.80	Slow Ingress
WS202	2.80	Slow Ingress (Oily sheen and hydrocarbon odour)
WS203	2.00	Slow Ingress
WS204	2.00	Slow Ingress (Oily sheen and hydrocarbon odour)
WS205	2.00	Slow Ingress (Oily sheen and hydrocarbon odour)
WS206	1.50	Slow Ingress
CP201	1.90	Slow Ingress
CP201	4.00	Slow Ingress
CP202	2.00	Slow Ingress (Oily sheen)
CP203	2.50	Slow Ingress
CP203	7.50	Slow Ingress
CP203	13.00	Slow Ingress
CP204	3.00	Slow Ingress (Oily sheen and hydrocarbon odour)
CP204	7.50	Slow Ingress

The water strikes encountered are confirmed as a perched pocket within the made ground. It is common for fully permeable anthropogenic materials such as this to contain perched water, which, when released during excavation, can result in rapid water ingress into a trial pit

3.6. 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 7.

Table 7 Summary of Visual and Olfactory Evidence of Contamination

LOCATION	DEPTH (M)	STRATUM	NOTES
TP101	0.30 – 2.40	Made Ground	Slight hydrocarbon odour
TP116	1.50 – 2.40	Made Ground	Strong hydrocarbon odour
TP119	1.80	Made Ground	Asbestos sheeting
TP120	2.10	Made Ground	Strong hydrocarbon odour
TP125	0.30 – 2.10	Made Ground	Slight hydrocarbon odour
TP127	1.80	Made Ground	Hydrocarbon odour
WS101	1.20 – 3.20	Made Ground	Strong hydrocarbon odour

LOCATION	DEPTH (M)	STRATUM	NOTES
WS102	3.10 – 4.00	Made Ground	Strong hydrocarbon odour
WS104	3.10 – 4.00	Made Ground	Strong hydrocarbon odour
CP201	1.90 – 9.80	Made Ground	Strong hydrocarbon sheen/odour
CP202	2.00	Groundwater	Slow Water Ingress (Oily sheen and hydrocarbon odour)
CP202	2.30 – 13.50	Made Ground	Strong hydrocarbon sheen/odour
CP203	2.50 – 11.00	Made Ground	Strong hydrocarbon sheen/odour
CP204	3.00	Made Ground	Strong hydrocarbon sheen/odour
TP202	0.25 – 2.30	Made Ground	Asbestos Cement
WS202	2.80 – 4.70	Made Ground	Strong hydrocarbon sheen/odour
WS202	2.80	Groundwater	Slow Water Ingress (Oily sheen and hydrocarbon odour)
WS204	2.00	Groundwater	Slow Water Ingress (Oily sheen and hydrocarbon odour)
WS204	3.00 – 5.45	Made Ground	Strong hydrocarbon sheen/odour
WS205	2.00 – 3.00	Made Ground	Strong hydrocarbon sheen/odour
WS205	2.00	Groundwater	Slow Water Ingress (Oily sheen and hydrocarbon odour)

3.7. OBSTRUCTIONS

Obstructions were identified in several locations across the site, with their positions summarised in Table 8.

Table 8 Summary of Obstructions

LOCATION	DEPTH (M)	STRATUM	NOTES
WS202	5.15	Made Ground	Terminated due to refusal on concrete cobble
WS206	3.41	Made Ground	Terminated due to refusal on cobble
WS207	4.80	Made Ground	Terminated due to refusal on brick cobble

3.8. CPTU TEST TERMINATION DEPTHS

18 Static Piezocone Penetration Tests (CPTUs) were undertaken across the site in order to assess the potential location of the high wall from the former clay pits. The termination depths have been summarised in Table 9.

Table 9 Summary of CPTU Termination Depths

LOCATION	DEPTH (M)	TEST REMARKS
CPT101	12.94	Test refused due to buckling rods
CPT102	11.93	Test refused due to buckling rods
CPT103	13.81	Test refused due to buckling rods
CPT104	7.89	Test refused on inclination
CPT105	6.25	Test refused on total pressure

LOCATION	DEPTH (M)	TEST REMARKS
CPT106	14.24	Test refused on total pressure
CPT107	5.19	Test refused on inclination
CPT108	7.05	Test refused on total pressure
CPT109	10.95	Test refused on total pressure
CPT110	11.46	Test refused due to buckling rods
CPT111	14.25	Test refused due to buckling rods
CPT112	13.90	Test refused due to buckling rods
CPT113A	5.07	Test refused on total pressure
CPT113B	5.97	Test refused on inclination
CPT113C	9.19	Test refused on inclination
CPT114	14.82	Test refused due to buckling rods
CPT115	13.06	Test refused on total pressure
CPT116	14.43	Test refused due to buckling rods

4. TIER 2 QUALITATIVE CONTAMINATED LAND RISK ASSESSMENT

E3P has undertaken a Tier 2 qualitative land risk assessment with respect to human health, controlled waters and ground gas to determine if any potential contaminants within the underlying soils and groundwater pose an unacceptable level of risk to the identified receptors.

4.1. HUMAN HEALTH RISK ASSESSMENT

At Tier 2 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 2 screening values are not provided by LQM, other screening values have been used, and these are referenced in Table 11.

4.1.1. SAMPLE ANALYSIS POPULATION

Table 10 summarises the chemical analysis testing scheduled during both the 2019 and 2024 site investigations.

Table 10 Summary of Testing Schedule

TYPE OF SAMPLE	NO. OF SAMPLES	DETERMINANDS
MADE GROUND: Reworked Topsoil	7	Total Metals, Speciated PAH, Banded TPH, TOC
MADE GROUND	6	TPH CWG
	9	SVOC, VOC
	26	Asbestos ID and Quantification (if required)
	22	Banded TPH
	22	Speciated PAH
	23	Total Metals
	6	Leachate Analysis
	3	2-Stage WAC
	2	Poly Chlorinated Biphenyls (PCBs)
Natural CLAY	4	Total Metals, Speciated PAH, Banded TPH, TOC

The Tier 2 screening values for residential with plant uptake have been utilised for this assessment due to the proposed development being a residential end use. To remain conservative at an early stage, the screening values based on a 1% SOM have been utilised for this assessment.

The results of the comparison have been summarised in Table 11.

Table 11 Summary of Inorganic and Hydrocarbon Toxicity Assessment for a Residential End Use (with plant uptake)

DETERMINANT	UNIT	GAC	N	MC	LOC. OF EX	PL	ASSESSMENT
Arsenic	mg/kg	37	37	150 77	WS202 3.00 m WS204 1.70 m	1	Further Action
Cadmium	mg/kg	11	37	1.3	N/A	1	No Further Action
Chromium (VI)	mg/kg	6.0	37	< 5.0	N/A	1	No Further Action
Lead	mg/kg	200**	37	1100 950 1700 450 350 880 230 820 1000 680 230 220 460 250 280 510 610 750 310	WS102 3.20 m WS201 2.80 m WS202 3.00 m WS204 3.50 m WS206 0.80 m WS207 2.80 m TP101 0.10 m TP105 0.10 m TP119 0.10 m TP120 2.10 m TP125 2.10 m TP127 1.80 m TP128 0.80 m TP202 0.10 m TP202 1.00 m TP201 2.00 m CP201 5.00 m CP203 5.00 m CP203 13.20m	1	Further Action
Mercury	mg/kg	1.2	37	3.0 2.9 2.8 2.7 1.4	CP201 5.00 m CP203 13.20m TP116 1.50 m WS204 1.70 m TP119 0.10 m	4	Further Action
Nickel	mg/kg	130	37	110	N/A	1	No Further Action
Selenium	mg/kg	250	37	1.4	N/A	1	No Further Action
Copper	mg/kg	2400	37	2600	TP128 0.80 m	1	Further Action
Zinc	mg/kg	3700	37	1400	N/A	1	No Further Action
Cyanide – Total	mg/kg	791	37	73	N/A	1	No Further Action
Phenols – Total	mg/kg	120	37	6.2	N/A	1	No Further Action
Asbestos	Fibres	NFD	16	1.18% 0.70% 0.65% 0.04% 0.01% <0.001 %	WS101 1.80 m WS201 2.80 m CP201 5.00 m WS102 3.20 m WS112 2.30 m WS110 0.50 m	3	Further Action
PAHs							
Naphthalene	mg/kg	2.3	37	19 5.1 4.5	CP203 5.00 m TP127 1.80 m(1) CP203 13.20m(1)	4	Further Action
Acenaphthylene	mg/kg	170	37	0.84	N/A	2	No Further Action
Acenaphthene	mg/kg	210	37	8.5	N/A	1	No Further Action
Fluorene	mg/kg	170	37	18	N/A	1	No Further Action
Phenanthrene	mg/kg	95	37	150	TP119 0.10 m	2	Further Action
Anthracene	mg/kg	2400	37	25	N/A	2	No Further Action

DETERMINANT	UNIT	GAC	N	MC	LOC. OF EX	PL	ASSESSMENT
Fluoranthene	mg/kg	280	37	73	N/A	2	No Further Action
Pyrene	mg/kg	620	37	54	N/A	2	No Further Action
Benzo(a)Anthracene	mg/kg	7.2	37	44 26 19 12 11 10 9.6 7.3	TP119 0.10 m CP201 5.00m TP116 1.50m TP127 1.80m TP202 1.00m(1) TP128 0.80 m WS102 3.20m(1) CP203 5.00m(1)	2	Further Action
Chrysene	mg/kg	15	37	37 22 16	TP119 0.10 m CP201 5.00m(1) TP116 1.50 m	2	Further Action
Benzo(b)Fluoranthene	mg/kg	2.6	37	50 23 14 12 11 10 8.5 7.2 7.1 6.6 3.8 3.3 3.0 3.0 2.8 2.8	TP119 0.10 m CP201 5.00m TP116 1.50 m TP202 1.00 m TP128 0.80 m TP127 1.80 m WS102 3.20m CP203 5.00 m WS201 2.80 m TP120 2.10 m WS202 3.00 m TP125 0.10 m TP101 0.10 m TP103 1.30 m(1) TP105 0.10m WS206 0.80 m(1)	2	Further Action
Benzo(k)Fluoranthene	mg/kg	77	37	15	N/A	2	No Further Action
Benzo(a)Pyrene	mg/kg	2.2	37	17 13 9.7 9.7 8.9 7.6 6.2 5.6 5.4 4.0 2.9 2.8 2.7 2.7 2.5	CP201 5.00 m TP116 1.50 m TP127 1.80 m TP202 1.00 m TP128 0.80 m WS102 3.20 m CP203 5.00 m TP102 2.10 m WS201 2.80 m TP119 0.10 m WS202 3.00 m(1) TP125 0.10 m TP103 1.30 m(1) TP105 0.10 m TP101 0.10 m	2	Further Action
Indeno(123-cd)Pyrene	mg/kg	27	37	30	TP119 0.10 m	2	Further Action
Dibenzo(a,h)Anthracene	mg/kg	0.24	37	7.2 2.1 2 1.5 1.4 1.1 1.1 1.0 0.91 0.65 0.50 0.44 0.42	TP119 0.10 m TP116 1.50 m CP201 5.00 m WS102 3.20 m TP120 2.10 m TP127 1.80 m TP202 1.00 m TP128 0.80 m WS201 2.80 m CP203 5.00 m WS203 2.50 m TP101 0.10 m TP103 1.30 m	2	Further Action

DETERMINANT	UNIT	GAC	N	MC	LOC. OF EX	PL	ASSESSMENT
				0.42 0.39 0.28	TP125 0.10 m TP105 0.10 m WS207 2.80 m(1)		
Benzo(ghi)Perylene	mg/kg	320	37	25	N/A	2	No Further Action
Aliphatic TPH							
TPH Aliphatic >C5 - C6	mg/kg	42	6	< 0.05	N/A	4	No Further Action
TPH Aliphatic >C6 - C8	mg/kg	100	6	1.6	N/A	4	No Further Action
TPH Aliphatic >C8 - C10	mg/kg	27	6	35	CP203 5.00m(1)	4	Further Action
TPH Aliphatic >C10 - C12	mg/kg	130	6	120	N/A	4	No Further Action
TPH Aliphatic >C12 - C16	mg/kg	1100	6	87	N/A	1	No Further Action
TPH Aliphatic >C16 - C35	mg/kg	65000	6	3780	N/A	1	No Further Action
Aromatic TPH							
TPH Aromatic >C5 - C7	mg/kg	70	6	<0.05	N/A	4	No Further Action
TPH Aromatic >C7 - C8	mg/kg	130	6	0.18	N/A	4	No Further Action
TPH Aromatic >C8 - C10	mg/kg	34	6	7.6	N/A	4	No Further Action
TPH Aromatic >C10 - C12	mg/kg	74	6	57	N/A	4	No Further Action
TPH Aromatic >C12 - C16	mg/kg	140	6	200	TP116 1.50m(1)	4	Further Action
TPH Aromatic >C16 - C21	mg/kg	260	6	1100 430 420	TP116 1.50m WS202 3.00m(1) CP201 5.00m(1)	1	Further Action
TPH Aromatic >C21 – C35	mg/kg	1100	6	280	N/A	1	No Further Action
Banded TPH							
TPH >C6-C8 (Aliphatic)	mg/kg	100	34	2.3	N/A	4	No Further Action
TPH >C8-C10 (Aliphatic)	mg/kg	27	34	53 49	WS201 2.80m(1) WS204 3.50m(1)	4	Further Action
TPH >C10-C12 (Aromatic)	mg/kg	74	34	110	WS204 3.50m(1)	4	Further Action
TPH >C12-C16 (Aromatic)	mg/kg	140	33	940 220 180	WS204 3.50m TP119 0.10m WS201 2.80m(1)	4	Further Action
TPH >C16-C21 (Aromatic)	mg/kg	260	33	10000 1700 1100	WS204 3.50m TP119 0.10m WS201 2.80m	4	Further Action
TPH >C21-C35 (Aromatic)	mg/kg	1100	33	43000 1300 1820	WS204 3.50m TP119 0.10m WS201 2.80m	1	Further Action

Notes

PL1 = soil ingestion, PL2 = dermal contact and ingestion, PL3 = dust inhalation; PL4 = Vapour/Gas Inhalation

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

The pathway noted in the table is the primary pathway, however it may not be the only pathway of that contaminant
* The Tier 2 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 2 values for aliphatic compounds for the volatile and semi volatile fractions (C5-C12) and the Tier 2 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.
** Tier 2 GAC for lead taken from C4SL CL:AIRE
(1) Concentration does not exceed higher screening values with increased SOM% - Refer to Table 16

Referring to Table 11, the result of this direct comparison indicates that the data exceeds the screening criteria for a residential end use (1% SOM) for the following contaminants:

- Arsenic
- Lead
- Mercury
- Copper
- Asbestos - Amosite, Chrysotile and Crocidolite (<1.18%)
- Naphthalene
- Phenanthrene
- Benzo(a)Anthracene
- Chrysene
- Benzo(b)Fluoranthene
- Benzo(a)Pyrene
- Indeno(123-cd)Pyrene
- Dibenzo(a,h)Anthracene
- TPH Aliphatic >C8 - C10
- TPH Aromatic >C12 - C16
- TPH Aromatic >C16 - C21
- TPH >C8-C10
- TPH >C10-C12
- TPH >C12-C16
- TPH >C16-C21
- TPH >C21-C25
- TPH >C25-35

The soil in WS203 was tested for PCBs due to the proximity to a former electricity substation. Further samples from TP201 WS203 and WS205 were tested to determine the presence of PCBs within the infill material of the former brick pits. No PCBs exceeding the laboratory LOD were recorded.

Soils which were also tested for SVOCs and VOCs and reported values above the LOD are listed within Table 12 below, compared against available GAC.

Table 12 Summary of SVOCs and VOCs identified above the LOD

DETERMINANT	UNIT	GAC LQM S4UL	CL:AIRE GAC	N	MC	LOC. OF EX	PL	ASSESSMENT
Benzene	mg/kg	0.087	-	4	0.05	N/A	4	No Further Action
Toluene	mg/kg	130	-	4	0.21	N/A	4	No Further Action
Ethylbenzene	mg/kg	47	-	4	0.36	N/A	4	No Further Action
p & m-xylene	mg/kg	56	-	4	1.7	N/A	4	No Further Action
o-xylene	mg/kg	60	-	4	0.97	N/A	4	No Further Action
Isopropyl benzene	mg/kg	-	27	4	0.073	N/A	4	No Further Action
1,2,4-Trimethylbenzene	mg/kg	-	2	4	6.5	CP203 5.00m	4	Further Action
n-Propylbenzene	mg/kg	No GAC Available		9	470 85	CP203 5.00m CP201 5.00m	4	Further Action
n-Butylbenzene	mg/kg	No GAC Available		4	25	CP201 5.00m	4	Further Action
Sec-Butylbenzene	mg/kg	No GAC Available		9	210 30	CP203 5.00m CP201 5.00m	4	Further Action
2-Methylnaphthalene	mg/kg	No GAC Available		9	4.1 4.0 2.4 0.7 0.5	CP203 5.00m TP127 1.80m CP201 5.00m WS102 3.20m TP116 1.50m	4	Further Action
Carbazole	mg/kg	No GAC Available		7	8.2 2.6 4.1 2.3 1.1 0.4	CP201 5.00m CP203 5.00m TP116 1.50m TP127 1.80m WS102 3.20m TP120 2.10m	4	Further Action

A number of the above contaminants have concentrations above the laboratory limit of detection (LOD) where GACs are not available. These determinants pose a potential volatilisation to indoor air risk.

The uses of the above determinants are typically associated with industrial and manufacturing processes as shown in Table 13. Based on the historical development and lack of industrial land use (absence of mills, factories etc.) on site, it is likely the source of these SVOC/VOC contaminants is associated with the materials used to backfill the clay pits on the site.

Table 13 Summary of the SVOC Industry Uses

DETERMINANT	INDUSTRY USES
n-Propylbenzene[1]	Used as a chemical intermediate and solvent for printing and textile dyeing; a constituent of asphalt and naphtha.
n- Butylbenzene[2]	Used as a plasticizer, surface active agent, and solvent for coatings; Found in asphalt and naphtha.
sec-Butylbenzene[3]	Used as an intermediate, a plasticizer, and a solvent for coatings.
2-Methylnaphthalene[4]	Produced from coal tar and used to make dyes and resins; present in asphalt and smoke from burning cigarettes and wood.
Carbazole[5]	Used in UV-sensitive photographic plates and as a reagent and dye intermediate. Used to make insecticides, lubricants, explosives and rubber antioxidants.

Sources

1. *PubChem Database - https://pubchem.ncbi.nlm.nih.gov/compound/7668*
2. *PubChem Database - https://pubchem.ncbi.nlm.nih.gov/compound/7705*
3. *PubChem Database - https://pubchem.ncbi.nlm.nih.gov/compound/8680*
4. *PubChem Database - https://pubchem.ncbi.nlm.nih.gov/compound/2-Methylnaphthalene*
5. *PubChem Database - https://pubchem.ncbi.nlm.nih.gov/compound/carbazole*

Table 14 includes a comparison of site concentrations against US EPA screening levels as an initial assessment to understand where contamination levels potentially present a significant risk in the context of the proposed residential end-use and appropriate pathways. Although these levels are not accepted as part of the overall risk assessment, where further information is not available in respect of a suitable guideline value these have been included for reference. Information on the identified compounds is provided within Section 4.1.3 to help inform the assessment.

Table 14 Summary of SVOCs and VOCs identified above the LOD

DETERMINANT	UNIT	US EPA SCREENING LEVELS	N	MC	LOC. OF EX	PL	ASSESSMENT
n-Propylbenzene	mg/kg	3800*	9	470 85	CP203 5.00m CP201 5.00m	4	No Further Action
n-Butylbenzene	mg/kg	3900*	4	25	CP201 5.00m	4	No Further Action
Sec-Butylbenzene	mg/kg	7800*	9	210 30	CP203 5.00m CP201 5.00m	4	No Further Action
2-Methylnaphthalene	mg/kg	240*	9	4.1 4.0 2.4 0.7 0.5	CP203 5.00m TP127 1.80m CP201 5.00m WS102 3.20m TP116 1.50m	4	No Further Action
Carbazole	mg/kg	-	7	8.2 2.6 4.1 2.3 1.1 0.4	CP201 5.00m CP203 5.00m TP116 1.50m TP127 1.80m WS102 3.20m TP120 2.10m	4	Further Assessment

Notes
* = Source: https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables
Noncarcinogenic Screening Level for a child using a Target Hazard Index =1.

Soil Organic Matter (SOM) can be used to justify higher soil screening values (SSVs) because it reduces the bioavailability, mobility, and overall risk of organic contaminants and some heavy metals. SOM binds contaminants, lowering their potential for human exposure through direct contact, ingestion, or plant uptake. Additionally, SOM promotes microbial degradation, which can naturally break down harmful compounds.

Testing has been undertaken for Total Organic Carbon (TOC) which can then be converted to an approximate SOM value. Where organic contamination has been identified with levels exceeding screening values with 1% SOM, an assessment has been carried out to determine the appropriate screening level with a higher SOM. The results of this comparison have been summarised in Table 15 to highlight the relevant SOM for further assessment against the relevant screening levels. It should be noted that some samples where exceedances have been identified were not submitted for TOC analysis and therefore the screening value for 1% SOM has been utilised in line with the initial assessment within Table 11.

Table 15 Summary of Soil Organic Matter

LOCATION	DEPTH (M BGL)	TOTAL ORGANIC CARBON (%)	SOIL ORGANIC MATTER (%)	SOM SCREENING VALUE TO BE UTILISED (%)
TP103	1.30	1.8	3.1	2.5
TP116	1.50	2.4	4.1	2.5
TP127	1.80	1.9	3.2	2.5
TP202	1.00	7.6	13.0	6.0
CP201	5.00	7.2	12.3	6.0
CP203	5.00	27	46.4	6.0

LOCATION	DEPTH (M BGL)	TOTAL ORGANIC CARBON (%)	SOIL ORGANIC MATTER (%)	SOM SCREENING VALUE TO BE UTILISED (%)
WS102	3.20	3.2	5.5	2.5
WS201	2.80	6.6	11.3	6.0
WS202	3.00	12	20.6	6.0
WS203	2.50	1.8	3.09	2.5
WS204	3.50	2.2	3.7	2.5
WS206	0.80	12	20.6	6.0
WS207	2.80	3.5	6.02	6.0

Notes
Where SOM has not been reported during chemical analysis, SOM has been calculated from TOC values using the following formula: Organic matter (%) = Total organic carbon (%) x 1.72

Based on the above calculated SOM values, a comparison of identified exceedances has been carried out against the increased screening values taken from LQM. The results of the comparison are presented in Table 16. It should be noted that only samples which do not exceed the higher screening values have been included and no further assessment is required. The remaining exceedances from the initial Tier 2 assessment in Table 11 have been discussed in Section 4.1.3.

Table 16 Reassessment of Tier 2 Exceedances with Increased GAC based on SOM %

DETERMINANT	UNIT	GAC (2.5% SOM)	GAC (6% SOM)	LOC. OF EX	SOM (%)	MC	ASSESSMENT
Naphthalene	mg/kg	5.6	13	TP127 1.80m	2.5	5.1	No Further Action
				CP203 13.20m	6.0	4.2	No Further Action
Benzo(a)Anthracene	mg/kg	11	13	TP202 1.00m	6.0	11	No Further Action
				WS102 3.20m	2.5	9.6	No Further Action
				CP203 5.00m	6.0	7.3	No Further Action
Chrysene	mg/kg	22	27	CP201 5.00m	6.0	22	No Further Action
Benzo(b)Fluoranthene	mg/kg	3.3	3.7	TP103 1.30m	2.5	3.0	No Further Action
				WS206 0.80m	6.0	2.8	No Further Action
Benzo(a)Pyrene	mg/kg	2.7	3.0	WS202 3.00m	6.0	2.9	No Further Action
				TP103 1.30m	2.5	2.7	No Further Action
Dibenzo(a,h)Anthracene	mg/kg	0.28	0.30	WS207 2.80m	6.0	0.28	No Further Action
TPH Aliphatic >C8-C10	mg/kg	65	150	CP203 5.00m	6.0	35	No Further Action
TPH Aromatic >C12-C16	mg/kg	330	660	TP116 1.50m	2.5	200	No Further Action
TPH Aromatic >C16-C21	mg/kg	540	930	WS202 3.00m	6.0	430	No Further Action
				CP201 5.00m	6.0	420	No Further Action
TPH >C8-C10	mg/kg	65	150	WS201 2.80m	6.0	53	No Further Action
				WS204 3.50m	2.5	49	No Further Action
TPH >C10-C12	mg/kg	180	380	WS204 3.50m	2.5	110	No Further Action
TPH >C12-C16	mg/kg	330	660	WS201 2.80m	6.0	140	No Further Action

Notes - Generic Assessment Criteria for both 2.5% and 6% SOM used in the above assessment have been taken from LQM/CIEH S4UL (S4UL3267)

4.1.2. EXPOSURE PATHWAYS

The main exposure pathways based on the Tier 2 exceedances are:

- Soil ingestion (PL1);
- Consumption of homegrown vegetables (PL1);
- Dermal contact and ingestion (PL2);
- Fibre/dust inhalation (PL3); and
- Vapour inhalation (indoor) (PL4).

4.1.3. HUMAN HEALTH RISK ASSESSMENT AND MITIGATION

Heavy Metals, PAH, Heavy end TPH

The risk to chronic human health associated with the elevated concentrations of inorganic heavy metals, non-volatile PAH and TPH 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.

TPH/PAH appears to be a coal tar derivative, which is consistent with expectations for this type of material, as it likely originates from combusted ash (coal waste) produced by fires and furnaces.

Mercury

Elevated total mercury has been identified within Made Ground deposits within TP116, TP119, CP201, CP203 and WS204. As a conservative approach, the GAC for elemental mercury has been utilised in the absence of mercury speciation testing. If further testing confirms that no elemental mercury is present, a higher GAC can be used (30 mg/kg) therefore the samples currently exceeding for elemental mercury will fall below the threshold for organic mercury therefore no residual risk. Further speciation testing is required to confirm the above.

Naphthalene, TPH, VOCs, SVOCs

With regards to the elevated naphthalene, TPH C12-C21 and VOCs/SVOCs, these present a potential volatilisation to indoor air risk. These have been identified within localised areas (TP116, TP119, WS201, WS204 and CP203) at depths between 0.10 m bgl and 5.00 m bgl. Due to the depth of the exceedances (>5.00 m bgl) with no specific source identified, the contamination will require mitigation by installing vapour mitigation measures within all affected plots. The details of the vapour mitigation measures will be included within the Ground Gas Design Report.

Further discussion for the VOCs and SVOCs is included below.

Asbestos

Asbestos in the form of loose chrysotile, amosite and crocidolite fibres has been identified in the Made Ground across the site in WS101, WS102, WS112, WS201 and CP201 at depths between 0.50 – 5.00 m bgl. Quantification has been carried out on all positive samples which indicates volumes of asbestos between 1.18% (WS101) to 0.01% (WS112). Asbestos quantification within WS110 has identified trace fibres (<0.001%).

Asbestos in the form of chrysotile has also been identified within localised areas in shallow Made Ground deposits. Further to this ACM materials were identified around the periphery of the site, as well as intact pieces within the soils during the investigation. Impacted soils should be managed according to the asbestos risk mitigation conceptual site model shown in
Figure 3. Visual asbestos, if identified, will require handpicking by specially trained personnel with removal to a licenced facility. Where soils are to be removed from site which are confirmed to be impacted by asbestos fibres and/or fragments, these will require removal to a suitable licenced facility.

Safe methods of work can be developed to ensure there is no risk during construction, and the developed Conceptual Site Model (CSM) will help mitigate long-term risks. It is recommended to prepare an Asbestos in Soil Construction Phase Risk Assessment and Management Plan to manage any potential hazards effectively.

Figure 3 Asbestos Risk Mitigation Conceptual Site Model

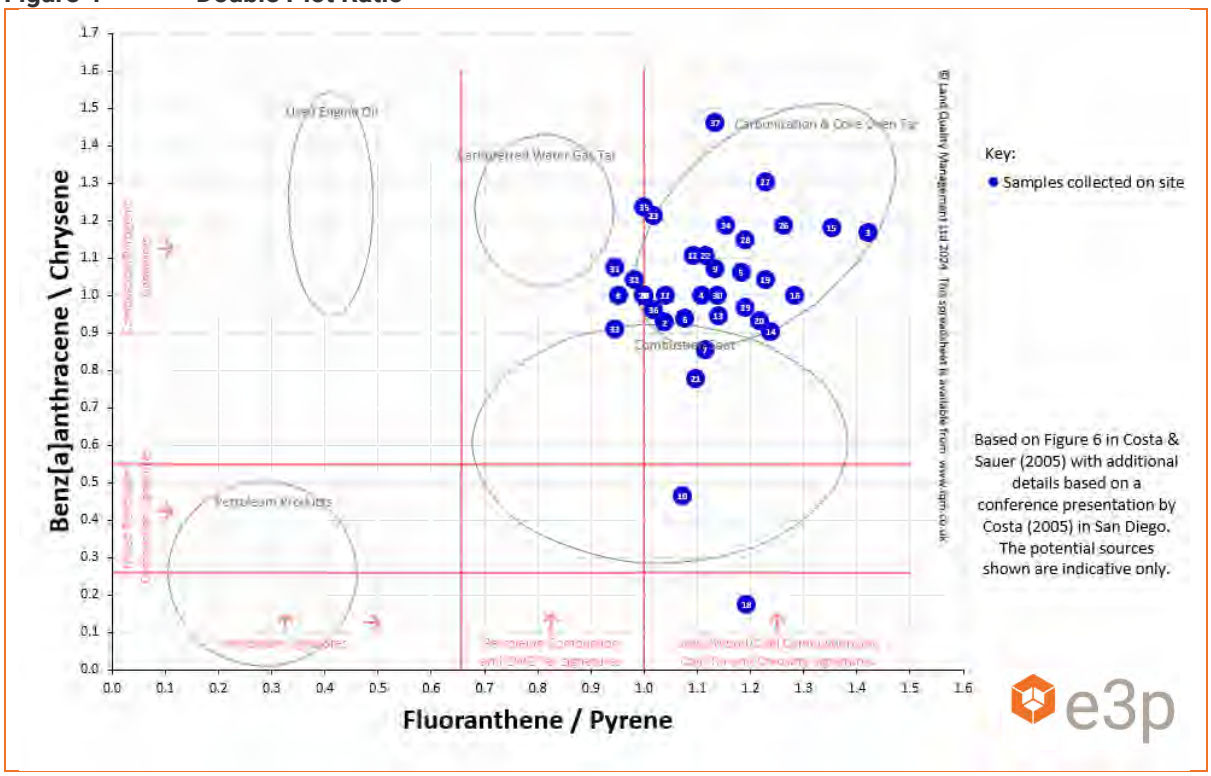


Notes
ND None Detect
0.001% Soils may contain ≤ 0.001% asbestos using composite testing to ensure there is no potential risk to human health. This value is present within areas where there may be a short term low level exposure of soils containing trace asbestos fibres by construction workers where an 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.

PAH Double Plot Ratio

Based on the elevated PAHs identified within the soils, the PAH double ratio tool (based on work by Costa & Sauer 2005) has been utilised to enable an assessment of the potential source of PAH within the soil samples. Figure 4 includes a snapshot of the double plot ratio for the PAH impacted soils in question.

Figure 4 Double Plot Ratio



The double plot ratio indicates that elevated PAHs are primarily relating to combustion related processes and are not evident of petroleum products. This correlates with the encountered nature of the Made Ground soils comprising of ashy granular materials.

Organic Contamination

n-Propylbenzene

n-Propylbenzene occurs naturally in petroleum and bituminous coal. It's production and use as a solvent and in textile dyeing and printing has resulted in its release to the environment.

n-propylbenzene is not classified as a known carcinogen, long-term exposure to VOCs can increase the risk of cancer, depending on the duration and intensity of exposure. In soil, it poses potential risks to a residential end use primarily through inhalation, ingestion, and dermal contact, with vapor intrusion from contaminated soil being a significant concern due to its volatility. Given that the site is going to be capped, the main pathway is vapour intrusion.

Volatilisation from moist soil surfaces is expected to be an important fate process based upon a Henry's Law constant of 1.05X10-2 atm-cu m/mole. n-Propylbenzene may volatilise from dry soil surfaces based upon its vapor pressure.

While n-propylbenzene can undergo biodegradation under aerobic conditions, it may persist longer under anaerobic conditions often found in deeper soil layers, which could prolong the exposure risk in residential settings.

The chemical structure of n-Propylbenzene is deemed to be similar to that of Ethylbenzene, therefore in the absence of a suitable screening value for n-Propylbenzene, a residential screening value of Ethylbenzene can be utilised as a marker. Based on the Ethylbenzene threshold of 260mg/kg (based on 6% SOM), the concentrations within CP201 are not considered to be exceeding and will not present a risk to future end users. Within CP203, albeit the likelihood of risk to the future end users is low, due to the depth of the exceedances (5.00 m bgl) with no specific source identified, the contamination will require mitigation by installing vapour mitigation measures within all affected plots. The details of the vapour mitigation measures will be included within the Remediation Strategy and Ground Gas Design Report.

n-Butylbenzene

n-Butylbenzene is a colourless liquid with a mild aromatic odour, primarily used as a chemical intermediate and in organic synthesis, particularly in the production of resins, polymers, and other chemicals.

The compound is not classified as a known carcinogen, long-term exposure to VOCs can increase the risk of cancer, depending on the duration and intensity of exposure. In soil, it poses potential risks to a residential end use primarily through inhalation, ingestion, and dermal contact, with vapor intrusion from contaminated soil being a significant concern due to its volatility. Given that the site is going to be capped, the main pathway is vapour intrusion.

The chemical structure of n-Butylbenzene is deemed to be similar to that of Ethylbenzene and Toluene, therefore in the absence of a suitable screening value for n-Propylbenzene, a residential screening value of Ethylbenzene and/or toluene can be utilised as a marker. Based on the Ethylbenzene threshold of 260mg/kg and Toluene threshold of 660mg/kg (based on 6% SOM), the concentration within CP201 is not considered to be exceeding and will not present a risk to future end users.

Sec-Butylbenzene

sec-Butylbenzene is a colourless liquid, with a sweet aromatic odour, used as an intermediate in the synthesis of various organic compounds, including pharmaceuticals and fragrances. It is also utilized in polymer manufacturing and as a solvent in chemical processes.

The compound is not classified as a known carcinogen, long-term exposure to VOCs can increase the risk of cancer, depending on the duration and intensity of exposure. In soil, it poses potential risks to a residential end use primarily through inhalation, ingestion, and dermal contact, with vapor intrusion from contaminated soil being a significant concern due to its volatility. Given that the site is going to be capped, the main pathway is vapour intrusion.

Similarly to n-Butylbenzene and n-Propylbenzene, the chemical structures of the compounds and volatility are deemed alike to other alkylbenzenes and therefore in the absence of a screening value for sec-Butylbenzene, a residential screening value of Ethylbenzene and/or toluene can be utilised as a marker. Based on the Ethylbenzene threshold of 260mg/kg and Toluene threshold of 660mg/kg (based on 6% SOM), the concentrations within CP201 and CP203 are not considered to be exceeding and are not deemed to present a risk to future end users.

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 is detected at a maximum concentration of 4.1 mg/kg in CP203 at 5.00 m bgl.

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

The Tier 2 CIEH / LQM S4UL for naphthalene is 2.3 mg/kg for a residential with plant update scenario, however this assessment assumes dermal contact, inhalation of particulate and other direct exposure pathways. The developed CSM for the subject site incorporates clean cover systems 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 0.8 ppm, 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.

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. Volatilisation 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 volatilisation. 2-Methylnaphthalene is not expected to volatilise from dry soil surfaces based upon its vapour 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.

Carbazole

This compound is detected at a maximum concentration of 8.20 mg/kg in CP201 5.00m.

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.

Carbazole can also be banded with dibenzofuran due to the absence of a GAC. Based on the Dibenzofuran threshold of 7.8mg/kg, the concentrations within CP203, TP116, TP127, WS102 and TP120, are not considered to be exceeding and will not present a risk to future end users.

Within CP201, albeit the likelihood of risk to the future end users is low, further sampling and delineation will be required to determine the extent of the contamination to understand if these can be associated with a specific source on site or are more widespread throughout the Made Ground. Due to the depth of the exceedances (5.00 m bgl) with no specific source identified, the contamination will require mitigation by installing vapour mitigation measures within all affected plots. The details of the vapour mitigation measures will be included within the Remediation Strategy and Ground Gas Design Report.

Subsoil

Chemical analysis of the natural clay superficial deposits has identified these soils to be acceptable and do not pose a risk to the site however given the significant depths these have been encountered; it is unlikely to be a sustainable and viable source of subsoil. Further sampling will be required to understand if any shallow natural superficial deposits are available/suitable for re-use within the proposed cover system.

There are no suitable sources of topsoil available on the site.

Minimum Remediation Requirements

At this stage, remediation will be required to render the site suitable for the proposed mixed residential development, including the following mitigation measures **as a minimum**:

- Installation of clean cover systems with a physical break layer in all areas of proposed landscaping and private gardens.
- Provision of Asbestos in Soil Construction Phase Risk Assessment and Management Plan.
- Management of Asbestos impacted soils in line with the Construction Phase Plan.
- Installation of a suitably protected potable water supply (barrier pipe).
- Ground Gas and Vapour Protection Design Report.
- Construction of all dwellings to comply to CS3 with appropriate vapour mitigation measures.

The site is considered suitable for residential use and can be safely and sustainably remediated. Implementing proper remediation measures and safety protocols will ensure that both construction and long-term use can proceed without risk.

A full detailed Remediation Strategy is required to detail the required remediation and enabling works.

4.2. CONTROLLED WATERS RISK ASSESSMENT

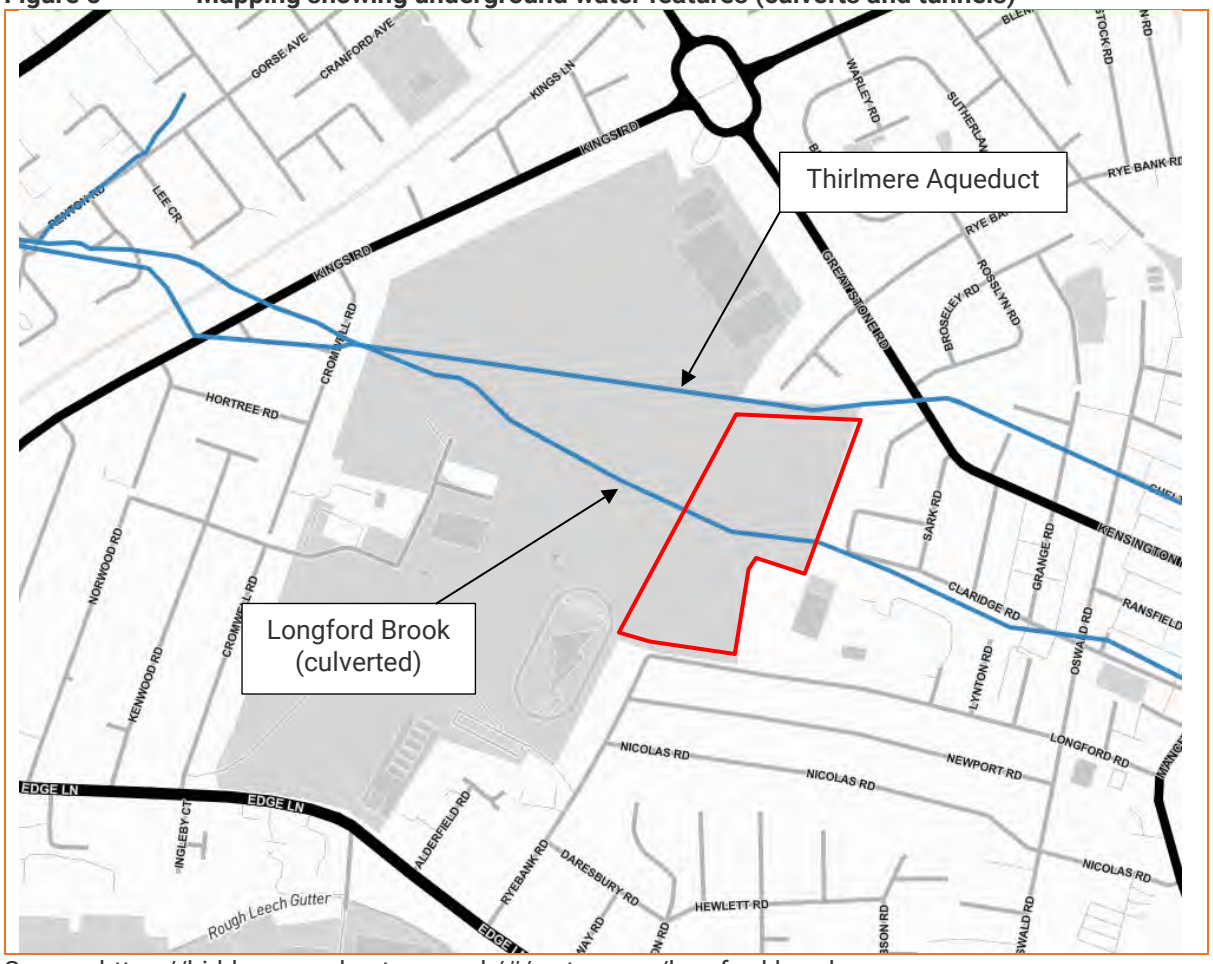
4.2.1. CONTROLLED WATERS CONCEPTUAL SITE MODEL

The site has been identified to have both surface water and groundwater receptors. These have been assessed in more detail below to inform further the conceptual site model which is summarised in Table 17.

Figure 5 indicates the locations of the culverted surface water features on site. The Thirlmere aqueduct is located off-site to the north and is understood to comprise cast iron pipes resulting in a closed system and is not deemed to be a viable receptor for any mobile phase contamination.

Longford Brook was recorded on historical mapping crossing the north of the site pre-1930 until it was re-directed and culverted to join the Nico Ditch between 1930 and 1950. The Nico Ditch is currently dry, and Longford Brook is understood to be culverted throughout the majority of its length within Chorlton including the section beneath the site. This will somewhat reduce the pathway for migration of mobile-phase contamination.

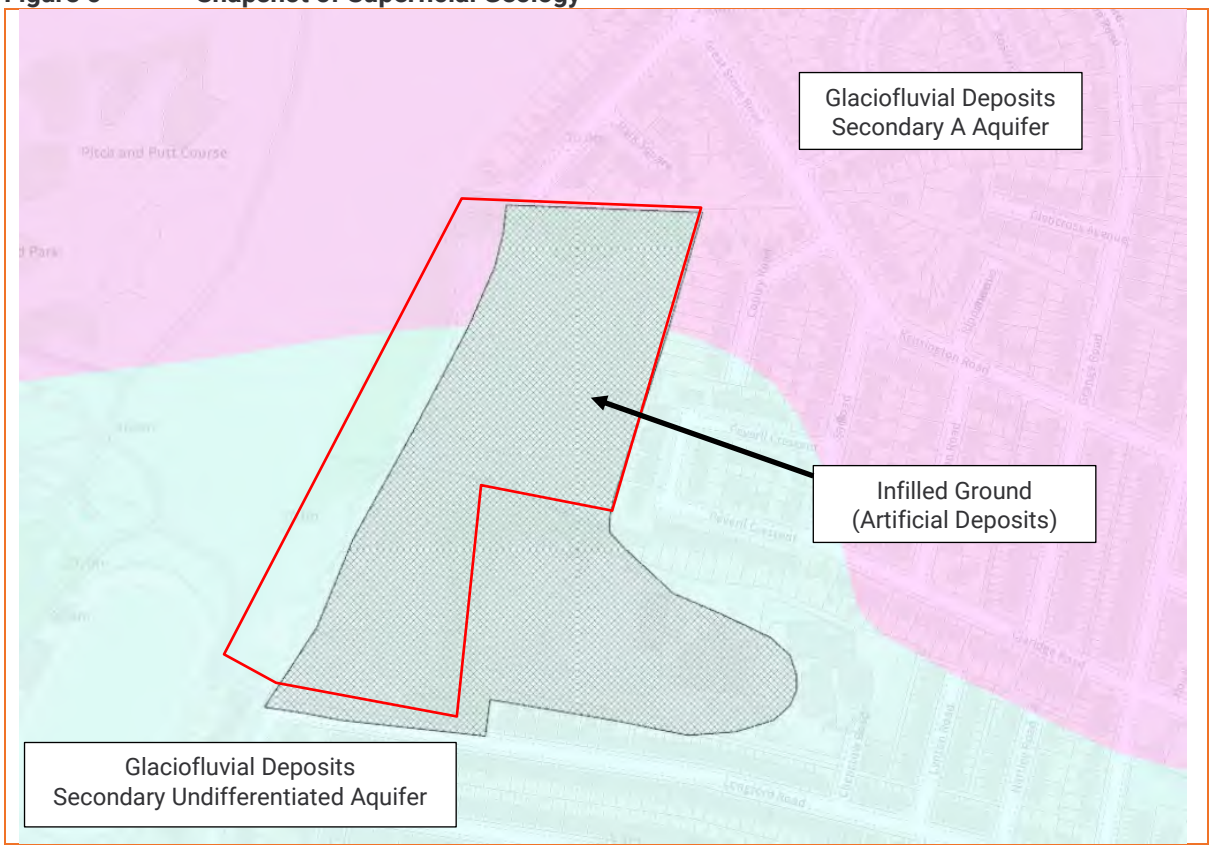
Figure 5 Mapping showing underground water features (culverts and tunnels)



Source: https://hidden-manchester.org.uk/#/waterways/longford-brook

The site is recorded to be predominantly underlain by Glacial Till, with Glaciofluvial deposits recorded in the north. Groundsure mapping of the superficial geology has been included in Figure 6. This indicates the extent of both glacial till deposits in the south and glaciofluvial deposits in the north, with the presence of infilled ground recorded in the location of the infilled clay pits.

Figure 6 Snapshot of Superficial Geology



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 17.

Table 17 Controlled Waters Conceptual Model and Sensitivity Profile

DISCUSSION	RATING
CONTAMINANT SOURCE	
Made Ground Heavy metal, TPH, PAH and VOC/SVOC contamination is present as a result of the Made Ground infill material from historical features on-site. Housing was recorded on site historically which will result in Made Ground at shallow depths with potential for heavy metals, PAHs and TPHs. Infilled ponds are present which may be a source of deeper Made Ground of unknown sources and may comprise heavy metals, TPHs and PAHs which may be mobilised where shallow groundwater is present.	**Moderate**
Former Clay Pits Made Ground has been identified to a maximum proven depth of 13.50 m bgl in some areas of the site associated with the historic clay pits and the subsequent infilling of these features. The source of the fill materials is unknown however it is anticipated that the presence of mobile contamination is likely. It is anticipated that the infilled clay pits will comprise heavy metals, TPHs, VOC and SVOC contamination that could potentially be at a level where it is mobilised from the soils into the perched groundwater.	**High**
PATHWAYS	
Vertical Migration – Principal Bedrock Aquifer Due to the majority of the site being underlain by cohesive deposits, vertical migration of contaminants is unlikely to occur as a result of the low permeability of the superficial deposits. The presence of this low permeability deposits will offer some protection to the underlying aquifer. Historic clay pits are recorded on site indicating the removal of shallow clay deposits (circa 1932). Site investigation has proven that natural CLAY deposits have been locally removed to circa 13.00 m bgl and backfilled with deep Made Ground. The infilled Made Ground has been proven within the former clay pits to a maximum depth of 13.50 m bgl. Made Ground has been proven to be underlain by cohesive superficial deposits with a maximum proven thickness of 5.00 m. BGS boreholes within proximity to the site indicate that bedrock is recorded at depths in excess of 28 m bgl, meaning that the Made Ground recorded on site will typically be underlain by 10-15m of low-permeability clay.	**Low**
Lateral and Vertical migration – Secondary A Superficial Aquifer (North) Glaciofluvial deposits are recorded in the north of the site which are recorded as a Secondary A aquifer. The north of the site has limited investigation due to site constraints and significant vegetation. It is therefore not confirmed whether low-permeability clay is present at shallow depths in the north of the site. Where low-permeability clay is proven at shallow depths to the north of the infilled clay pits, this will provide some protection to prevent migration of mobile phase contaminants form the Made Ground towards the secondary A superficial aquifer. Where the clay deposits have been fully excavated in the north of the site, the deep Made Ground may be in direct contact with the glaciofluvial deposits in the north which are anticipated to be predominantly granular in nature. The may provide a viable pathway for mobile phase contamination to migrate north towards the secondary A superficial aquifer.	**Moderate**
Lateral migration – Surface Water Features Historically, Longford Brook was recorded to cross the north of the site however this was subsequently redirected south towards the Nico Ditch and culverted. It is currently unknown as to whether Longford Brook remains culverted. If culverted, the construction of the culvert (likely concrete pipe) will provide some protection to the surface water feature from the lateral migration of mobile phase contamination within the Made Ground. As the culverted brook is present in the near surface and significant contamination has been identified at depth, it is unlikely that deep contamination will be mobilised and migrate upwards towards the culvert. There is potential that shallow	**Moderate**

mobile phase contamination can mobilise and migrate towards the culverted brook along the Nico Ditch.		
RECEPTOR		
Aquifer Classification in Superficial Drift Deposits	Secondary A superficial aquifer in the northwest of the site (Glaciofluvial Deposits). Secondary undifferentiated superficial aquifer across the majority of the site (Glacial Till).	**Moderate**
Aquifer Classification in Bedrock	Principal aquifer	**High**
Groundwater Source Protection Zone or Drinking Water Safeguard Zone	The site is not located in a Groundwater Source Protection Zone or Drinking Water Safeguard Zone	**Low**
Distance to the Closest Groundwater Abstraction Point	There are three groundwater abstraction points located 593 m north of the site which are all operated by Trafford Metal Finishers Manchester Ltd and utilised for process water. There are no potable groundwater abstractions within 1.0km of the site.	**Low**
Is the Site Located Within 50 m of a Surface Watercourse?	The Nico Ditch intersects the centre of the site (currently recorded to be dry) which was previously used to re-direct Longford Brook between 1930 and 1950. Longford Brook is understood to be culverted throughout the majority of its length within Chorlton including the section beneath the site. United Utilities have indicated that the route of the Thirlmere Aqueduct runs adjacent to the northern boundary of the site however this is understood to be a closed system within cast iron pipes. The River Mersey is location 1.25km south of the site but is not deemed to be a viable receptor due to distance.	**High**

The ICSM developed within the context of the site setting has identified viable pollutant linkages, associated with the downward migration of potentially mobile phase-soluble contaminants towards the underlying Principal aquifer and lateral migration towards the on-site drainage ditch (Nico Ditch/culverted Longford Brook).

The Tier 2 assessment in line with LCRM (2023) has included a comparison of leachate analysis from samples of the Made Ground and groundwater samples to Drinking Water Standards (DWS) and Environmental Quality Standards (EQS).

Leachate and groundwater sampling results will be compared against both EQS and DWS values due to the presence of both possible receptors. Where there are no regulatory guidance values for EQS, the DWS will be utilised in their absence.

Water samples were obtained utilising a low flow sampler to reduce the impact on analysis of suspended solids in the sample. A summary of water monitoring visits and samples obtained has been included within Table 18.

Table 18 Summary of Groundwater Sampling

VISIT NUMBER	DATE	MONITORING WELLS SAMPLED	RESPONSE ZONE STRATUM	DEPTH TO WATER (m bgl)	TESTING REPORT REFERENCE
2019 – Visit 1	16/12/2019	WS101	MADE GROUND	1.60	19-78337
		WS104	MADE GROUND	0.22	-
		WS110	MADE GROUND	1.91	19-78337
		CP101	MADE GROUND	2.30	19-78337
		CP102	MADE GROUND	1.90	19-78337
2024 – Visit 2	29/07/2024	WS202	MADE GROUND	-	24-24409
		WS205	MADE GROUND	-	24-24409
2024 – Visit 3	02/09/2024	WS201	MADE GROUND	2.60	24-28971
		WS202	MADE GROUND	2.55	24-28971
		WS205	MADE GROUND	2.74	24-28971
		CP201	Natural CLAY	2.75	24-28971
		CP203	MADE GROUND	2.50	24-28971
		CP204	Natural CLAY	3.80	24-28971
2024 – Visit 4	21/10/2024	CP201	Natural CLAY	3.60	24-34371
		CP202	MADE GROUND	2.33	24-34371
		CP203	MADE GROUND	2.48	24-34371
		CP204	Natural CLAY	4.28	24-34371

The results of the tier 2 assessment are presented in Table 19 and Table 20.

Table 19 Comparison of Leachate with Tier 2 Screening Levels

DETERMINAND	UNIT	EQS [1, 2] AA	DWS [3,4]	NO. OF LEACHATE SAMPLES	MAX CONC. IN LEACHATE	LOCATION OF EXCEEDANCE	ASSESSMENT
Arsenic	µg/l	50	10	6	12.0	TP103 2.10 m (DWS)	Further Action
Cadmium	µg/l	0.08-0.25	5	6	<0.11	N/A	No Further Action
Chromium (VI)	µg/l	3.4	–	6	20	TP106 1.50 m (EQS)	Further Action
Chromium (III)	µg/l	4.7	50	6	3.1	N/A	No Further Action
Copper	µg/l	1	2000	6	110 14 13 9 5.6	TP106 1.50m (EQS) TP103 2.10m (EQS) WS111 2.70m (EQS) WS106 0.80m (EQS) CP202 4.00m (EQS)	Further Action
Total Cyanide	µg/l	1	50	6	7.4 5.2 1.5	TP103 2.10m (EQS) WS111 2.70m (EQS) WS106 0.80m (EQS)	Further Action
Lead	µg/l	1.2	10	6	26 9.8 1.5	WS106 0.80m (EQS/ DWS) TP106 1.50m (EQS) TP103 2.10m (EQS)	Further Action
Mercury	µg/l	–	1.0	6	<0.5	N/A	No Further Action
Nickel	µg/l	4	20	6	19 11 7.1 5.3	WS202 1.30 (EQS) TP103 2.10m (EQS) TP106 1.50m (EQS) WS111 2.70m (EQS)	Further Action
Selenium	µg/l	–	10	6	<4.0	N/A	No Further Action
Zinc	µg/l	10.9	–	6	73 13	TP106 1.50m (EQS) WS106 0.80m (EQS)	Further Action
pH	6–9			6	12.6 12.6	TP103 2.10m (EQS) WS111 2.70m (EQS)	Further Action
PAHs							
Naphthalene	µg/l	2	10*	6	<0.01	N/A	No Further Action
Anthracene	µg/l	0.1	10*	6	<0.01	N/A	No Further Action

DETERMINAND	UNIT	EQS [1, 2] AA	DWS [3,4]	NO. OF LEACHATE SAMPLES	MAX CONC. IN LEACHATE	LOCATION OF EXCEEDANCE	ASSESSMENT
Benzo(b)fluoranthene	µg/l	0.00017*	10*	6	<0.01	N/A	No Further Action
Benzo(k)fluoranthene	µg/l	0.00017*	10*	6	<0.01	N/A	No Further Action
Benzo(a)pyrene	µg/l	0.00017*	10*	6	<0.01	N/A	No Further Action
Indeno(123-cd)pyrene	µg/l	0.00017*	10*	6	<0.01	N/A	No Further Action
Fluoranthene	µg/l	0.0063	10*	6	<0.01	N/A	No Further Action
Benzo(ghi)perylene	µg/l	1.7–4	10*	6	<0.01	N/A	No Further Action
TPH Aromatic							
TPH C5-C7 (benzene)	µg/l	10	1	6	<1.0	N/A	No Further Action
TPH C7-C8 (toluene)	µg/l	74	700	6	<1.0	N/A	No Further Action
TPH C8-C10 (xylene)	µg/l	30	300	6	<1.0	N/A	No Further Action
TPH C10-C12 (naphthalene)	µg/l	2	90	6	<10	N/A	No Further Action
TPH C12-C16	µg/l	–	90	6	45	N/A	No Further Action
TPH C16-C35	µg/l	–	90	6	66	N/A	No Further Action
TPH Aromatic							
TPH C5-C6	µg/l	–	10005	6	<1.0	N/A	No Further Action
TPH C6-C8	µg/l	–	10005	6	<1.0	N/A	No Further Action
TPH C8-C10	µg/l	–	300	6	<1.0	N/A	No Further Action
TPH C10-C12	µg/l	–	300	6	<10	N/A	No Further Action
TPH C12-C16	µg/l	–	300	6	<10	N/A	No Further Action
TPH C16-C21	µg/l	–	300**	6	<10	N/A	No Further Action
TPH C21-C35	µg/l	–	300**	6	<10	N/A	No Further Action

Notes
Solubility <0.01µg/l
AA – Annual Average

** 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 Framework Directive (Standards and Classification) Directions (England and Wales) 2015 (legislation.gov.uk)*
2. *The Water Supply (Water Quality) Regulations 2018 (legislation.gov.uk)*
3. *Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum (who.int)*
4. *CL:AIRE publishes Petroleum Hydrocarbons in Groundwater guidance (claire.co.uk)*

A total TPH criteria of 1000 mg/kg will act as a surrogate criterion for remaining aliphatic and aromatic TPH fractions.

Table 20 Comparison of Groundwater with Tier 2 Screening Levels

DETERMINAND	UNIT	EQS [1,2]	DWS [3,4]	NO. OF GW SAMPLES	MAXIMUM CONCENTRATIONS AND EXCEEDANCES IN GROUNDWATER (µG/L)				LOCATION OF EXCEEDANCE	ASSESSMENT
		AA			VISIT 1	VISIT 2	VISIT 3	VISIT 4		
Arsenic	µg/l	50	10	16	15.4 12.8 14.0 - - - -	- - - 18.0 28.0 - -	- - - - - 27.0 -	- - - - - - 11.0	WS110 (DWS) CP101(DWS) CP102(DWS) WS202 (DWS) WS205 (DWS) WS205 (DWS) CP202 (DWS)	Further Action
Cadmium	µg/l	0.08-0.25	5	16	< 0.11	< 0.11	*< 0.11*	*< 0.11*	N/A	No Further Action
Chromium (VI)	µg/l	3.4	–	6	<5.0	*<20*	-	-	N/A	No Further Action
Chromium (III)	µg/l	4.7	50	16	5.7	*3.1*	*4.4*	*0.67*	CP101 (EQS)	Further Action
Copper	µg/l	1	2000	16	4.3 9.1 7.5 5.0 - - -	- - - - 2.7 2.3 -	- - - - - - <0.50	- - - - - - 0.96	WS101(EQS) WS110(EQS) CP101(EQS) CP102(EQS) WS202 (EQS) WS205 (EQS) N/A	Further Action
Total Cyanide	µg/l	1	50	16	5.2 31.0 160.0 81.0 -	- - - - <0.005	- - - - 0.12	- - - - <0.05	WS110 (EQS) WS101 (EQS) CP101(EQS / DWS) CP102(EQS / DWS) N/A	Further Action
Lead	µg/l	1.2	10	16	16.0 4.4 9.5 - - - -	- - - 4.0 1.3 - -	- - - - - 2.4 -	- - - - - - 1.6	WS110 (EQS/DWS) CP101(EQS) CP102(EQS) WS202 (EQS) WS205 (EQS) WS201 (EQS) CP203 (EQS)	Further Action

DETERMINAND	UNIT	EQS [1, 2]	DWS [3,4]	NO. OF GW SAMPLES	MAXIMUM CONCENTRATIONS AND EXCEEDANCES IN GROUNDWATER (µG/L)				LOCATION OF EXCEEDANCE	ASSESSMENT
		AA			VISIT 1	VISIT 2	VISIT 3	VISIT 4		
Mercury	µg/l	–	1.0	16	*0.18*	*<0.010*	*0.14*	*0.05*	N/A	No Further Action
Nickel	µg/l	4	20	16	4.7 22 6.4 15 - - -	- - - - 5.2 6.1 -	- - - - - - *3.3*	- - - - - - *1.9*	WS101(EQS) WS110 (EQS / DWS) CP101(EQS) CP102(EQS) WS202 (EQS) WS205 (EQS) N/A	Further Action
Selenium	µg/l	–	10	16	5.3	4.3	<0.50	<0.50	N/A	No Further Action
Zinc	µg/l	10.9	–	16	14 48 62 34 - - - -	- - - - - - - -	- - - - - - - -	- - - - 530 400 490 530	WS101 (EQS) WS110 (EQS) CP101(EQS) CP102(EQS) CP201 (EQS) CP202 (EQS) CP203 (EQS) CP204 (EQS)	Further Action
Manganese	µg/l	123	50	12	- - - - - - - -	- - - - - - - *6.4*	100 300 880 - - - - -	- - - 110 390 220 360 -	CP201 (DWS) CP203 (EQS/DWS) CP204 (EQS/DWS) CP201 (DWS) CP202 (EQS/DWS) CP203 (EQS/DWS) CP204 (EQS/DWS) N/A	Further Action
pH	6–9	–	–	16	11.1 10.7 -	- - *8.9*	- - *9.1*	- - *8.4*	CP101 CP102 N/A	Further Action
PAHs										
Naphthalene	µg/l	2	10*	16	16 3.4 - - -	- - - - -	- - 95 5.0 270	- - - - -	CP101 (EQS/ DWS) CP102 (EQS) CP201 (EQS/DWS) CP203 (EQS) CP204 (EQS/DWS)	Further Action

DETERMINAND	UNIT	EQS [1, 2]	DWS [3,4]	NO. OF GW SAMPLES	MAXIMUM CONCENTRATIONS AND EXCEEDANCES IN GROUNDWATER (µG/L)				LOCATION OF EXCEEDANCE	ASSESSMENT
		AA			VISIT 1	VISIT 2	VISIT 3	VISIT 4		
					- - - - -	- - - - <0.50	7.4 9.7 - - -	- - 27 130 -	WS201 (EQS) WS202 (EQS) CP202 (EQS/DWS) CP203 (EQS/DWS) N/A	
Anthracene	µg/l	0.1	10*	16	0.25 - - - - -	- - - - - <0.50	- 0.71 1.0 0.75 0.55 -	- - - - - <0.50	WS101 (EQS) CP201 (EQS) CP204 (EQS) WS201 (EQS) WS202 (EQS) N/A	Further Action
Benzo(b)fluoranthene	µg/l	0.00017*	10*	16	<0.50	<0.50	<0.50	<0.50	N/A	No Further Action
Benzo(k)fluoranthene	µg/l	0.00017*	10*	16	<0.50	<0.50	<0.50	<0.50	N/A	No Further Action
Benzo(a)pyrene	µg/l	0.00017*	10*	16	<0.50	<0.50	<0.50	<0.50	N/A	No Further Action
Indeno(123-cd)pyrene	µg/l	0.00017*	10*	16	<0.50	<0.50	<0.50	<0.50	N/A	No Further Action
Fluoranthene	µg/l	0.0063	10*	16	<0.50	<0.50	<0.50	<0.50	N/A	No Further Action
Benzo(ghi)perylene	µg/l	1.7–4	10*	16	<0.50	<0.50	<0.50	<0.50	N/A	No Further Action
TPH Aromatic										
TPH C5-C7 (benzene)	µg/l	10	1	16	11 7.0 -	- - <0.10	- - <0.10	- - 0.84	CP101(EQS/DWS) CP102 DWS) N/A	Further Action
TPH C7-C8 (toluene)	µg/l	74	700	16	<0.10	<0.10	<0.10	<0.10	N/A	No Further Action
TPH C8-C10 (xylene)	µg/l	30	300	16	- - - - 12	150 - - - -	- 350 - - -	- - 390 330 -	WS202 (EQS) WS201 (EQS/DWS) CP202 (EQS/DWS) CP203 (EQS/DWS) N/A	Further Action
TPH C10-C12 (naphthalene)	µg/l	2	90	16	63 48 -	- - 130	- - -	- - -	CP101 (EQS) CP102 (EQS) WS202 (EQS/DWS) CP201 (EQS)	Further Action

DETERMINAND	UNIT	EQS [1, 2]	DWS [3,4]	NO. OF GW SAMPLES	MAXIMUM CONCENTRATIONS AND EXCEEDANCES IN GROUNDWATER (µG/L)				LOCATION OF EXCEEDANCE	ASSESSMENT
		AA			VISIT 1	VISIT 2	VISIT 3	VISIT 4		
					- - - - - -	- - - - - -	11 15 33 430 - -	- - - - 270 190	CP203 (EQS) CP204 (EQS) WS201 (EQS/DWS) CP202 (EQS/DWS) CP203 (EQS/DWS)	
TPH C12-C16	µg/l	–	90	16	220 - - -	- - - 69	- 170 - -	- - 120 -	CP101 (DWS) WS201 (DWS) CP203 (DWS) N/A	Further Action
TPH C16-C35	µg/l	–	90	16	*79*	*<0.10*	*34*	*<0.10*	N/A	No Further Action
TPH Aliphatic										
TPH C5-C6	µg/l	–	1000[5]	16	*< 1.0*	*<0.10*	*<0.10*	*<0.10*	N/A	No Further Action
TPH C6-C8	µg/l	–	1000[5]	16	*< 1.0*	*<0.10*	*<0.10*	*<0.10*	N/A	No Further Action
TPH C8-C10	µg/l	–	300	16	*< 1.0*	*<0.10*	*<0.10*	*<0.10*	N/A	No Further Action
TPH C10-C12	µg/l	–	300	16	*< 10*	*<0.10*	*<0.10*	*<0.10*	N/A	No Further Action
TPH C12-C16	µg/l	–	300	16	*< 10*	*<0.10*	*<0.10*	*<0.10*	N/A	No Further Action
TPH C16-C21	µg/l	–	300**	16	*< 10*	*<0.10*	*<0.10*	*170*	N/A	No Further Action
TPH C21-C35	µg/l	–	300**	16	*< 10*	*<0.10*	*<0.10*	*<0.10*	N/A	No Further Action
VOCs/SVOCs										
Tetrachloroethylene	µg/l	0.4	10	16	*<1.0*	*<1.0*	*<1.0*	*<1.0*	N/A	No further Action
Trichloroethylene	µg/l	10	10	16	*<1.0*	*<1.0*	*<1.0*	*<1.0*	N/A	No further Action
Trichlorobenzene	µg/l	0.4	–	16	*<1.0*	*<1.0*	*<1.0*	*<1.0*	N/A	No further Action
Trichloromethane	µg/l	2.5	–	16	9.1 -	- *<1.0*	- *<1.0*	- *<1.0*	CP101 (EQS) N/A	Further Action
Vinyl Chloride	µg/l	–	0.3	16	*<1.0*	*<1.0*	*<1.0*	*<1.0*	N/A	Further Action

DETERMINAND	UNIT	EQS [1, 2] AA	DWS [3,4]	NO. OF GW SAMPLES	MAXIMUM CONCENTRATIONS AND EXCEEDANCES IN GROUNDWATER (µG/L) VISIT 1	VISIT 2	VISIT 3	VISIT 4	LOCATION OF EXCEEDANCE	ASSESSMENT
Benzene	µg/l	10	1.0	16	11.3 7.0 - - - - - - -	- - 17 - - - - - -	- - - 87 70 1.9 - - -	- - - - - - 130 31 93	CP101 (EQS/DWS) CP102 (DWS) WS202 (EQS/DWS) CP201 (EQS/DWS) CP203 (EQS/DWS) WS205 (DWS) CP201 (EQS/DWS) CP202 (EQS/DWS) CP203 (EQS/DWS)	**Further Action**
Toluene	µg/l	74	700	16	*4.6*	*1.7*	*87*	*130*	N/A	No further Action
Ethylbenzene	µg/l	20	300	16	*1.8*	*<1.0*	*33*	*60*	N/A	No further Action
p & m-Xylene	µg/l	30	500	16	- - - *5.3*	- - - *<1.0*	56 - - -	- 83 100 -	CP203 (EQS) CP202 (EQS) CP203 (EQS) N/A	**Further Action**
o-Xylene	µg/l	30	500	16	- - - *3.3*	- - - *3.7*	78 - - -	- 51 35 -	CP203 (EQS) CP202 (EQS) CP203 (EQS) N/A	**Further Action**
Phenol	µg/l	7.7	–	16	17 -	- *<0.50*	- *<0.50*	- *<0.50*	CP102 (EQS) N/A	**Further Action**

Notes
Solubility <0.01µg/l
AA – Annual Average
0.50 – Maximum concentration where no exceedances identified during monitoring round.
** 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.*
A total TPH criteria of 1000 mg/kg will act as a surrogate criterion for remaining aliphatic and aromatic TPH fractions.

1. *The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015 (legislation.gov.uk)*
2. *The Water Supply (Water Quality) Regulations 2018 (legislation.gov.uk)*
3. *Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum (who.int)*
4. *CL:AIRE publishes Petroleum Hydrocarbons in Groundwater guidance (claire.co.uk)*

4.2.2. CONTROLLED WATER RISK ASSESSMENT AND MITIGATION

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

Table 21 Summary of Controlled Waters Risk Assessment

EXCEEDANCE OF EQS	EXCEEDANCE OF DWS
Heavy Metals • Chromium VI (L and GW) • Chromium III (GW) • Copper (L and GW) • Total Cyanide (L and GW) • Lead (L and GW) • Nickel (L and GW) • Zinc (L and GW) **PAHs** • Naphthalene (GW) • Anthracene (GW) **TPHs** • TPH C5-C7 Aromatic (GW) • TPH C8-C10 Aromatic (GW) • TPH C10-C12 Aromatic (GW) **VOCs/SVOCs** • Trichloromethane (GW) • Benzene (GW) • p & m Xylene (GW) • o-Xylene (GW) • Phenol (GW)	**Heavy Metals** • Arsenic (L and GW) • Total Cyanide (GW) • Lead (L and GW) • Nickel (GW) **PAHs** • Naphthalene (GW) **TPHs** • TPH C5-C7 Aromatic (GW) • TPH C8-C10 Aromatic (GW) • TPH C10-C12 Aromatic (GW) • TPH C12-C16 Aliphatic (GW) **VOCs/SVOCs** • Benzene (GW)

Notes
L = Leachate sample
GW = Groundwater sample

The assessment indicates that the majority of exceedances relate to groundwater when compared against EQS values, however some exceedances in groundwater have also been noted when compared to the higher DWS values.

Arsenic has been identified above the DWS values within six locations across the four monitoring visits with a maximum concentration of 28ug/kg recorded within WS205.

Chromium (III) was identified above the EQS values during the first monitoring visit however no further exceedances were noted during the 2024 monitoring.

Exceedances in copper have been identified when compared against EQS values within WS101, WS110, CP101, CP102, WS202 and WS205 during the first two monitoring visits. No exceedances were recorded within the final two visits.

Total cyanide has been recorded above both EQS and DWS values during the first monitoring visit within WS101, WS110, CP101 and CP102, however no exceedances have been recorded with the majority of samples indicated levels are below LOD.

Lead has been identified above EQS values during all monitoring visits however a number of exceedances are marginal (1.30ug/kg - 2.4ug/kg). Concentrations of lead within WS110 are recorded above both EQS and DWS values with the maximum recorded concentration on site (16ug/kg).

Elevated levels of Nickel have been identified when compared against EQS values within WS101, WS110, CP101, CP102, WS202 and WS205 during the first two monitoring visits. Concentrations within WS110 are also noted to exceed the higher DWS values with a maximum concentration of 22 ug/kg.

No exceedances of cadmium, chromium (VI), selenium or mercury have been identified when compared against both EQS and DWS values.

Zinc has been identified above EQS values during the first and last monitoring visits within WS101, WS110, CP101, CP102, CP201, CP202, CP203 and CP204. The maximum concentration of 530ug/kg has been recorded within both CP201 and CP204 which is located within the natural response zone. The remaining elevations of zinc are noted within Made Ground response zones. The concentrations encountered during visit 4 are significantly higher than the initial monitoring results.

Elevated levels of manganese have been identified above EQS and DWS values within CP201, CP202, CP203 and CP204 with a maximum concentration of 880ug/kg within CP204. Exceedances appear to be associated with deep groundwater as no exceedances have been recorded within shallow monitoring installations.

pH levels in excess of 10 has been identified within CP101 and CP102 during the first monitoring visit in 2019. pH levels within samples from the 2024 monitoring are all within the range of 6-9.

Elevated levels of Naphthalene have been identified within 8 locations when compared against EQS values, five of which also exceed the higher DWS values with a maximum recorded concentration of 270ug/kg within CP204 (natural response zone). The majority of identified exceedances are recorded within the deeper monitoring locations within the Made Ground.

Anthracene has been identified above EQS values within WS101, CP201, CP204, WS201 and WS202 with a maximum concentration of 1ug/kg. There are no exceedances when compared against the higher DWS values.

There are no exceedances identified against EQS or DWS values for benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, ideno(123-cd)pyrene, fluoranthene and benzo(ghi)perylene with all concentrations recorded below the LOD.

No elevated levels of Aromatic TPH C7-C8 or C16-C35 have been identified within any of the groundwater monitoring visits. Elevated levels of Aromatic TPH C5-C7 have been identified within CP101 (EQS and DWS) and CP102 (EQS) during the first monitoring visit. No exceedances for C5-C7 were encountered during the 2024 monitoring.

Aromatic TPH C8-C10 has been identified above EQS values within WS201, WS202, CP202 and CP203 during the monitoring visits in 2024. Concentrations encountered in WS202, CP202 and CP203 also exceed the higher DWS values.

Aromatic TPH C10-C12 has been identified above EQS levels within CP101, CP102, WS201, WS202, CP201, CP202, CP203 and CP204. Levels within WS201, WS202, CP202 and CP203 also exceed the higher DWS values. Elevated levels were identified during both the 2019 and 2024 monitoring visits within both Made Ground (CP101, CP102, WS201, WS202, CP202 and CP203) and natural response zones (CP201 and CP204).

Aromatic TPH C12-C16 has been identified above the DWS value on three monitoring visits within CP101, WS201 and CP203. It should be noted that a EQS value is not available for this determinant.

No elevated levels of Aliphatic TPHs have been identified within groundwater samples during the monitoring visits undertaken. All levels were recorded below the limit of detection.

VOCs and SVOCs have been identified within groundwater within seven locations on site and are typically noted within monitoring installations with Made Ground response zones. The exception of this is CP201 (natural response zone) where Benzene has been identified above both DWS and EQS levels on the fourth monitoring visit.

Toluene and Ethylbenzene are recorded below both the EQS and DWS values on all monitoring visits. Tetrachloroethylene (PCE), trichloroethylene (TCE), trichlorobenzene and vinyl chloride (VC) are all recorded below the limit of detection (<1.0ug/kg). Trichloromethane (TCM) has been recorded above the EQS value within CP101 during the first monitoring visit. No elevated levels of TCM were recorded during the 2024 groundwater monitoring.

o-, p- & m-Xylene have been identified above the EQS values within CP202 and CP203 during the 2024 monitoring visits. There are no elevated levels of o-, p- & m-xylene when compared against DWS values.

Elevated levels of Phenol were identified during the first monitoring visit when compared against EQS values. No further exceedances have been identified in the 2024 monitoring.

Groundwater samples with SVOC and VOC values recorded above the limit of detection (LOD) where no GAC is available have been summarised in Table 22.

Table 22 Summary of SVOCs and VOCs identified above the LOD

DETERMINANT	UNIT	ASSESSMENT CRITERIA	N	MC	LOC. OF EX	PL	ASSESSMENT
2,4-Dimethylphenol	µg/l	No GAC available	16	2.0 38 76 2.5 3.9	WS110 CP101 CP102 CP201 CP203	4	Further Assessment
Dibenzofuran	µg/l	No GAC available	16	0.97 4.7 1.7 7.1 4.1 1.2 1.0 2.2 2.5	WS101 WS202 CP201 CP204 WS201 WS202 CP201 CP202 CP203	4	Further Assessment
Carbazole	µg/l	No GAC available	16	3.2 1.7 7.5	CP101 CP102 WS202	4	Further Assessment

DETERMINANT	UNIT	ASSESSMENT CRITERIA	N	MC	LOC. OF EX	PL	ASSESSMENT
				13 14 8.3 1.1 2.1 5.2 8.0	CP201 CP204 WS202 WS205 CP201 CP202 CP203		
Chlorobenzene	µg/l	No GAC available	16	4.9 1.3 25 5.9	CP203 CP201 CP202 CP203	4	Further Assessment
Isopropylbenzene	µg/l	No GAC available	16	1.3 8.3 16 4.3 15	CP201 CP203 CP201 CP202 CP203	4	**Further Assessment**
N-Propylbenzene	µg/l	No GAC available	16	5.8 11 2.6 11	CP203 CP201 CP202 CP203	4	**Further Assessment**
1,2,4-Trimethylbenzene	µg/l	No GAC available	16	1.9 1.7 40 19	CP101 CP102 CP201 CP203	4	**Further Assessment**
1,3,5-Trimethylbenzene	µg/l	No GAC available	16	3.2 19 18 33	WS202 CP203 CP202 CP203	4	**Further Assessment**
Sec-Butylbenzene	µg/l	No GAC available	16	2.1 2.9	CP201 CP203	4	**Further Assessment**
4-Isopropyltoluene	µg/l	No GAC available	16	2.3 1.7 1.7 4.1	WS202 CP203 CP202 CP203	4	**Further Assessment**
2-Methylnaphthalene	µg/l	No GAC available	16	1.6 4.2 0.56 11 3.6 1.2 3.4 6.6	WS202 CP201 CP203 CP204 WS201 WS202 CP202 CP203	4	**Further Assessment**

Where VOCs are recorded within groundwater which do not have an appropriate GAC, they are initially included as a potential risk. Further assessment is required to understand the potential solubility, mobility and associated risk to the identified controlled water receptors. The majority of concentrations recorded are only marginally higher than the LOD and are therefore considered a low risk.

4.2.3. CONTROLLED WATERS RISK ASSESSMENT

The majority of exceedances identified are in groundwater obtained from monitoring wells with response zones in the Made Ground. Elevated levels of heavy metals, PAHs, and TPHs have been identified within CP201 and CP204, which both have monitoring wells installed within the natural clay underlying the deep Made Ground. VOCs and SVOCs have also been detected in groundwater samples from wells with response zones in both Made Ground and natural deposits.

Receptor – Underlying Principal Aquifer and Secondary A Superficial Aquifer

Elevated levels of heavy metals, PAHs, TPHs, and benzene have been identified within groundwater samples, exceeding Drinking Water Standards (DWS). It is understood that these elevated levels are associated with perched water within the Made Ground in the infilled clay pits. Water samples taken from both deep and shallow monitoring wells indicate contamination exceedances, making it unfeasible to determine a specific source; rather, the impact is understood to be widespread within the infilled clay pits.

Low-permeability clay has been encountered beneath the Made Ground within the infilled clay pits, providing some protection to the underlying principal aquifer. BGS borehole records indicate that the bedrock (principal aquifer) is located approximately 27 m bgl, resulting in an approximate 10-15 m cover of low-permeability clay, which reduces downward migration. However, exceedances identified in groundwater samples taken from natural response zones (CP201 and CP204) beneath the infilled clay pits indicate that some downward migration may be occurring on-site.

Further assessment will be required if piled foundations are utilised to ensure no preferential pathways are created, which could increase the risk to the underlying principal aquifer.

The northern part of the site comprises glaciofluvial superficial deposits, classified as a Secondary A aquifer, which may be in direct contact with the Made Ground within the infilled clay pits. Further investigation will be needed in the north to confirm the presence of any shallow, low-permeability clay deposits that could prevent lateral migration to the adjacent Secondary A aquifer.

The site, a former clay pit in Manchester, has been infilled with ash-type materials, and residual polycyclic aromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPHs) have been identified within the ground. At present, the site is entirely unsurfaced, allowing unrestricted infiltration of rainfall into the ground. This poses an increased risk of contaminant mobilisation, leaching, and transportation into the groundwater system.

Manchester experiences an average annual rainfall of approximately 900 mm (0.9 m). On an unsurfaced site of one acre (4046.86 m^2), this results in an estimated infiltration volume of 3642.17 m^3 per year. Following the proposed development, where 60% of the site will be made impermeable, infiltration will be reduced by the same proportion. The remaining 40% of the site will account for only 1456.87 m^3 of infiltration per year, resulting in a reduction of 2185.3 m^3 per year per acre.

This reduction in infiltration has important implications for groundwater risk. The current high rate of infiltration facilitates the downward movement of water through the contaminated fill, increasing the risk of contaminant mobilisation and dissolved-phase transport into the groundwater. Post-development, the introduction of impermeable surfacing on 60% of the site will significantly reduce infiltration, lowering the hydraulic connectivity between surface water and groundwater. This reduction will minimise the volume of water available to dissolve and mobilise contaminants, thereby decreasing the potential for their leaching and migration into deeper aquifers.

The introduction of impermeable surfacing is a pragmatic engineering control that mitigates groundwater contamination risks by reducing infiltration and the subsequent mobilisation of PAHs and TPHs. Lower infiltration rates will confine contaminants closer to the surface, where they can be more effectively managed through additional surface-level remediation techniques.

The proposed reduction in infiltration, achieved by rendering 60% of the site impermeable, provides a practical remediation solution. It significantly mitigates the risk of contaminant transport into groundwater, aligning with sustainable development principles and ensuring compliance with environmental regulations.

Receptor – Surface Water (Culverted Longford Brook/Nico Ditch)

Elevated levels of heavy metals, TPHs, PAHs, and VOCs/SVOCs have been identified in groundwater samples when compared with Environmental Quality Standards (EQS). Exceedances have been noted in both shallow and deep monitoring wells installed within Made Ground across the site, indicating an association with perched water within the infilled clay pits. It is not feasible to determine a specific source; the impact is considered widespread within the infilled clay pits.

Where shallow groundwater contamination is present, there is potential for lateral migration to the onsite culverted brook along the Nico Ditch. Typically, infiltration leads to downward migration of mobile phase contamination through leaching, meaning contamination will migrate away from the onsite culvert, although some lateral migration is possible. The construction and exact location of the culverted watercourse are currently unknown due to limited investigation in this area. It is understood that the Nico Ditch remained intact during the extraction of clay for brick works because of its historical importance; however, this has not been confirmed. If low-permeability clay deposits are still present in the location of the Nico Ditch and culverted brook, they will provide some protection against contamination migration. Additionally, depending on the construction of the culvert, any concrete lining may also help prevent contamination migration to surface water.

The risk to controlled water receptors is considered moderate. Due to the presence of heavy metals and organic hydrocarbon compounds in the perched groundwater, careful consideration of risks to site operatives and the potential requirement for water pretreatment will be necessary.

Given the presence of the culverted Longford Brook and the Nico Ditch across the centre of the site, a DQRA is recommended to determine practicable and deliverable remediation targets for the soils (considered a secondary source).

4.3. GROUND GAS RISK ASSESSMENT

4.3.1. RATIONALE

Hazardous ground gas qualitative risk assessment is based on a conceptual site model (CSM) similar to that used for soil and groundwater contamination sources (i.e., source pathway receptor pollutant linkages).

The risk can be assessed based on knowledge of the ground conditions and CSM and a measure of hazardous gas concentrations and gas flow at the site within monitoring standpipes.

4.3.2. SOURCES AND PATHWAYS OF GROUND GAS

Table 23 summarises the potential sources and pathways of ground gas within the context of the recorded site setting and proposed development.

Table 23 Identified Potential Sources of Ground Gas

SOURCE
Former Clay Pits and Infilled Ponds Made Ground has been identified to depths in excess of 13.00 m bgl in some areas of the site associated with infilled clay pits. The source of the fill materials is unknown and therefore may contain some organic putrescible materials which may be a source of hazardous ground gas production. Chemical analysis of Made Ground soils has indicated Total Organic Carbon (TOC) ranging from 0.5% to 27%. Where soils have a high percentage TOC, there is a greater potential for the production of ground gases.
Landfill Sites There are no current or historical landfill sites within 250 m of the subject site. However, mapping circa 1908 and 1989 indicates that the site has been subject to historical infilling (pits, quarries, pond, marsh, river, streams). In particular historical mapping shows significant topographical changes, steep slopes, infilled clay pits and ponds within the site boundary. There are also ten locations of potentially infilled land within 250 m of the site from historical mapping dating 1848 to 1955 with an unknown input type, including two on-site from 1989 mapping.
Vapours (Soil and Groundwater) Volatile contamination has been identified within both soils and groundwater on site. These present a potential risk of vapour migration and ingress into the proposed buildings (mixed-use and residential). Further assessment is required to confirm the level of risk.
Other Gases – Radon The site is located within and area where less than 1% of properties are deemed to be affected by Radon. Radon protective measures are not necessary in the construction of new dwellings or extensions.

The ICSM has identified that the underlying Made Ground, infilled ponds, infilled clay pits, infilled field boundaries may represent a potential source of ground gas generation. Based on the identification of these sources, E3P has determined that the site represents a moderate ground gas source generation potential.

Volatile organic contaminants have been identified within the soil analysis therefore, further assessment is required in relation to the potential vapour risk associated with the existing Made Ground.

4.3.3. MONITORING FREQUENCY

The CIRIA C665 guidance on gas risk assessment includes recommendations for periods and frequencies for monitoring visits. These recommendations take into account the nature of the proposed development and the likely generation potential of the source.

The proposed development comprises private residential properties, which would be classified as a Type A development (high sensitivity) in accordance with BS8485:2015+A1:2019.

Within the context of the proposed residential end use and ground gas generation potential, the gas assessment requires that nine visits are required over 6 months, with at least two sets of readings at low or falling atmospheric pressure as set out within CIRIA 665.

The spacing requirements for monitoring wells are detailed within CIRIA 665 Table 4.2, which indicates that for low gas hazard sites (Made Ground with limited degradable material, organic clay of limited thickness) and a high sensitivity development, nominal well spacing should be between 25 m and 50 m.

E3P have completed spot monitoring and continuous gas monitoring; results are summarised within the subsequent sections of this report. The locations and depth of the monitoring wells installed are presented within Table 24.

Table 24 Ground Gas Monitoring Location Rationale

LOCATION	GROUND GAS SOURCE	DEPTH OF MONITORING WELL (M)
WS101	Made Ground	0.50–3.00
WS102	Made Ground	0.50–4.00
WS103	Made Ground	0.50–2.00
WS104	Made Ground	0.50–2.50
WS105	Made Ground	0.50–2.00
WS106	Made Ground	0.50–2.00
WS107	Made Ground	0.50–3.00
WS108	Made Ground	0.50–3.00
WS109	Made Ground	0.50–2.50
WS110	Made Ground	0.50–2.00
WS111	Made Ground	0.50–3.00
WS112	Made Ground	0.50–2.00
CP101	Made Ground	10.50–12.50
CP102	Made Ground	8.00–10.00
WS201	Made Ground	2.00–3.00
WS202	Made Ground	2.50–4.50
WS205	Made Ground	2.50–4.50
WS207	Made Ground	0.50–1.00
CP201	Natural CLAY	11.00–15.50
CP202	Made Ground	4.00–13.00
CP203	Made Ground	5.00–12.00
CP204	Natural CLAY	8.00–10.50

Spot monitoring has been completed within all monitoring wells during the 2019 investigation, with continuous monitoring completed within WS101, WS102, WS103, WS106, WS108 and WS110.

Spot monitoring within WS101, WS102, and WS103 identified elevated methane concentrations; therefore, these locations were also utilised for continuous gas monitoring to assess the risk fully.

Continuous gas monitoring was also carried out within WS106, WS108 and WS110 to provide information for the northern sector of the site for comparability and to gain a wider understanding of the ground gas regime across the whole site.

Continuous gas monitoring equipment was installed within four monitoring wells (WS201, WS202, WS205 and CP202) during the 2024 site investigation to supplement the 2019 data.

4.3.4. MONITORING METHODOLOGY – TRADITIONAL SPOT MONITORING

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 300 seconds (5 minutes) at each location, increasing to 600 seconds if elevated concentrations identified, at which point the maximum concentration of CH_4 and CO_2, together with the lowest concentration of O_2 were recorded.

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 (Q_{hg}) have been derived for each monitoring point, from which an individual Characteristic Situation (CS) can ultimately be determined.

4.3.5. SUMMARY OF MONITORING RESULTS

The results of the ground gas monitoring are presented in Table 25, Table 26 and Table 27.

Table 25 Summary of Ground Gas Monitoring Results (E3P 2019) – Spot Monitoring

WELL	STRATA	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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	Made Ground	14/01/2020	15.50	15.50	0.2542	3.40	3.40	0.0558	0.20	999	Falling	1.64	1.64	0.50-3.00	2.85	1.80
		05/02/2020	10.50	10.50	0.1932	3.70	3.70	0.0681	0.20	1034	Falling	1.84	1.84		2.80	1.98
		26/02/2020	11.60	11.60	0.0603	3.80	3.80	0.0198	0.30	1010	Rising	0.52	0.52		2.81	1.89
		18/03/2020	12.10	12.10	0.1936	4.10	4.10	0.0656	0.20	1005	Steady	1.60	1.60		2.80	1.94
		08/04/2020	10.10	10.10	0.0263	3.10	3.10	0.0081	0.90	1021	Falling	0.26	0.26		2.80	1.95
		30/04/2020	13.10	13.10	0.0681	3.90	3.90	0.0203	0.70	985	Falling	0.52	0.52		2.80	2.01
		18/06/2020	1.20	1.20	0.0031	6.00	6.00	0.0156	0.60	1007	Falling	0.26	0.26		2.76	2.30
		07/07/2020	1.80	1.80	0.0047	6.60	6.60	0.0172	3.80	1012	Falling	0.26	0.26		2.77	2.35
		04/08/2020	5.60	5.60	0.0056	7.20	7.20	0.0072	0.10	1008	Falling	0.10	0.10		2.78	2.24
WS102	Made Ground	14/01/2020	26.00	26.00	0.0676	1.10	1.10	0.0029	2.20	999	Falling	0.26	0.26	0.50-4.00	3.12	0.50
		05/02/2020	Flooded												-	-
		26/02/2020													-	-
		18/03/2020													-	-
		08/04/2020	4.60	4.60	0.0929	0.50	0.50	0.0101	13.80	1021	Falling	2.02	2.02		3.35	1.58
		30/04/2020	5.20	5.20	0.0988	0.90	0.90	0.0171	12.10	985	Falling	1.90	1.90		3.30	1.69
		18/06/2020	49.90	49.90	0.2595	1.60	1.60	0.0083	0.20	1007	Falling	0.52	0.52		3.20	1.90
		07/07/2020	50.80	50.80	0.0660	1.40	1.40	0.0018	0.10	1012	Falling	0.13	0.13		3.25	2.12
		04/08/2020	53.00	53.00	0.053	1.60	1.60	0.0016	0.10	1008	Falling	0.10	0.10		3.45	2.19

WELL	STRATA	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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)
WS103	Made Ground	14/01/20	63.80	63.80	1.0208	0.10	0.10	0.0016	5.80	999	Falling	1.60	1.60	0.50 – 2.00	1.90	1.15
		05/02/20	73.80	73.80	3.1808	0.20	0.20	0.0086	3.70	1034	Falling	4.31	4.31		1.94	1.27
		26/02/20	75.10	75.10	2.1779	0.10	0.10	0.0029	2.80	1010	Rising	2.90	2.90		1.93	0.99
		18/03/20	71.20	71.20	2.4208	0.20	0.20	0.0068	1.90	1005	Steady	3.40	3.40		1.92	1.04
		08/04/20	76.20	76.20	1.9431	0.20	0.20	0.0051	3.70	1021	Falling	2.55	2.55		1.90	1.33
		30/04/20	73.50	73.50	2.2785	0.20	0.20	0.0062	1.80	985	Falling	3.10	3.10		1.91	1.40
		18/06/20	34.50	34.50	0.0345	0.90	0.90	0.0009	0.00	1007	Falling	0.10	0.10		1.60	1.57
		07/07/20	26.70	26.70	0.0694	0.90	0.90	0.0023	4.50	1012	Falling	0.26	0.26		1.98	1.71
		04/08/20	37.60	37.60	0.7482	1.70	1.70	0.0338	0.10	1008	Falling	1.99	1.99		1.93	1.65
WS104	Made Ground	14/01/2020	Flooded											0.50-2.50	-	-
		05/02/2020													-	-
		26/02/2020													-	-
		18/03/2020													-	-
		08/04/2020	0.10	0.10	0.0001	2.50	2.50	0.0033	10.00	1021	Falling	0.13	0.13		1.56	1.00
		30/04/2020	0.10	0.10	0.0003	3.10	3.10	0.0081	9.80	985	Falling	0.26	0.26		1.55	1.12
		18/06/2020	64.60	64.60	1.2145	1.60	1.60	0.0301	0.10	1007	Falling	1.88	1.88		1.56	1.33
		07/07/2020	70.20	70.20	0.8635	4.60	4.60	0.0566	0.10	1012	Falling	1.23	1.23		1.61	1.10
		04/08/2020	91.40	91.40	0.1188	1.80	1.80	0.0023	0.10	1008	Falling	0.13	0.13		1.60	1.28

WELL	STRATA	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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)
WS105	Made Ground	14/01/2020	0.10	0.10	0.0005	0.70	0.70	0.0036	18.40	999	Falling	0.52	0.52	0.50-2.00	2.10	2.00
		05/02/2020	0.10	0.10	0.0003	0.70	0.70	0.0018	19.40	1034	Falling	0.26	0.26		2.12	2.00
		26/02/2020	0.10	0.10	0.0001	0.60	0.60	0.0008	19.20	1010	Rising	0.13	0.13		2.11	1.80
		18/03/2020	0.10	0.10	0.0005	0.50	0.50	0.0026	19.60	1005	Steady	0.52	0.52		2.12	1.89
		08/04/2020	0.10	0.10	0.0005	0.10	0.10	0.0005	20.80	1021	Falling	0.52	0.52		2.12	2.01
		30/04/2020	0.10	0.10	0.0008	0.30	0.30	0.0023	19.90	985	Falling	0.76	0.76		2.10	2.05
		18/06/2020	0.10	0.10	0.0028	0.10	0.10	0.0028	20.50	1007	Falling	2.77	2.77		2.13	2.12
		07/07/2020	0.10	0.10	0.0019	0.20	0.20	0.0038	20.10	1012	Falling	1.90	1.90		2.12	2.12
		04/08/2020	0.10	0.10	0.0015	0.20	0.20	0.0029	20.00	1008	Falling	1.45	1.45		2.12	2.10
WS106	Made Ground	14/01/2020	0.10	0.10	0.0003	1.00	1.00	0.0026	18.30	999	Falling	-0.26	-0.26	0.50-2.00	0.83	Dry
		05/02/2020	0.10	0.10	0.0003	0.90	0.90	0.0023	18.30	1034	Falling	0.26	0.26		1.80	Dry
		26/02/2020	0.10	0.10	0.0005	0.90	0.90	0.0047	18.50	1010	Rising	0.52	0.52		1.79	Dry
		18/03/2020	0.10	0.10	0.0001	0.80	0.80	0.0010	18.90	1005	Steady	0.13	0.13		1.80	Dry
		08/04/2020	0.10	0.10	0.0001	0.90	0.90	0.0012	18.60	1021	Falling	0.13	0.13		1.85	Dry
		30/04/2020	0.10	0.10	0.0005	0.70	0.70	0.0036	18.90	985	Falling	0.52	0.52		1.84	Dry
		18/06/2020	Unable to Access												-	-
		07/07/2020	0.10	0.10	0.0005	1.50	1.50	0.0078	18.10	1012	Falling	0.52	0.52		1.66	1.65
		04/08/2020	0.10	0.10	0.0003	1.30	1.30	0.0034	18.50	1008	Falling	0.26	0.26		1.68	1.64

WELL	STRATA	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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)
WS107	Made Ground	14/01/2020	0.10	0.10	0.0001	3.80	3.80	0.0038	13.40	999	Falling	0.10	0.10	0.50-3.00	2.90	1.92
		05/02/2020	0.10	0.10	0.002	1.70	1.70	0.0337	16.40	1034	Falling	1.98	1.98		2.90	2.00
		26/02/2020	0.10	0.10	0.0009	2.10	2.12	0.0197	15.80	1010	Rising	0.94	0.94		2.90	1.89
		18/03/2020	0.10	0.10	0.0013	2.40	2.40	0.0302	16.20	1005	Steady	1.26	1.26		2.90	1.92
		08/04/2020	0.10	0.10	0.0003	2.80	2.80	0.0073	15.00	1021	Falling	0.26	0.26		2.90	2.00
		30/04/2020	0.10	0.10	0.0001	2.60	2.60	0.0034	15.80	985	Falling	0.13	0.13		2.90	2.10
		18/06/2020	0.10	0.10	0.0001	1.90	1.90	0.0025	18.20	1007	Falling	0.13	0.13		2.89	2.37
		07/07/2020	0.10	0.10	0.0001	3.60	3.60	0.0047	14.60	1012	Falling	0.13	0.13		2.90	2.34
		04/08/2020	0.10	0.10	0.0003	3.20	3.20	0.0083	15.20	1008	Falling	0.26	0.26		2.90	2.40
WS108	Made Ground	14/01/2020	0.10	0.10	0.0005	4.50	4.50	0.0234	12.20	999	Falling	0.52	0.52	0.50-3.00	2.29	1.97
		05/02/2020	0.10	0.10	0.0009	3.20	3.20	0.0282	15.30	1034	Falling	0.88	0.88		2.30	2.05
		26/02/2020	0.10	0.10	0.0003	3.40	3.40	0.0088	14.30	1010	Rising	0.26	0.26		2.30	1.99
		18/03/2020	0.10	0.10	0.0005	3.70	3.70	0.0192	13.90	1005	Steady	0.52	0.52		2.30	2.10
		08/04/2020	0.10	0.10	0.0001	0.20	0.20	0.0002	19.90	1021	Falling	0.10	0.10		2.31	2.02
		30/04/2020	0.10	0.10	0.0003	1.10	1.10	0.0029	16.40	985	Falling	0.26	0.26		2.30	2.10
		18/06/2020	Unable to Access												-	-
		07/07/2020	0.10	0.10	0.0018	2.30	2.30	0.0405	15.60	1012	Falling	1.76	1.76		2.32	2.32
		04/08/2020	0.10	0.10	0.0009	2.10	2.10	0.0185	16.10	1008	Falling	0.88	0.88		2.30	2.28

WELL	STRATA	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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)
WS109	Made Ground	14/01/2020	0.10	0.10	0.0008	0.90	0.90	0.0071	18.90	999	Falling	0.79	0.79	0.50-2.50	2.35	2.10
		05/02/2020	0.10	0.10	0.0009	0.90	0.90	0.0077	18.70	1034	Falling	0.85	0.85		2.33	2.20
		26/02/2020	0.10	0.10	0.0009	0.70	0.70	0.0062	19.10	1010	Rising	0.89	0.89		2.34	2.14
		18/03/2020	0.10	0.10	0.0012	0.80	0.80	0.0099	18.90	1005	Steady	1.24	1.24		2.30	2.20
		08/04/2020	0.10	0.10	0.0001	0.80	0.80	0.0008	19.00	1021	Falling	0.10	0.10		2.36	2.16
		30/04/2020	0.10	0.10	0.0003	0.70	0.70	0.0018	19.20	985	Falling	0.26	0.26		2.35	2.20
		18/06/2020	0.10	0.10	0.0003	0.90	0.90	0.0023	19.00	1007	Falling	0.26	0.26		2.32	Dry
		07/07/2020	0.10	0.10	0.0005	0.80	0.80	0.0042	19.20	1012	Falling	0.52	0.52		2.33	Dry
		04/08/2020	0.10	0.10	0.0003	0.70	0.70	0.0018	19.40	1008	Falling	0.26	0.26		2.30	Dry
WS110	Made Ground	14/01/2020	0.10	0.10	0.0008	2.30	2.30	0.0182	18.30	999	Falling	0.79	0.79	0.50-2.00	2.60	2.00
		05/02/2020	0.10	0.10	0.0003	2.20	2.20	0.0057	17.80	1034	Falling	0.26	0.26		2.60	2.13
		26/02/2020	0.10	0.10	0.0005	1.90	1.90	0.0099	18.60	1010	Rising	0.52	0.52		2.60	2.10
		18/03/2020	0.10	0.10	0.0003	2.10	2.10	0.0055	18.20	1005	Steady	0.26	0.26		2.60	2.19
		08/04/2020	0.10	0.10	0.0001	0.10	0.10	0.0001	20.90	1021	Falling	0.10	0.10		2.60	2.00
		30/04/2020	0.10	0.10	0.0005	0.40	0.40	0.0021	19.80	985	Falling	0.52	0.52		2.60	2.05
		18/06/2020	Unable To access												-	-
		07/07/2020	0.10	0.10	0.001	0.10	0.10	0.0010	20.50	1012	Falling	0.95	0.95		2.65	2.46
		04/08/2020	0.10	0.10	0.0008	0.20	0.20	0.0016	20.20	1008	Falling	0.80	0.80		2.63	2.50

WELL	STRATA	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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)
WS111	Made Ground	14/01/2020	0.10	0.10	0.0005	0.10	0.10	0.0005	20.40	999	Falling	0.52	0.52	0.50-3.00	1.92	1.92
		05/02/2020	0.10	0.10	0.0003	0.40	0.40	0.0010	19.80	1034	Falling	0.26	0.26		1.97	1.95
		26/02/2020	0.10	0.10	0.0001	0.20	0.20	0.0003	20.10	1010	Rising	0.13	0.13		1.96	1.95
		18/03/2020	0.10	0.10	0.0005	0.30	0.30	0.0016	19.90	1005	Steady	0.52	0.52		1.96	1.95
		08/04/2020	0.10	0.10	0.0001	0.60	0.60	0.0008	19.80	1021	Falling	0.13	0.13		1.97	1.96
		30/04/2020	0.10	0.10	0.0003	0.50	0.50	0.0013	19.80	985	Falling	0.26	0.26		1.96	1.95
		18/06/2020	0.10	0.10	0.0003	0.10	0.10	0.0003	20.50	1007	Falling	0.26	0.26		1.93	1.92
		07/07/2020	0.10	0.10	-0.0009	0.10	0.10	0.0009	20.50	1012	Falling	0.85	0.85		1.96	1.95
		04/08/2020	0.10	0.10	0.0005	0.30	0.30	0.0016	20.10	1008	Falling	0.52	0.52		1.94	1.93
WS112	Made Ground	14/01/2020	0.10	0.10	0.0005	0.10	0.10	0.0005	20.40	999	Falling	0.52	0.52	0.50-2.00	1.79	Dry
		05/02/2020	0.10	0.10	0.0003	0.40	0.40	0.0010	19.80	1034	Falling	0.26	0.26		1.80	Dry
		26/02/2020	0.10	0.10	0.0001	0.20	0.20	0.0003	20.10	1010	Rising	0.13	0.13		1.80	Dry
		18/03/2020	0.10	0.10	0.0005	0.30	0.30	0.0016	19.90	1005	Steady	0.52	0.52		1.80	Dry
		08/04/2020	0.10	0.10	0.0001	0.60	0.60	0.0008	19.80	1021	Falling	0.13	0.13		1.82	1.81
		30/04/2020	0.10	0.10	0.0003	0.50	0.50	0.0013	19.80	985	Falling	0.26	0.26		1.81	Dry
		18/06/2020	0.10	0.10	0.0003	0.10	0.10	0.0003	20.50	1007	Falling	0.26	0.26		1.80	Dry
		07/07/2020	0.10	0.10	-0.0009	0.10	0.10	0.0009	20.50	1012	Falling	0.85	0.85		1.81	Dry
		04/08/2020	0.10	0.10	0.0005	0.30	0.30	0.0016	20.10	1008	Falling	0.52	0.52		1.80	Dry

WELL	STRATA	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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)
CP101	Made Ground	14/01/2020	0.10	0.10	-0.0043	0.10	0.10	0.0043	19.30	999	Falling	4.27	4.27	10.50-12.50	12.93	1.62
		05/02/2020	0.10	0.10	0.0001	0.10	0.10	0.0001	19.70	1034	Falling	0.10	0.10		12.95	1.70
		26/02/2020	0.10	0.10	0.0005	0.10	0.10	0.0005	19.50	1010	Rising	0.52	0.52		12.94	1.64
		18/03/2020	0.10	0.10	0.0003	0.10	0.10	0.0003	19.60	1005	Steady	0.26	0.26		12.95	1.92
		08/04/2020	0.80	0.80	0.0198	0.10	0.10	0.0025	19.70	1021	Falling	2.48	2.48		11.02	1.74
		30/04/2020	0.40	0.40	0.0076	0.10	0.10	0.0019	19.40	985	Falling	1.90	1.90		11.23	1.80
		18/06/2020	Unable to Access												-	-
		07/07/2020	34.10	25.90	1.0503	0.70	0.70	0.0216	3.40	1012	Falling	3.08	3.08		12.70	2.20
		04/08/2020	18.90	12.10	0.2948	0.50	0.50	0.0078	5.90	1008	Falling	1.56	1.56		12.71	2.60
CP102	Made Ground	14/01/2020	0.10	0.10	0.0005	0.40	0.40	0.0021	18.50	999	Falling	0.52	0.52	8.00-10.00	9.97	2.04
		05/02/2020	0.10	0.10	0.0015	0.60	0.60	0.0092	18.90	1034	Falling	1.54	1.54		10.20	2.10
		26/02/2020	0.10	0.10	0.0009	0.70	0.70	0.0066	18.20	1010	Rising	0.94	0.94		10.15	2.01
		18/03/2020	0.10	0.10	0.0012	0.50	0.50	0.0062	18.70	1005	Steady	1.24	1.24		10.20	2.14
		08/04/2020	0.10	0.10	0.0003	0.60	0.60	0.0016	19.30	1021	Falling	0.26	0.26		10.20	2.08
		30/04/2020	0.10	0.10	0.0005	0.70	0.70	0.0036	19.10	985	Falling	0.52	0.52		10.20	2.15
		18/06/2020	0.10	0.10	0.0003	0.50	0.50	0.0013	19.80	1007	Falling	0.26	0.26		10.20	2.45
		07/07/2020	0.10	0.10	0.0005	0.40	0.40	0.0021	20.00	1012	Falling	0.52	0.52		10.22	2.67
		04/08/2020	0.10	0.10	0.0001	0.50	0.50	0.0007	19.90	1008	Falling	0.13	0.13		10.20	2.70

Table 26 Summary of Continuous Ground Gas Monitoring Results (GGS 2019)

WELL	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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	30/04/2020	7.9	7.9	0.0079	3.9	3.9	0.0039	0.1	988	Falling	0.1	0.1	0.50 – 3.00	2.81	2.08
WS102	30/04/2020	38.4	38.4	0.0384	2.0	2.0	0.002	1.1	988	Falling	0.1	0.1	0.50 – 4.00	3.45	1.70
WS106	30/04/2020	0.1	0.1	0.0002	0.1	0.1	0.0002	21.1	987	Falling	0.2	0.2	0.50 – 2.00	1.81	Dry
WS108	30/04/2020	0.1	0.1	0.0001	4.7	N/A	0.0047	15.3	988	Falling	0.1	0.1	0.50 – 3.00	2.22	2.11
WS109	30/04/2020	0.1	0.1	0.0001	0.4	0.4	0.0004	20.6	987	Falling	0.1	0.1	0.50 – 2.50	2.35	2.24
WS110	30/04/2020	0.1	0.1	0.0001	1.7	1.7	0.0017	19.6	987	Falling	0.1	0.1	0.50 - 2.00	2.58	2.13
WS111	30/04/2020	0.1	0.1	0.0001	1.1	1.1	0.0011	19.3	987	Falling	0.1	0.1	0.50 – 3.00	1.93	1.44
WS112	30/04/2020	7.9	7.9	0.0079	3.9	3.9	0.0039	0.1	988	Falling	0.1	0.1	0.50 – 2.00	1.78	Dry

Table 27 Summary of Continuous Ground Gas Monitoring Results (GGS 2024)

WELL	DATE	CH_4 PEAK (%V/V)	CH_4 STEADY (%V/V)	CH_4 Q_{hg} (l/hr)	CO_2 PEAK (%V/V)	CO_2 STEADY (%V/V)	CO_2 Q_{hg} (l/hr)	O_2 (%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)
WS201	06/08/2024	16.2	14.7	0.0162	0.6	0.6	0.0006	0.3	1007	Steady	<0.1	<0.1	2.00–3.00	2.97	2.12
	28/08/2024	15.5	15.5	0.0155	0.5	0.5	0.0005	0.2	1011	Steady	<0.1	<0.1		2.93	2.23
WS202	06/08/2024	5.0	5.0	0.005	0.7	0.7	0.0007	13.7	1007	Steady	<0.1	<0.1	2.50–4.50	4.19	2.25
	28/08/2024	5.5	5.5	0.0055	1.9	1.9	0.0019	9.8	1011	Steady	<1.0	<1.0		4.26	2.38
WS205	06/08/2024	0.1	0.1	0.0001	0.4	0.4	0.0004	20.5	1007	Steady	<0.1	<0.1	2.50–4.50	4.12	2.38
	28/08/2024	0.1	0.1	0.0001	1.4	1.4	0.0014	19.2	1007	Steady	<0.1	<0.1		4.10	2.47
CP202	06/08/2024	8.9	6.2	0.0089	0.1	0.1	0.0001	18.7	1007	Steady	<0.1	<0.1	4.00–13.00	13.11	1.86
	28/08/2024	8.1	5.2	0.0081	3.8	1.4	0.0038	12.8	1011	Steady	<0.1	<0.1		12.92	1.96

Notes

CIRIA Characteristic Situation		Q_{hg}		
	CS1	*<0.07*	*Typical Max CO2 <5 % Typical Max CH4 <1 %*	*Values in BOLD exceed CS1 Thresholds*
	CS2	*<0.7*	*Flow rate not to exceed 70 l/hr otherwise consider increase to CS3*	*Values in BLUE denote water above level of response zone (flooded)*
	CS3	*<3.5*		
	CS4	*<15*	*Quantitative Risk Assessment required to evaluate scope of protective measures*	

4.3.6. CONTINUOUS GROUND GAS MONITORING

Continuous monitoring has been undertaken by GGS using calibrated Gas Clam and Gas Sentinel instrumentation. Gas Clams were installed within WS106, WS108 and WS110, with Gas Sentinels installed within WS101, WS102, WS103, WS201, WS202, WS205 and CP202, which allowed the monitoring of flow rates to be completed.

Continuous ground gas monitoring was undertaken during the 2019 site investigation within eight monitoring wells between 30th April and 21st May 2020. A second round of continuous ground gas monitoring was undertaken in 2024 with four monitoring wells installed between 6th August and 28th August 2024. Upon collection of the monitoring equipment installed within CP202, an issue with data recording had been noted therefore a new gas sentinel was installed and additional monitoring was carried out between 28th August and 13th September 2024.

Purge and Recovery Tests were completed in 2019 within WS101, WS102 and WS103. Periodic spot monitoring was completed prior to deployment of continuous monitoring equipment and at least 30 minutes after the removal of instrumentation. GGS have compiled all information from monitoring for both 2019 and 2024 which are appended to this report.

The GasClam instrumentation were set to record at hourly intervals of bulk gases including methane (CH_4), carbon dioxide (CO_2) and oxygen (O_2) and trace gases including total volatile hydrogen sulphide (H_2S) and carbon monoxide (CO) for the duration of the monitoring period.

The GasClam instrumentation also record atmospheric pressure and temperature. Continuous monitoring has now been completed with the results summarised in Table 28. The final factual data reports are attached to this report and discussed within the ground gas assessment.

Table 28 Summary of Continuous Ground Gas Monitoring

LOCATION	CH_4 (%V/V)		CO_2 (%V/V)		O_2 (%V/V)		ATM (MBAR)		H_2S (PPMV)		CO (PPMV)	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
WS101	**7.2**	**8.1**	4.5	**5.1**	0.1	1.9	986	1024	0.0	1.0	0.0	3.0
WS102	Monitoring sensor malfunctioned											
WS103	0.0	**78.3**	0.0	0.2	0.0	17.0	986	1024	0.0	1.0	0.0	1.0
WS106	0.0	0.0	0.0	0.0	18.7	20.6	986	1024	0.0	0.0	0.0	0.0
WS108	0.0	0.0	2.8	4.4	14.2	17.1	985	1032	0.0	0.0	0.0	0.0
WS110	0.0	0.0	0.0	0.0	17.7	20.5	987	1024	0.0	0.0	0.0	0.0
WS201	14.0	**16.4**	0.4	0.5	0.0	2.5	989	1022	0.0	0.0	0.0	0.0
WS202	0.8	**5.0**	0.3	1.5	8.1	19.3	989	1022	0.0	0.0	0.0	**7.0**
WS205	0.0	0.0	0.0	1.8	17.9	19.6	989	1022	0.0	0.0	0.0	0.0
CP202	3.1	**17.2**	0.4	**5.5**	5.9	19.5	989	1022	0.0	0.0	5.0	**43.0**

Notes: % v/v = percentage by volume
Ppmv = parts per million by volume

Following post deployment checks, the methane sensor within WS102 malfunctioned after a few days and subsequently gave unrepresentative values so the values have been omitted.

4.3.7. 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 29.

Table 29 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.*

It should be noted that in the first instance, this assessment has been carried out in accordance with BS8485:2015+A1(2019).

4.3.8. GROUNDWATER

2019 Gas Monitoring

WS102 was noted to be flooded on the first monitoring visit. WS104 has been noted to be flooded on the first two occasions of monitoring. CP101 and CP102 have been flooded during all monitoring visits completed. As such, where the response zone has been flooded, the data cannot be utilised within the ground gas assessment.

Within the remaining monitoring wells groundwater levels have been shown to primarily decrease over the monitoring completed, however WS106 noted a rise in groundwater within the final two visits of monitoring, where former visits noted the well to be dry. WS109 was noted to be dry on the final 3 spot monitoring visits. WS112 was dry on all bar one monitoring visits.

2024 Gas Monitoring

During the traditional spot monitoring carried out before and after deployment, all monitoring wells were recorded to be flooded above the response zones.

Groundwater levels were recorded between 1.80 m bgl and 2.40 m bgl across all monitoring locations.

4.3.9. BAROMETRIC PRESSURE

2019 Gas Monitoring

Visit 4 was undertaken during a period of relatively high/rising pressure, with pressure recorded to be 1021 m bar.

Visits 1 and 5 were undertaken during periods of falling pressure and visit 3 was undertaken during a period of steady low pressure, with pressure recorded to be 979 m bar.

During the continuous gas monitoring, atmospheric pressure was relatively low at the start of the monitoring, around 985 mbar. This gradually increased throughout the monitoring period to around 1025 mbar (peak) with two significant falls in pressure from 1025 to 1000 mbar during the monitoring.

It is therefore considered that the monitoring has been undertaken over representative conditions.

2024 Gas Monitoring

During the continuous monitoring, both high and low pressures were recorded ranging from 989 to 1024 mbar. In general, the atmospheric pressure was recorded >1000 mbar.

Several periods of rapid fall in atmospheric pressure were observed during the monitoring period. These have been summarised in Table 30.

Table 30 Summary of Zone 4 Events

END DATE / TIME	STARTING PRESSURE (mbar)	END PRESSURE (mbar)	DIFFERENCE (mbar)	DURATION (HOURS)	AVERAGE DECREASE PER HOUR (mbar)
12/08/2024 02:00	1013.0	1011.9	2.1	1	-2.10
12/08/2024 03:00	1014.2	1009.8	4.4	4	-1.10
12/08/2024 12:00	1020.2	1006.0	14.2	24	-0.60
15/08/2024 12:00	1010.4	1006.8	3.6	4	-0.90
19/08/2024 17:00	1007.4	1005.6	1.8	1	-1.80
19/08/2024 18:00	1010.2	1005.6	4.6	4	-1.15
20/08/2024 06:00	1015.2	1003.7	11.5	24	-0.48
22/08/2024 01:00	1009.7	1004.8	4.9	4	-1.23
22/08/2024 03:00	1004.0	1001.4	2.6	1	-2.60
22/08/2024 05:00	1004.8	999.4	5.4	4	-1.35
22/08/2024 06:00	1014.5	999.2	15.3	24	-0.64
23/08/2024 02:00	995.2	992.4	2.8	1	-2.8
23/08/2024 03:00	998.6	990.8	7.8	4	-1.95
23/08/2024 04:00	1000.6	989.5	11.1	24	-0.46

It is therefore considered that the monitoring has been undertaken over representative conditions with 'zone 4' events occurring during the 2024 monitoring which is representative of worst-case scenario.

4.3.10. GAS FLOW

2019 Gas Monitoring

A negative flow has been recorded in WS101, WS106, WS111 and CP101. Negative flows are indicative of back pressure from wind being greater than the active flow from the wells.

All monitoring wells recorded a positive flow.

Within the continuous monitoring completed a flow of 0.00l/hr was identified within WS101 throughout the monitoring completed. Within WS102 flow was recorded between -0.01 l/hr and 0.03 l/hr, and within WS103 flow was recorded between -0.15 l/hr and 0.31 l/hr.

2024 Gas Monitoring

A flow of 0.00l/hr was recorded throughout the monitoring period within WS201 and CP202 with no positive or negative flows observed.

Within WS202 flow was recorded between -0.08 l/hr and 0.02 l/hr, and within WS205 flow was recorded between -0.13 l/hr and 0.00 l/hr.

4.3.11. TRADITIONAL SPOT MONITORING GAS CONCENTRATIONS

Methane has been recorded within all monitoring wells at concentrations ranging from the Limit of Detection (LOD), 0.1 % v/v, and 91.40 % v/v (WS104). Elevated concentrations were recorded within the following locations:

- WS101 – Maximum concentration of 15.50 % v/v, with all monitoring visits exceeding 1 % v/v;
- WS102 – Maximum concentration of 53.00 % v/v, with all monitoring visits exceeding 1 % v/v;
- WS103 – Maximum concentration of 76.20 % v/v, with all monitoring visits exceeding 1 % v/v;
- WS104 – Maximum concentration of 91.40 % v/v;
- CP101 – Maximum concentration of 34.10 % v/v;
- WS201 – Maximum concentration of 16.2 % v/v, with both monitoring visits exceeding 1 % v/v;
- WS202 – Maximum concentration of 5.5 % v/v, with both monitoring visits exceeding 1 % v/v;
- CP202 – Maximum concentration of 8.9 % v/v, with both monitoring visits exceeding 1 % v/v.
- Carbon dioxide concentrations were recorded within all the monitoring wells at concentrations between 0.1 % v/v (LOD) to 7.6 % v/v.
- The elevated ground gas concentrations are all associated with the underlying Made Ground.

4.3.12. CONTINUOUS MONITORING GAS CONCENTRATION

2019 Gas Monitoring

During the continuous monitoring undertaken, elevated concentrations of methane (max 78.3% v/v) were identified within WS101, WS102 and WS103; methane was noted to be elevated throughout the monitoring period. WS106, WS108 and WS110 did not identify elevated methane concentrations during the continuous monitoring.

Elevated concentrations of carbon dioxide were identified within WS101 sporadically during the monitoring period on the 11th, 12th, 13th, 14th, 15th, 16th and 21st May 2020 for a maximum of 9 hours at any one time.

2024 Gas Monitoring

Elevated concentrations of methane (max 17.2% v/v) were identified within WS201, WS202 and CP202 with an average level of 15.2% v/v, 3.5% v/v and 19.6% v/v respectively. No elevated levels of methane were observed within WS205.

Carbon dioxide levels varied between 0.0% v/v (LOD) and 5.5% v/v throughout the monitoring period.

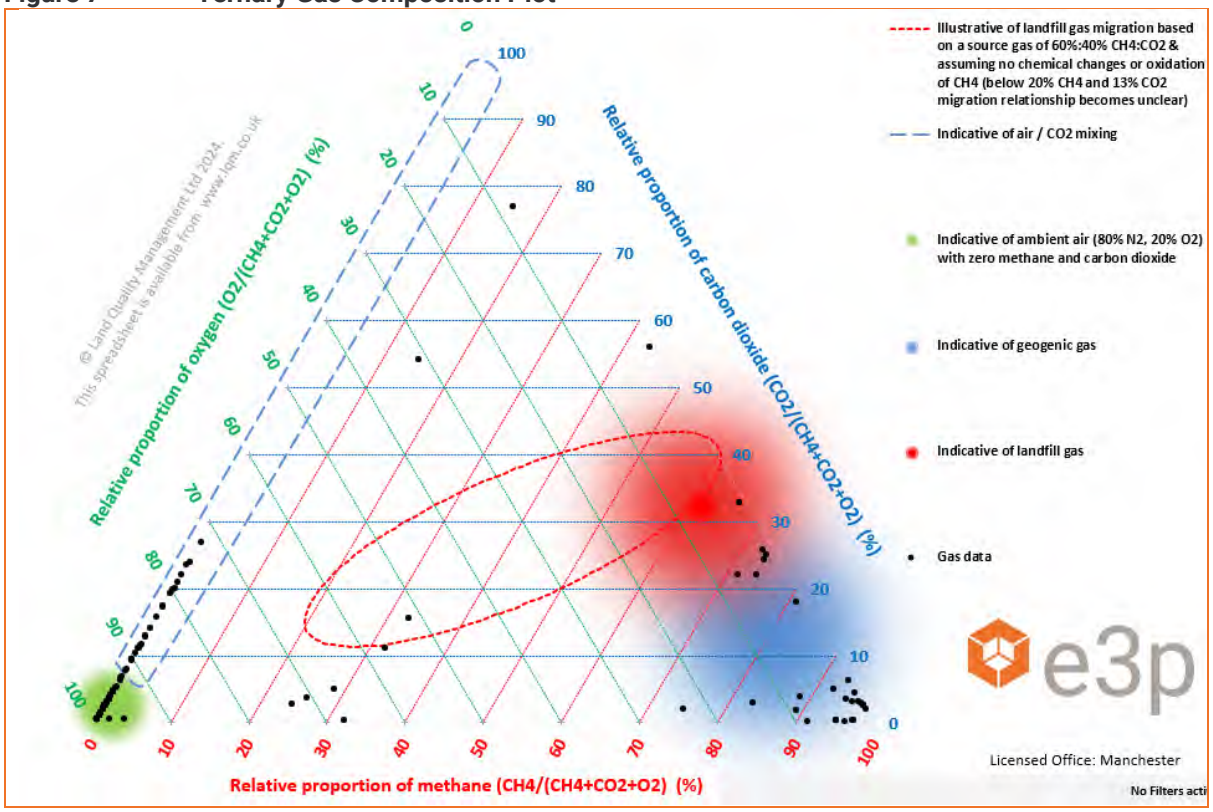
No elevated levels of carbon dioxide were observed within WS201, WS202 or WS205 with a maximum concentration within WS205 of 1.8% v/v recorded on the 12th August.

Within CP202, carbon dioxide levels were typically recorded at concentrations <5.0% v/v with the exception of monitoring between the 20th to 27th August where levels above 5% v/v (max 5.5 % v/v) were recorded sporadically.

4.3.13. TERNARY GAS COMPOSITION PLOT TOOL

A ternary gas plot is a triangular plot of three variables which equal 100%. They allow the composition of gas to be identified and can help to identify the potential source of gas. As carbon dioxide is present in natural soils (such as Glacial Till), this can lead to uncertainty about whether it is necessary to increase the gas regime. On this basis, a ternary plot has been used as an assessment tool for the gas monitoring data to identify if there is a true risk. Figure 7 shows the ternary gas plot for the traditional spot monitoring data from both 2019 and 2024.

Figure 7 Ternary Gas Composition Plot



The ternary gas plot suggests that the majority of monitoring points are indicative of ambient air and air/CO2 mixing which appear in the green area shown within Figure 7. In these locations, the relative proportion of both methane and carbon dioxide is low.

Sampling points plotted within the central area of the chart where the relative proportion of methane and carbon dioxide are in excess of 20%. The composition of the ground gas concentrations within these locations are indicative of landfill gas.

Several sampling points are recorded to have a high proportion of methane with low carbon dioxide and oxygen, this composition is indicative of geogenic gas. The source of the ground gas is considered to be natural degradation of organic materials within the underlying Made Ground utilised to backfill the former clay pits on site.

4.3.14. GAS ASSESSMENT CONCLUSIONS

In accordance with the methodology outlined within the BS8485:2015+A1:2019, E3P has utilised the results of the ground gas monitoring surveys to calculate a tentative gas screening value (GSV). The GSVs for the monitoring positions are summarised in Table 31 and Table 32.

Table 31 Gas Risk Profile and Location – Spot Monitoring

LOCATION	MAX CH_4 (% V/V)	MAX GSV (L/HR)	MAX CO_2 (% V/V)	MAX GSV (L/HR)	CLASSIFICATION TOTAL	CLASSIFICATION GSV	COMMENTS
2019 GAS MONITORING							
WS101	15.50	-0.2542	7.20	-0.0681	CS3	CS2	N/A
WS102	53.00	0.2595	2.00	0.0171	CS3	CS2	N/A
WS103	75.10	3.1808	1.70	0.0338	CS3	CS3	N/A
WS104	91.40	1.2145	4.60	0.0566	CS3	CS3	N/A
WS105	0.10	0.0028	0.70	0.0038	CS1	CS1	N/A
WS106	0.10	0.0005	1.50	0.0078	CS1	CS1	N/A
WS107	0.10	0.002	3.80	0.0337	CS1	CS1	N/A
WS108	0.10	0.0018	4.70	0.0405	CS1	CS1	N/A
WS109	0.10	0.0012	0.90	0.0099	CS1	CS1	N/A
WS110	0.10	0.001	2.30	0.0182	CS1	CS1	N/A
WS111	0.10	-0.0009	1.10	0.0016	CS1	CS1	N/A
WS112	7.90	0.0079	7.60	0.0569	CS3	CS1	N/A
CP101	34.10	1.0503	0.70	0.0216	CS3	CS3	Monitoring Wells Flooded Further Assessment
CP102	0.10	0.0015	0.70	0.0092	CS1	CS1	
2024 GAS MONITORING							
WS201	16.20	0.0162	0.60	0.0006	CS2	CS1	Monitoring Wells Flooded Further Assessment
WS202	5.50	0.0055	1.90	0.0019	CS2	CS1	
WS205	0.10	0.0001	1.40	0.0014	CS1	CS1	
CP202	8.90	0.0089	3.80	0.0038	CS2	CS1	

The GSVs for continuous monitoring have been calculated using the highest flow rate identified within the continuous monitoring where measured or within spot monitoring within the borehole to provide a conservative view.

Table 32 Gas Risk Profile and Location – Continuous Monitoring

LOCATION	MAX CH_4 (% v/v)	MAX GSV (L/HR)	MAX CO_2 (% v/v)	MAX GSV (L/HR)	CLASSIFICATION TOTAL	CLASSIFICATION GSV	COMMENTS
2019 GAS MONITORING							
WS101	8.1	0.0081	5.1	0.0051	CS2	CS2	N/A
WS102	48.5	0.01455	2.5	0.00075	CS3	CS2	N/A
WS103	78.3	0.24273	0.2	0.00062	CS3	CS3	N/A
WS106	0.0	0.00052	0.0	0.00052	CS1	CS1	N/A
WS108	0.0	0.00176	4.4	0.07744	CS2	CS2	N/A
WS110	0.0	0.00095	0.0	0.00095	CS1	CS1	N/A
2024 GAS MONITORING							
WS201	16.4	0.0164	0.5	0.0005	CS2	CS1	Monitoring Wells Flooded Further Assessment
WS202	5.0	0.005	1.5	0.0015	CS2	CS1	
WS205	0.0	0.0001	1.8	0.0018	CS1	CS1	
CP202	17.2	0.0172	5.5	0.0055	CS3	CS1	

It should be noted that CP101, CP102, WS201, WS202, WS205 and CP202 were flooded on all monitoring visits and should not be included in the ground gas risk assessment. Furthermore, WS102 and WS104 have been noted to be flooded on occasions and these visits have not been included within the risk assessment.

Spot monitoring and continuous monitoring have classified WS105, WS106, WS107, WS108, WS109, WS110 and WS111 as CS1. All monitoring wells within the northern sector of the site were classified as CS1 with the exception of WS108. Within WS108, when the GSV has been calculated using the highest flow from spot monitoring and the highest carbon dioxide concentration from continuous monitoring, the GSV exceeds the CIRIA threshold for CS1 and is classified as CS2.

Within the southern sector of the site spot monitoring and continuous monitoring classified WS101 as CS3 due to elevated methane concentrations at this location. However, when the calculated GSV from spot monitoring is compared against CIRIA thresholds it is classified as CS2; whilst data from the continuous monitoring classified WS101 as CS1. The ternary plot for monitoring data from WS101 indicate the elevated levels of both methane and carbon dioxide are indicative of landfill gas. In order to provide a conservative classification WS101 should be classified as CS3.

Elevated levels of methane has been identified within WS102, WS103 and WS104 however the GSV for all of these locations indicates a CS3 and CS2 classification.

The ternary plot indicates the monitoring results for WS102, WS103 and WS104 indicates the gas composition is not indicative of a landfill gas source and is likely associated with a geogenic gas source.

Elevated methane within WS201 and WS202 suggests that these locations should be classified as CS2 however based on the GSV, a CS1 classification is noted. Based on the absence of significant flow during the monitoring, as a conservative approach, a CS2 classification is recommended.

Elevated methane and carbon dioxide are recorded within CP201 during the spot monitoring and continuous monitoring with a CS3 classification however the GSV is noted to be within CS1. In order to provide a conservative classification CP201 should be classified as CS3.

4.3.15. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations have been made based on the data summarised above:

Conclusions

The site, comprising an unfilled clay pit with significant methane identified, is classified as Characteristic Situation 3 (CS3) in accordance with BS 8485:2015+A1:2019. Although methane concentrations are elevated (between 5% and 60%), there is no evidence of substantial gas outflow, even during periods of rapidly falling barometric pressure. This indicates that the gas is predominantly residual rather than actively migrating. The material within the clay pit dates back to the 1950s, meaning the primary phase of gas generation from organic decomposition has long since ceased. Over time, most methane will have naturally vented or dissipated. The classification as CS3 reflects the moderate to high gas risk due to elevated methane concentrations, requiring appropriate protective measures despite the low current outflow rates and limited active gas generation.

In accordance with BS 8485, gas mitigation measures must be designed by a suitably qualified specialist to ensure they address the specific risks of the site. A detailed design report will be required, outlining the proposed gas protection measures, the rationale for their selection, and how they align with the risk classification. This should be accompanied by a robust validation plan to confirm the correct installation and performance of the mitigation measures, ensuring the long-term safety of the development and compliance with relevant standards and regulations.

Recommendations

- Ground Gas Protection Design Report
- Assessment of Soil and Groundwater Vapour Risk (see Section 4.4 and 4.5) & design of appropriate mitigation measures.

4.4. GROUNDWATER VAPOUR ASSESSMENT

Groundwater monitoring carried out to date has identified elevated levels of volatile contamination within groundwater in monitoring wells across the site. Where volatile contamination is present in groundwater there is a potential risk to human health via volatilisation and migration to overlying buildings and air space, resulting in possible inhalation.

In order to understand the potential risk associated with the identified volatile contamination within groundwater, a comparison has been carried out against SoBRA groundwater vapour GAC (GAC_{gwvap}). The SoBRA groundwater vapour GAC (GAC_{gwvap}) are intended as a conservative screening tool that help assess the long-term (chronic) risks to human health from inhalation of vapours arising from groundwater.

It should be noted that only contaminants which have been identified within groundwater samples which are deemed to be sufficiently volatile (Kaw $4x10^{-4}$) and aqueous solubility (>1µg/l) have been included in the assessment. The maximum concentration encountered within groundwater has been used for the assessment as worst-case scenario.

The results of the comparison are summarised in Table 33.

Table 33 Comparison of Groundwater with SoBRA Groundwater Vapour GAC for Residential End Use

DETERMINAND	UNIT	SOBRA GAC_{gwvap}	NO. OF GW SAMPLES	MAXIMUM CONCENTRATION	ASSESSMENT
Naphthalene	µg/l	1400	16	270	No Further Action
TPH C5-C7 (benzene)	µg/l	210000	16	11	No Further Action
TPH C7-C8 (toluene)	µg/l	220000	16	<0.10	No Further Action
TPH C8-C10 (xylene)	µg/l	1900	16	390	No Further Action
TPH C10-C12 (naphthalene)	µg/l	6800	16	430	No Further Action
TPH C12-C16	µg/l	39000	16	220	No Further Action
Trichloromethane	µg/l	790	16	9.1	No Further Action
Vinyl Chloride	µg/l	12	16	<1.0	No Further Action
Benzene	µg/l	500	16	130	No Further Action
p & m-Xylene	µg/l	9500	16	100	No Further Action
o-Xylene	µg/l	12000	16	78	No Further Action

Notes
SoBRA GAC_{gwvap} from SoBRA 'Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater' - Version 2.0 September 2024

The result of the comparison show that all levels of volatile contaminants within groundwater monitoring to date are below the GAC_{gwvap} and therefore are not deemed to pose a vapour risk to the proposed residential development.

4.5. SOIL VAPOUR ASSESSMENT

4.5.1. METHODOLOGY

In order to build on the assessment completed to date further, and to consider if the elevated concentrations of methane are associated with volatile and semi-volatile aromatic hydrocarbons, vapour monitoring and a vapour risk assessment have been undertaken.

GGS has completed active VOC sampling targeting the top 10 VOCs, TPH, and Naphthalene within selected monitoring wells to investigate the presence of vapours following the detection of hydrocarbon compounds in soils and groundwater.

Samples were taken on the 30th April 2020, from WS101, WS102, WS104, WS108, WS110 and WS112, where monitoring well response zones were within the Made Ground.

4.5.2. VAPOUR ANALYSIS RESULTS

The results of the laboratory analysis are within Appendix V. However, VOC and TPH compounds at concentrations above the limit of detection are summarised within Table 34.

It should be noted that Naphthalene has not been identified above the laboratory limit of detection.

Table 34 Summary of VOC / TPH Time Weighted Averages

COMPOUND	LOCATION											
	WS101		WS102		WS104		WS108		WS110		WS112	
	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³	ppbv	µg/m³
VOCs												
Vinyl Chloride	14.1	36	5.5	14.1	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
cis-1,2-Dichloroethene	2	8	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Benzene	7.6	24.3	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	53.4	170.6	2.5	8
Toluene	28.7	108.1	18.2	68.6	10.9	41.1	7.4	27.9	340.5	1283	17.8	67.1
Ethylbenzene	5.5	23.9	2	8.7	<LOD	<LOD	<LOD	<LOD	20.6	89.4	3.1	13.5
m/p-Xylene	15.9	69	6.1	26.5	4	17.4	3.4	14.8	65.1	282.7	6.5	28.2
o-Xylene	5.8	25.2	4.3	18.7	1.5	6.5	<LOD	<LOD	22	95.5	1.5	6.5
Styrene	3.6	15.3	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD	<LOD
Sum of VOC USEPA Compounds	83.2	309.8	36.1	136.6	16.4	65	10.8	42.7	501.6	1921.2	31.4	123.3
TPHs												
Aliphatic C4-C6	187	619	451	1494	28	93	11	36	83	275	45	149
Aliphatic C6-C8	837	3423	1035	4233	31	127	<10	<41	208	851	16	65
Aliphatic C8-C10	7367	36169	6317	33586	4562	24255	<10	<53	22	117	<10	<53
Aliphatic C10-C12	568	3717	1246	8153	939	6145	<10	<65	<10	<65	<10	<65
Aromatic C5-C7 (Benzene)	7.6	24.3	<1.5	<4.8	<1.5	<4.8	<1.5	<4.8	53.4	170.6	2.5	8
Aromatic C7-C8 (Toluene)	28.7	108.1	18.2	68.6	10.9	41.1	7.4	27.9	340.5	1283	17.8	67.1
Aromatic C8-C10	25	123	13	64	<10	<49	<10	<49	177	869	20	98
Aromatic C10-C12	48	255	60	319	147	782	<10	<53	<10	<53	<10	<53

4.5.3. DQRA ASSESSMENT OF BTEX, BANDED TPHS AND VOC COMPOUNDS

In order to determine if the vapour concentrations detected would generate a risk to human health, the results in µg/m3 have to be assessed against the Tolerable Daily Intake values (TDIs) for the relevant compound or group which are shown in Table 35 and Table 36.

In order to assess any potential risk, it is first necessary to identify the critical receptor which in this case is the future residents. The proposed residential end use means that the receptor for any vapour inhalation is a 0-6-year old child of approximately 12.70kg who breathes circa 11.85m3 of air per day.

Table 35 Chemical Parameters (TDI)

COMPOUND	TDI_{INHAL} UG KG^{-1} BW DAY^{-1}	SOURCE
Ethylbenzene	74.3	Environment Agency (2009) Contaminants in Soil: Updated collation of toxicological data and intake values for humans. Ethylbenzene
Meta/Para-Xylene	60	Environment Agency (2009) Contaminants in Soil: Updated collation of toxicological data and intake values for humans. Xylene
Ortho-Xylene		
Toluene	1400	Environment Agency (2009) Contaminants in Soil: Updated collation of toxicological data and intake values for humans. Toluene
C5-C6 aliphatic	5000	TPH CWG
C6-C8 aliphatic		
C8-C10 aliphatic	290	
C10-C12 aliphatic		
C5-C7 aromatic	1400	Environment Agency (2009) Contaminates in Soil: updated collation of toxicological data and intake values for humans. Toluene
C7-C8 aromatic		
C8-C10 aromatic	60	TPH CWG
C10-C12 aromatic		

Table 36 Chemical Parameters (ID)

COMPOUND	ID_{INHAL} UG KG^{-1} BW DAY^{-1}	SOURCE
Benzene	1.4 (Non-Threshold)	Environment Agency (2009) Soil Guideline Values for Benzene in soil (Science report No SC050021/ benzene SGV)
Vinyl Chloride	0.3* (Non-Threshold)	LQM – Non threshold effect HCV are used in deriving S4ULs
cis-1,2-Dichloroethene	17* (trans-1,2-Dichloroethene value)	CLAIRE GAC 2010

Due to the lack of TDI values available for Styrene, in order to create a SSSV, the compound has been characterised in regard to the TPH carbon fraction banding it falls within as the compound is only made up of carbon and hydrogen atoms. In the case of Styrene, the chemical formula is C_8H_8 and the compound is aromatic; therefore, in order to provide a conservative view, the SSSV will be calculated from the Aromatic C8-C10 banding.

Table 37 Physiological Parameters and Justification

PARAMETER	VALUE	SOURCE	JUSTIFICATION
Average body weight	12.70 kg	Table 4.6 SR3	Based on a 3 year old female child
Daily Inhalation Rate (long-term exposure)	11.85 m3/day	Table 4.14 SR3	Based on a 0-6 year old female child

E3P has used the data above to devise Site Specific Screening Values (SSSVs) for each individual compounds or group using the below formula:

$$\text{Site Specific Screening Value} = \frac{\text{TDI (inhal) x Body Weight}}{\text{Daily Inhalation Rate}}$$

The result is recorded in µg/m^3 which is then divided by 1000 to give a result expressed in mg/m^3, which is the unit that the analysis results are recorded in.

Table 38 outlines the SSSVs for the individual compounds and groups for BTEXs and Banded TPHs.

Table 38 Site Specific Screening Values Residential Exposure - mg/m^3

COMPOUND	TDI_{INHAL} UG KG^{-1} BW DAY^{-1}	SITE SPECIFIC SCREENING VALUES MG/M^3
Ethylbenzene	74.3	0.0796
Meta/Para-Xylene	60	0.0643
Ortho-Xylene		0.0643
Toluene	1400	1.5004
C5-C6 aliphatic	5000	5.3586
C6-C8 aliphatic		5.3586
C8-C10 aliphatic	290	0.3108
C10-C12 aliphatic		0.3108
C5-C7 aromatic	1400	1.5004
C7-C8 aromatic		1.5004
C8-C10 aromatic	60	0.0643
C10-C12 aromatic		0.0643
C12-C16 aromatic		0.0643
Benzene	1.4*	0.0178
cis-1,2-Dichloroethene	17*	0.0182
Styrene (C8H8 – aromatic)	60	0.0643
Vinyl Chloride	0.3*	0.0003215

* Value based on IDinhal ug kg-1 BW day-1

E3P has directly compared the SSSVs to the concentrations identified during the vapour monitoring as shown in Table 39.

Table 39 DQRA Results (Naphthalene, BTEX, Banded TPH)

COMPOUND	SITE SPECIFIC SCREENING VALUES (mg/m^3)	MAX MONITORING RESULT (mg/m^3)	LOCATION OF EXCEEDANCE	REMARKS
Ethylbenzene	0.0796	0.0894	WS110	Further Action
Meta/Para-Xylene	0.0643	0.069 0.2827	WS101 WS110	Further Action
Ortho-Xylene	0.0643	0.0955	WS110	Further Action
Toluene	1.5004	1.283	N/A	No further action
C5-C6 aliphatic	5.3586	1.494	N/A	No further action
C6-C8 aliphatic	5.3586	4.233	N/A	No further action
C8-C10 aliphatic	0.3108	36.169 33.586 24.255	WS101 WS102 WS104	Further Action
C10-C12 aliphatic	0.3108	3.717 8.153 6.145	WS101 WS102 WS104	Further Action
C5-C7 aromatic	1.5004	0.1706	N/A	No further action
C7-C8 aromatic	1.5004	1.283	N/A	No further action
C8-C10 aromatic	0.0643	0.123 0.869 0.098	WS101 WS110 WS112	Further Action
C10-C12 aromatic	0.0643	0.255 0.319 0.782	WS101 WS102 WS104	Further Action
Benzene	0.0178	0.0243 0.1706	WS101 WS110	Further Action
cis-1,2-Dichloroethene	0.0182	0.008	N/A	No further action
Styrene (C8H8 – aromatic)	0.0643	0.0153	N/A	No further action
Vinyl Chloride	0.0003215	0.036 0.0141	WS101 WS102	Further Action

Exceedances against the SSSVs have been detected for the following compounds:

- Ethylbenzene (WS110);
- Meta/Para-Xylene (WS101, WS110);
- Ortho-Xylene (WS110);
- TPH C8-C10 aliphatic (WS101, WS102, WS104);
- TPH C10-C12 aliphatic (WS101, WS102, WS104);
- TPH C8-C10 aromatic (WS101, WS110, WS112);
- TPH C10-C12 aromatic (WS101, WS102, WS104);
- Benzene (WS101, WS110); and,
- Vinyl Chloride (WS101, WS102).

The results of the direct comparison indicate that there are no currently identified concentrations of Styrene or cis-1-2-Dichloroethene which may generate a risk associated with vapour intrusion and ingress within the proposed development.

Due to the widespread nature of the elevations identified, that VOCs have been identified within groundwater sampling in deep boreholes, and the homogenous nature of the Made Ground on-site it is recommended that all properties are installed with vapour mitigation measures. Furthermore, of 6 samples submitted for analysis, 5 have identified volatile compounds above the SSSVs.

Following remediation and enabling works it would be beneficial to complete post remediation ground gas and vapour monitoring to confirm the ground gas regime.

4.5.4. VAPOUR ANALYSIS CONCLUSIONS

The results of this direct comparison indicate that there are elevated concentrations against the SSSVs for TPH and VOC compounds across the entire site.

There are no currently identified concentrations of naphthalene that could generate a risk associated with vapour intrusion and ingress within the proposed development as analysis has noted these to be below the laboratory limit of detection.

There are elevated concentrations of TPHs and VOCs in the proximity of WS101, WS102, WS104, WS110 and WS112 where 5 out of 6 samples from across the site obtained for analysis had elevated concentrations against SSSVs.

In regard to the elevated concentrations of TPH vapour compounds it is considered that these are likely to be contributing to the elevated concentrations of ground gases, in particular methane, identified on site during ground gas monitoring. Ground gas monitoring completed thus far does not have a methane specific testing ability and therefore elevations in TPHs may be contributing to the overall concentrations measured. It is likely there is degradation of hydrocarbons occurring causing localised methane concentrations.

At this stage, it is concluded that following remediation and enabling works all properties should be constructed with ground gas protection measures adhering to a minimum of CS3 with suitable hydrocarbon/VOC mitigation measures. Localised areas will require CS3 with a hydrocarbon / VOC resistant membrane.

During remediation and enabling works, the site should undergo a site wide turnover, by which volatile compounds are likely to volatilise and thus decreasing the concentration within the soils. Despite this, mitigation measures should be put in all proposed dwellings on site and post-remediation ground gas and vapour monitoring should be completed to confirm the required ground gas regime for the proposed development.

The vapour risk assessment confirms that if soils underlying the site are to remain in-situ, they would pose an unacceptable level of risk to the future site users by volatilisation to indoor air. As such it is recommended that all properties are constructed with the installation of a mitigation measures that protect against hydrocarbon and VOC compounds, as well as ground gases.

The mitigation measures to be installed in all proposed properties will be required to be of a specification in which it will impede the ingress of aromatic and aliphatic hydrocarbons, VOCs and ground gases (carbon dioxide and methane).

The specialist protection measures required will be included in detail within the Gas Protection Design Report.

4.6. 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 40 Pipeline Selection PE Threshold Concentrations

CONTAMINANT GROUP	PE-THRESHOLD (mg/kg)	CONCENTRATIONS AT CURRENT PIPELINE DEPTH (mg/kg)
Total VOC	0.5	<1.0
Total BTEX And MTBE	0.1	N/A
Total SVOCs (Excluding PAH and those substances marked with an *)	2	<0.5
EC5-EC10 Aliphatic and Aromatic Hydrocarbons	2	<1.0
EC10-EC16- Aliphatic and Aromatic Hydrocarbons	10	61 mg/kg TP103 1.30 m 24.3 mg/kg TP128 0.80 m 27 mg/kg TP202 1.00m
EC16-EC40 Aliphatic and Aromatic Hydrocarbons	500	657 mg/kg TP128 0.80 m
Phenols (From SVOC Analysis)*	2	N/A
Cresols and Chlorinated Phenols (From SVOC Analysis)	2	N/A
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?	Exceedances above PE threshold outside pipeline depth have been identified on a site wide basis.	
Is free product present in soil and groundwater?	Elevated concentrations of hydrocarbons have been identified within soil and groundwater.	
Could hydrocarbon impact at greater depth than current pipeline depth be mobilised by rising groundwater levels?	Heavy end hydrocarbon impact and low solubility PAH has been identified within Made Ground at depths above or below the proposed pipeline depth. Groundwater strikes have also been identified between 1.20 m and 13.0 m bgl	
Will soils impacted with above determinands likely be utilised elsewhere on site?	To be determined, the site will likely undergo some form of site wide turnover to create a suitable development platform.	
Will soils be imported to site as part of any future earth works	Currently unknown. The importation of materials could affect the pipeline selection.	

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

Based on the assessment of current site conditions barrier pipe will be required for the proposed development.

4.7. WASTE CLASSIFICATION TESTING (WM3)

A WM3 assessment was completed to inform the waste classification of the soils.

The WM3 assessment is attached to this letter and a summary of the results is shown below.

Table 3 Summary of WM3 Assessment

LOCATION	DEPTH (M)	CLASSIFICATION RESULT	REASON FOR EXCEEDANCE
TP201	2.00	Hazardous	Elevated pH and Zinc Chromate
TP202	1.00	Hazardous	Elevated pH
WS201	2.80	Hazardous	Elevated pH, Zinc Chromate, Asbestos and TPH
WS202	3.00	Hazardous	Elevated Lead Chromate and TPH
WS203	1.00	Non-hazardous	N/A
WS204	3.50	Hazardous	Elevated TPH
WS205	2.00	Non-hazardous	N/A
WS206	0.80	Non-hazardous	N/A
CP201	5.00	Hazardous	Elevated Asbestos and Zinc Chromate
CP203	5.00	Hazardous	Elevated Zinc Chromate

4.8. WASTE ACCEPTANCE CRITERIA

In total 3 No. samples of Made Ground were submitted for Waste Acceptance Criteria (WAC) Testing. The results are summarised in Table 41. Chemical analysis results are included within APPENDIX VIII.

Table 41 Summary of Waste Acceptance Criteria Testing Results

LOCATION	DEPTH (M)	RESULT	REASON FOR EXCEEDANCE
WS207	0.40	Non-reactive Hazardous Waste Landfill	Total Organic Carbon, pH and Antimony
CP204	2.50	Non-reactive Hazardous Waste Landfill	Total Organic Carbon, pH and Antimony
HP201	0.10	Hazardous Waste Landfill	Total Organic Carbon and Loss on Ignition

The results suggest that material tested from WS207 and CP204 would be suitable for non-reactive hazardous waste landfill due to an elevated TOC, elevated Antimony and high pH. The results indicate that the material from HP201 would only be suitable for Hazardous Waste Landfill due to elevated TOC and Loss on Ignition.

It should be noted that if any significant contamination is identified during the enabling works, then additional WAC testing should be carried out to determine a suitable method of removal if required.

4.9. DEVELOPED CONCEPTUAL SITE MODEL

Following the completion of the intrusive site investigation, chemical analysis and risk assessment, the conceptual model shown in Table 42 has been prepared for the site.

Table 42 Developed Conceptual Model

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL1 PL2	Heavy metals and non-volatile PAHs, TPH (in Made Ground)	Dermal contact Dermal contact and Soil Ingestion	Future site users. Offsite receptors.	Likely	Moderate	LOW

Assessment:
Heavy metals and non-volatile PAHs have been identified throughout the Made Ground deposits between depths of 0.10 m and 13.20 m bgl associated with the former infilling of clay pits on site.

Recommendation:
The chronic risk to human health associated with the elevated concentrations of inorganic heavy metals and non-volatile PAHs 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 to future site users. Construction works completed with PPE and provision of welfare.

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL3	ACM in Made Ground	Inhalation of dust.	Future site users. Buildings. Off-site land users.	Likely	High	LOW

Assessment:
Asbestos in the form of loose chrysotile, amosite and crocidolite fibres has been identified in the Made Ground across the site in WS101, WS102, WS112, WS201 and CP201 at depths between 0.50 – 5.00 m bgl. Quantification has been carried out on all positive samples which indicates volumes of asbestos between 1.18% (WS101) to 0.01% (WS112). Asbestos quantification within WS110 has identified trace fibres (<0.001%). Further to this ACM materials were identified around the periphery of the site, as well as intact pieces within the soils during the investigation.

Recommendation:
Impacted soils should be managed according to the asbestos CSM shown in Figure 3 including the installation of a suitably cover system to garden and landscaped areas which will prevent exposure to future site users. Visual asbestos, if identified, will require handpicking by specially trained personnel with removal to a licenced facility. Any soils which require removal from site and are impacted by asbestos fibres and/or fragments will also require removal to a suitable licenced facility.

Care must be taken in the demolition of the buildings as asbestos roofing and cladding is likely present. Construction works completed with PPE and provision of welfare in accordance with JIWG guidelines.

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL4	Volatile Contaminants such as naphthalene, mercury, VOCs and volatile-TPHs (Made Ground)	Inhalation of vapours. Migration through permeable strata and preferential pathways.	Future site users. Offsite receptors.	Likely	High	To Be Determined

Assessment:
Elevated total mercury has been identified within Made Ground deposits within TP116, TP119, CP201, CP203 and WS204.

With regards to the elevated naphthalene, TPH C12-C21 and VOCs/SVOCs, these present a potential volatilisation to indoor air risk. These have been identified within localised areas (TP116, TP119, WS201, WS204 and CP203) at depths between 0.10 m bgl and 5.00 m bgl.

Recommendation:
If further testing confirms that no elemental mercury is present, a higher GAC can be used (30 mg/kg) therefore the samples currently exceeding for elemental mercury will fall below the threshold for organic mercury therefore no residual risk. Further speciation testing is required to confirm the above.
Further sampling and delineation will be required to determine the extent of the TPH and VOC/SVOC contamination to understand if these can be associated with a specific source on site or are more wide-spread throughout the Made Ground. Due to the depth of the exceedances (5.00 m bgl) with no specific source identified, the contamination will require mitigation by installing vapour mitigation measures. The details of the vapour mitigation measures will be included within the Ground Gas Design Report.
The results of the vapour monitoring completed to date suggest that all properties should be installed with vapour mitigation measures.

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL5	Methane, carbon dioxide (infilled features on and within 250 m of the site)	Inhalation of gas. Migration through permeable strata and preferential pathways. Explosion in confined spaces.	Future site users. Buildings. Off-site land users.	Likely	High	To be determined

Assessment:
Where monitoring indicates a CS1 classification, given the nature of the site and historic clay pits, a minimum of CS2 is recommended.

Localised areas of the site have been classified as CS4 (based on gas concentrations) due to elevated levels of Methane and Carbon Dioxide associated with the infilled clay pits with concentrations indicative of landfill gases. Typically the classification can be reduced based on GSV, however further assessment will be required following remediation works.

Overall the ground gas assessment results indicate that the majority of the site will require a minimum of CS2 protection measures due to elevated GSVs for Methane with localised areas of CS3.

The vapour risk assessment confirms that all properties should be constructed with the installation of a mitigation measures that protect against hydrocarbon and VOC compounds, as well as ground gases.

Recommendation:
Following remediation and enabling works it would be beneficial to complete post remediation ground gas and vapour monitoring to confirm the ground gas regime.

The details of the ground gas mitigation requirements will be detailed within a Gas Protection Design Report.

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, infilled ponds and clay pits)	Surface runoff. Migration through permeable strata and preferential pathways. Perched waters migration.	Groundwater (Principal aquifer). Surface water (Longford Brook). Three abstraction Points Thirlmere Aqueduct	Likely	Moderate	LOW

Assessment:
Elevated concentrations of heavy metals, TPHs, PAHs, and VOCs/SVOCs have been identified in groundwater and leachate samples when compared with Environmental Quality Standards (EQS) and Drinking Water Standards (DWS).

Low-permeability clay has been encountered beneath the Made Ground within the infilled clay pits, providing some protection to the underlying principal aquifer. BGS borehole records indicate that the bedrock (principal aquifer) is located approximately 27 m bgl, resulting in an approximate 10-15 m cover of low-permeability clay, which reduces downward migration. However, exceedances identified in groundwater samples taken from natural response zones (CP201 and CP204) beneath the infilled clay pits indicate that some downward migration may be occurring on-site.

If low-permeability clay deposits are still present in the location of the Nico Ditch and culverted brook, they will provide some protection against contamination migration. Additionally, depending on the construction of the culvert, any concrete lining may also help prevent contamination migration to surface water.

Recommendation:
The risk to controlled water receptors is considered moderate. Due to the presence of heavy metals and organic hydrocarbon compounds in the perched groundwater, careful consideration of risks to site operatives and the potential requirement for water pretreatment will be necessary.

Given the presence of the culverted Longford Brook and the Nico Ditch across the centre of the site, a DQRA is recommended using a P20 RTM methodology to determine practicable and deliverable remediation targets for the soils (considered a secondary source).

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL7	Sulphate (potential ash within Made Ground)	Sulphate attack on concrete.	Building structure.	Likely	Moderate	LOW
Assessment: The soils generally meet class DS-1, AC-1s. Class DS-2, AC-1s were noted within the Made Ground deposits in WS102, TP201, WS201, WS202, WS203, WS207 and CP203. Class DS-3, AC-2s has been identified in Made Ground soils in WS205 at 2.00 m bgl. **Recommendation:** Concrete should be designed in accordance with the chemical testing results.						
PL8	Organic contaminants such as hydrocarbons, solvents (Made Ground)	Ingestion of tainted water supply.	Future site users. Water pipes.	Likely	Moderate	LOW
Assessment: Elevated concentrations of TPH have been identified at the proposed pipeline depth (0.75-1.35m). **Recommendation:** It is considered that barrier pipe will be required to be confirmed following the completion of a UKWIR risk assessment.						

POLLUTANT LINKAGE	CONTAMINANT (SOURCE)	PATHWAY	RECEPTOR	PROBABILITY	CURRENT RISK	RESIDUAL RISK AFTER MITIGATION
PL9	Phytotoxic contaminants (Made Ground)	Direct Contact (plant uptake).	Flora.	Likely	Moderate	LOW

Assessment:
Likely probability as contamination has been identified which may be taken up by flora in soft landscaping/gardens.

Recommendation:
Remediation works and the installation of a suitably designed cover system within gardens and areas of soft standing and landscaped areas will prevent direct contact and plant uptake.

Main exposure pathways:
PL1 = dermal contact, PL2 = dermal contact and ingestion, PL3 = dust inhalation, PL4 = vapour inhalation (indoor), PL5 = Inhalation, PL6 = Vertical/lateral migration; PL7 = Corrosion of concrete; PL8=Tainting of water supply; PL9 = Uptake by plants

LEVEL OF RISK	
Very Low	
Low	
Low/Moderate	
Moderate	
Moderate/High	
High	

5. GEOTECHNICAL ASSESSMENT

5.1. 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 43 and Table 44, respectively, which indicate the clay soils to vary between stiff and very stiff. Strength test data is generally consistent with the field descriptions of the aforementioned soils.

Table 43 Summary of Hand Shear Vane Tests

LOCATION	DEPTH	SHEAR STRENGTH (KPA)	CALCULATED ALLOWABLE BEARING CAPACITY (KN/M^2)
TP202	1.10	99	232.65

Notes: ABC Calculated using Stroud and Butler et al 1974.
** granular content within soil tests may underestimate true shear strength.*

Results of the standard penetration tests, including undrained shear strengths derived from SPTs are included in Table 45.

Table 44 Summary of Undrained Shear Strength in Triaxial Compression – Laboratory Test

LOCATION	SAMPLE DEPTH (m)	LAB DESCRIPTION	UNDRAINED SHEAR STRENGTH (kN/m^2)	CONSISTENCY
CP201	12.00–12.45	Brown silty slightly sandy slightly gravelly CLAY	89	Stiff
CP204	10.00–10.45	Brown silty slightly sandy slightly gravelly CLAY	112	Stiff

5.2. SIDE STABILITY AND EASE OF EXCAVATION

The sides of the exploratory trial pit excavations appeared to be generally stable during excavation.

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.

Table 45 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/m²)	ALLOWABLE BEARING CAPACITY (kN/m²)*
WS101	1.00	MADE GROUND	12	12.10	Medium Dense	N/A	N/A	N/A	121.00
WS101	2.00	MADE GROUND	5	4.57	Loose	N/A	N/A	N/A	45.70
WS101	3.00	MADE GROUND	2	1.74	Very Loose	N/A	N/A	N/A	17.40
WS101	4.00	MADE GROUND	18	15.21	Medium Dense	N/A	N/A	N/A	152.10
WS101	5.00	MADE GROUND	16	13.27	Medium Dense	N/A	N/A	N/A	132.70
WS102	1.00	MADE GROUND	4	4.03	Loose	N/A	N/A	N/A	40.30
WS102	2.00	MADE GROUND	1	0.91	Very Loose	N/A	N/A	N/A	9.10
WS102	3.00	MADE GROUND	12	10.44	Medium Dense	N/A	N/A	N/A	104.40
WS102	4.00	MADE GROUND	4	3.38	Very Loose	N/A	N/A	N/A	33.80
WS102	5.00	MADE GROUND	11	9.13	Loose	N/A	N/A	N/A	91.30
WS103	1.00	MADE GROUND	15	15.12	Medium Dense	N/A	N/A	N/A	151.20
WS103	2.00	MADE GROUND	2	1.83	Very Loose	N/A	N/A	N/A	18.30
WS103	3.00	MADE GROUND	11	9.57	Loose	N/A	N/A	N/A	95.70
WS103	4.00	MADE GROUND	12	10.14	Medium Dense	N/A	N/A	N/A	101.40
WS103	5.00	MADE GROUND	7	5.81	Loose	N/A	N/A	N/A	58.10
WS104	1.00	MADE GROUND	13	13.11	Medium Dense	N/A	N/A	N/A	131.10
WS104	2.00	MADE GROUND	4	3.65	Very Loose	N/A	N/A	N/A	36.50
WS104	3.00	MADE GROUND	21	18.26	Medium Dense	N/A	N/A	N/A	182.60
WS104	4.00	MADE GROUND	17	14.36	Medium Dense	N/A	N/A	N/A	143.60

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 CAPACITY (kN/m^2)*
WS104	5.00	MADE GROUND	20	16.59	Medium Dense	N/A	N/A	N/A	165.90
WS105	1.00	MADE GROUND	26	26.21	Medium Dense	N/A	N/A	N/A	262.10
WS105	2.00	MADE GROUND	0	0.00	N/A	N/A	N/A	N/A	N/A
WS105	3.00	MADE GROUND	22	19.13	Medium Dense	N/A	N/A	N/A	191.30
WS105	4.00	MADE GROUND	4	3.38	Very Loose	N/A	N/A	N/A	33.80
WS106	1.00	MADE GROUND	17	17.14	Medium Dense	N/A	N/A	N/A	171.40
WS106	2.00	MADE GROUND	4	3.65	Very Loose	N/A	N/A	N/A	36.50
WS106	3.00	MADE GROUND	50	43.48	Dense	N/A	N/A	N/A	434.80
WS107	1.00	MADE GROUND	20	20.16	Medium Dense	N/A	N/A	N/A	201.60
WS107	2.00	MADE GROUND	17	15.53	Medium Dense	N/A	N/A	N/A	155.30
WS107	3.00	MADE GROUND	12	10.44	Medium Dense	N/A	N/A	N/A	104.40
WS107	4.00	MADE GROUND	16	13.52	Medium Dense	N/A	N/A	N/A	135.20
WS108	1.00	MADE GROUND	23	23.19	Medium Dense	N/A	N/A	N/A	231.90
WS108	2.00	MADE GROUND	30	27.41	Medium Dense	N/A	N/A	N/A	274.10
WS108	3.00	MADE GROUND	0	0.00	Very Loose	N/A	N/A	N/A	N/A
WS109	1.00	MADE GROUND	16	16.13	Medium Dense	N/A	N/A	N/A	161.30
WS109	2.00	MADE GROUND	7	6.39	Loose	N/A	N/A	N/A	63.90
WS109	3.00	MADE GROUND	21	18.26	Medium Dense	N/A	N/A	N/A	182.60
WS109	4.00	MADE GROUND	13	10.98	Medium Dense	N/A	N/A	N/A	109.80
WS110	1.00	MADE GROUND	8	8.07	Loose	N/A	N/A	N/A	80.70

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 CAPACITY (kN/m^2)*
WS110	2.00	MADE GROUND	28	25.58	Medium Dense	N/A	N/A	N/A	255.80
WS110	3.00	MADE GROUND	50	43.48	Dense	N/A	N/A	N/A	434.80
WS111	1.00	MADE GROUND	23	23.19	Medium Dense	N/A	N/A	N/A	231.90
WS111	2.00	MADE GROUND	27	24.67	Medium Dense	N/A	N/A	N/A	246.70
WS111	3.00	MADE GROUND	1	0.87	Very Loose	N/A	N/A	N/A	8.70
WS112	1.00	MADE GROUND	18	18.15	Medium Dense	N/A	N/A	N/A	181.50
WS112	2.00	MADE GROUND	12	10.96	N/A	Medium strength	Stiff	54.80	112.67
WS112	3.00	MADE GROUND	4	3.48	N/A	Very low strength	Soft	17.40	35.77
CP101	1.00	MADE GROUND	7	7.06	Loose	N/A	N/A	N/A	70.60
CP101	2.00	MADE GROUND	7	6.39	Loose	N/A	N/A	N/A	63.90
CP101	3.00	MADE GROUND	9	7.83	Loose	N/A	N/A	N/A	78.30
CP101	4.00	MADE GROUND	20	16.90	Medium Dense	N/A	N/A	N/A	169.00
CP101	5.00	MADE GROUND	8	6.64	Loose	N/A	N/A	N/A	66.40
CP101	6.50	MADE GROUND	37	30.21	Dense	N/A	N/A	N/A	302.10
CP101	8.00	MADE GROUND	15	12.14	Medium Dense	N/A	N/A	N/A	121.40
CP101	9.50	MADE GROUND	15	12.09	Medium Dense	N/A	N/A	N/A	120.90
CP101	11.00	MADE GROUND	36	27.84	Medium Dense	N/A	N/A	N/A	278.40
CP101	12.50	CLAY	20	14.61	N/A	Medium strength	Stiff	73.05	150.19
CP101	14.00	CLAY	50	34.64	N/A	Very high strength	Very Stiff	173.20	356.10
CP101	14.50	CLAY	50	34.05	N/A	Very high strength	Very Stiff	170.25	350.03

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 CAPACITY (kN/m^2)*
CP102	1.00	MADE GROUND	10	10.08	Medium Dense	N/A	N/A	N/A	100.80
CP102	2.00	MADE GROUND	14	12.79	Medium Dense	N/A	N/A	N/A	127.90
CP102	3.00	MADE GROUND	26	22.61	Medium Dense	N/A	N/A	N/A	226.10
CP102	4.00	MADE GROUND	46	38.86	Dense	N/A	N/A	N/A	388.60
CP102	5.00	MADE GROUND	51	42.31	Dense	N/A	N/A	N/A	423.10
CP102	6.50	MADE GROUND	25	20.41	Medium Dense	N/A	N/A	N/A	204.10
CP102	8.00	MADE GROUND	23	18.62	Medium Dense	N/A	N/A	N/A	186.20
CP102	9.50	MADE GROUND	32	25.79	Medium Dense	N/A	N/A	N/A	257.90
CP102	12.50	CLAY	20	14.61	N/A	Medium strength	Stiff	73.05	150.19
CP102	14.00	CLAY	50	34.64	N/A	Very high strength	Very Stiff	173.20	356.10
CP102	14.50	CLAY	50	34.05	N/A	Very high strength	Very Stiff	170.25	350.03
CP102	11.00	CLAY	28	21.65	N/A	High strength	Very Stiff	108.25	222.56
CP102	12.50	CLAY	50	36.53	N/A	Very high strength	Very Stiff	182.65	375.53
CP102	14.00	CLAY	52	36.02	N/A	Very high strength	Very Stiff	180.10	370.29
WS201	1.00	MADE GROUND	9	9.07	Loose	N/A	N/A	N/A	90.73
WS201	2.00	MADE GROUND	4	3.65	Very Loose	N/A	N/A	N/A	36.54
WS201	3.00	MADE GROUND	20	17.39	Medium Dense	N/A	N/A	N/A	173.93
WS201	4.00	MADE GROUND	15	12.67	Medium Dense	N/A	N/A	N/A	126.73
WS202	1.00	MADE GROUND	10	10.08	Medium Dense	N/A	N/A	N/A	100.81
WS202	2.00	MADE GROUND	4	3.65	Very Loose	N/A	N/A	N/A	36.54

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 CAPACITY (kN/m^2)*
WS202	3.00	MADE GROUND	5	4.35	Loose	N/A	N/A	N/A	43.48
WS202	4.00	MADE GROUND	5	4.22	Loose	N/A	N/A	N/A	42.24
WS202	4.70	MADE GROUND	35	29.17	Medium Dense	N/A	N/A	N/A	291.72
WS203	1.00	MADE GROUND	9	9.07	Loose	N/A	N/A	N/A	90.73
WS203	2.00	CLAY	2	1.83	N/A	Extremely low strength	Very Soft	9.14	18.78
WS203	3.00	CLAY	4	3.48	N/A	Very low strength	Soft	17.39	35.76
WS203	4.00	CLAY	3	2.53	N/A	Very low strength	Soft	12.67	26.06
WS203	5.00	CLAY	8	6.64	N/A	Low strength	Firm	33.18	68.23
WS204	1.00	MADE GROUND	9	9.07	Loose	N/A	N/A	N/A	90.73
WS204	2.00	MADE GROUND	4	3.65	Very Loose	N/A	N/A	N/A	36.54
WS204	3.00	MADE GROUND	4	3.48	Very Loose	N/A	N/A	N/A	34.79
WS204	4.00	MADE GROUND	10	8.45	Loose	N/A	N/A	N/A	84.49
WS204	5.00	MADE GROUND	13	10.79	Medium Dense	N/A	N/A	N/A	107.85
WS205	1.00	MADE GROUND	7	7.06	Loose	N/A	N/A	N/A	70.57
WS205	2.00	MADE GROUND	16	14.62	Medium Dense	N/A	N/A	N/A	146.17
WS205	3.00	MADE GROUND	7	6.09	Loose	N/A	N/A	N/A	60.88
WS205	4.00	MADE GROUND	15	12.67	Medium Dense	N/A	N/A	N/A	126.73
WS205	4.50	MADE GROUND	32	26.76	Medium Dense	N/A	N/A	N/A	267.64
WS206	1.00	MADE GROUND	7	7.06	Loose	N/A	N/A	N/A	70.57
WS206	2.00	MADE GROUND	22	20.10	Medium Dense	N/A	N/A	N/A	200.98

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 CAPACITY (kN/m^2)*
WS206	3.00	MADE GROUND	50	43.48	Dense	N/A	N/A	N/A	434.83
WS207	1.00	MADE GROUND	7	7.06	Loose	N/A	N/A	N/A	70.57
WS207	2.00	MADE GROUND	8	7.31	Loose	N/A	N/A	N/A	73.08
WS207	3.00	MADE GROUND	8	6.96	Loose	N/A	N/A	N/A	69.57
WS207	4.00	MADE GROUND	26	21.97	Medium Dense	N/A	N/A	N/A	219.66
CP201	1.20	MADE GROUND	39	38.27	Dense	N/A	N/A	N/A	382.68
CP201	2.00	MADE GROUND	19	17.36	Medium Dense	N/A	N/A	N/A	173.57
CP201	3.00	MADE GROUND	8	6.96	Loose	N/A	N/A	N/A	69.57
CP201	4.00	MADE GROUND	25	21.12	Medium Dense	N/A	N/A	N/A	211.21
CP201	5.00	MADE GROUND	9	7.47	Loose	N/A	N/A	N/A	74.67
CP201	6.00	MADE GROUND	12	9.84	Loose	N/A	N/A	N/A	98.39
CP201	7.50	MADE GROUND	21	17.04	Medium Dense	N/A	N/A	N/A	170.37
CP201	9.00	MADE GROUND	11	8.88	Loose	N/A	N/A	N/A	88.75
CP201	10.50	CLAY	26	20.51	N/A	High strength	Very Stiff	102.56	210.86
CP201	13.50	CLAY	50	35.24	N/A	Very high strength	Very Stiff	176.22	362.31
CP201	15.00	CLAY	49	32.81	N/A	Very high strength	Very Stiff	164.06	337.31
CP202	1.00	MADE GROUND	11	11.09	Medium Dense	N/A	N/A	N/A	110.90
CP202	2.00	MADE GROUND	2	1.83	Very Loose	N/A	N/A	N/A	18.27
CP202	3.00	MADE GROUND	6	5.22	Loose	N/A	N/A	N/A	52.18
CP202	4.00	MADE GROUND	34	28.72	Medium Dense	N/A	N/A	N/A	287.25

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 CAPACITY (kN/m^2)*
CP202	5.00	MADE GROUND	50	41.48	Dense	N/A	N/A	N/A	414.81
CP202	6.50	MADE GROUND	7	5.71	Loose	N/A	N/A	N/A	57.15
CP202	8.00	MADE GROUND	38	30.76	Dense	N/A	N/A	N/A	307.60
CP202	9.50	MADE GROUND	32	25.79	Medium Dense	N/A	N/A	N/A	257.90
CP202	11.00	MADE GROUND	8	6.19	Loose	N/A	N/A	N/A	61.87
CP202	12.50	MADE GROUND	0	0.00	Very Loose	N/A	N/A	N/A	N/A
CP202	14.00	CLAY	50	34.64	N/A	Very high strength	Very Stiff	173.18	356.06
CP202	15.50	CLAY	50	32.93	N/A	Very high strength	Very Stiff	164.67	338.56
CP202	16.00	CLAY	64	41.48	N/A	Very high strength	Very Stiff	207.38	426.37
CP202	17.50	CLAY	60	37.09	N/A	Very high strength	Very Stiff	185.43	381.24
CP203	1.20	MADE GROUND	34	33.36	Dense	N/A	N/A	N/A	333.62
CP203	2.00	MADE GROUND	12	10.96	Medium Dense	N/A	N/A	N/A	109.62
CP203	3.00	MADE GROUND	17	14.78	Medium Dense	N/A	N/A	N/A	147.84
CP203	4.00	MADE GROUND	2	1.69	Very Loose	N/A	N/A	N/A	16.90
CP203	5.00	MADE GROUND	14	11.61	Medium Dense	N/A	N/A	N/A	116.15
CP203	6.00	MADE GROUND	12	9.84	Loose	N/A	N/A	N/A	98.39
CP203	7.50	MADE GROUND	16	12.98	Medium Dense	N/A	N/A	N/A	129.81
CP203	9.00	MADE GROUND	27	21.78	Medium Dense	N/A	N/A	N/A	217.85
CP203	10.50	MADE GROUND	31	24.46	Medium Dense	N/A	N/A	N/A	244.56
CP203	12.00	MADE GROUND	50	37.21	Dense	N/A	N/A	N/A	372.13

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 CAPACITY (kN/m^2)*
CP203	13.20	CLAY	50	35.62	N/A	Very high strength	Very Stiff	178.10	366.17
CP203	13.70	CLAY	50	35.00	N/A	Very high strength	Very Stiff	174.99	359.78
CP204	1.00	MADE GROUND	28	28.23	Medium Dense	N/A	N/A	N/A	282.28
CP204	2.00	MADE GROUND	21	19.18	Medium Dense	N/A	N/A	N/A	191.84
CP204	3.00	MADE GROUND	10	8.70	Loose	N/A	N/A	N/A	86.97
CP204	4.00	MADE GROUND	20	16.90	Medium Dense	N/A	N/A	N/A	168.97
CP204	5.00	MADE GROUND	47	38.99	Dense	N/A	N/A	N/A	389.92
CP204	6.50	MADE GROUND	50	40.82	Dense	N/A	N/A	N/A	408.19
CP204	8.00	CLAY	18	14.57	N/A	Medium strength	Stiff	72.85	149.78
CP204	9.50	CLAY	21	16.92	N/A	High strength	Very Stiff	84.62	173.99

NOTES
* The Allowable Bearing Capacity (ABC) 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 capacity on sands. Soil Mechanics in Engineering Practice Terzaghi, K. & Peck, R.B. 1996.

5.3. CONSOLIDATION

Two undisturbed samples of Glacial Till were submitted for oedometer analysis. The results are provided in Table 46.

Table 46 Oedometer Consolidation Results

LOCATION	DEPTH (M)	SAMPLE TYPE	MOISTURE CONTENT (%)	OEDOMETER CONSOLIDATION		
				PRESSURE RANGE (kPa)	Mv (m^2/MN)	Cv (m^2/year)
CP201	12.00-12.45	U100	12.6	0–245	0.28	3.16
				245–489	0.06	3.28
				489–978	0.04	3.59
				978–1956	0.02	5.58
				1956–245	0.01	-
CP204	10-10.45	U100	19.0	0–205	0.31	1.93
				205–409	0.09	1.85
				409–818	0.05	2.41
				818–1636	0.03	1.93
				1636–205	0.01	-

5.4. PARTICLE SIZE DISTRIBUTION

Particle Size Distribution Tests have been undertaken on selected samples via wet sieve to obtain information on the soil fractions. The results are included in Table 47. The full results can be found in APPENDIX IX.

Table 47 Summary of Particle Size Distribution Test Results

LOCATION	DEPTH (M)	SOIL FRACTION (%)			
		COBBLES	GRAVEL	SAND	SILT/CLAY
CP101	3.00–3.45	0	39	26	35
CP101	8.00–8.45	0	91	8	1
CP102	1.00–1.45	33	47	18	2
CP102	3.00–3.45	30	49	18	3
CP102	5.00–5.45	0	90	10	0
TP120	2.10	0	55	39	6
TP129	1.30	0	49	46	5
CP201	1.50	0	41	32	27
CP202	4.00	0	74	14	12
CP203	1.00	0	34	34	32
CP203	9.00	0	77	18	5
CP204	0.50	0	55	29	16
HP205	0.80	0	51	24	25

5.5. SOIL DENSITY/MOISTURE CONTENT RELATIONSHIP

Dry density / moisture content relationship analysis has been conducted on soils using via utilising proctor compaction tests utilising both a 2.5kg and 4.5kg rammer. The results of the tests has been summarised in Table 48. The full test results can be found in APPENDIX IX.

Table 48 Summary of 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 (%)
CP101	MADE GROUND	3.00	2.5kg	31	17	10	1.67	8
CP101	MADE GROUND	8.00	2.5kg	16	18	31	1.62	20
CP102	MADE GROUND	1.00	2.5kg	14	18	47	1.62	12
CP102	MADE GROUND	3.00	2.5kg	19	21	38	1.54	11
TP120	MADE GROUND	2.10	2.5kg	20	18	2	1.55	12
TP129	MADE GROUND	1.30	2.5kg	28	15	4	1.59	3
CP201	MADE GROUND	1.50	4.5kg	25.2	13	2	1.79	11
CP202	MADE GROUND	4.00	4.5kg	20.3	13	17	1.81	40
CP203	MADE GROUND	1.00	4.5kg	21	14	2	1.78	14
HP205	MADE GROUND	0.80	4.5kg	17.2	13	12	1.81	36

The compaction tests have indicated that the materials on site to being wet of the optimum across both phases of investigation. 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.

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

5.6. SOIL INFILTRATION

In-situ variable (falling) head permeability tests were undertaken within the monitoring well installations located in two boreholes (CP101 and CP102). Both of the installations were noted to be dry prior to the test being undertaken, therefore the tests were undertaken in the unsaturated zone. Infiltration tests in both CP101 and CP102 were completed in the underlying Made Ground where a soil infiltration rate of 1.32E-05 m/s and 1.56E-05 m/s have been calculated respectively.

Given the depth of Made Ground (greater than 7.50m bgl) and potentially soluble phase contamination on site, it has been concluded soakaway drainage is not suitable within the Made Ground deposits. Any proposed soakaway drainage would require a suitable design within natural material and further investigation including BRE 365 soakaway testing would be required. Given the cohesive nature of superficial deposits encountered, soakaway drainage is unlikely to be viable.

The application of soakaway drainage will ultimately be dependent on the specific requirements of the development and should take into account the identified ground conditions. All soakaways should be designed in accordance with BRE Special Digest 365 – *Soakaway Design*.

5.7. SOIL PLASTICITY

The Atterberg limits determinations, summarised in Table 49 , show the clay to be of low plasticity.

It should be noted that all samples obtained of natural cohesive deposits are significantly below the potential depth of tree influence. Where shallow cohesive deposits are encountered, further testing including Atterberg limits should be conducted to determine whether heave precautions are required.

Table 49 Summary of Plasticity Index Test results

LOCATION	DEPTH (M)	NATURAL MOISTURE CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	PASSING 425 MM SIEVE (%)	MODIFIED PLASTICITY INDEX	NHBC VOLUME CHANGE POTENTIAL
CP101	14.45	11	15	28	13	78	10.14	Low
CP102	12.50	10	14	26	12	77	9.24	Low
CP102	14.00	16	19	36	17	84	14.28	Low
CP201	10.50	12.7	11	26	15	98	14.70	Low
CP204	8.00	21.2	12	31	19	99	14.85	Low

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

5.8. VOID RATIO AND TOTAL POROSITY

Table 50 Summary of Total Porosity

LOCATION AND DEPTH	PARTICLE DENSITY (mg/m^3)	BULK DENSITY (mg/m^3)	WATER CONTENT (%)	DRY DENSITY (mg/m^3)	VOLUME OF VOIDS (m^3)	VOLUME OF SOLIDS (m^3)	TOTAL POROSITY (%)	AIR FILLED POROSITY (%)	WATER FILLED POROSITY (%)
CP201 12.50 m	2.68	2.24	13.2	1.98	0.261	0.739	0.26	0.26	0.00
CP202 14.00 m	2.66	2.22	13.9	1.95	0.268	0.732	0.27	0.27	0.00

The results in Table 50 suggest that the voids in the samples are air filled rather than water filled.

5.9. CALIFORNIA BEARING RATIO

During the December 2019 investigation, the California bearing ratio (CBR) for the soils was measured using an in-situ TRL probe. The results are summarised in Table 51.

The result sheets are included in APPENDIX IX and the locations are shown on Drawing 17-403-005 (APPENDIX IV). 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 51 Summary of DCP Results

LOCATION	DEPTH (m)	STRATA	IN-SITU OR LAB TEST	CBR (%)
DCP101	0.21–0.32	MADE GROUND: Gravel	In-Situ	6.77
DCP102	0.36–0.44	MADE GROUND: Gravel	In-Situ	82.60
DCP103	0.18–0.27	MADE GROUND: Topsoil	In-Situ	85.28
DCP104	0.19–0.22	MADE GROUND: Topsoil / Gravel	In-Situ	173.70
DCP105	0.33–0.42	MADE GROUND: Gravel	In-Situ	53.69
DCP106	0.42–0.78	MADE GROUND: Gravel	In-Situ	12.73
DCP107	0.18–0.34	MADE GROUND: Topsoil / Gravel	In-Situ	47.62
DCP108	0.30–0.50	MADE GROUND: Gravel	In-Situ	33.53
DCP109	0.11–0.27	MADE GROUND: Topsoil / Gravel	In-Situ	25.76
DCP110	0.29–0.33	MADE GROUND: Topsoil / Gravel	In-Situ	35.40

All locations were terminated due to the presence of obstructions within the underlying Made Ground. Obstructions within the Made Ground the CBR values calculated are likely overstated.

It should be noted that due to the presence of significant depths of fill materials on site, CBRs at the surface are unlikely to provide accurate results for potential redevelopment purposes and further settlement analysis and/or re-engineering of the underlying Made Ground will be required.

5.10. PH AND SULPHATE

Chemical analyses for pH and soluble sulphate content contained in APPENDIX VIII and summarised in Table 52 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).

The Made Ground deposits in WS102, TP201, WS201, WS202, WS203, WS207 and CP203 were classified as DS-2, AC-1s.

Class DS-3, AC-2s has been identified in Made Ground soils in WS205 at 2.00 m bgl.

Table 52 Summary of pH and Sulphate Data

LOCATION	DEPTH (m)	SO_4 IN 2:1 WATER/SOIL (g/l)	PH VALUE	CLASSIFICATION
TP105	0.10	0.046	9.0	DS-1/AC-1s
TP115	1.60	0.15	12.3	DS-1/AC-1s
TP116	1.50	0.11	11.2	DS-1/AC-1s
TP120	2.10	0.13	10.30	DS-1/AC-1s
WS102	3.20	0.97	9.0	**DS-2/AC-1s**
WS105	3.80	0.055	12.4	DS-1/AC-1s
TP201	2.00	0.77	11.6	**DS-2/AC-1s**
TP202	0.10	0.047	9.1	DS-1/AC-1s
TP202	1.00	0.36	11.5	DS-1/AC-1s
WS201	0.40	0.035	9.6	DS-1/AC-1s

LOCATION	DEPTH (m)	SO_4 IN 2:1 WATER/SOIL (g/l)	PH VALUE	CLASSIFICATION
WS201	2.80	0.64	11.7	**DS-2/AC-1s**
WS202	0.10	0.033	6.9	DS-1/AC-1s
WS202	3.00	0.80	8.9	**DS-2/AC-1s**
WS203	1.00	0.077	7.9	DS-1/AC-1s
WS203	2.50	1.0	11.5	**DS-2/AC-1s**
WS204	1.70	0.10	8.5	DS-1/AC-1s
WS204	3.50	0.31	7.7	DS-1/AC-1s
WS205	2.00	1.8	10.5	**DS-3/AC-2s**
WS206	0.80	0.023	8.8	DS-1/AC-1s
WS207	2.80	0.85	11.7	**DS-2/AC-1s**
CP201	5.00	0.28	8.6	DS-1/AC-1s
CP201	11.00	0.089	9.3	DS-1/AC-1s
CP202	16.00	0.014	8.7	DS-1/AC-1s
CP203	1.00	0.28	8.1	DS-1/AC-1s
CP203	5.00	0.98	9.6	**DS-2/AC-1s**
CP203	13.20	0.099	8.4	DS-1/AC-1s

5.11. GROUNDWATER

Perched water strikes have been encountered on site during the investigation, these were typically associated with Made Ground overlying natural cohesive which created a perched waterbody within the infilled clay pits. Surrounding locations did not present any plausible trend with a shallow groundwater flow.

5.12. SITE PREPARATION

Our assessment has been based on the fact that the site will 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 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.

5.13. 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 safe allowable bearing capacity (ABC) 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 53.

Table 53 Summary of ABC

2019 COHESIVE SOILS			
Description	**Depth (range m bgl)**	**Undrained Shear Strength (Cu) (kN/m²)**	**Allowable Bearing Capacity (kN/m²)**
Firm gravelly CLAY	12.50	73.06	150.21
Stiff to very stiff gravelly CLAY	11.00 – 14.50	108.27 – 182.65	222.60-375.53
2024 COHESIVE SOILS			
Description	**Depth (range m bgl)**	**Undrained Shear Strength (Cu) (kN/m²)**	**Allowable Bearing Capacity (kN/m²)**
Very soft CLAY (1 Location WS203)	2.00-4.45	9-12	18-35
Soft CLAY (1 Location WS203)	5.00	33	68
Firm CLAY	8.00	72	149
Stiff CLAY	9.50-10.50	84-102	173-210
Very stiff CLAY	13.20-17.50	164-207	337-426

The clay soils are firm medium strength to very stiff very high strength between depths of 8.00 – 17.50 m bgl with an ABC in the range of 149 – 426 kN/m^2.

Soft clay was identified in WS203 between 2.00 – 5.00 m bgl with an ABC of 18 – 68 kN/m^2.

To support the in-situ geotechnical information, sixteen Static Piezocone Penetration Tests (CPTUs) were also advanced across the site. The tests were carried out in accordance with the International Standard for Electrical Cone and Piezocone Penetration Test (ISO 22476-1:2012).

The CPTUs probehole results generally recorded SPT N^{60} values of <10 from circa 1.00– 5.00 m bgl in reworked soft silty clays and silts. SPT values generally increased with depth in medium dense to dense SAND and very stiff CLAY at depths of greater than 5.00 m bgl.

The In-Situ CPTU data is presented in the report within Appendix XV.

5.14. FOUNDATIONS OPTIONS APPRAISAL

Based on the assessment of the relative undrained shear strength, relative in-situ densities and corresponding safe allowable bearing capacity, the following recommendations have been developed for the site of the potential foundation solutions that may be adopted for the future residential development. The suitable target founding stratum has been identified as the underlying stiff to very stiff glacial clays.

It is advisable to consult with geotechnical engineers and foundation specialists who can assess the specific ground conditions and design an appropriate foundation solution to meet the project's requirements.

Dependent on development levels, plots in the area of the former clay pits where deep Made Ground has been identified, may require a driven pile foundation.

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.

Where piled foundations are utilised, a detailed piling risk assessment will be required to confirm there is no increased risk to controlled waters and the gas/vapour regime where new pathways are created.

5.15. HIGH WALLS

The investigation to locate the high walls associated with the infilled clay pits was restricted by dense vegetation, the presence of the Nico Ditch and sewer and gas pipelines which required a buffer zone.

The high walls represent a risk associated with exaggerated differential settlement to structures and infrastructure.

Vegetation clearance will be required to permit further investigation and to delineate the extent of the clay pits.

5.16. 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.

In clay soils allowance should be made in the design for heave. This must incorporate either a clear void of a specified minimum depth under the suspended floor, or a proprietary compressible material/void former below the underside of the floor construction.

Ground bearing slabs should not be used in ground conditions where heave can occur or where the foundation depth is greater than 1.5m. Under these circumstances a suspended floor construction should be used.

5.17. SETTLEMENT

The site has been appraised through desk based information and site investigation data in order to inform geotechnical risk where possible. Table 54 below has been formulated to determine if settlement risks are required to be further appraised. Where any item is determined to be appraised a settlement appraisal for the site should be prepared upon receipt of development levels and layout.

Table 54 Summary of Geotechnical Information for Settlement

RISK	COMMENT	ASSESSMENT
Site is located in an area deemed to be at Risk from Ground Dissolution from desk based information	Data searches indicate no hazard.	No Further Assessment
Site is in an area where geology is reported as having a compressible risk from desk based information	Moderate risk identified.	**Further Assessment**
Do historical maps indicate relic excavation features such as opencast or ponds that have been infilled.	Yes, infilled ponds and clay pits are present.	**Further Assessment**
Has the site been proven to be underlain by anthropogenic materials to an unknown specification?	Yes Made Ground to a depth of 13.50 m bgl.	**Further Assessment**
Have Oedometers and/or ground conditions reported compressible stratum on site?	Yes, soft silty clays have been identified.	**Further Assessment**
Have High walls been identified on site that could result in differential settlement?	Yes, further investigation required to accurately profile and delineate.	**Further Assessment**
Has any evidence been observed on site indicating settlement (non-structural assessment)	None identified.	No Further Assessment
Is voided ground present beneath the site?	None identified.	No Further Assessment
Is the site in an area where a mobile groundwater regime is present in influencing distance of foundations and infrastructure?	N/A	No Further Assessment
Will the site be subject to changes in site levels that may induce heave or settlement?	To be confirmed.	**Further Assessment**

Developing infilled clay pits from the early to mid-20th century poses significant risks to infrastructure due to poorly compacted and variable fill materials, leading to potential settlement. Differential settlement is a key concern, particularly due to variations in fill thickness and composition, as well as the effects of surcharge loads. Changes in groundwater levels can further exacerbate settlement risks, particularly in cohesive or organic layers. Comprehensive geotechnical settlement analysis is required to understand potential risks and ensure a suitable enabling earthworks design.

5.18. HEAVE PRECAUTIONS

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

The clay has been determined as being of low volume change potential. Where clay soil is present within the conjectured zone of potential tree influence, heave precautions should be incorporated within the design of the proposed buildings.

In addition to the requirements of the 'Drainage' section, drainage near trees should incorporate additional provisions. Where there is a volume change potential within the ground, the provisions include:

- Increased falls to cater for any ground movement.
- Deeper and wider backfill of granular material.
- A drainage system that is capable of movement should heave and shrinkage occur.
- Drainage pipes should not be encased in concrete.
- Additional clearance is required where drains pass through the structure of a building to allow for additional movement.

5.19. HIGHWAYS CONSTRUCTION

A programme of remediation and enabling works will be required to remediate the proposed road subgrade 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.

Bulk earthworks to construct highways to the underside of capping. Enabling works contractor will need to do CBRs to determine the capping layer.

5.20. DRAINAGE

Where loose or soft materials have been identified at drainage invert levels, there will need to be consideration for the use of reinforced pipe bedding.

Shrinkage and heave of clay soils can affect pipelines. To protect against the effects of heave, drainage should be designed:

- To take account of potential ground movement as shown in Table 55 , including where pipes and services pass through substructure walls or foundations.
- With gradients which may need to be steeper.
- To use alternative means of catering for the movement when sufficient falls cannot be provided, for example, by deepening the excavation and laying pipework on a granular bedding of suitable thickness to reduce the extent of potential movement.

Table 55 Potential Ground Movement for Drainage

VOLUME CHANGE POTENTIAL	HIGH	MEDIUM	LOW
Potential ground movement	150mm	100mm	50mm

5.21. EXCAVATIONS

Trial pits were generally stable in granular Made Ground; as such, it is considered that near-surface excavations will be feasible. In areas where Made Ground exceeded 2.00 m, excavations were generally less stable.

Site observations indicated that excavations should be feasible in the near surface with normal plant; 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 56 Civil Engineering Excavation Risk Matrix

RISK ITEM	PRESENT	COMMENT
Running Sands	No	No running sand has been identified.
Minor Water Ingress	Yes	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.
Shallow Bedrock	No	Shallow bedrock has not been identified on site.

5.22. 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 sub-formations 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).

5.23. DEVELOPED GEOTECHNICAL RISK REGISTER

POTENTIAL ABNORMAL CONSTRAINT	LOCATION ON SITE	ESTIMATED AREA OF SITE AT RISK (%)	ASSESSMENT AND MITIGATION
Remediation of contaminated soils	On site	5	Localised hotspot excavations are likely to be required for asbestos. Should significant backfill be needed deeper or specialist foundations may be required in those areas.
Obstructions	All	TBC	Concrete and brick obstructions were identified in a number of locations. 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.
Artificially levelled and filled platforms	All	100	The site has previously undergone extensive quarrying during its use as a clay pit for an adjacent brick works. Following its excavation, the site had been infilled with waste materials in order to create a level platform.
Trench collapse	All	100	Made Ground present beneath the site is likely to be loosely compacted and possibly prone to collapse.
Drainage Invert levels	All	100	Loose materials present at drainage invert levels – reinforced pipe bedding will be required.
Infilled clay pits	All	TBC	Mapping from 1930–1938 identifies a clay pit and two ponds in the north of the site, with embankments present across the entire site likely to be indicative of areas of excavation. Further investigation will be required to delineate the features.
Mature trees	All	TBC	The site is surfaced by overgrown grasses and semi mature and mature trees, which are notably dense around the perimeter of the site. Arboriculture survey required to determine areas of potential tree influence.
Volume change potential clay	All	100	The clay has been determined as being of low volume change potential. Where clay soil is present within the conjectured zone of potential tree influence, heave precautions should be incorporated within the design of the proposed buildings.
Running sands	N/A	N/A	None identified.
Ground dissolution	N/A	N/A	Data searches indicate no hazard.
Concrete design	All	100	The soils generally meet class DS-1, AC-1s.

POTENTIAL ABNORMAL CONSTRAINT	LOCATION ON SITE	ESTIMATED AREA OF SITE AT RISK (%)	ASSESSMENT AND MITIGATION
Low-permeability ground	All	100	Soakaways unlikely to be effective in areas where low permeability cohesive deposits are present or where areas of potentially contaminated soil and groundwater are present.
Services/sensitive structures	All	TBC	A review of online services has identified a number of services within the site boundary. Culverted watercourses are also present. Piling may not be possible within close proximity to any sensitive infrastructure.
Abnormal foundation solutions	TBC	TBC	Dependent on development levels, plots in the area of the former clay pits where deep Made Ground has been identified, may require a driven pile foundation.
Quarry high wall	TBC	TBC	High walls will be present associated with the infilled clay pits, these represents a risk associated with exaggerated differential settlement to structures and infrastructure. Further investigation will be required to identify the location of the high walls.
Consolidation & Settlement	All	100	The presence of variable historical Made Ground and/or low strength compressible superficial deposits represent an unacceptable risk associated with the consolidation of materials that could induce unacceptable settlement to structures and infrastructure. A detailed settlement analysis will be required to inform a Geotechnical Design Report.
Enabling Earthworks	All	100	All proposed earthworks will need to be designed by a suitably qualified geotechnical engineer in accordance with NHBC Chapter 4.6. The earthworks design will incorporate a Geotechnical Specification for Earthworks that will define protocols to ensure no unacceptable future risk.

6. RECOMMENDATIONS AND 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 of inaccessible areas and delineation of clay pits.
- DQRA for controlled waters.
- Arboricultural survey.
- Settlement Analysis for earthworks design.
- Geotechnical Design Report (GDR).
- Asbestos in Soil Construction Phase Risk Assessment and Management Plan
- Geotechnical Earthworks Strategy (infrastructure).
- Remediation and enabling works strategy.
- Ground Gas and Vapour Protection Design Report.
- Construction Phase Surface Water Management Plan.

END OF REPORT

APPENDIX I
LIMITATIONS



GENERAL

1. This report and any associated works (together comprising the "Services") were compiled and carried out by E3P for the client (as present in Section 1) under the E3P “Terms of Business” or with those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.

2. Unless explicitly agreed otherwise, in writing, this report has been prepared under E3P Standard Terms and Business as included within our proposal to the Client.

3. Project-specific appointment documents may be agreed upon at our discretion and a charge may be levied for both the time to review and finalise appointment documents and also for associated changes to the appointment terms. E3P reserves the right to amend the fee should any changes to the appointment terms create an increased risk to E3P.

4. The report needs to be considered in light of the proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

PHASE 1 GEOENVIRONMENTAL AND PRELIMINARY RISK ASSESSMENTS

5. Coverage: This section covers reports with the following titles or combination of titles: Phase 1; Desktop Study; Geoenvironmental Assessment; Development Appraisal; Preliminary Environmental Risk Assessment; Constraints Report; Due Diligence Report; Geotechnical Development Review; Environmental Statement; Environmental Chapter; Baseline Environmental Assessment; Project Scope Summary Report (PSSR), Program Environmental Impact Report (PEIR), Geotechnical Development Risk Register; Agricultural Land Assessment; Mineral Safeguarding Assessment; Desk Top Coal Mining Risk Assessment; Hydrogeological Appraisal; Construction Environmental Management Plan; and Site Water Management Plan.

6. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walkover inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. E3P cannot be held responsible for any disclosures that are provided post-production of our report and will not automatically update our report.

7. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, E3P reserves the right to review such information and, if warranted, to modify the opinions accordingly.

8. It should be noted that any risks identified in this report are perceived risks based on the information reviewed. Actual risks can only be assessed following intrusive investigations of the site.

9. 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 does not constitute or replace full and proper surveys completed by suitably qualified and experienced specialists in these fields.

10. E3P does not warrant work/data undertaken/provided by others.

INTRUSIVE INVESTIGATION REPORTS

11. Coverage: The following report titles (or combination) may cover this category of work: Geoenvironmental Site Investigation; Geotechnical Assessment; GIR (Ground Investigation Reports); Preliminary Environmental And Geotechnical Risk Assessment; Preliminary Summary; Coal Mining Risk Assessment, Ground Gas Addendum; and, Geotechnical Risk Register.

12. The investigation has been undertaken to provide information concerning either:

    I. The type and degree of contamination present at the site in order to allow a generic quantitative risk assessment to be undertaken; or

    II. Information on the soil properties present at the site to allow for geotechnical development constraints to be considered.

13. The scope of the investigation was selected on the basis of the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.

14. Unless otherwise specified in the scope of works, any site drawing(s) provided in this report is (are) not meant to be an accurate base plan but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

15. For contamination purposes, the objectives of the investigation are limited to establishing the risks associated with potential contamination sources with the potential to cause harm to human health, building materials, the environment (including adjacent land), or controlled waters.

16. For geotechnical investigations, the purpose is to broadly consider potential development constraints associated with the physical property of the soils underlying the site within the context of the proposed future or continued use of the site, as stated within the report.

17. The amount of exploratory work, soil property testing and chemical testing undertaken has necessarily been restricted by various factors which may include accessibility, the presence of services; existing buildings; current site usage or short timescales. The exploratory holes completed assess only a small percentage of the area in relation to the overall size of the Site, and as such can only provide a general indication of conditions.

18. The number of sampling points and the methods of sampling and testing do not preclude the possible existence of contamination where concentrations may be significantly higher than those actually encountered or ground conditions that vary from those identified. In addition, there may be exceptional ground conditions elsewhere on the site which have not been disclosed by this investigation and which have therefore not been taken into account in this report.

19. The inspection, testing and monitoring records relate specifically to the investigation points and the timeframe that the works were undertaken. They will also be limited by the techniques employed. As part of this assessment, E3P has used reasonable skill and care to extrapolate conditions between these points based on assumptions to develop our interpretation and conclusions.

20. The assumption made in forming our conclusions is that the ground and groundwater conditions (both chemically and physically) are the same as have been encountered during the works undertaken at the specific points of investigation and at the time of the investigation.

21. Conditions can change between investigation points both spatially and over time and these interpretations should therefore be considered indicative. The assessment of extreme weather events and their impact on ground conditions is not within the scope of E3P's work.

22. The risk assessment and opinions provided are based on currently available guidance relating to acceptable contamination concentrations; no liability can be accepted for the retrospective effects of any future changes or amendments to these values. Specific assumptions associated with the risk assessment process have been outlined within the body or associated appendix of the report.

23. Additional investigations may be required in order to satisfy relevant planning conditions or to resolve any engineering and environmental issues.

24. Where soil contamination concentrations recorded as part of this investigation are used for commentary on the potential waste classification of soils for disposal purposes, these should be classed as indicative only. Due consideration should be given to the variability of contaminant concentrations taken from targeted samples versus bulk excavated soils and the potential variability of contaminant concentrations between sampling locations. Where major waste disposal operations are considered, targeted waste classification investigations should be designed and the waste classification and any subsequent disposal option agreed upon with licenced subcontractors and/or the relevant regulators.

25. The results of the asbestos testing are factually reported and interpretation is given as to how this relates to the previous use of the site, the types of ground encountered and site conceptualisation. This does not however constitute a formal asbestos assessment. These results should be treated cautiously and should not be relied upon to provide detailed and representative information on the delineation, type and extent of bulk ACMs and/or trace loose asbestos fibres within the soil matrix at the site.

26. If costs have been included in relation to additional site works, and/or site remediation works these must be considered as indicative only and must be confirmed by a qualified quantity surveyor.

EUROCODE 7: GEOTECHNICAL DESIGN

27. On 1st April 2010, BS EN 1997-1:2004 (Eurocode 7: Geotechnical Design – Part 1) became the mandatory baseline standard for geotechnical ground investigations.

28. In terms of geotechnical design for foundations, slopes, retaining walls and earthworks, EC7 sets guidance on design procedures including specific guidance on the numbers and spacings of boreholes for geotechnical design, there are limits to methods of ground investigation and the quality of data obtained and there are also prescriptive methods of assessing soil strengths and methods of design. Unless otherwise explicitly stated, the work has not been undertaken in accordance with EC7. A standard geotechnical interpretative report will not meet the requirements of the Geotechnical Design Report (GDR) under Eurocode 7. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. The report is likely to represent a Ground Investigation Report (GIR) under the Eurocode 7 guidance.

DETAILED QUANTITATIVE RISK ASSESSMENTS AND REMEDIATION AND ENABLING WORK STRATEGY REPORTS

29. These reports build upon previous report versions and associated notes. The scope of the investigation, further testing and monitoring and associated risk assessments were selected based on the specific development and land use scenario proposed by the Client and may not be appropriate to another form of development or scheme layout. The risk assessment and opinions provided are based on currently available approaches in the generation of Site Specific Assessment Criteria relating to contamination concentrations and are not considered to represent a risk in a specific land use scenario to a specific receptor. No liability can be accepted for the retrospective effects of any future changes or amendments to these values, associated models or associated guidance.

30. The outputs of the Detailed Quantitative Risk Assessments are based upon the manipulation of standard risk assessment models. These are our interpretation of the risk assessment criteria.

31. Before adoption on-site, assessment criteria will need to be discussed and agreed upon with the Regulatory Authorities prior to adoption on site. The regulatory discussion and engagement process may result in an alternative interpretation being determined and agreed. The process and timescales associated with the Regulatory Authority engagement are not within the control of E3P. All costs and programmes presented as a result of this process should be validated by a quantity surveyor and should be presumed to be indicative.

32. E3P does not accept liability for any subcontract work that has not been completed in strict accordance with an approved E3P Remediation and Enabling Works Strategy.

GEOTECHNICAL DESIGN REPORT (GDR)

33. The GDR can only be prepared following confirmation of all structural loads and serviceability requirements. All the relevant information needs to be provided to allow for a GDR to be produced.

MONITORING (INCLUDING REMEDIATION MONITORING REPORTS AND BUILD PHASE MITIGATION)

34. These reports are factual and comprise monitoring, normally groundwater and ground gas and data provided by contractors as part of earthworks or remedial works.

35. The data is presented and will be compared with assessment criteria.

APPENDIX II
GLOSSARY



TERMS

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**	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
RISK CLASSIFICATION



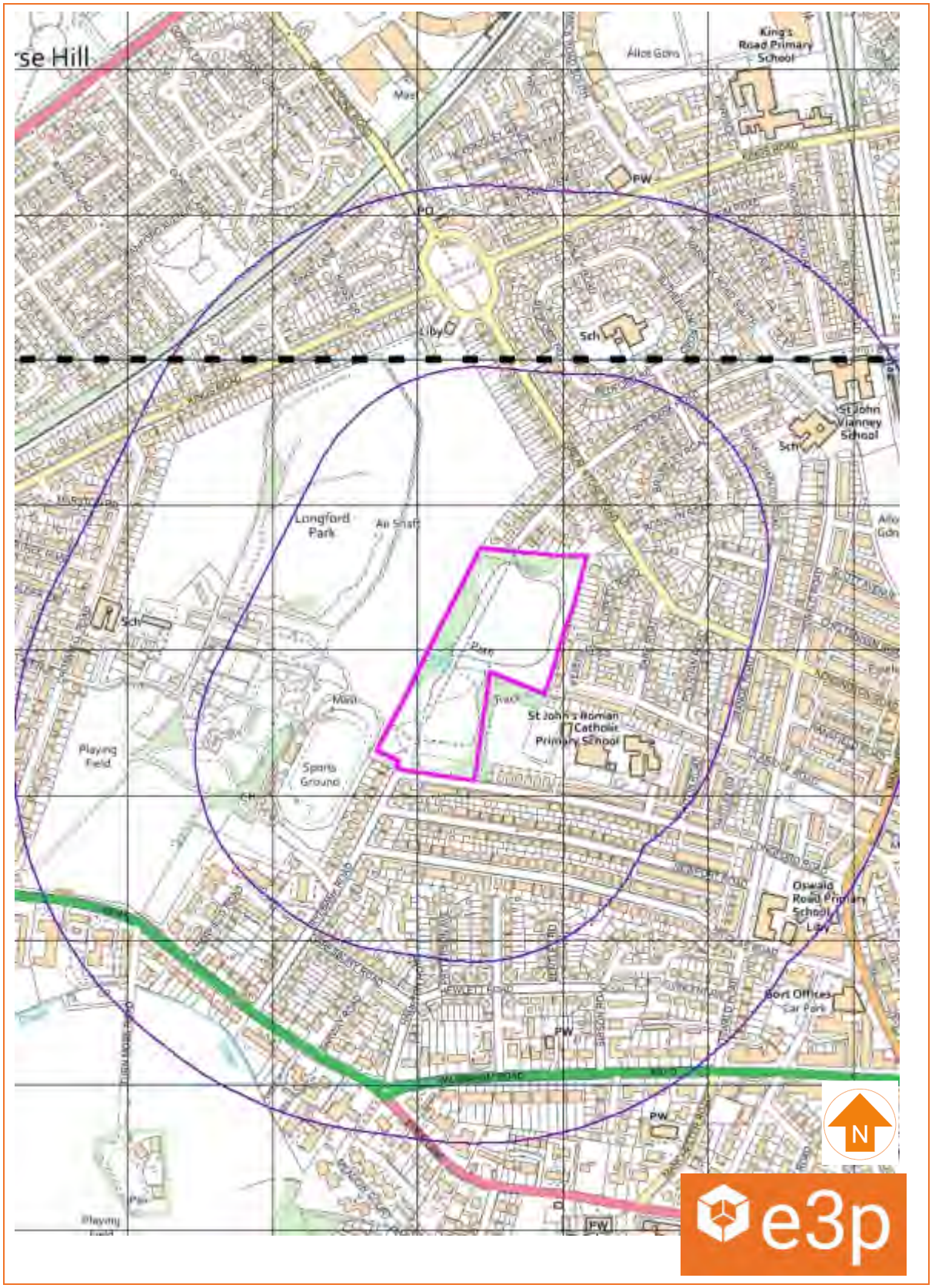
risk classification

RISK	DEFINITION
Low	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property.
Low Moderate	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property with regard to the proposed use. However, minor issues may require further consideration in the event of future redevelopment of the Site.
Moderate	Some potential contaminated land liabilities/geotechnical constraints are likely to affect the property as a result of historical and/or current activities. The risks identified are unlikely to pose an immediate significant issue, but the purchaser/developer may wish to make further enquiries of the vendor or undertake further environmental improvements. Redevelopment of the Site will likely require further site investigation.
Moderate High	Some potentially significant contaminated land liabilities/geotechnical constraints have been identified at the property that requires further assessment, including intrusive ground investigations.
High	Significant potential contaminated land liabilities/geotechnical constraints have been identified at the property. Further assessment including intrusive ground investigation will be required to determine the level of risk and associated liability.

APPENDIX IV
DRAWINGS



DRAWING 17-403-001 – Site Location Plan

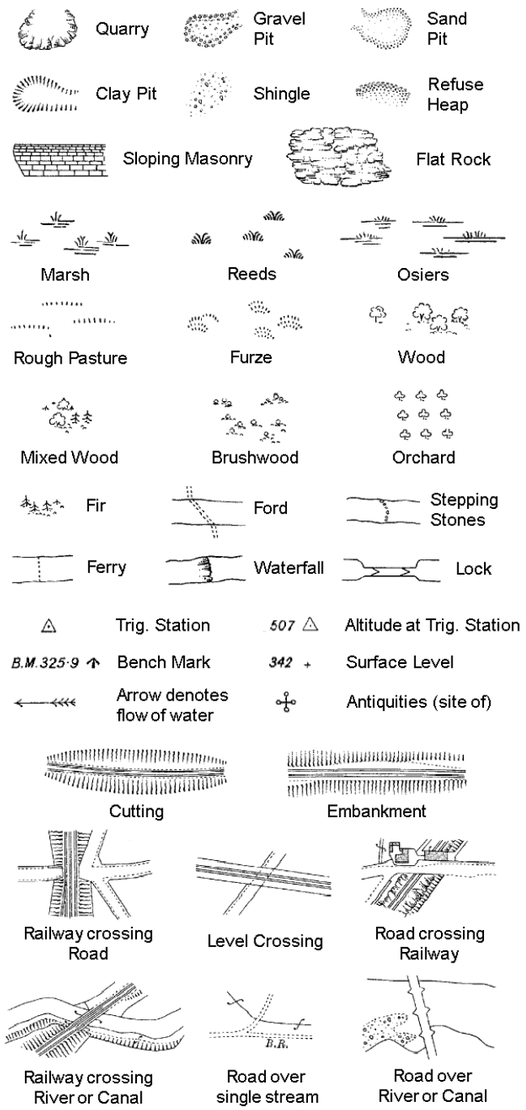


APPENDIX V
HISTORICAL MAPS



Historical Mapping Legends

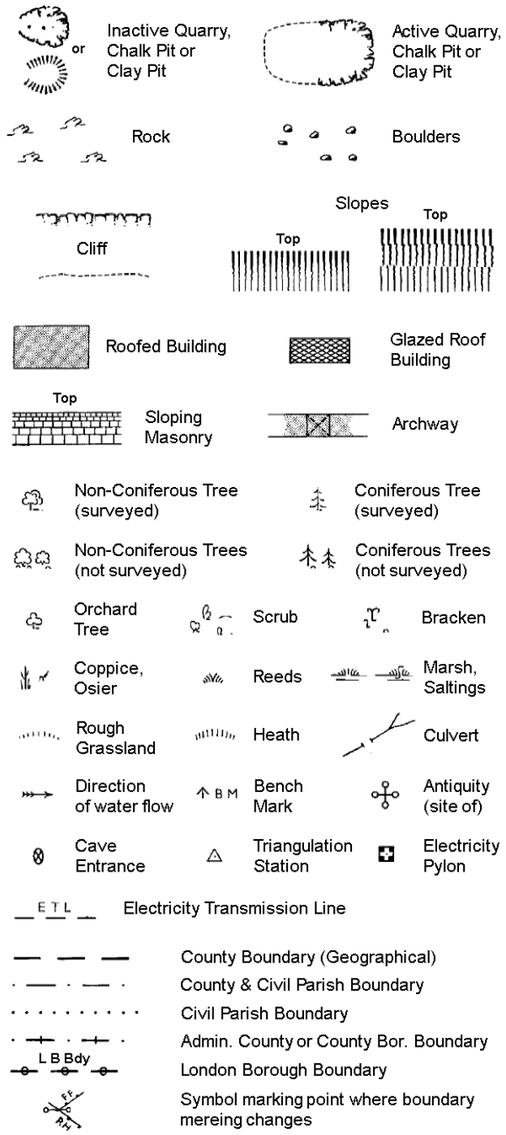
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

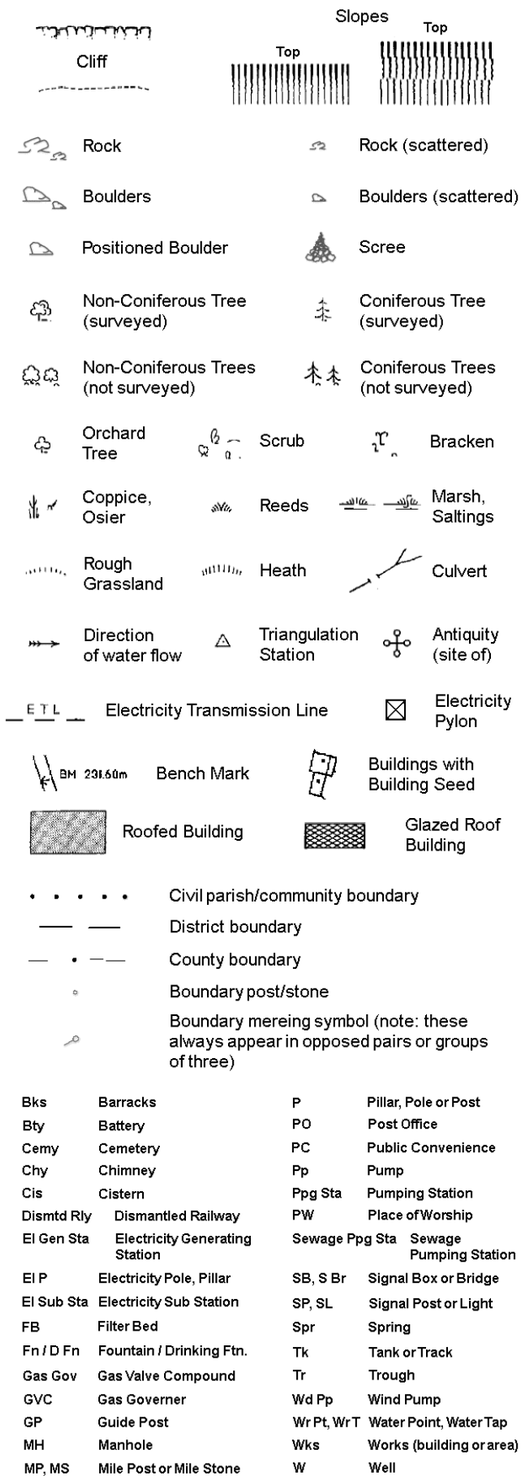
Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)
County & Civil Parish Boundary
Civil Parish Boundary
Admin. County or County Bor. Boundary
L B Bdy London Borough Boundary
Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary
District boundary
County boundary
Boundary post/stone
Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

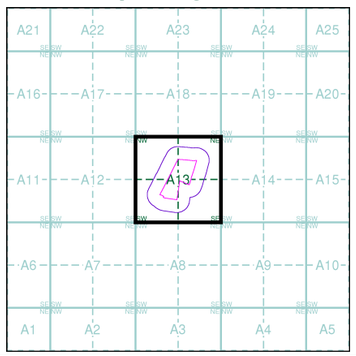
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Cheshire	1:2,500	1877	2
Lancashire And Furness	1:2,500	1894	3
Cheshire	1:2,500	1898	4
Lancashire And Furness	1:2,500	1907	5
Cheshire	1:2,500	1910	6
Lancashire And Furness	1:2,500	1933	7
Ordnance Survey Plan	1:1,250	1951 - 1955	8
Ordnance Survey Plan	1:2,500	1952 - 1955	9
Additional SIMs	1:1,250	1955 - 1980	10
Ordnance Survey Plan	1:1,250	1963 - 1971	11
Supply of Unpublished Survey Information	1:1,250	1975	12
Additional SIMs	1:1,250	1987	13
Large-Scale National Grid Data	1:1,250	1992	14
Historical Aerial Photography	1:2,500	2000	15

Historical Map - Segment A13



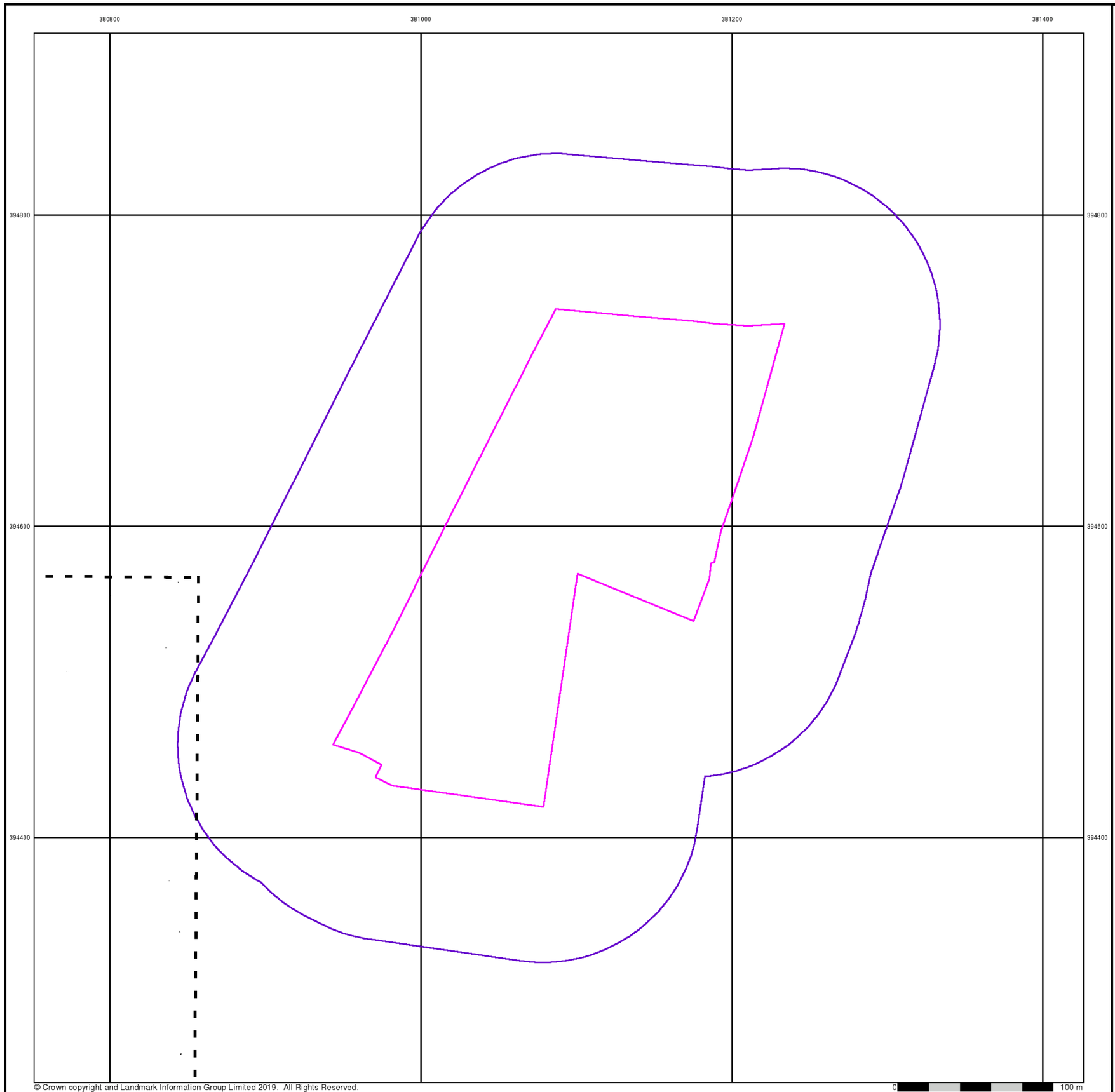
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National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

Site Details

St. Johns R C Primary School, Chepstow Road, MANCHESTER, M21 9SN

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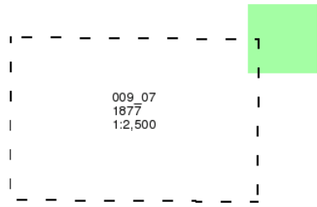
Cheshire

Published 1877

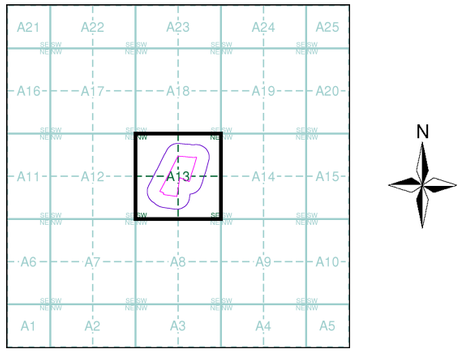
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

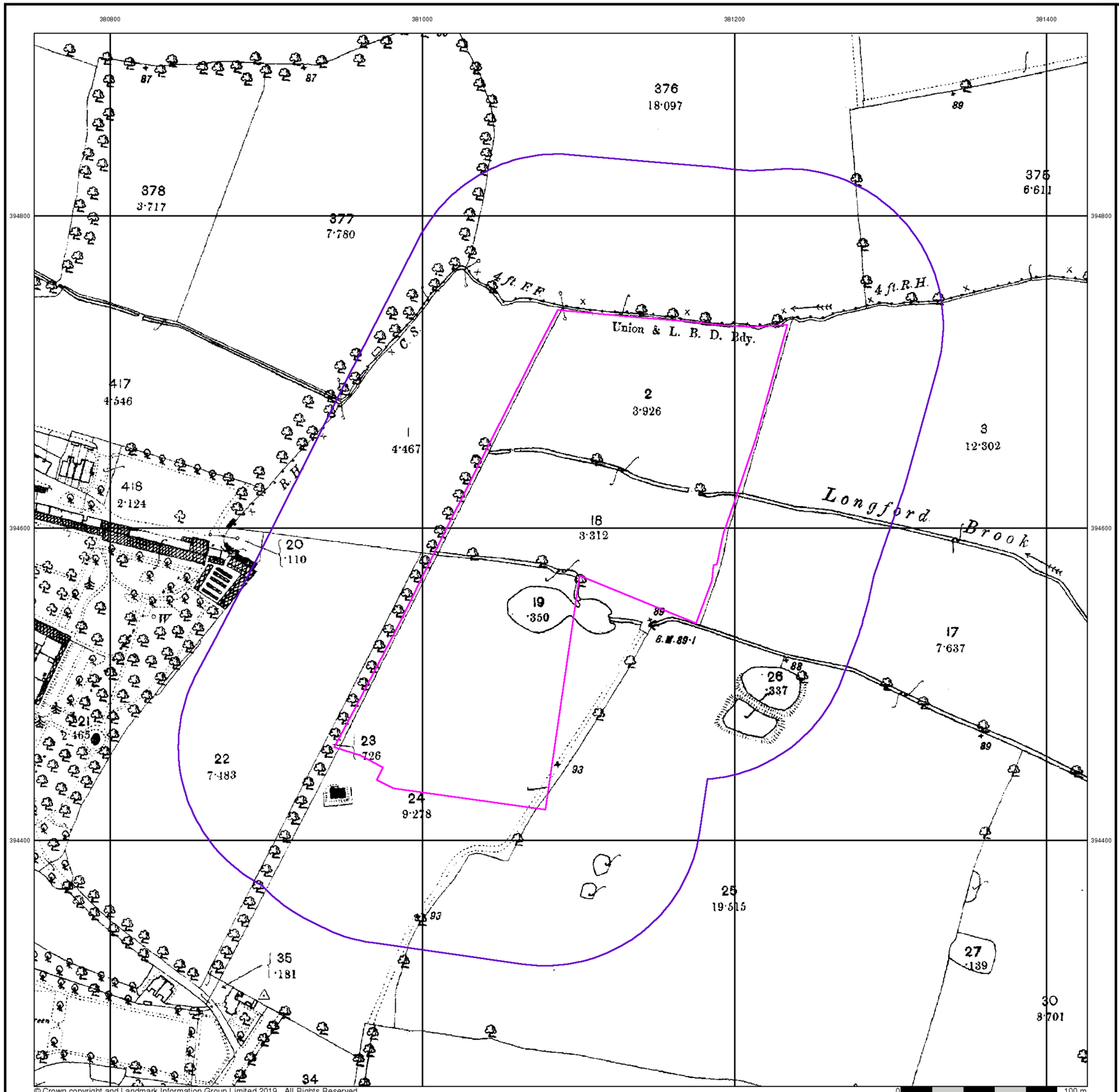
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National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

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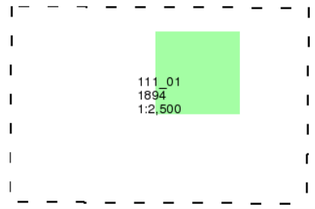
Lancashire And Furness

Published 1894

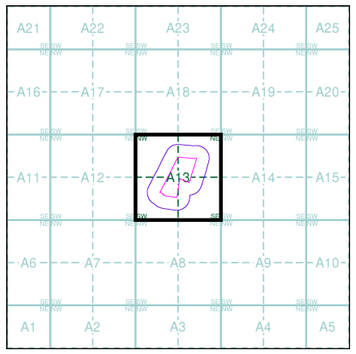
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Map Name(s) and Date(s)



Historical Map - Segment A13



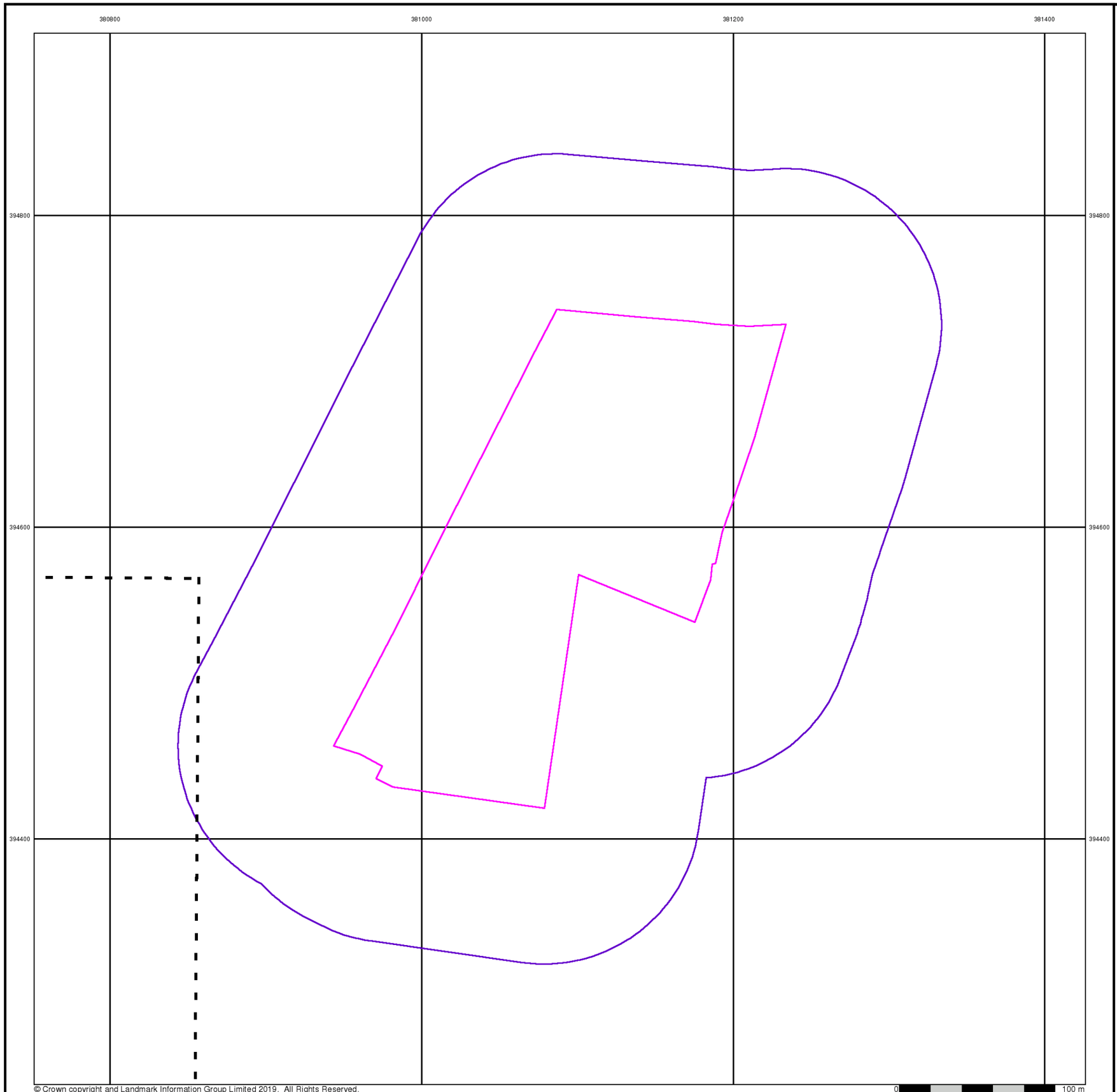
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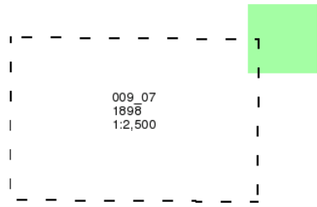
Cheshire

Published 1898

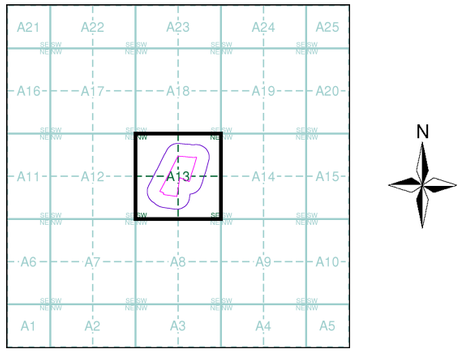
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

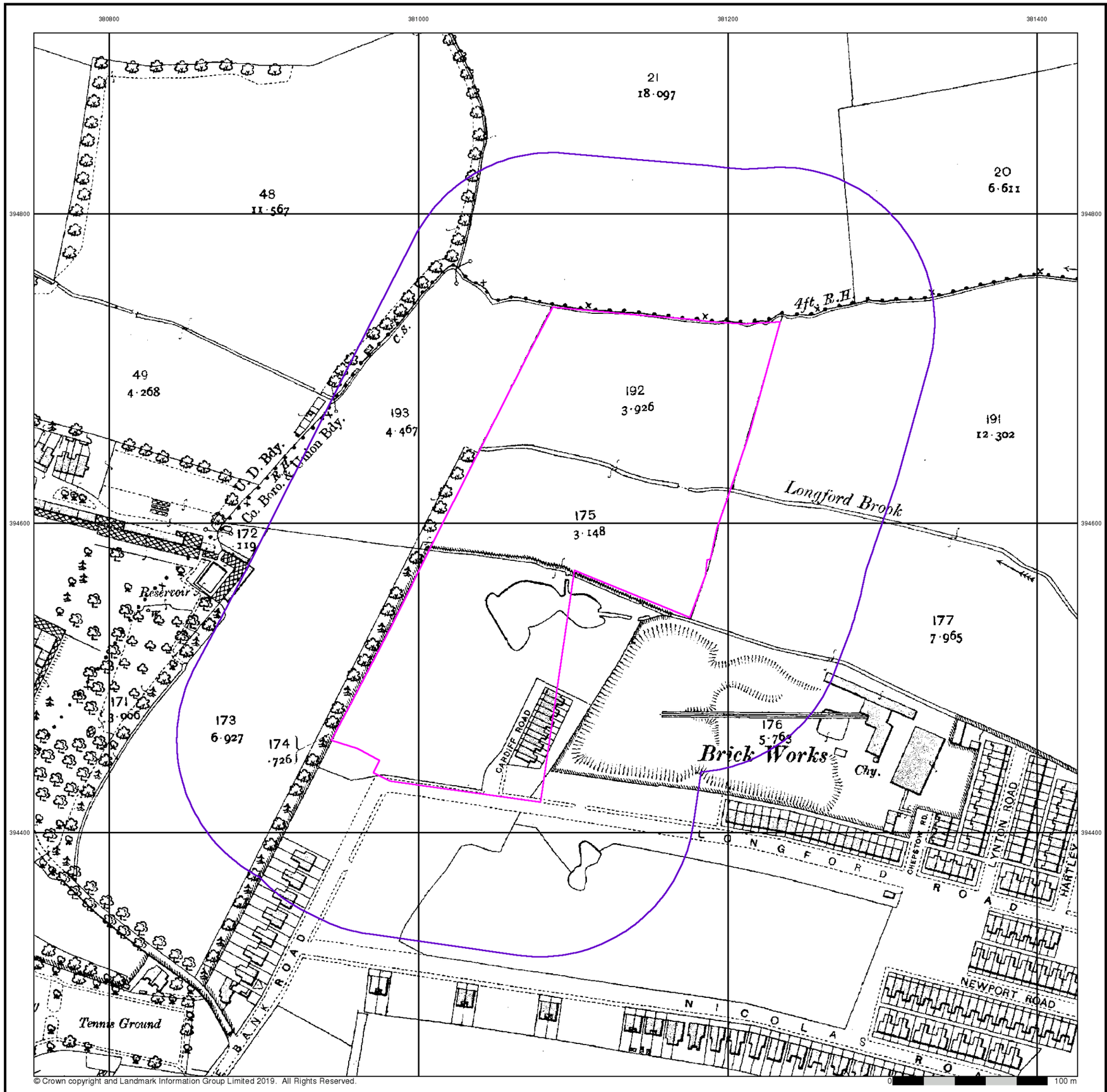
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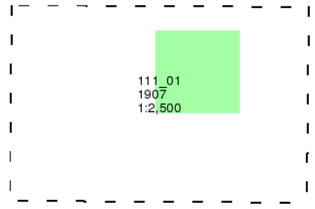
Lancashire And Furness

Published 1907

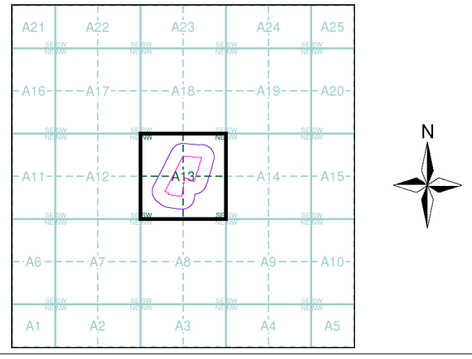
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



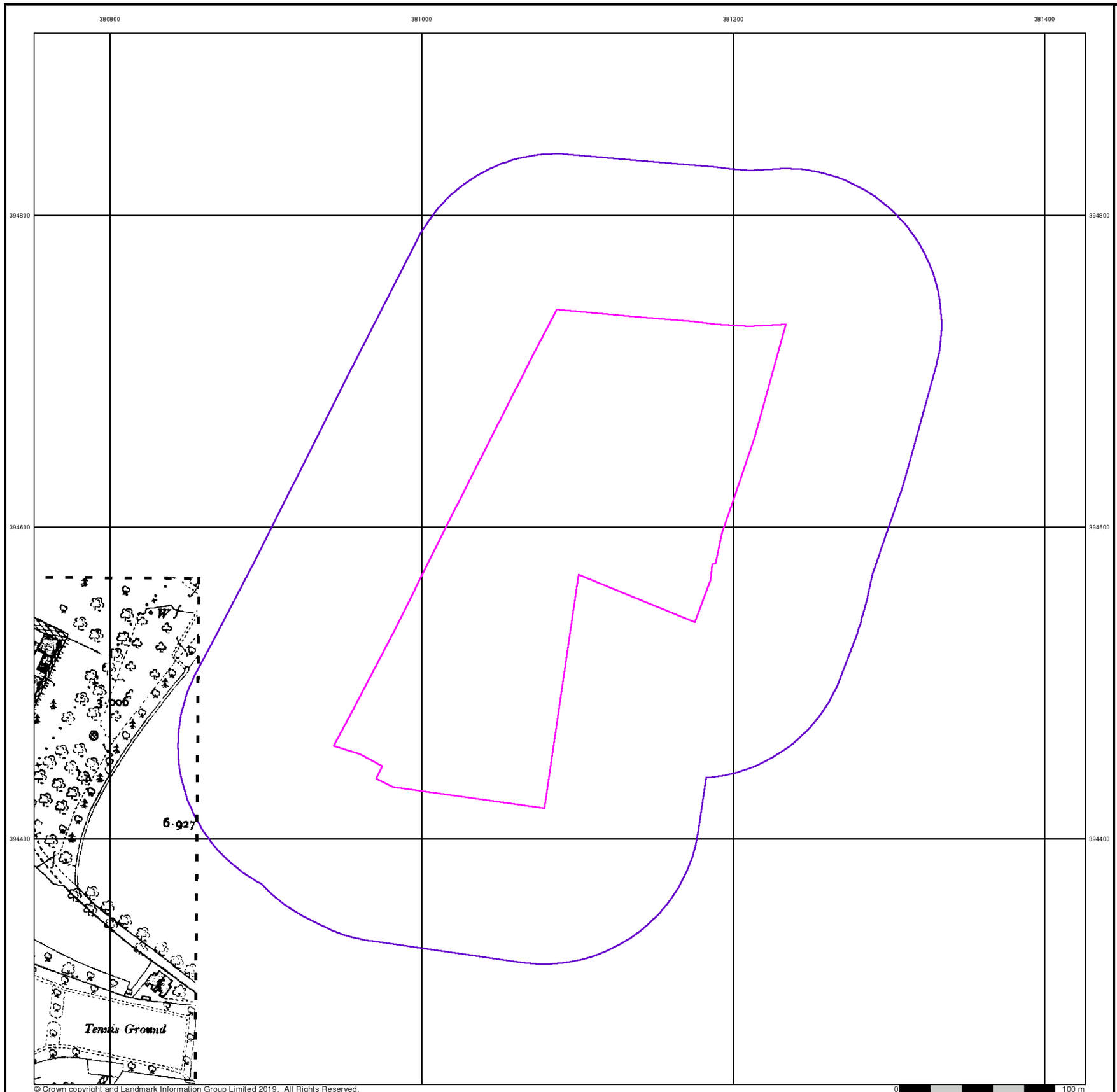
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Site Area (Ha):	4.6
Search Buffer (m):	100

Site Details

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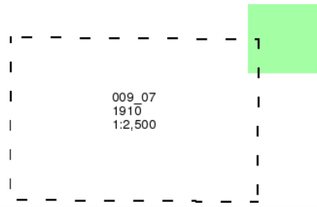
Cheshire

Published 1910

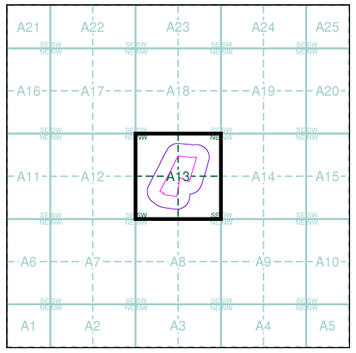
Source map scale - 1:2,500

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Map Name(s) and Date(s)



Historical Map - Segment A13



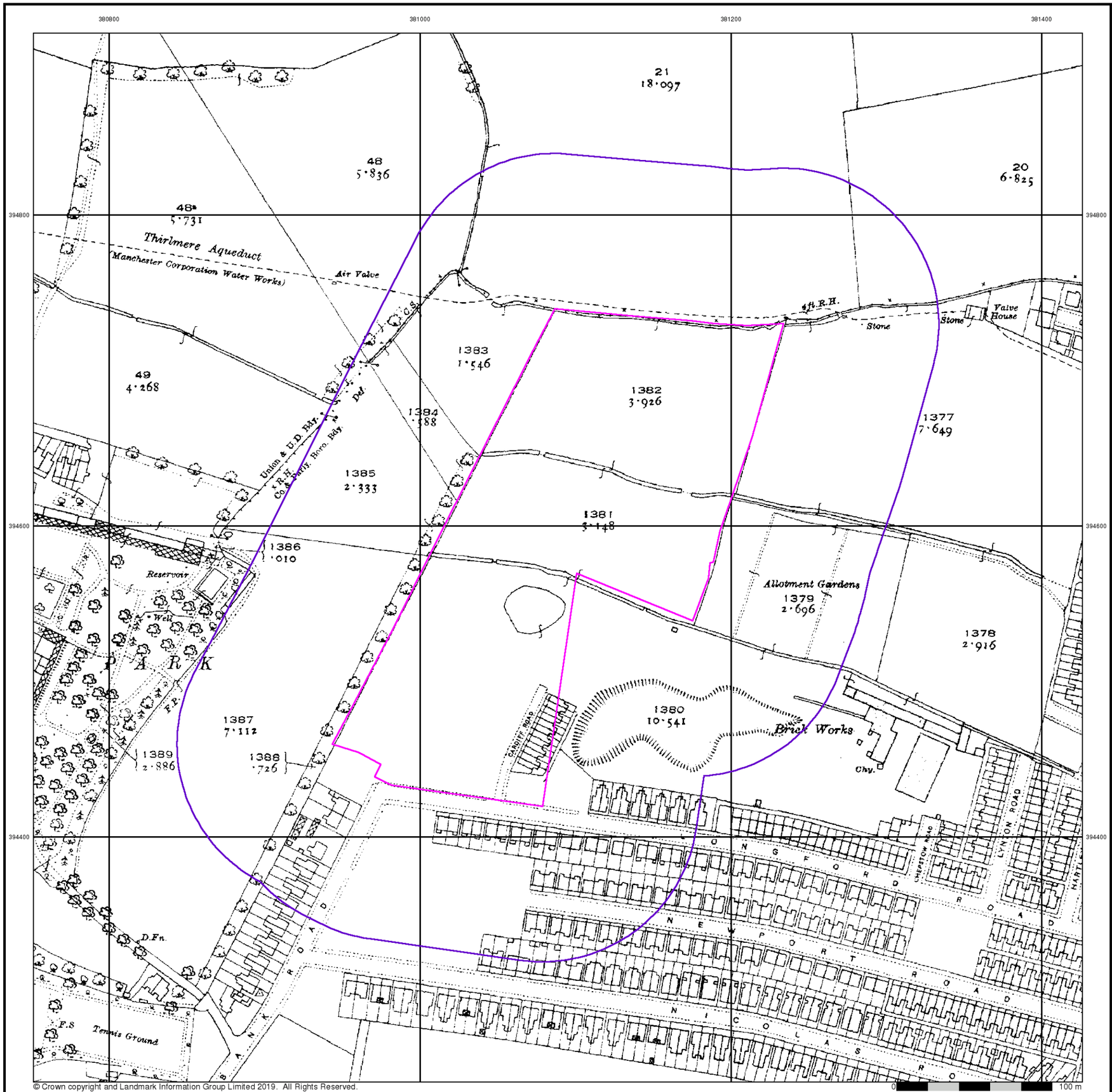
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National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
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Site Details

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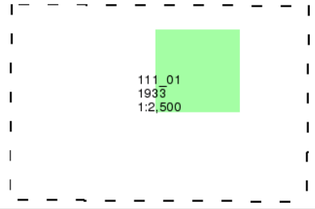
Lancashire And Furness

Published 1933

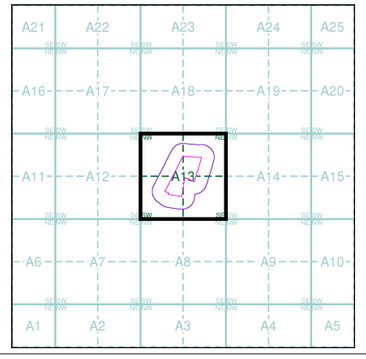
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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

Site Details

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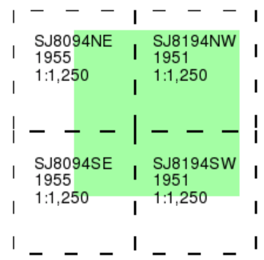
Ordnance Survey Plan

Published 1951 - 1955

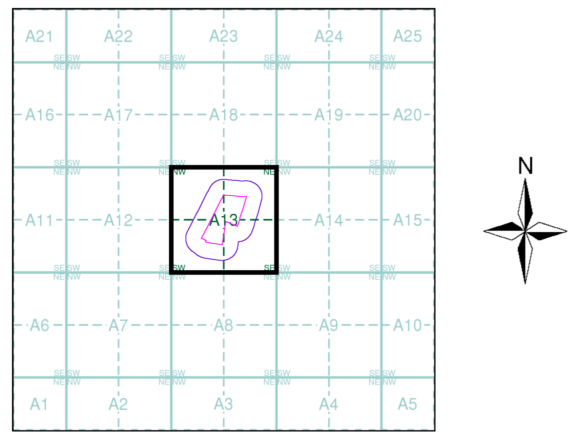
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



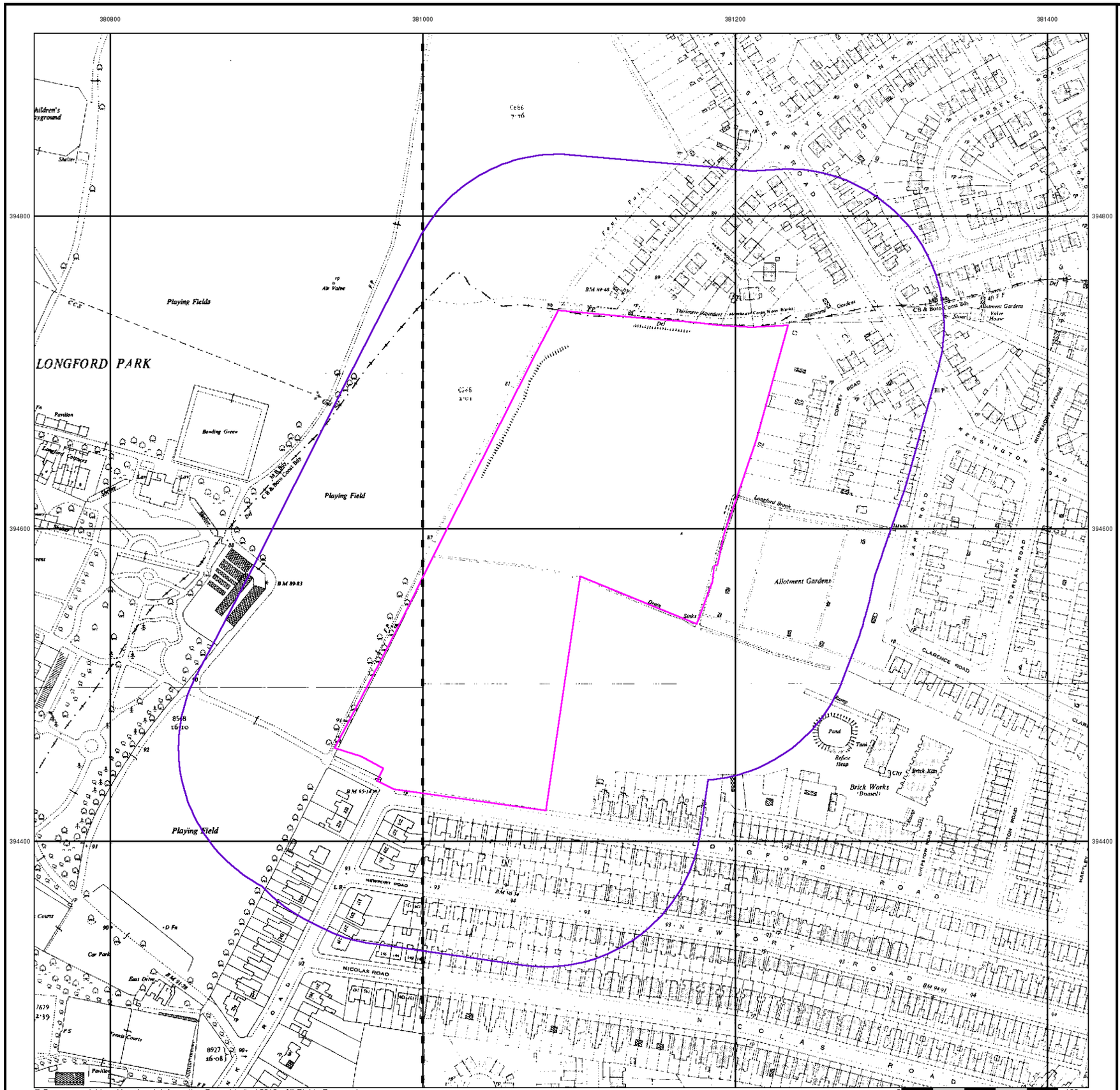
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Site Area (Ha): 4.6
Search Buffer (m): 100

Site Details

St. Johns R C Primary School, Chepstow Road, MANCHESTER, M21 9SN

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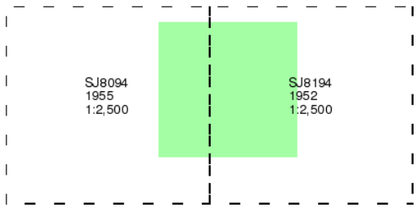
Ordnance Survey Plan

Published 1952 - 1955

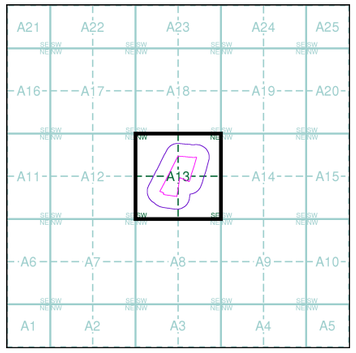
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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

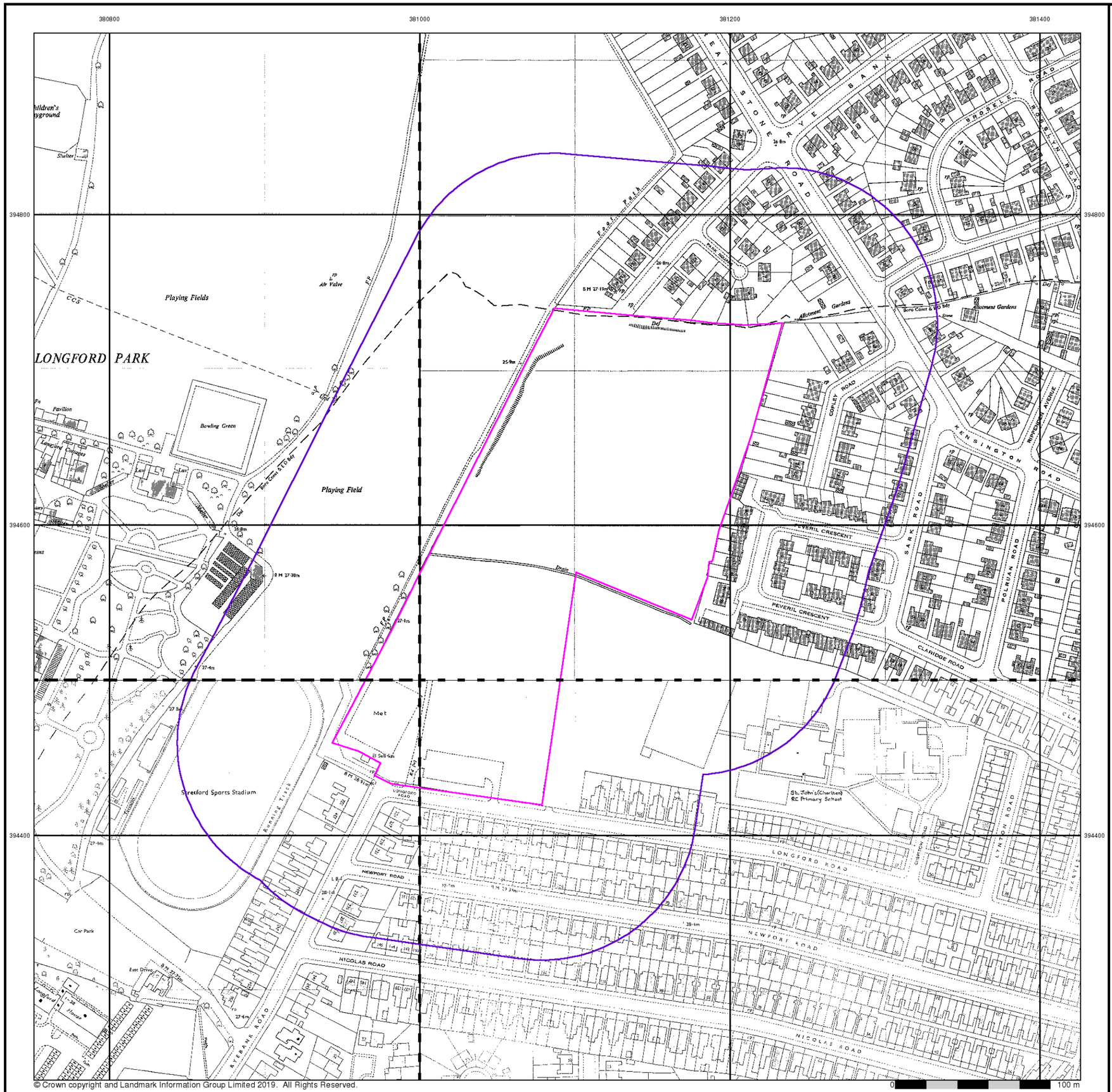
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Slice:	A
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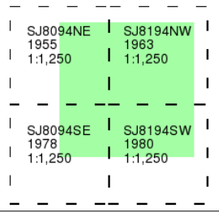
Additional SIMs

Published 1955 - 1980

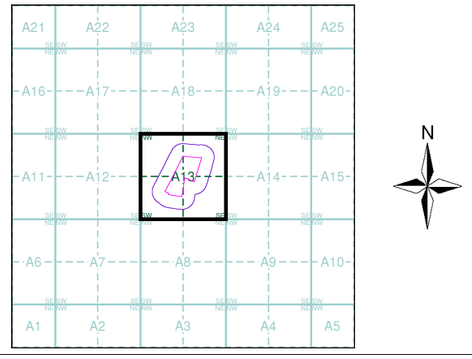
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

Site Details

St. Johns R C Primary School, Chepstow Road, MANCHESTER, M21 9SN

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



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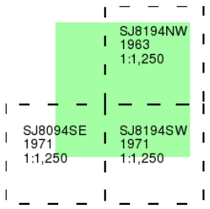
Ordnance Survey Plan

Published 1963 - 1971

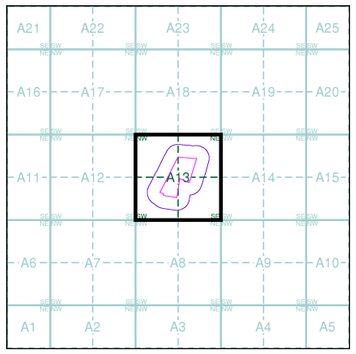
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



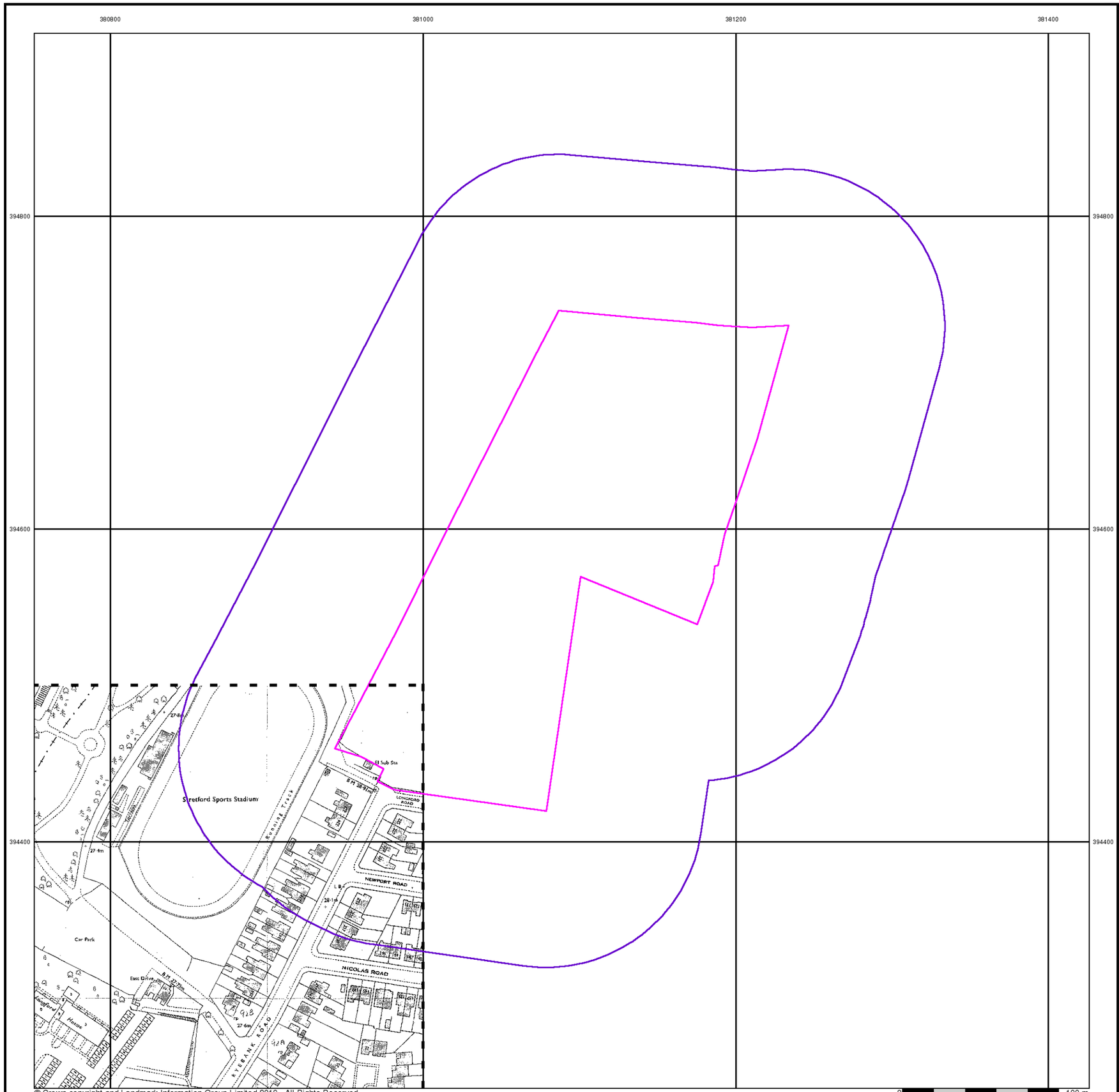
Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

Site Details

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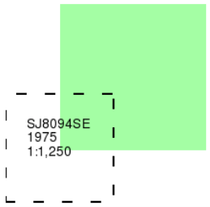
Supply of Unpublished Survey Information

Published 1975

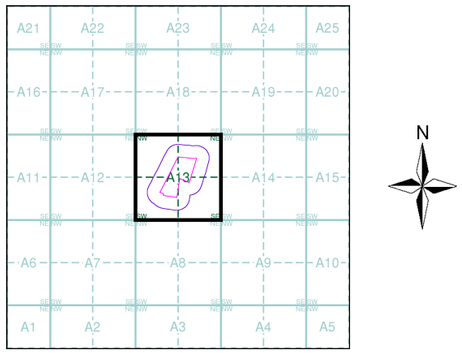
Source map scale - 1:1,250

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



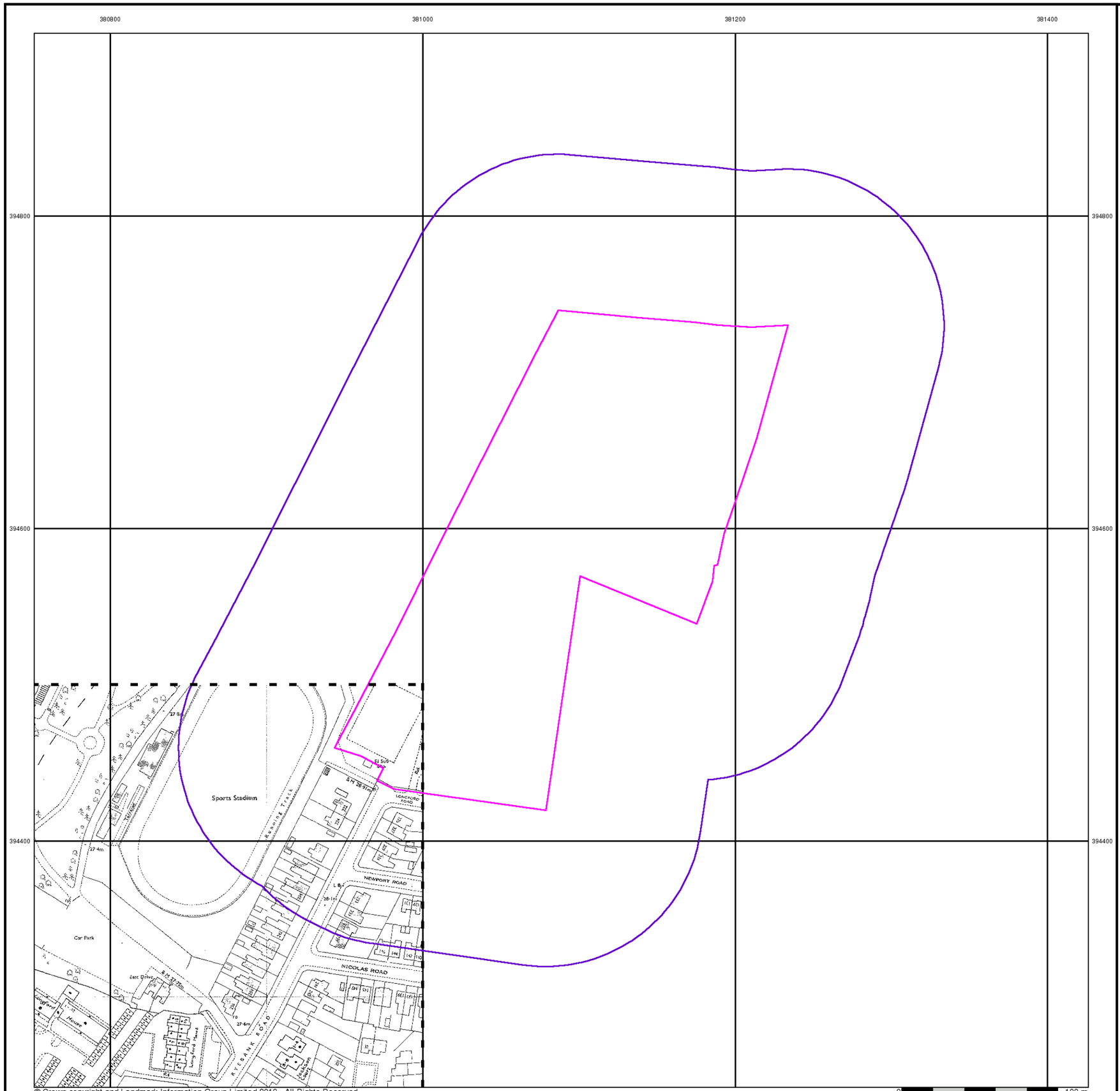
Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

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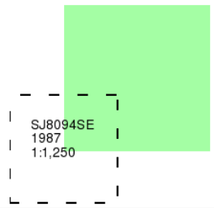
Additional SIMs

Published 1987

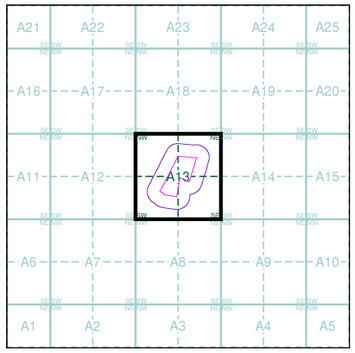
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

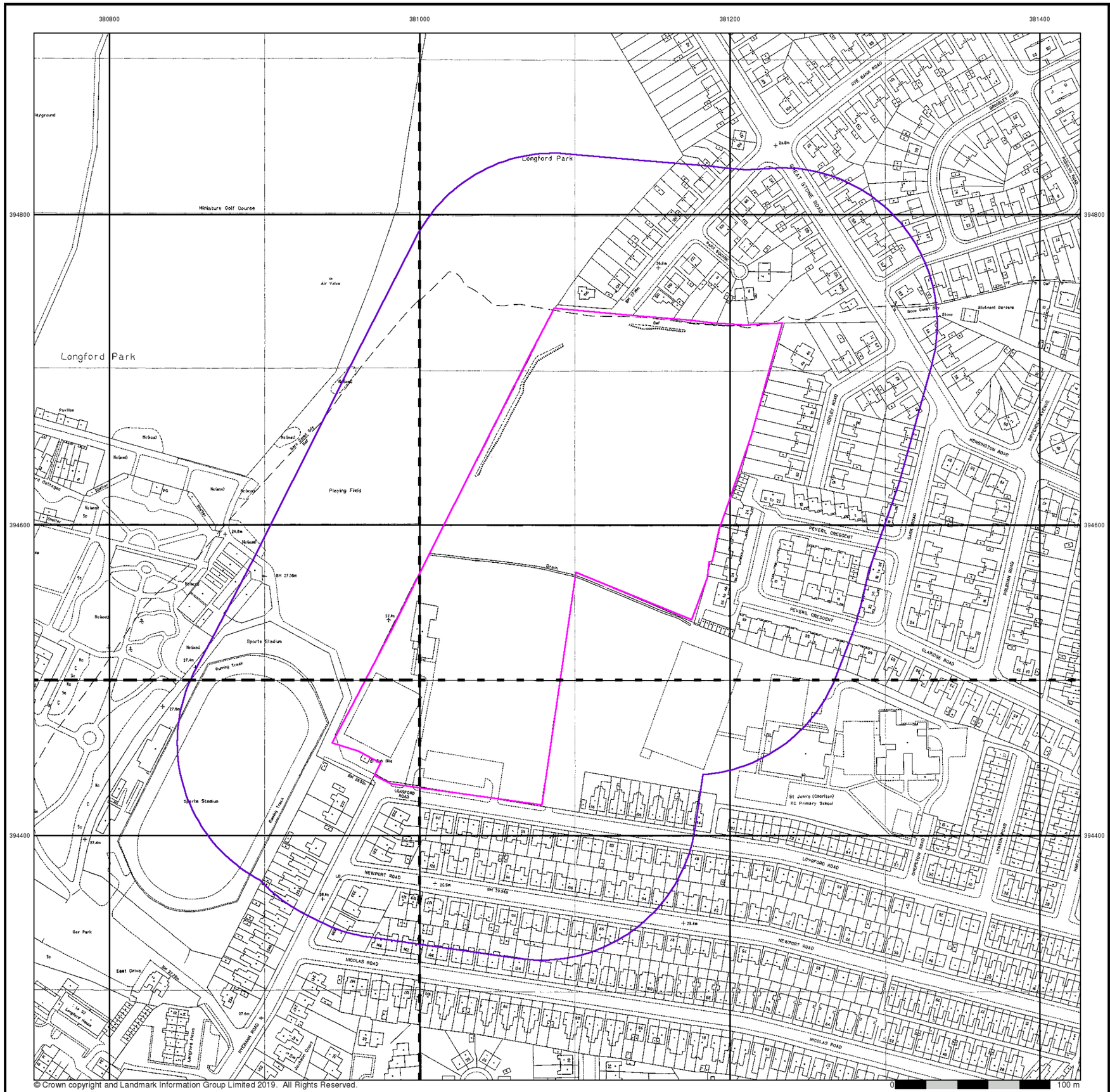
Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

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Large-Scale National Grid Data

Published 1992

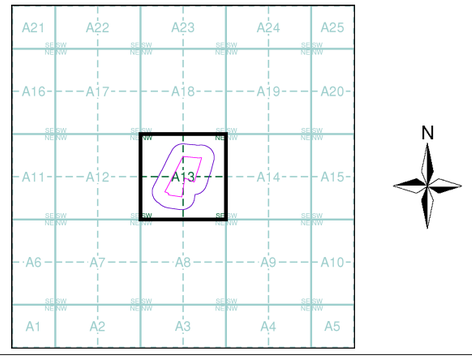
Source map scale - 1:1,250

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

Map Name(s) and Date(s)

SJ8094NE 1992 1:1,250	SJ8194NW 1992 1:1,250
SJ8094SE 1992 1:1,250	SJ8194SW 1992 1:1,250

Historical Map - Segment A13



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
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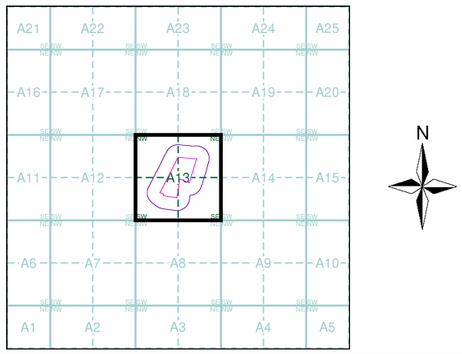


Historical Aerial Photography

Published 2000

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

Historical Aerial Photography - Segment A13



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	100

Site Details

St. Johns R C Primary School, Chepstow Road,
MANCHESTER, M21 9SN

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Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

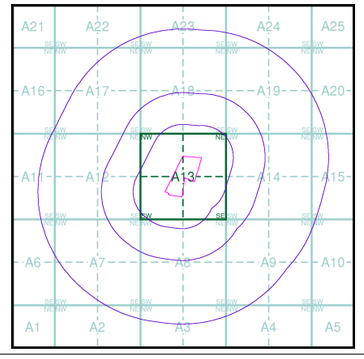
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

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Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1882	4
Lancashire And Furness	1:10,560	1894 - 1896	5
Cheshire	1:10,560	1899	6
Lancashire And Furness	1:10,560	1908 - 1909	7
Cheshire	1:10,560	1911	8
Lancashire And Furness	1:10,560	1923	9
Lancashire And Furness	1:10,560	1932 - 1934	10
Lancashire And Furness	1:10,560	1938	11
Cheshire	1:10,560	1938	12
Ordnance Survey Plan	1:10,000	1954 - 1956	13
Ordnance Survey Plan	1:10,000	1959	14
Ordnance Survey Plan	1:10,000	1965 - 1966	15
Ordnance Survey Plan	1:10,000	1971 - 1979	16
Manchester	1:25,000	1975	17
Ordnance Survey Plan	1:10,000	1980 - 1984	18
Ordnance Survey Plan	1:10,000	1985 - 1989	19
Ordnance Survey Plan	1:10,000	1989	20
Ordnance Survey Plan	1:10,000	1990 - 1994	21
10K Raster Mapping	1:10,000	1999	22
10K Raster Mapping	1:10,000	2006	23
VectorMap Local	1:10,000	2019	24

Historical Map - Slice A



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

St. Johns R C Primary School, Chepstow Road, MANCHESTER, M21 9SN

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Russian Military Mapping Legends

1:5,000 and 1:10,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Fireproof Building
- Prominent Fireproof Building
- Non-fireproof Building
- Non-fireproof Building (non-dwelling)
- Factory, mill, and flour mill, with chimneys
- Factory, mill, and flour mill, without chimneys
- Power Station, drawn to scale
- Hydroelectric Power Station
- Radio Station, drawn to scale
- Telephone Station, drawn to scale
- Abandoned Open-pit Mine or Quarry
- Open-pit Salt Mine
- Pit
- Oil Deposit or Well
- Oil Seepage
- Tailings Pile
- Fuel Storage Tanks
- Natural Gas Tank
- Bench Mark
- Drill Hole
- Burial Mound
- Triangulation Point on Burial Mound
- Single-track Railroad
- Double-track Railroad and Station Building
- Coniferous Forest
- Deciduous Forest
- Mixed Forest
- Lawns
- Citrus Orchard
- Wet Ground
- Scattered Vegetation

243,8 — Values for prominent elevations

186.0 — Numbers for spot elevations, depth soundings, contour lines, etc.

0,2 — Velocity of the current, width of river bed, depth of river

Fractional terms: length and capacity of bridges; depth of fords and condition of the river bottom; height of forest and the diameter of trees

Russian Alphabet (For reference and phonetic interpretation of map text)

А а (A)	З з (Z)	П п (P)	Ч ч (CH)
Б б (B)	И и (I)	Р р (R)	Ш ш (SH)
В в (V)	Й й (Y)	С с (S)	Щ щ (SHCH)
Г г (G)	К к (K)	Т т (T)	ъ (–)
Д д (D)	Л л (L)	У у (U)	ы (Y)
Е е (E)	М м (M)	Ф ф (F)	ь (')
Ё ё (YO)	Н н (N)	Х х (KH)	Э э (E)
Ж ж (ZH)	О о (O)	Ц ц (TS)	Ю ю (YU or IU)
			Я я (YA or IA)

1:25,000 mapping

a. Not drawn to scale b. Drawn to scale

- Government and Administrative Buildings
- Military and Industrial Buildings
- Military and Communication Areas
- Subway Entrance
- Partly Demolished Buildings
- Demolished Buildings
- Built-Up Area with Fireproof Buildings Predominant
- Built-Up Area with Non-Fireproof Buildings Predominant
- Individual Fireproof Building
- Prominent Industrial Building
- Individual Dwelling, Fireproof
- Ruins of an Individual Dwelling
- Factory or Mill Chimney
- Factory or Mill with Chimney
- Factory or Mill without Chimney
- Mine or Open Pit Mine
- Operating Shaft or Mine
- Non-Operating Shaft or Mine
- Salt Mine
- Tailings Pile
- Pit
- Stone Quarry
- Gas Pump or Service Station
- Fuel Storage or Natural Gas Tank
- Oil or Natural Gas Derrick
- Small Hydroelectric Power Station
- Power Station
- Transformer Station
- Cemetery
- Burial Mound (height in metres)
- Triangulation Point on Burial Mound
- Triangulation Point
- Bench Mark
- Bench Mark (monumented)
- Telegraph Office
- Telephone Station
- Radio Station
- Radio Tower
- Airfield or Seaplane Base
- Landing Strip
- Main Highway
- Highway under Construction
- Improved Dirt Road (former truck road)
- Double-track Railroad with First Class Station
- Dismantled Railroad
- Railroad Under Construction
- Shore Embankment
- River or Ditch with Embankment
- Well
- Water Reservoir or Rain Water Pit
- Spring
- Isobath with value
- Heavy (Index) Contour Line
- Contour Line and Value
- Half Contour Line
- Spot Elevation Value
- Coniferous
- Deciduous
- Mixed
- Scrub

Key to Numbers on Mapping

SJ89_Manchester

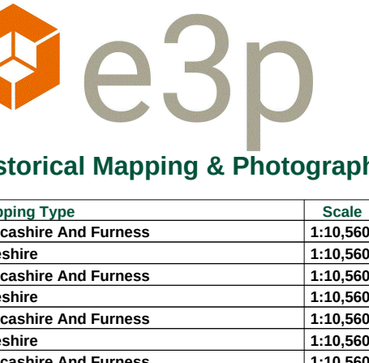
No.	Description
151	Council/Government Buildings/Courts

e3p

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Lancashire And Furness	1:10,560	1848	3
Cheshire	1:10,560	1882	4
Lancashire And Furness	1:10,560	1894 - 1896	5
Cheshire	1:10,560	1899	6
Lancashire And Furness	1:10,560	1908 - 1909	7
Cheshire	1:10,560	1911	8
Lancashire And Furness	1:10,560	1923	9
Lancashire And Furness	1:10,560	1932 - 1934	10
Lancashire And Furness	1:10,560	1938	11
Cheshire	1:10,560	1938	12
Ordnance Survey Plan	1:10,000	1954 - 1956	13
Ordnance Survey Plan	1:10,000	1959	14
Ordnance Survey Plan	1:10,000	1965 - 1966	15
Ordnance Survey Plan	1:10,000	1971 - 1979	16
Manchester	1:25,000	1975	17
Ordnance Survey Plan	1:10,000	1980 - 1984	18
Ordnance Survey Plan	1:10,000	1985 - 1989	19
Ordnance Survey Plan	1:10,000	1989	20
Ordnance Survey Plan	1:10,000	1990 - 1994	21
10K Raster Mapping	1:10,000	1999	22
10K Raster Mapping	1:10,000	2006	23
VectorMap Local	1:10,000	2019	24

Russian Map - Slice A



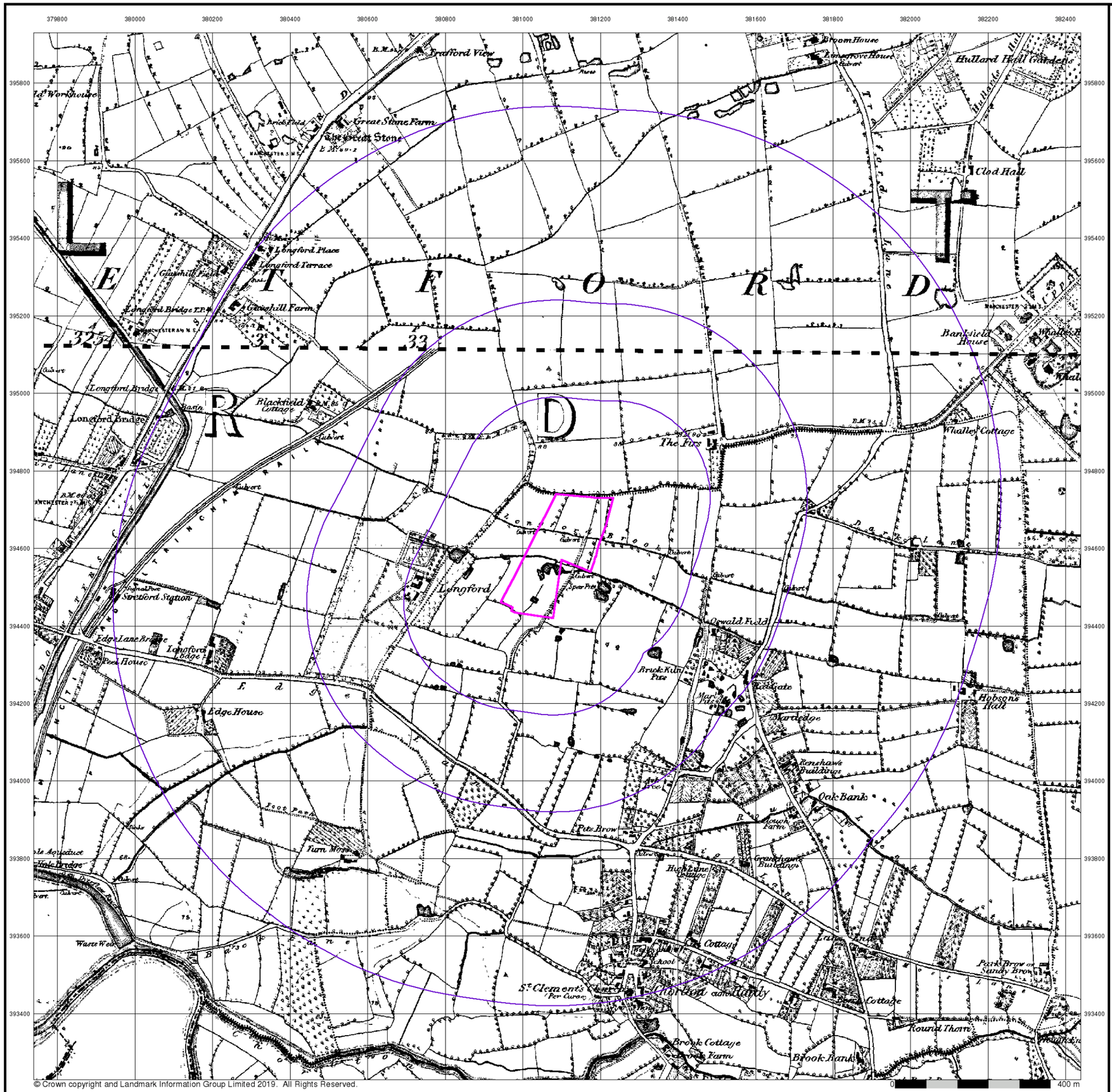
Order Details

Order Number: 222286198_1_1
Customer Ref: 13533-em
National Grid Reference: 381090, 394580
Slice: A
Site Area (Ha): 4.6
Search Buffer (m): 1000

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Web: www.envirocheck.co.uk



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Lancashire And Furness

Published 1848

Source map scale - 1:10,560

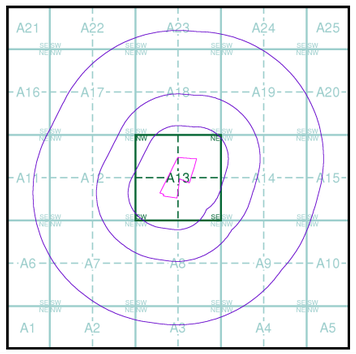
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

10400
1848
1:10,560

11100
1848
1:10,560

Historical Map - Slice A



Order Details

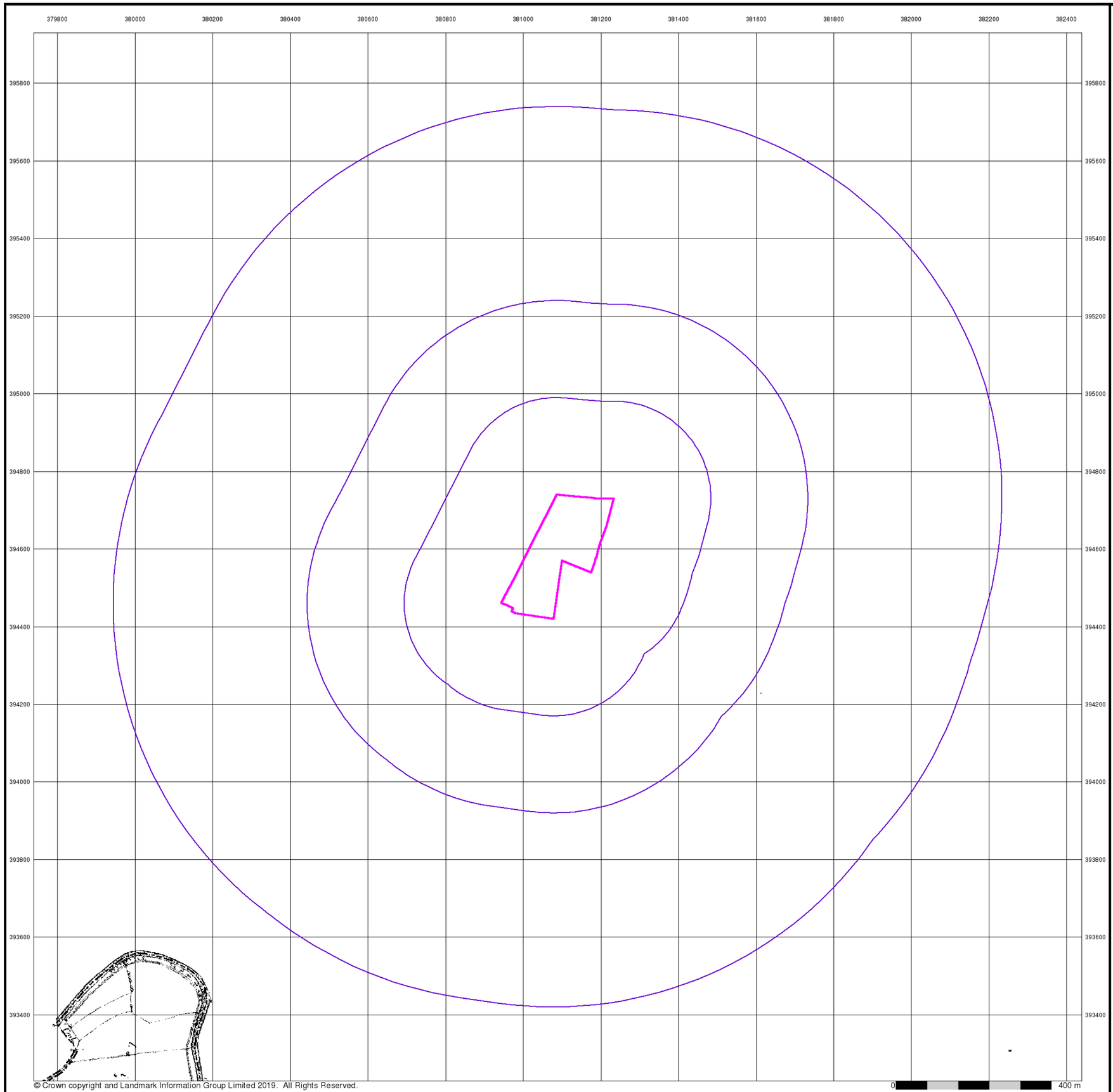
Order Number:	222286198_1_1
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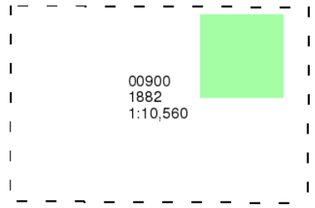
Cheshire

Published 1882

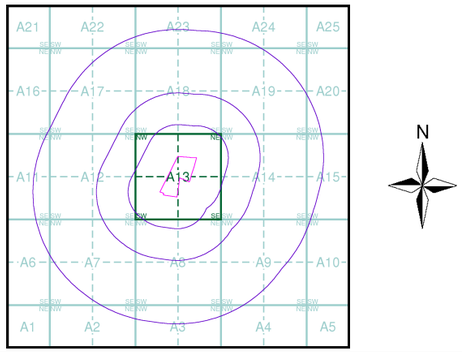
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



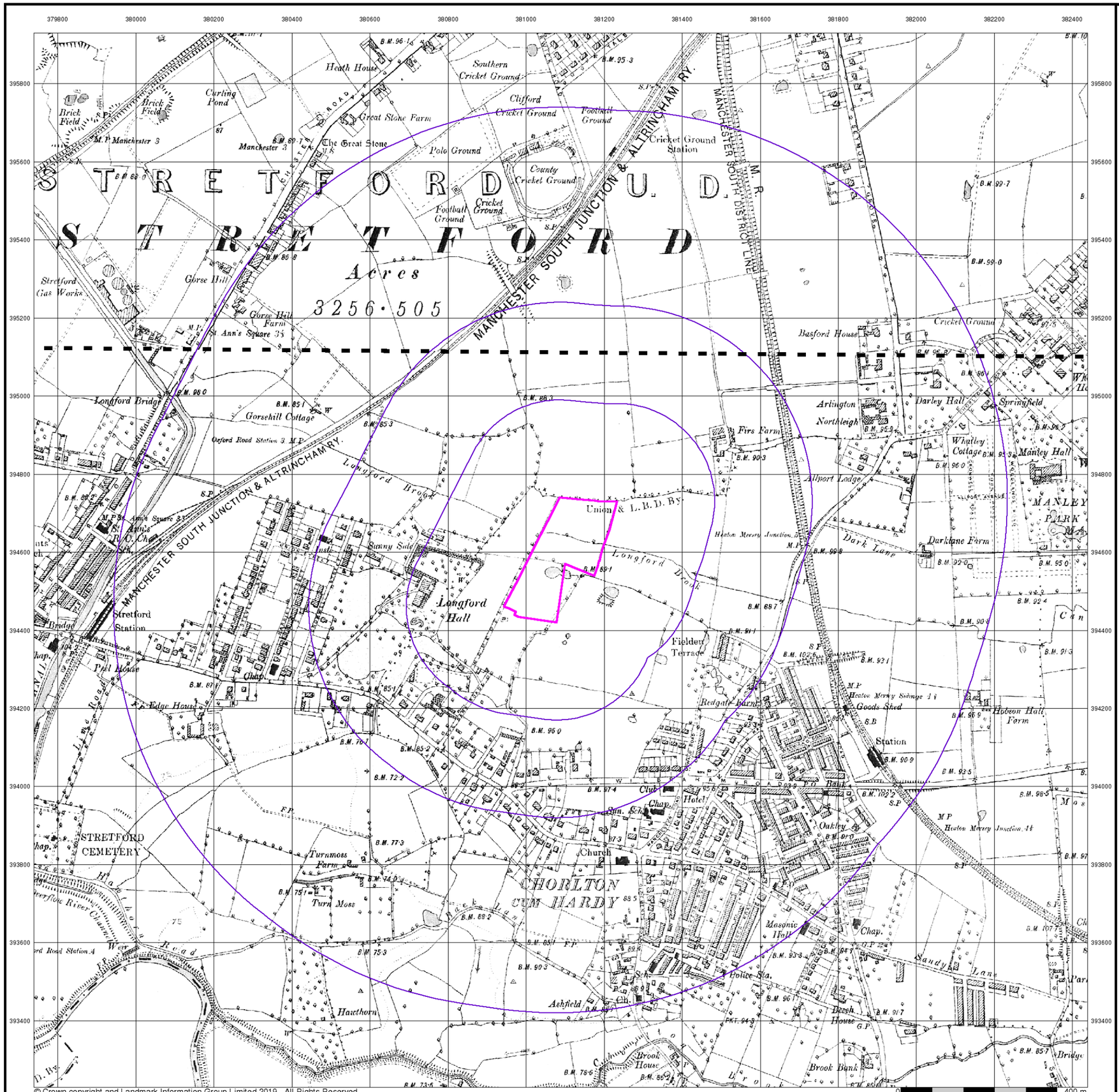
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Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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Lancashire And Furness

Published 1894 - 1896

Source map scale - 1:10,560

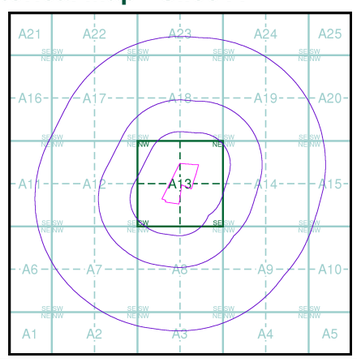
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Map Name(s) and Date(s)

104SW
1896
1:10,560

111NW
1894
1:10,560

Historical Map - Slice A



Order Details

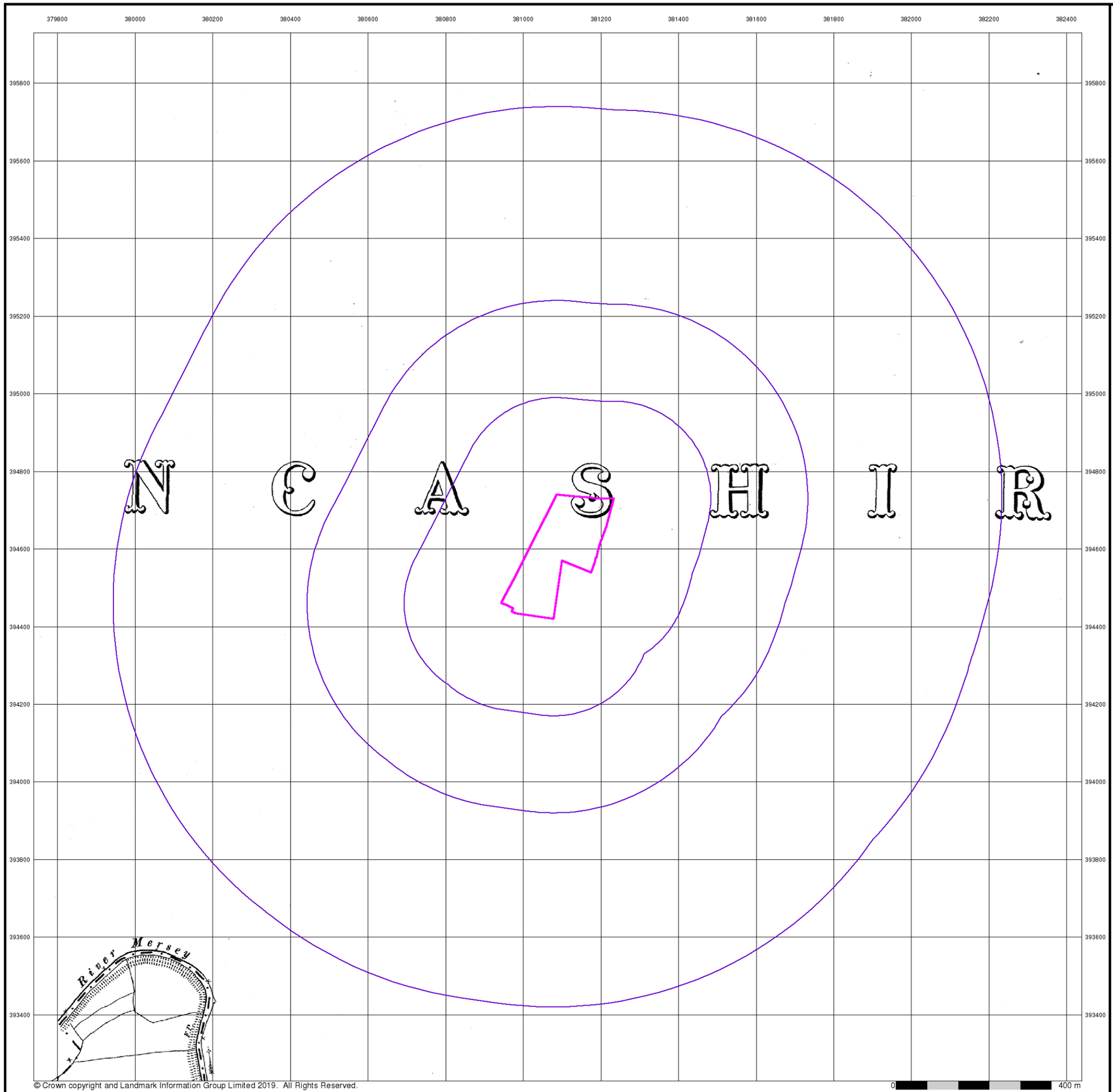
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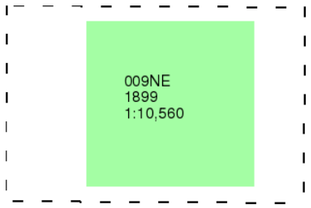
Cheshire

Published 1899

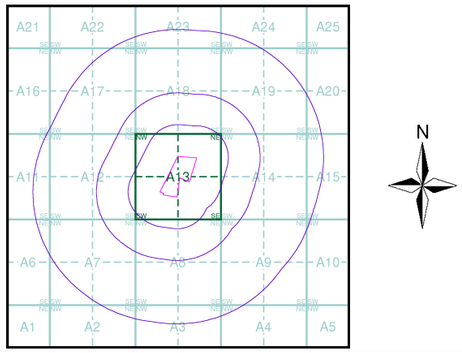
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	222286198_1_1
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Lancashire And Furness

Published 1908 - 1909

Source map scale - 1:10,560

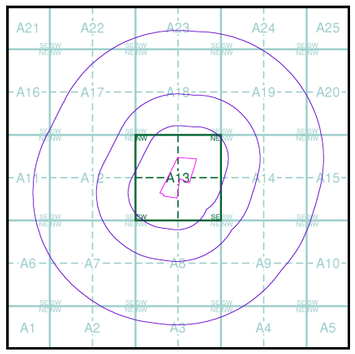
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Map Name(s) and Date(s)

104SW
1909
1:10,560

111NW
1908
1:10,560

Historical Map - Slice A



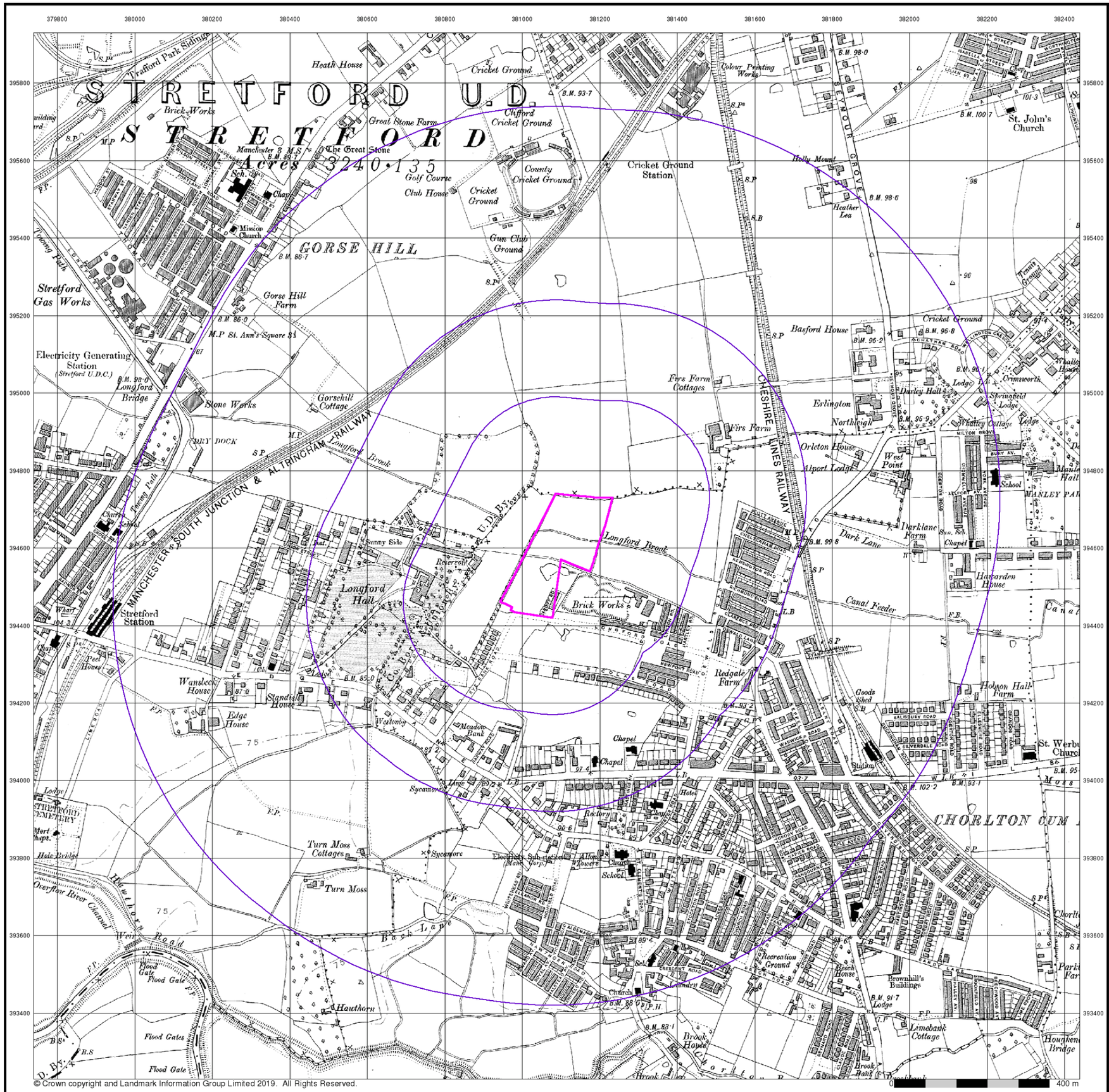
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Cheshire

Published 1911

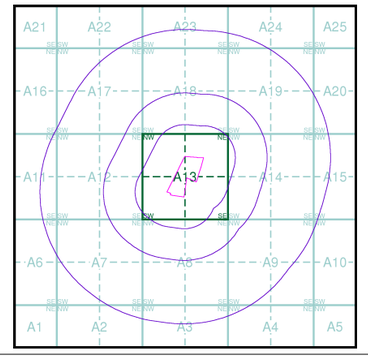
Source map scale - 1:10,560

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Map Name(s) and Date(s)

009NE
1911
1:10,560

Historical Map - Slice A



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
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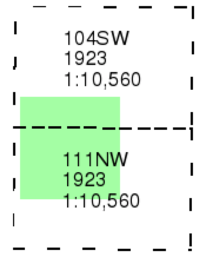
Lancashire And Furness

Published 1923

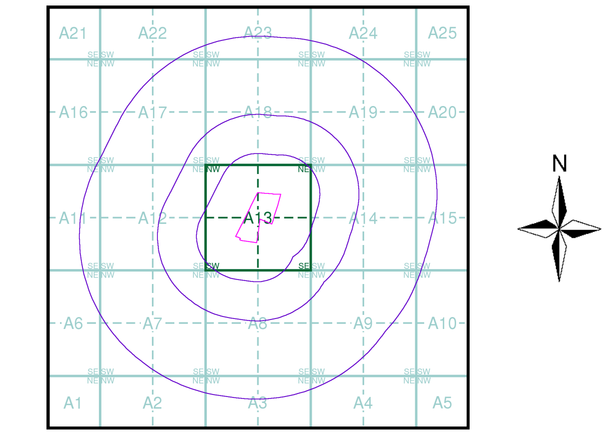
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

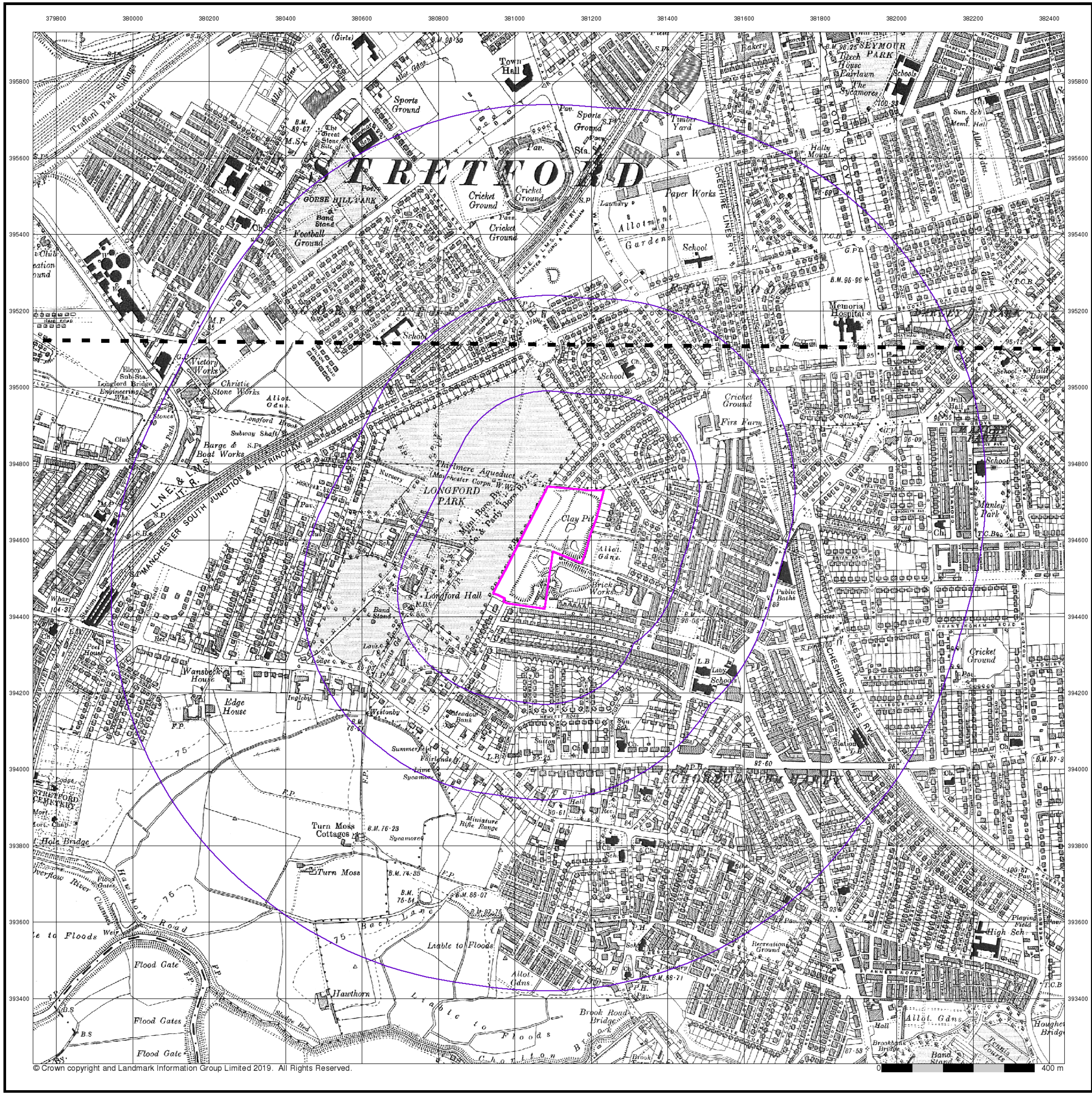
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Slice: A
Site Area (Ha): 4.6
Search Buffer (m): 1000

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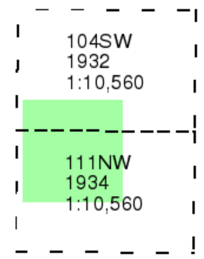
Lancashire And Furness

Published 1932 - 1934

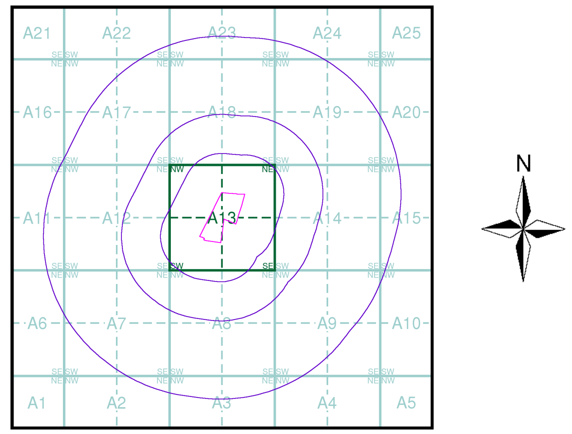
Source map scale - 1:10,560

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Map Name(s) and Date(s)



Historical Map - Slice A



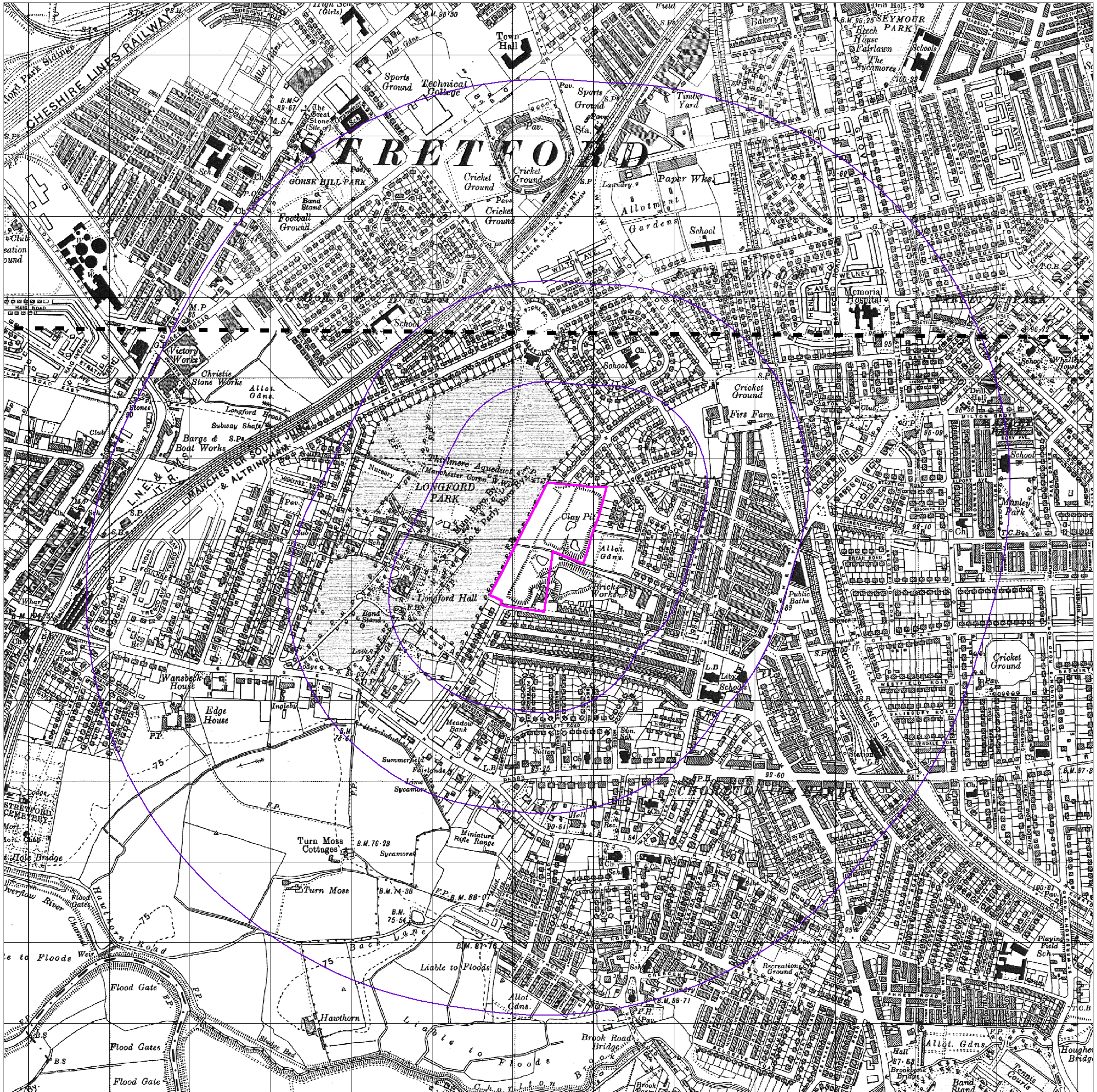
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Search Buffer (m): 1000

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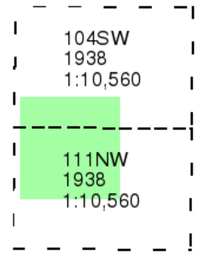
Lancashire And Furness

Published 1938

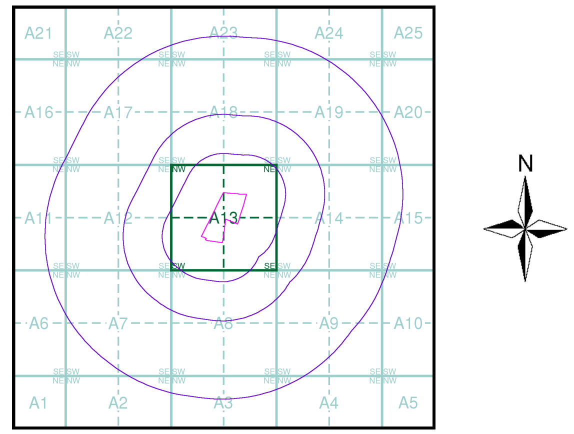
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Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

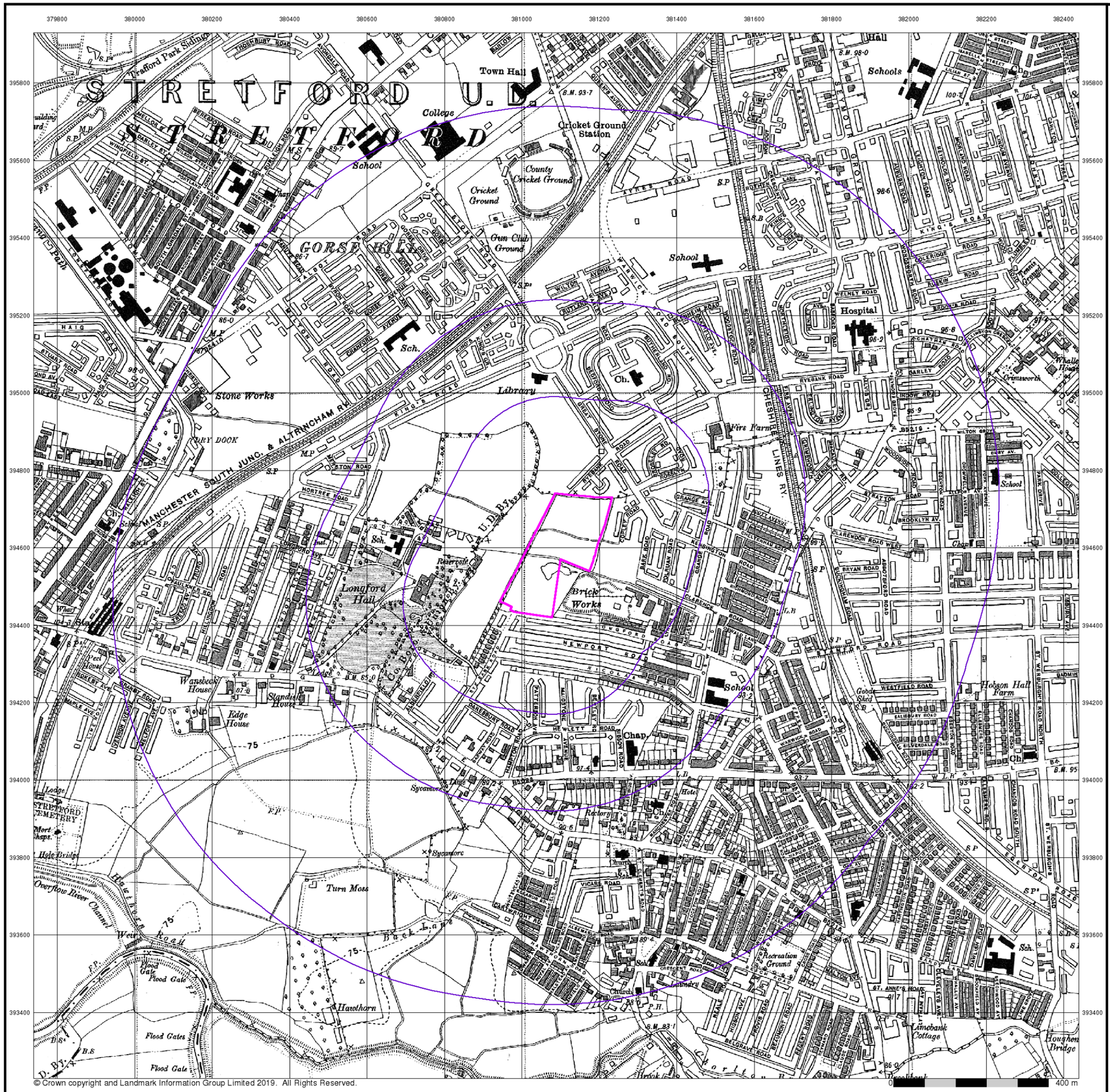
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Cheshire

Published 1938

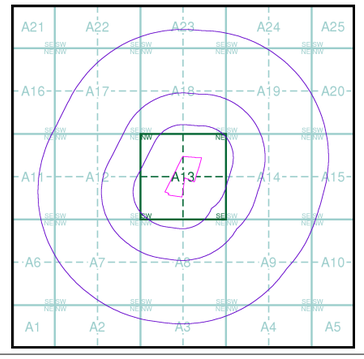
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Map Name(s) and Date(s)

009NE
1938
1:10,560

Historical Map - Slice A



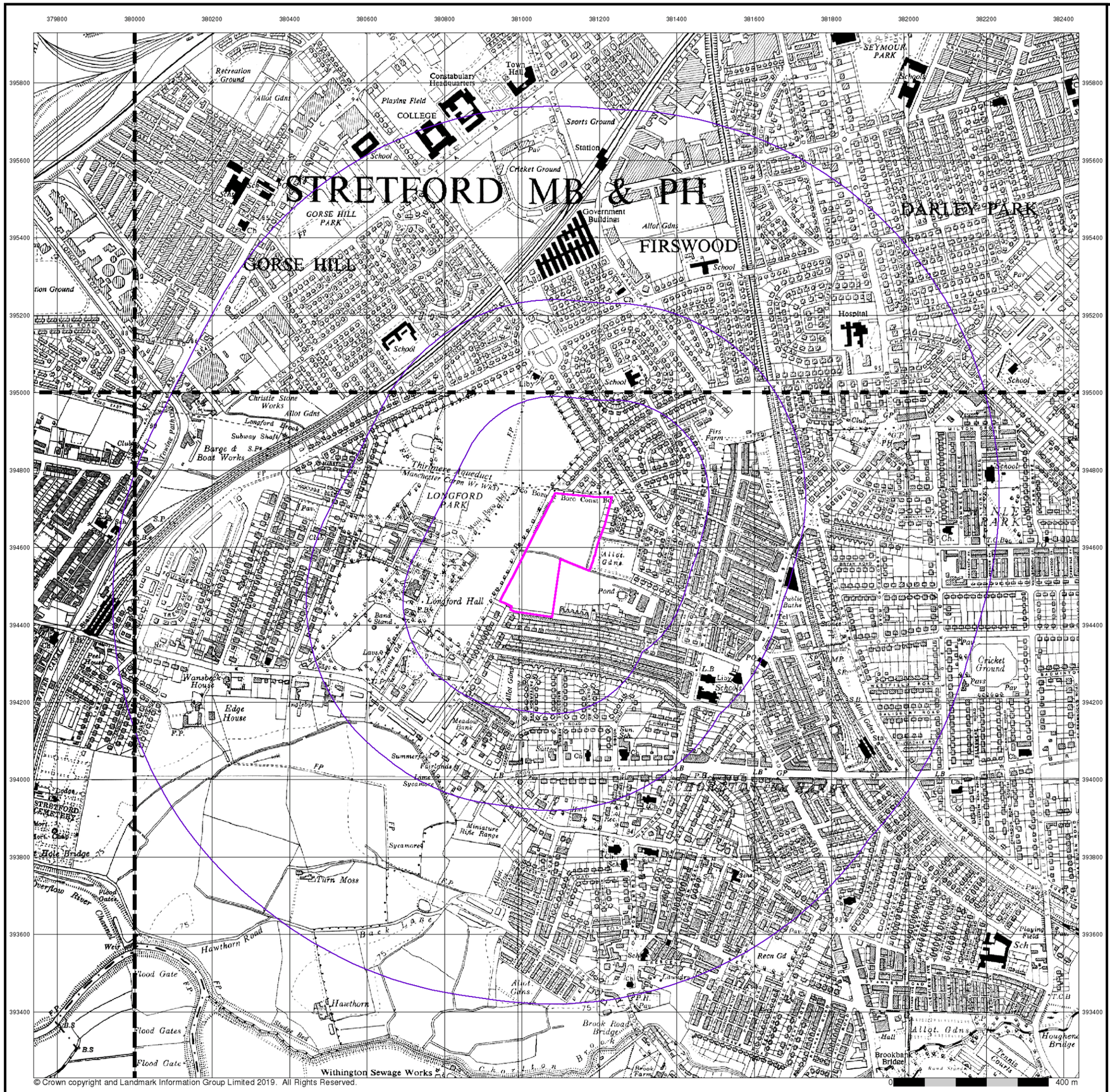
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Ordnance Survey Plan

Published 1954 - 1956

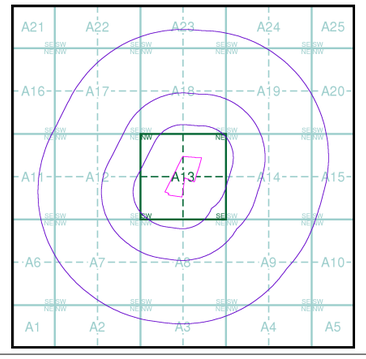
Source map scale - 1:10,000

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Map Name(s) and Date(s)

SJ79NE 1956 1:10,560	SJ89NW 1956 1:10,560
SJ79SE 1954 1:10,560	SJ89SW 1955 1:10,560

Historical Map - Slice A



Order Details

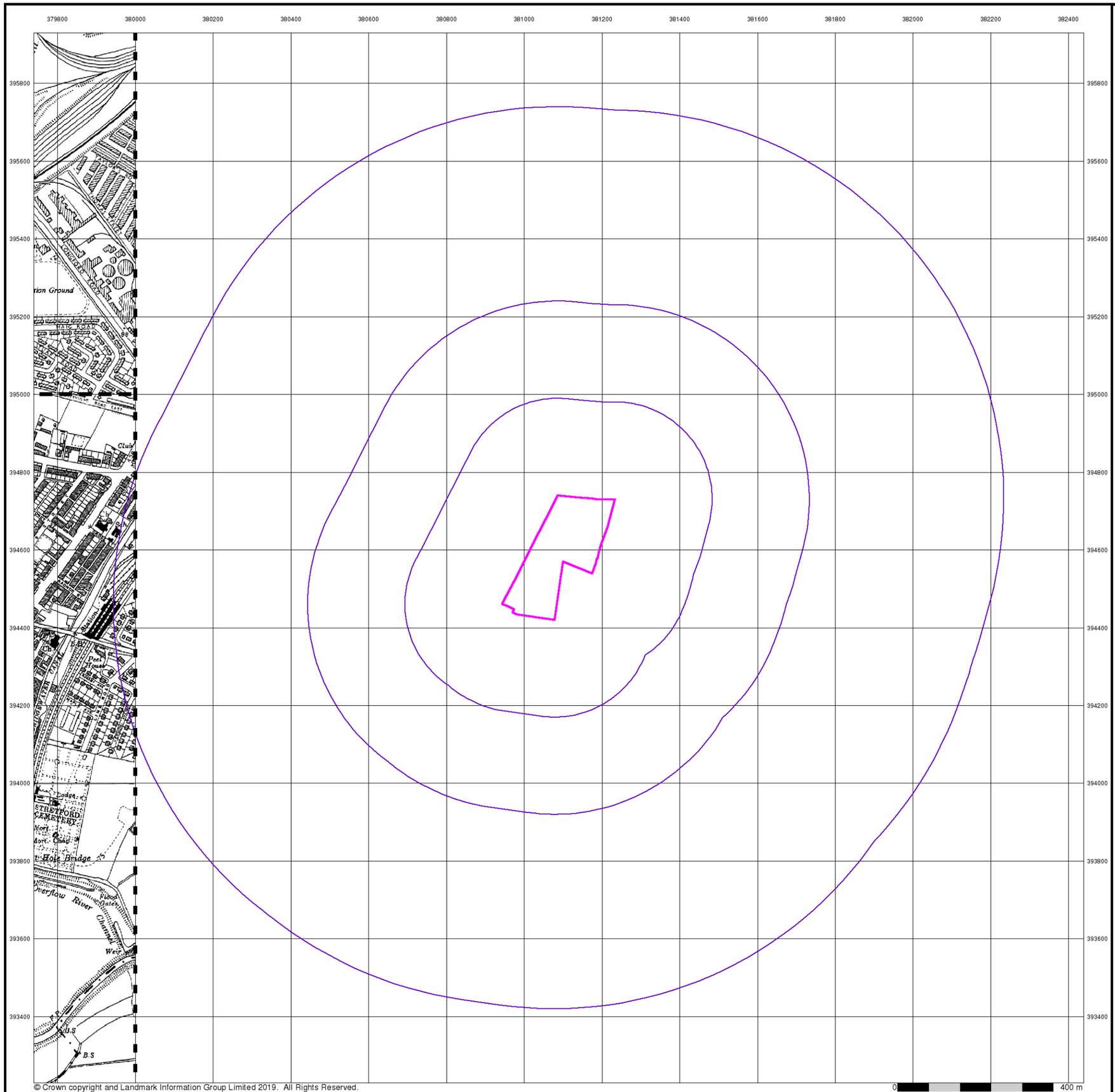
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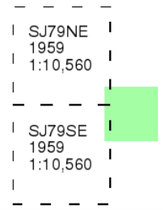
Ordnance Survey Plan

Published 1959

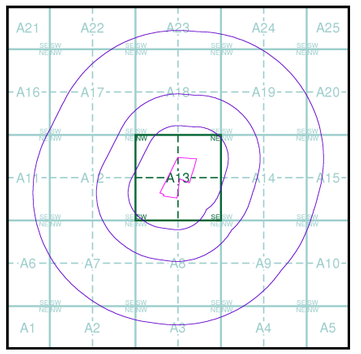
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice A



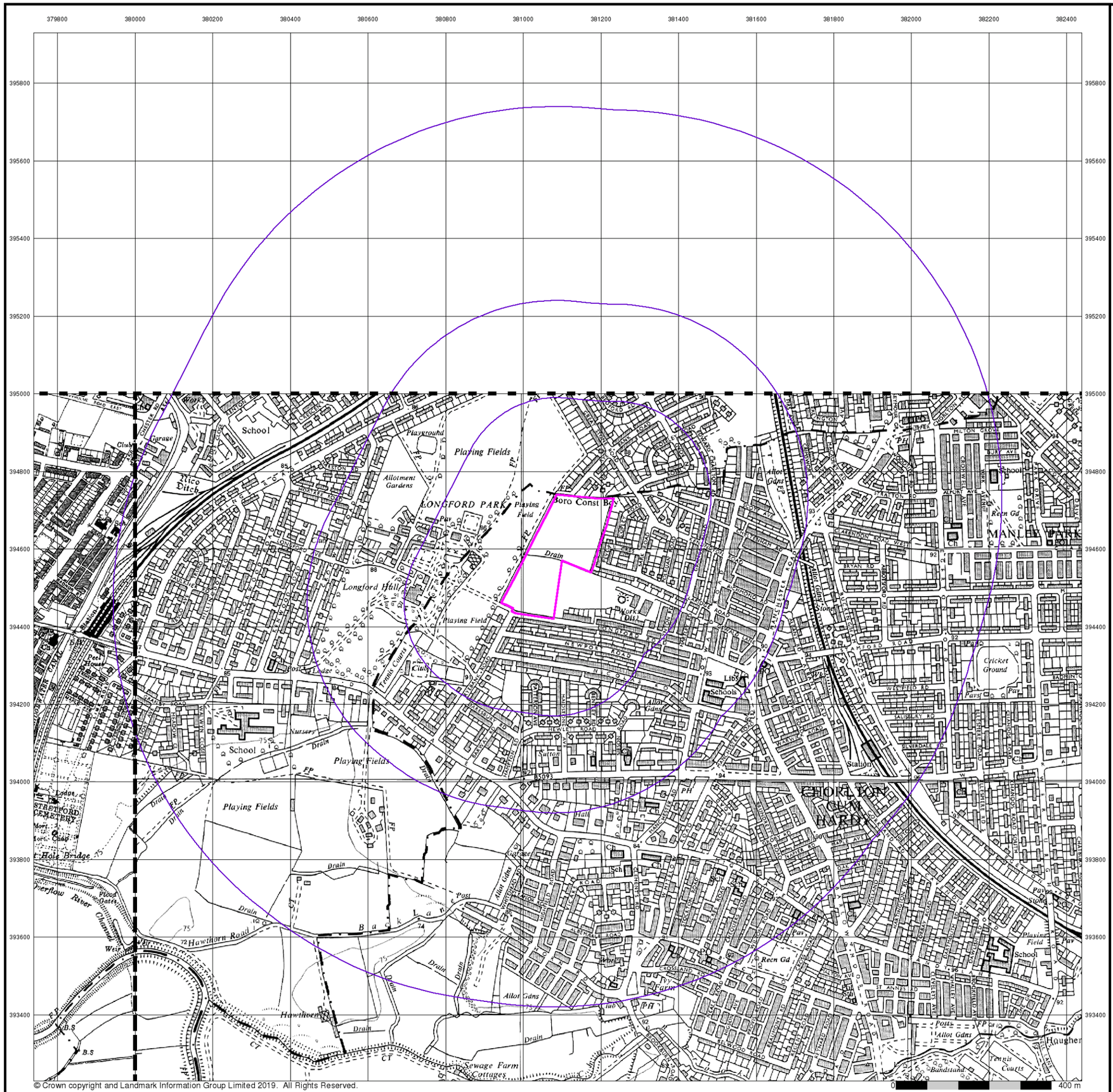
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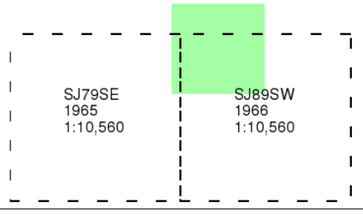
Ordnance Survey Plan

Published 1965 - 1966

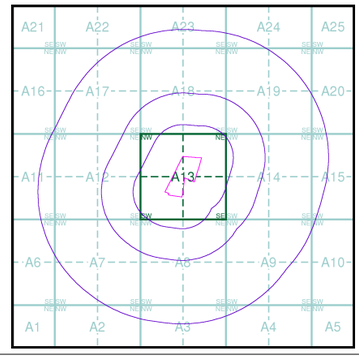
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

St. Johns R C Primary School, Chepstow Road, MANCHESTER, M21 9SN

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e3p

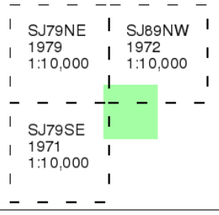
Ordnance Survey Plan

Published 1971 - 1979

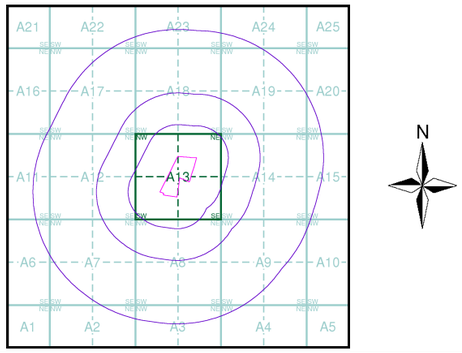
Source map scale - 1:10,000

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Map Name(s) and Date(s)



Historical Map - Slice A



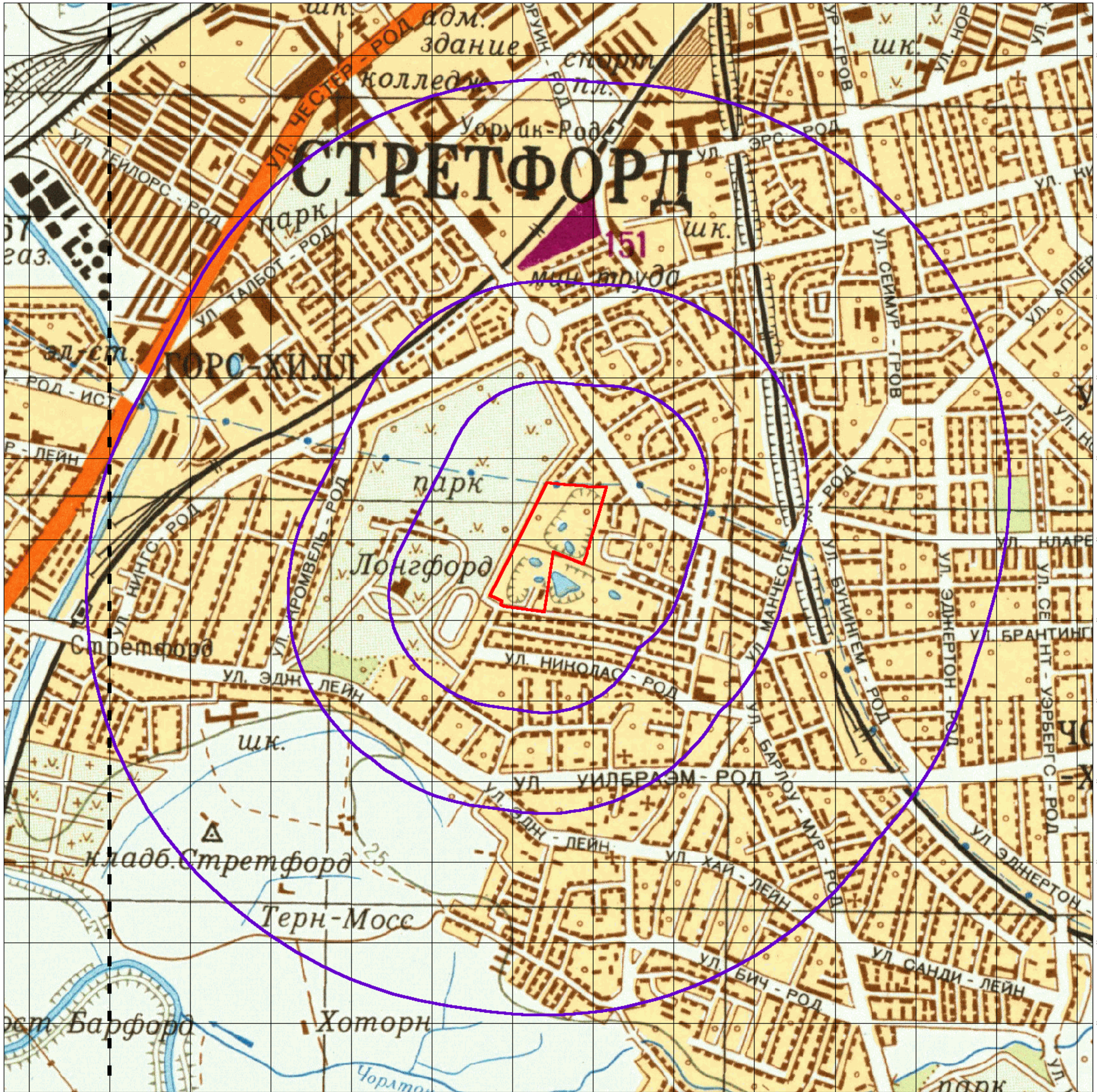
Order Details

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Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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0 400 m

Manchester

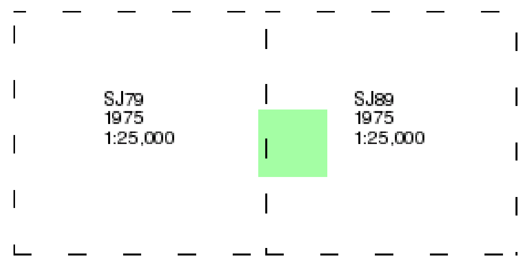
Published 1975

Source map scale - 1:25,000

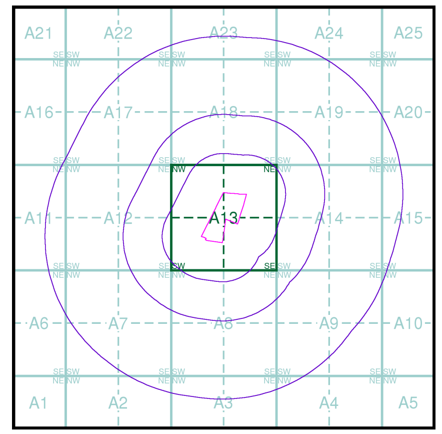
These maps were produced by the Russian military during the Cold War between 1950 and 1997, and cover 103 towns and cities throughout the U.K. The maps are produced at 1:25,000, 1:10,000 and 1:5,000 scale, and show detailed land use, with colour-coded areas for development, green areas, and non-developed areas. Buildings are coloured black and important building uses (such as hospitals, post offices, factories etc.) are numbered, with a numbered key describing their use.

They were produced by the Russians for the benefit of navigation, as well as strategic military sites and transport hubs, for use if they were to have invaded the U.K. The detailed information provided indicates that the areas were surveyed using land-based personnel, on the ground, in the cities that are mapped.

Map Name(s) and Date(s)



Russian Map - Slice A



N

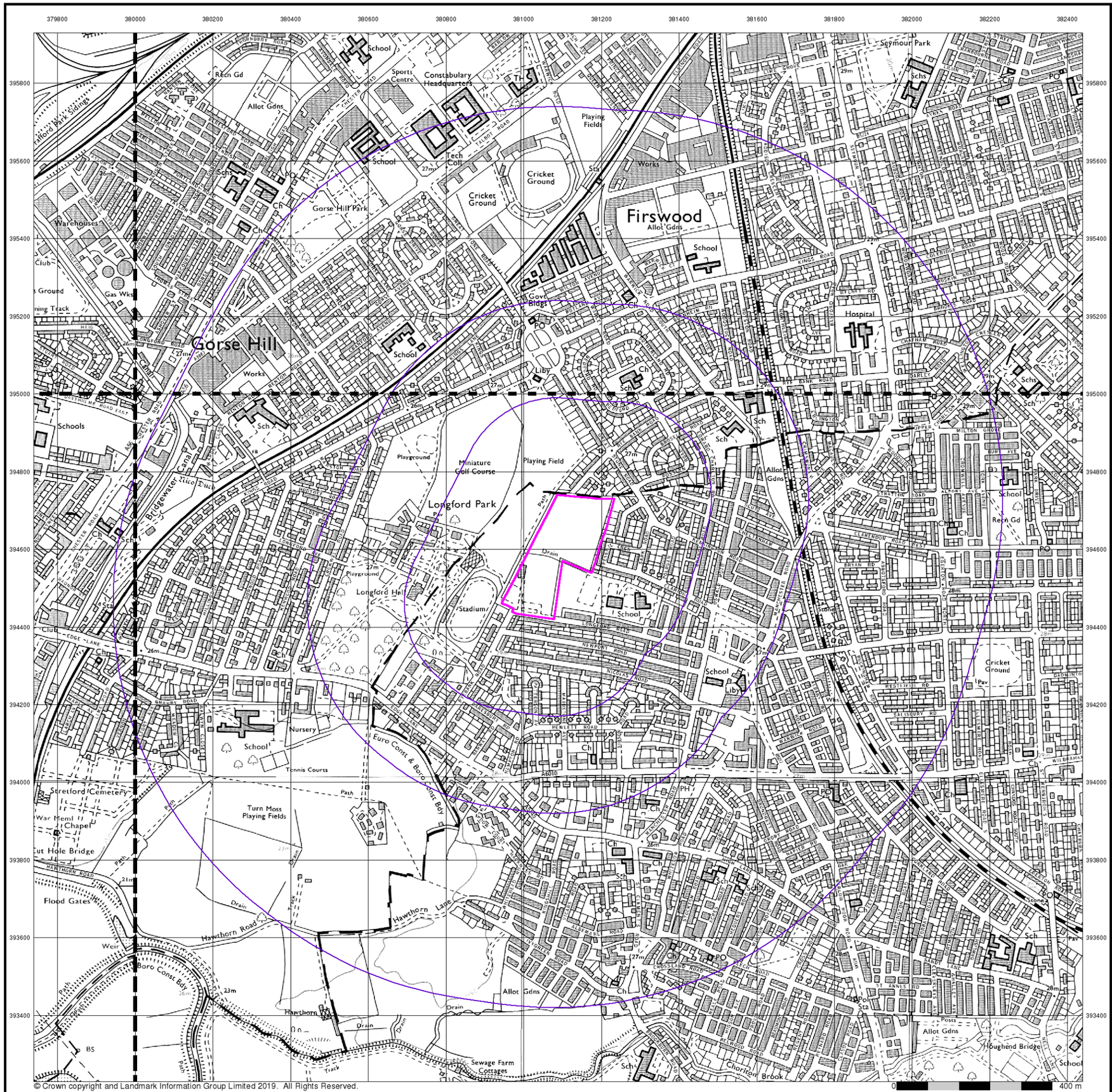
Order Details

Order Number: 222286198_1_1
Customer Ref: 13533-em
National Grid Reference: 381090, 394580
Slice: A
Site Area (Ha): 4.6
Search Buffer (m): 1000

Site Details

St. Johns R C Primary School, Chepstow Road, MANCHESTER, M21 9SN

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Ordnance Survey Plan

Published 1980 - 1984

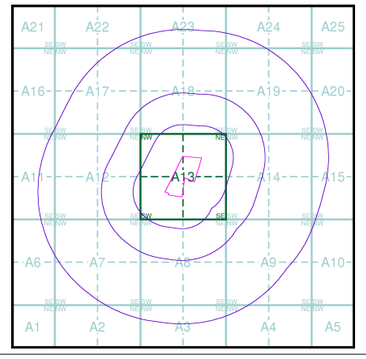
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ79NE 1984 1:10,000	SJ89NW 1980 1:10,000
SJ79SE 1980 1:10,000	SJ89SW 1981 1:10,000

Historical Map - Slice A



Order Details

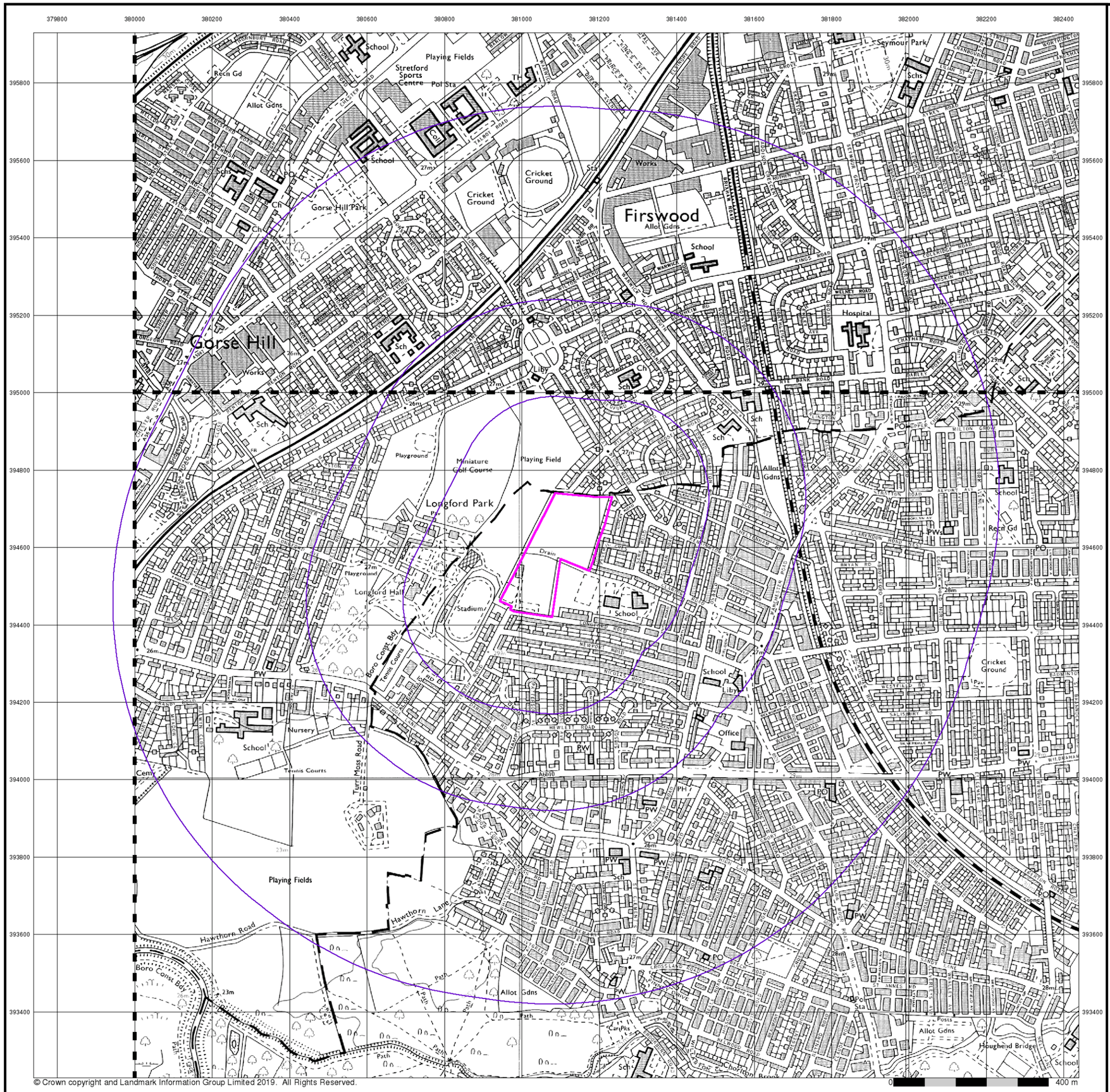
Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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Ordnance Survey Plan

Published 1985 - 1989

Source map scale - 1:10,000

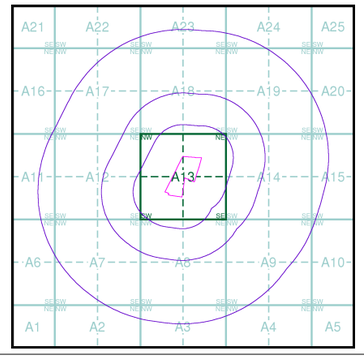
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SJ89NW
1985
1:10,000

SJ89SW
1989
1:10,000

Historical Map - Slice A



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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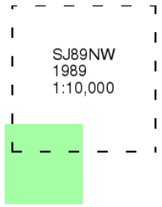
Ordnance Survey Plan

Published 1989

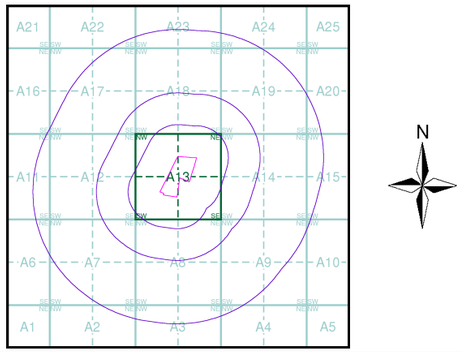
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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Ordnance Survey Plan

Published 1990 - 1994

Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

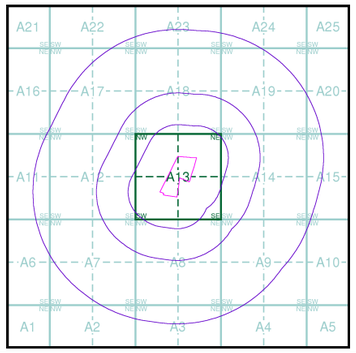
Map Name(s) and Date(s)

SJ79NE 1990 1:10,000

SJ89NW 1994 1:10,000

SJ79SE 1991 1:10,000

Historical Map - Slice A



Order Details

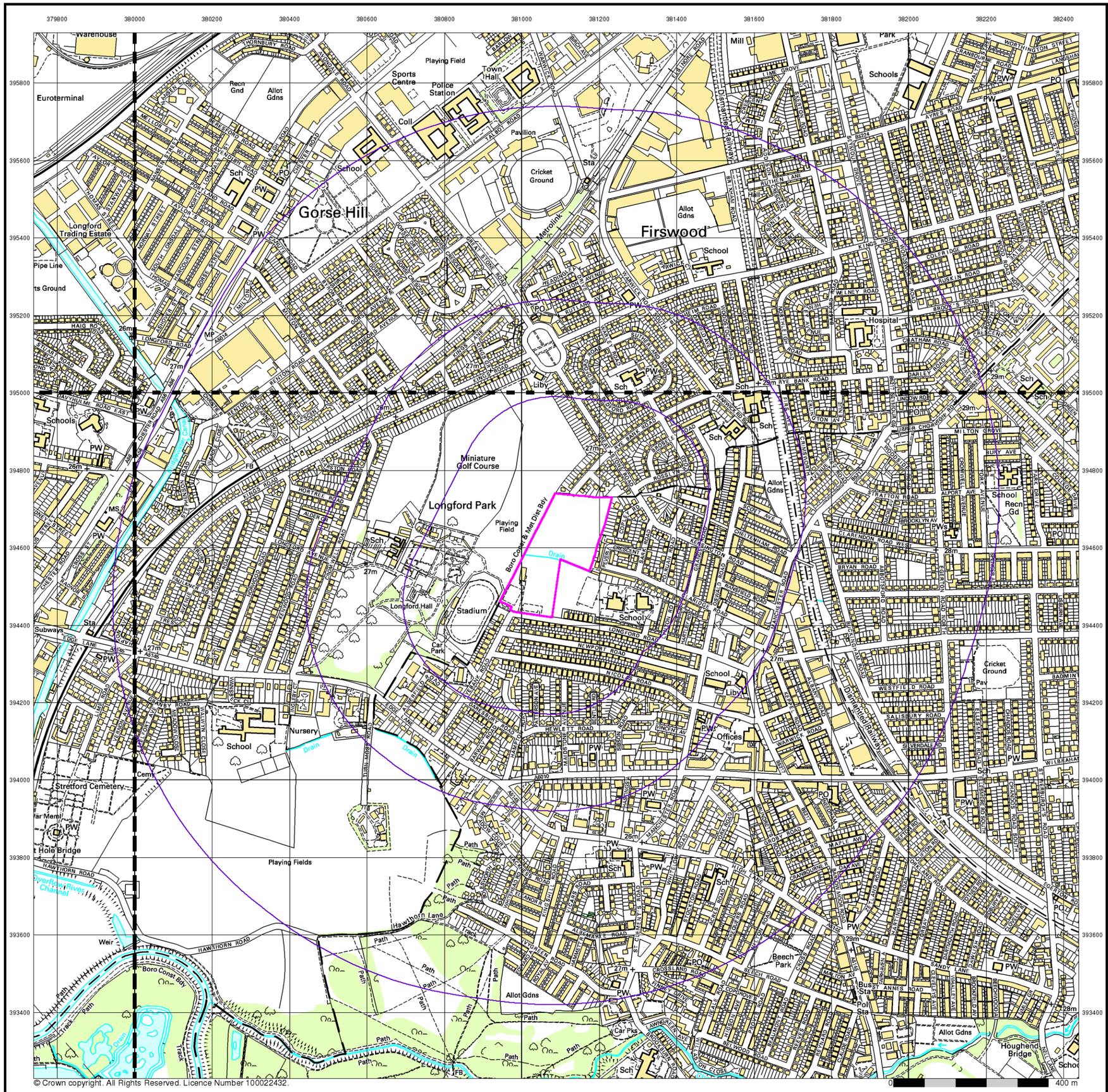
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Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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10k Raster Mapping

Published 1999

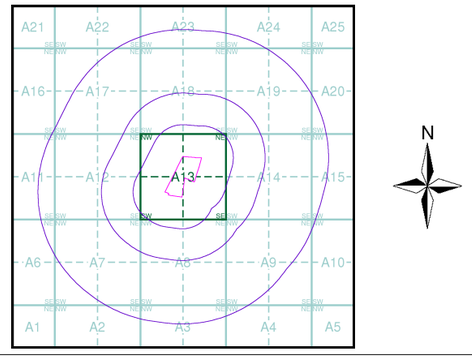
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SJ79NE 1999 1:10,000	SJ89NW 1999 1:10,000
SJ79SE 1999 1:10,000	SJ89SW 1999 1:10,000

Historical Map - Slice A



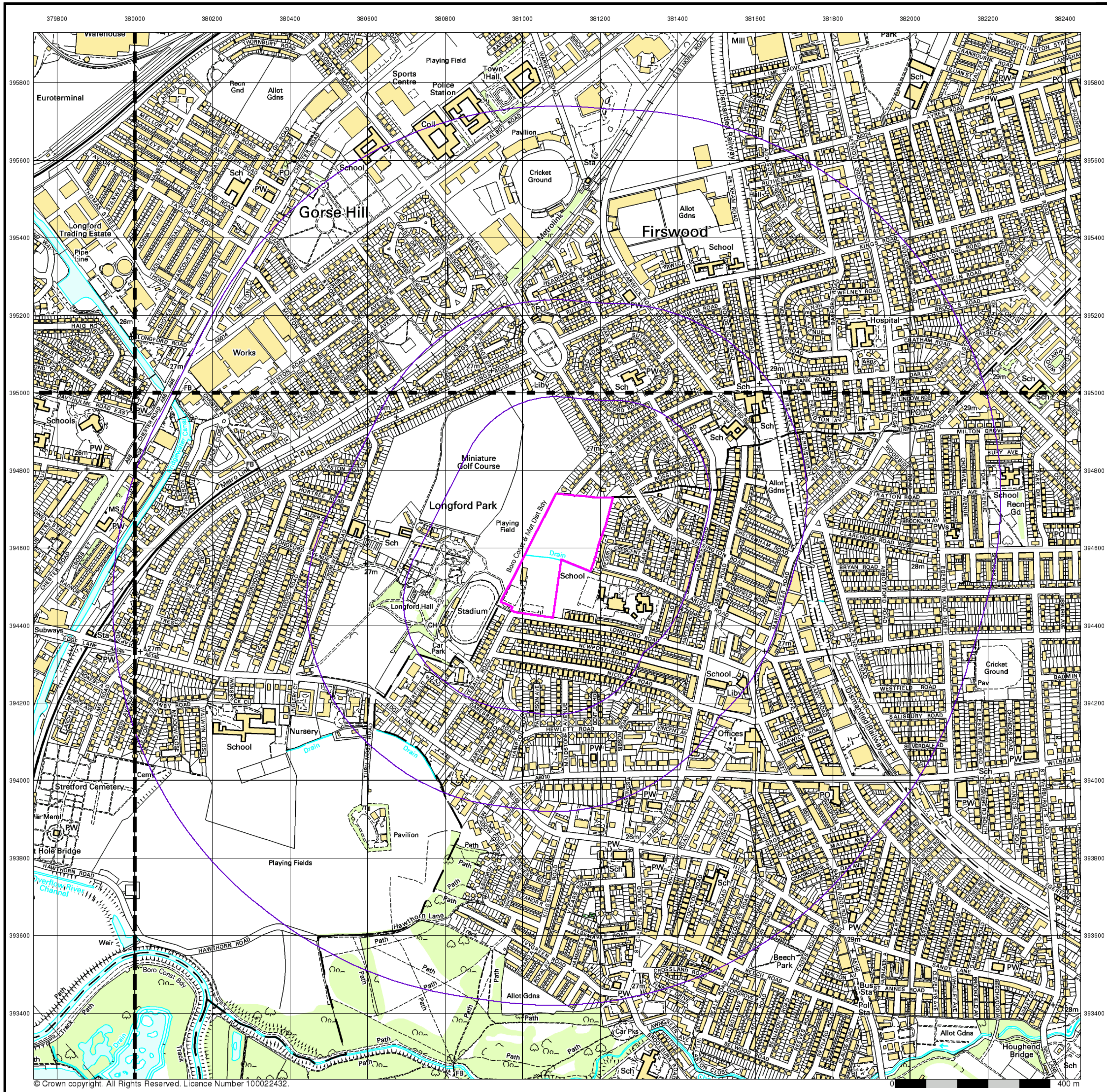
Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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10k Raster Mapping

Published 2006

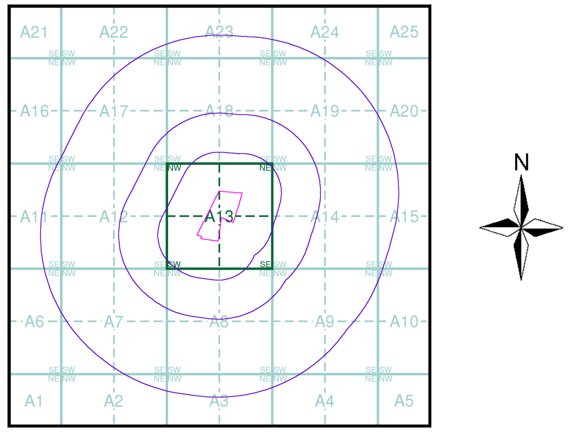
Source map scale - 1:10,000

The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SJ79NE 2006 1:10,000	SJ89NW 2006 1:10,000
SJ79SE 2006 1:10,000	SJ89SW 2006 1:10,000

Historical Map - Slice A



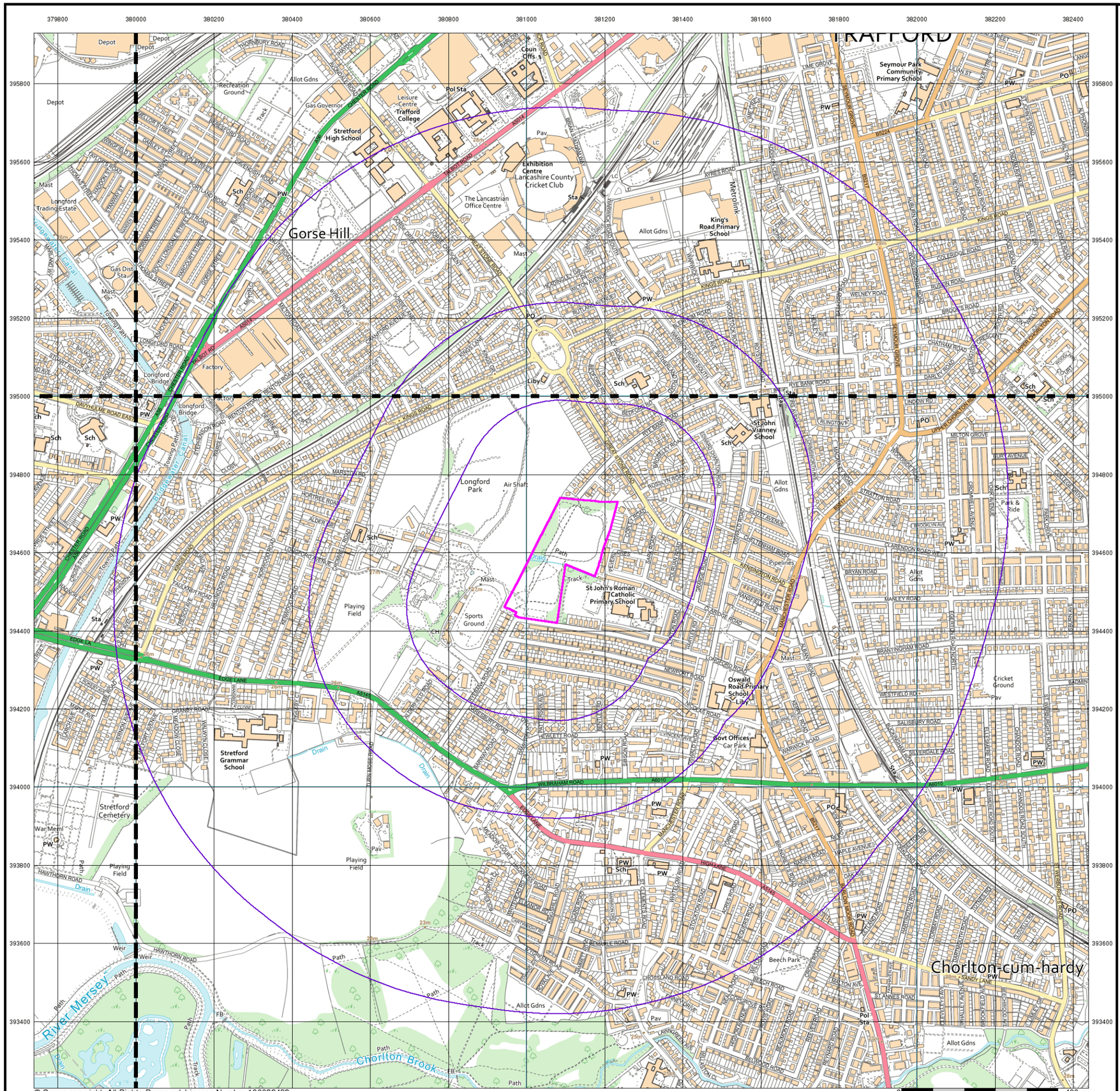
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Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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VectorMap Local

Published 2019

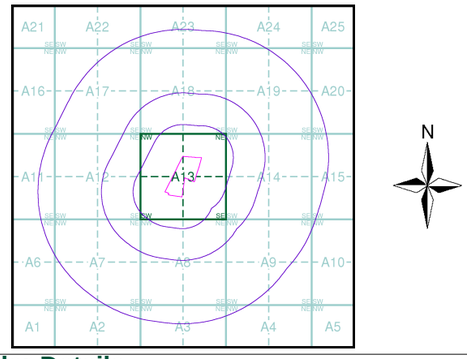
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SJ79NE 2019 Variable	SJ89NW 2019 Variable
SJ79SE 2019 Variable	SJ89SW 2019 Variable

Historical Map - Slice A



Order Details

Order Number:	222286198_1_1
Customer Ref:	13533-em
National Grid Reference:	381090, 394580
Slice:	A
Site Area (Ha):	4.6
Search Buffer (m):	1000

Site Details

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APPENDIX VI
EXPLORATORY HOLE LOGS



Trial Pit Log

TrialPit No: TP101
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Date 03/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70	Scale 1:30
Client: Step Places		Depth 2.40	Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
	1.50	ES					MADE GROUND: Black sandy gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of ash, asphalt, concrete, brick and plastic. Cobbles are sub-angular of concrete and brick. (Slight hydrocarbon odour).
▼ 1.90				2.40			End of Pit at 2.40m

1
2
3
4

Trial Pit Photographs



Trial Pit 101



Trial Pit 101 Spoil

Remarks: 1.Terminated at 2.40m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 1.90m bgl. 3.Excavation slow due to cobbles within Made Ground. 4. Hydrocarbon odour within Made Ground.

Stability: Stable

Trial Pit Log

TrialPit No: TP102
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Date 03/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70	Scale 1:30
Client: Step Places		Depth 2.30	Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.20			MADE GROUND: Brown sandy gravel with frequent rootlets (Reworked Topsoil). Gravel Is fine to coarse, sub-angular to sub-rounded of concrete and brick.
							MADE GROUND: Brown sandy, clayey gravel (ashy) with occasional cobbles and rare boulders. Gravel is fine to coarse, sub-angular to sub-rounded of ash, sandstone, concrete and brick. Cobbles are sub-angular of concrete. Boulders are sub-angular of concrete.
				1.50			MADE GROUND: Brown fine to medium sand.
				1.60			MADE GROUND: Brown gravelly clay. Gravel is fine to coarse, sub-angular to sub-rounded of asphalt and concrete. (Reworked clay)
▼ 2.10	2.10	ES					
				2.30			End of Pit at 2.30m

1
2
3
4

Trial Pit Photographs



Trial Pit 102



Trial Pit 102 Spoil

Remarks: 1.Terminated at 2.30m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 2.10m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP103
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 03/12/2019
Location: Chorlton		Dimensions (m): 2.30 x 0.60 Depth 2.40	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown sandy gravel with frequent cobbles and rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick.
							MADE GROUND: Brown slightly sandy clayey gravel with frequent cobbles and occasional boulders. Gravel is fine to coarse sub-angular to sub-rounded of sandstone, mudstone, concrete, metal, plastic and timber. Cobbles are sub-angular of brick and concrete. Boulders are sub-angular of concrete.
	1.30	ES		1.20			MADE GROUND: Black gravelly medium to coarse sand (ash) with frequent cobbles. Gravel is fine to coarse sub-angular to sub-rounded of concrete, glass, timber, ash and brick. Cobbles are sub-angular of concrete, glass, timber and brick.
	1.50	B					
▼ 2.10	2.10	ES		2.10			MADE GROUND: Soft blue grey clayey medium sand (ash).
	2.20	ES		2.40			End of Pit at 2.40m

1
2
3
4

Trial Pit Photographs



Trial Pit 103



Trial Pit 103 Spoil

Remarks: 1.Terminated at 2.40m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 2.10m bgl.

Stability: Unstable in northern elevation of trial pit at 1.00m bgl.

Trial Pit Log

TrialPit No: TP104
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 03/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70, Depth 2.10	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
	0.80	ES					MADE GROUND: Brown sandy, clayey gravel (ashy) with occasional cobbles and rare boulders. Gravel is fine to coarse, sub-angular to sub-rounded of ash, sandstone, plastic, wood, concrete and brick. Cobbles are sub-angular of concrete. Boulders are sub-angular of concrete.
▼ 2.10				2.10			End of Pit at 2.10m

1
2
3
4

Trial Pit Photographs



Trial Pit 104



Trial Pit 104 Spoil

Remarks: 1.Terminated at 2.10m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 2.10m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP105
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 03/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
							MADE GROUND: Black gravel (ashy) with frequent cobbles and occasional boulders. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete, ash and brick. Cobbles are sub-angular of concrete and brick. Boulders are sub-angular of concrete.
▼ 2.20				2.20			End of Pit at 2.20m

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Trial Pit Photographs



Trial Pit 105



Trial Pit 105 Spoil

Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 2.20m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP106
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 03/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70 Depth 1.70	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
				0.30			MADE GROUND: Brown gravel. Gravel is coarse, sub-angular of concrete and limestone.
▼ 1.60	1.50	ES					MADE GROUND: Black gravel (ashy) with frequent cobbles and occasional boulders. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, timber, ash, concrete and brick. Cobbles are sub-angular of concrete and brick. Boulders are sub-angular of concrete.
				1.70			End of Pit at 1.70m

1 2 3 4

Trial Pit Photographs



Trial Pit 106



Trial Pit 106 Spoil

Remarks: 1.Terminated at 1.70m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 1.60m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP107
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.00 × 0.60	Scale 1:30
Client: Step Places		Depth 2.40	Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
	1.80	ES					MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles and boulders. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, ash and brick. Cobbles are sub-angular of sandstone, brick and concrete. Boulders are sub-angular of concrete.
▼ 2.30				2.40			End of Pit at 2.40m

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Trial Pit Photographs



Trial Pit 107



Trial Pit 107 Spoil

Remarks: 1.Terminated at 2.40m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 2.30m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP108
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.00 x 0.60 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	1.00 1.00	B ES		0.20			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
							MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles and boulders. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, ash, copper, asphalt and brick. Cobbles are sub-angular of sandstone, brick and concrete. Boulders are sub-angular of concrete.
▼ 2.20				2.20			End of Pit at 2.20m

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Trial Pit Photographs



Trial Pit 108



Trial Pit 108 Spoil

Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 2.20m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP109
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.30			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
▼ 2.00							MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, ash, rebar, asphalt, rare glass and brick. Cobbles are sub-angular of sandstone, brick and concrete.
				2.20			End of Pit at 2.20m

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Trial Pit Photographs



Trial Pit 109



Trial Pit 109 Spoil

Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater ingress. 2.Rapid groundwater strike at 2.00m bgl. 3.Excavation slow due to compact Made Ground.

Stability: Stable

Trial Pit Log

TrialPit No: TP110
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
2.10				2.20			MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles and boulders. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, ash and brick. Cobbles are sub-angular of sandstone, brick and concrete. Boulders are sub-angular of concrete.
							End of Pit at 2.20m

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Trial Pit Photographs



Trial Pit 110



Trial Pit 110 Spoil

Remarks: 1.Terminated due to continued collapse at 0.80m bgl. 2.Rapid Groundwater strike at 2.10m bgl

Stability: Unstable

Trial Pit Log

TrialPit No: TP111
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70, Depth 1.80	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
	1.20	ES					MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles and boulders. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, ash and brick. Cobbles are sub-angular of sandstone, brick and concrete. Boulders are sub-angular of concrete. (Soft blue, grey clayey medium sand (White ash) in east at 1.20m bgl.)
				1.80			End of Pit at 1.80m

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Trial Pit Photographs



Trial Pit 111



Trial Pit 111 Spoil

Remarks: 1.Terminated due to continued collapse at 1.80m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP112
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70	Scale 1:30
Client: Step Places		Depth 1.90	Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.10			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
				0.20			MADE GROUND: Brown gravel. Gravel is fine to coarse, sub-angular to sub-rounded of concrete.
	1.50	ES					MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles and boulders. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, ash, rebar and brick. Cobbles are sub-angular of sandstone, brick and concrete. Boulders are sub-angular of concrete.
				1.90			End of Pit at 1.90m

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Trial Pit Photographs



Trial Pit 112



Trial Pit 112 Spoil

Remarks: 1.Terminated due to continued collapse at 1.90m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP113
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70, Depth 2.00	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
	1.50	ES					MADE GROUND: Black red sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of asphalt, brick, ash, rebar and concrete. Cobbles are sub-angular to sub-rounded of brick and concrete. Boulders are sub-angular of concrete and brick. Boulders are angular to sub-rounded of brick and concrete. (Soft grey blue clayey medium sand with ash in southern elevation between 1.10m and 1.50m bgl)
▼ 1.80				2.00			End of Pit at 2.00m

1 2 3 4

Trial Pit Photographs



Trial Pit 113



Trial Pit 113 Spoil

Remarks: 1.Terminated at 2.00m bgl due to collapse. 2.Rapid groundwater strike at 1.80m bgl. 3.Excavation slow due to cobbles within Made Ground. 4. Large concrete and brick obstructions within strata at 0.40m and 0.30m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP114
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.30	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
				0.50			MADE GROUND: Brown gravel. Gravel is fine to coarse, sub-angular to sub-rounded of concrete.
▼ 2.20							MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles and boulders. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, ash and brick. Cobbles are sub-angular of sandstone, brick and concrete. Boulders are sub-angular of concrete.
				2.30			End of Pit at 2.30m

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Remarks: 1.Complete. 2.Rapid groundwater strike at 2.20m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP115
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
2.10							MADE GROUND: Black sandy gravel (ashy) with frequent cobbles and plastic sheeting. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, brick and concrete. Cobbles are sub-angular of brick and concrete. (Pockets of soft blue grey clayey medium sand (ash) at 1.60m bgl).
				2.20			End of Pit at 2.20m

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Remarks: 1.Complete. 2.Rapid groundwater strike at 2.10m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP116
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 04/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70, Depth 2.40	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
	1.70	ES					MADE GROUND: Black clayey sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, brick, ash, tin and potential asbestos pipe. Cobbles are sub-angular of brick. (Hydrocarbon odour between 1.50m to 2.40m bgl).
▼ 2.00				2.40			End of Pit at 2.40m

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Trial Pit Photographs



Trial Pit 116



Trial Pit 116 Spoil

Remarks: 1. Terminated due to potential asbestos pipe. 2.Rapid groundwater strike at 2.00m bgl. 3. Strong hydrocarbon odour at 1.50m bgl to 2.40m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP117
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70 Depth 1.60	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
1.40 ▼				0.20			MADE GROUND: Brown sandy gravel with frequent cobbles. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, brick and sandstone. Cobbles are sub-angular of concrete, brick and sandstone.
				1.60			MADE GROUND: Black gravelly medium to coarse sand (ashy) with frequent cobbles and boulders. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt, ash and brick. Cobbles are sub-angular of sandstone, brick and concrete. Boulders are sub-angular of concrete.
							End of Pit at 1.60m

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Trial Pit Photographs



Trial Pit 117



Trial Pit 117 Spoil

Remarks: 1.Terminated due to rapid groundwater ingress. 2.Rapid groundwater strike at 1.40m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP118
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70 Depth 1.90	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown slightly sandy gravel (ash) with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
							MADE GROUND: Brown sandy gravel (ashy). Gravel is fine to coarse, of sandstone, mudstone, tin, ash, metal and concrete. Cobbles are sub-angular of sub-rounded of brick and concrete. Boulders are sub-angular of concrete.
				1.90			End of Pit at 1.90m

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Trial Pit Photographs



Trial Pit 118



Trial Pit 118 Spoil

Remarks: 1.Terminated at 1.90m bgl due to continued collapse.

Stability: Unstable

Trial Pit Log

TrialPit No: TP119
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 1.80	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
							MADE GROUND: Brown sandy gravel (ashy). Gravel is fine to coarse, of sandstone, mudstone, tin, ash, metal, rebar, potential asbestos sheeting and concrete. Cobbles are sub-angular of sub-rounded of brick and concrete. Boulders are sub-angular of concrete. (Obstructions of concrete at 0.50m long).
	1.80	ES		1.80			End of Pit at 1.80m

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Trial Pit Photographs



Trial Pit 119



Trial Pit 119 Spoil

Remarks: 1.Terminated at 1.80m bgl due to asbestos sheeting.

Stability: Stable

Trial Pit Log

TrialPit No: TP120
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): Depth 2.20 (2.20 × 0.70)	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
	1.00	B					MADE GROUND: Brown sandy gravel (ashy). Gravel is fine to coarse, of sandstone, mudstone, tin, ash, metal, and concrete. Cobbles are sub-angular of sub-rounded of brick and concrete. Boulders are sub-angular of concrete. (Pockets of blue grey clayey medium sand (White ash)) (Strong hydrocarbon odour at 2.10m bgl).
▼ 2.10	2.10	ES		2.20			End of Pit at 2.20m

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Trial Pit Photographs



Trial Pit 120



Trial Pit 120 Spoil

Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater strike. 2.Rapid groundwater strike at 2.10m bgl. 3.Strong hydrocarbon odour at 2.10m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP121
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
							MADE GROUND: Black sandy gravel (ashy) with frequent cobbles and boulders and pockets of blue Le Blanc Process Waste. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick and concrete. Boulders are sub-angular of concrete. (Brick Fill)
				2.20			End of Pit at 2.20m

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Remarks: 1.Terminated at 2.20m bgl due to continued collapse.

Stability: Unstable

Trial Pit Log

TrialPit No TP122
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70 Depth 3.00	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
	1.00	ES					MADE GROUND: Black gravelly coarse sand (ash) with frequent cobbles and occasional boulders. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick. Boulders are sub-angular of concrete. (Concrete obstructions 0.50m in length).
▼ 2.90				3.00			End of Pit at 3.00m

1 2 3 4

Trial Pit Photographs



Trial Pit 122



Trial Pit 122 Spoil

Remarks: 1. Complete. 2. Water strike encountered at 2.90m bgl (Slow ingress).

Stability: Unstable

Trial Pit Log

TrialPit No: TP123
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
▼ 2.00							MADE GROUND: Black gravelly coarse sand (ash) with frequent cobbles and occasional boulders. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick. Boulders are sub-angular of concrete. (Concrete obstructions 0.50m in length).
				2.20			End of Pit at 2.20m

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Trial Pit Photographs



Trial Pit 123



Trial Pit 123 Spoil

Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater strike. 2. Groundwater strike encountered at 2.00m bgl (Slow ingress).

Stability: Unstable

Trial Pit Log

TrialPit No: TP124
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
	0.80	ES					MADE GROUND: Black gravelly coarse sand (ash) with frequent cobbles and occasional boulders. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick. Boulders are sub-angular of concrete. (Concrete obstructions 0.50m in length).
	1.50	B					
▼ 2.10				2.20			End of Pit at 2.20m

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Trial Pit Photographs



Trial Pit 124



Trial Pit 124 Spoil

Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater ingress and continued collapse. 2.Rapid groundwater strike at 2.10m bgl.

Stability: Unstable

Trial Pit Log

TrialPit No: TP125
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70 Depth 2.10	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
							MADE GROUND: Black sandy gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of ash, glass, pottery, ceramic, rebar, metal, asphalt, concrete, brick and plastic. Cobbles are sub-angular of concrete and brick. (Slight hydrocarbon odour).
▼ 2.10				2.10			End of Pit at 2.10m

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Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater ingress and continued collapse. 2.Rapid groundwater strike at 2.10m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP126
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.30	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
	1.00	ES					MADE GROUND: Brown sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick and concrete.
▼ 2.20				2.30			End of Pit at 2.30m

1
2
3
4

Trial Pit Photographs



Trial Pit 126



Trial Pit 126 Spoil

Remarks: 1.Terminated at 2.20m bgl due to rapid groundwater ingress and continued collapse. 2.Rapid groundwater strike at 2.20m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP127
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70, Depth 2.00	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
▼ 1.70							MADE GROUND: Brown sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular to sub-rounded of concrete. (Hydrocarbon odour encountered at 1.80m bgl).
				2.00			End of Pit at 2.00m

1 2 3 4

Trial Pit Photographs



Trial Pit 127



Trial Pit 127 Spoil

Remarks: 1.Complete. 2.Rapid groundwater strike at 1.70m bgl. 3.Strong hydrocarbon odour at 1.80m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP128
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 × 0.70 Depth 3.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular of concrete and brick.
	0.80	ES					MADE GROUND: Brown sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick and concrete.
				3.20			End of Pit at 3.20m

1
2
3
4

Trial Pit Photographs



Trial Pit 128



Trial Pit 128 Spoil

Remarks: Complete.

Stability: Stable

Trial Pit Log

TrialPit No: TP129
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 1.90	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.10			MADE GROUND: Asphalt.
							MADE GROUND: Light brown sandy gravel with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone and brick. Cobbles are sub-angular of brick.
	1.30 1.30	B ES		1.20			MADE GROUND: Black sandy gravel (ashy) pockets of blue grey clayey medium sand (ash). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, ash, mudstone, asphalt and brick. Cobbles are sub-angular of brick.
▼ 1.90				1.90			End of Pit at 1.90m

1
2
3
4

Trial Pit Photographs



Trial Pit 129



Trial Pit 129 Spoil

Remarks: 1. Terminated due to rapid groundwater ingress at 1.90m bgl.

Stability: Stable

Trial Pit Log

TrialPit No: TP130
Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: - Level:	Date 05/12/2019
Location: Chorlton		Dimensions (m): 2.20 x 0.70 Depth 2.20	Scale 1:30
Client: Step Places			Logged E.Moss

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.10			MADE GROUND: Asphalt.
							MADE GROUND: Light brown sandy gravel with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone and brick. Cobbles are sub-angular of brick.
				1.30			MADE GROUND: Black sandy gravel (ashy) with pockets of soft grey blue clayey medium sand (ash). Gravel is fine to coarse, sub-angular to sub-rounded of concrete, ash, mudstone, asphalt and brick. Cobbles are sub-angular of brick.
▼ 2.00				2.20			End of Pit at 2.20m

1
2
3
4

Trial Pit Photographs



Trial Pit 130



Trial Pit 130 Spoil

Remarks: 1.Terminate due to rapid groundwater strike at 2.0 m bgl.

Stability: Stable

Borehole Log

Borehole No. **WS101**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 03/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30			MADE GROUND: Brown slightly gravelly clayey fine to medium sand with occasional rootlets (Reworked Topsoil) .Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete.
		1.00		N=12 (2,5/5,3,2,2)				MADE GROUND: Red brown sandy gravel with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of brick, concrete and sandstone. Cobbles are sub-angular of brick.
		1.20	ES		1.20			MADE GROUND: Medium dense brown sandy gravel. Gravel is fine to coarse, sub-angular to sub-rounded of concrete, asphalt and brick. (Hydrocarbon odour encountered between 1.50m to 5.00m bgl). (Circa 2.00m bgl becomes loose) (No return between 2.00m and 3.00m bgl, assume continuation of above).
		1.80	ES					
		2.00		N=5 (2,1/1,1,1,2)				
		3.00		N=2 (0,0/0,0,0,2)				
					3.20			MADE GROUND: Very loose dark brown slightly clayey gravel. Gravel is fine to coarse, sub-angular to sub-rounded of asphalt, concrete and brick. (Becoming medium dense at circa 4.00m bgl) (Hydrocarbon odour).
	▼	4.00		N=18 (2,3/5,5,4,4)				
		4.80	ES					
		5.00		N=16 (3,3/4,4,4,4)				
					5.45			End of borehole at 5.45 m

Remarks

1.Complete. 2.No return at 2.00m to 3.00m bgl. 3.Fell in to 3.00m bgl 3.Slow groundwater strike at 4.30m bgl 4.Strong hydrocarbon odour between 1.50m and 5.00m bgl. 5.Monitoring well installed.

Borehole Log

Borehole No. **WS102**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 03/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Brown slightly gravelly clayey fine to medium sand with occasional rootlets (Reworked Topsoil) .Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete.
		1.00		N=4 (5,6/4,0,0,0)	1.00			MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, sub-angular to sub-rounded of brick and concrete.
		2.00		N=1 (1,0/0,0,0,1)				MADE GROUND: Loose black gravelly coarse sand (ash). Gravel is fine to coarse, sub-angular of mudstone, ash, concrete and brick. (Strong hydrocarbon odour encountered between 3.10m and 4.00m bgl). (Circa 2.00m bgl becomes very loose) (Circa 3.00m bgl becomes medium dense) (Circa 4.00m bgl becomes very loose) (Circa 5.00m bgl becomes loose).
		3.00		N=12 (3,3/4,3,3,2)				
		3.20	ES					
	▼	4.00		N=4 (2,2/2,1,0,1)				
		4.20	ES					
		5.00		N=11 (3,3/2,3,3,3)				
					5.45			End of borehole at 5.45 m

Remarks

1.Complete. 2. Collapse in to 3.00m bgl 3.Slow groundwater strike at 4.00m bgl 3.Strong hydrocarbon odour between 3.10m and 4.00m bgl 4.Monitoring well installed.

Borehole Log

Borehole No. **WS103**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 03/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Brown slightly gravelly clayey fine to medium sand with occasional rootlets (Reworked Topsoil) .Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete.
	▼	1.00		N=15 (7,6/6,6,2,1)	1.00			MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, sub-angular to sub-rounded of brick and concrete.
		1.80	ES					MADE GROUND: Loose black gravelly coarse sand (ash). Gravel is fine to coarse, sub-angular of mudstone, ash, concrete and brick. (Circa 2.00m bgl becomes very loose) (Circa 3.00m bgl becomes loose) (Circa 4.00m bgl becomes medium dense) (Circa 5.00m bgl becomes loose).
		2.00		N=2 (1,0/0,0,2,0)				
		3.00		N=11 (2,2/2,2,3,4)				
		4.00		N=12 (5,6/4,2,3,3)				
		5.00		N=7 (3,3/3,2,1,1)				
					5.45			End of borehole at 5.45 m

Remarks

1.Complete. 2. Collapse in to 2.00m bgl 3.Slow groundwater strike at 1.20m bgl 4.Monitoring well installed.

Borehole Log

Borehole No. **WS104**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 03/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			MADE GROUND: Brown slightly gravelly clayey fine to medium sand with occasional rootlets (Reworked Topsoil) .Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete.
	▼	1.00		N=13 (5,6/3,3,3,4)				MADE GROUND: Medium dense light brown slightly gravelly fine sand. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and concrete.
		1.20	ES		1.30			MADE GROUND: Medium dense black gravelly coarse sand (ash). Gravel is fine to coarse, sub-angular of mudstone, ash, concrete and brick. (Strong hydrocarbon odour encountered between 3.10m and 4.00m bgl). (Circa 2.00m bgl becomes very loose) (Circa 3.00m bgl becomes medium dense).
		2.00		N=4 (2,3/2,2,0,0)				
		3.00		N=21 (3,3/4,7,6,4)				
		4.00		N=17 (3,4/4,4,5,4)				
		5.00		N=20 (3,3/4,5,4,7)				
					5.45			End of borehole at 5.45 m

1 2 3 4 5 6 7 8 9 10

Remarks

1.Complete. 2. Collapse in to 2.50m bgl 3.Slow groundwater strike at 1.20m bgl 4.Monitoring well installed.

Borehole Log

Borehole No. **WS105**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 03/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Brown slightly gravelly clayey fine to medium sand with occasional rootlets (Reworked Topsoil) .Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete.
		1.00		N=26 (6,8/9,6,7,4)				MADE GROUND: Medium dense black sandy gravel (ashy) with occasional cobbles and pockets of soft blue grey clayey medium sand (ash). Gravel is fine to coarse, sub-angular of brick, ash and concrete. (Circa 2.00m bgl becomes very loose) (Circa 3.00m bgl becomes medium dense).
		2.00		N=0 (2,0/0,0,0,0)				
		3.00		N=22 (3,5/8,7,3,4)				
		3.80	ES		3.60			MADE GROUND: Blue grey clayey medium sand (Ash). (slight sulphur odour) (circa 4.00m bgl becomes very loose).
		4.00		N=4 (3,2/3,0,0,1)				
					4.45			End of borehole at 4.45 m

Remarks

1.Terminated at 4.00m bgl due to continued collapse back to 2.00m bgl. 2.Monitoring well installed.

Borehole Log

Borehole No. **WS106**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 03/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			MADE GROUND: Brown slightly gravelly clayey fine to medium sand with occasional rootlets (Reworked Topsoil) .Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete.
		0.80	ES					MADE GROUND: Medium dense red sandy gravel with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete. Cobbles are sub-angular of brick. (No return between 1.00m and 2.00m bgl, assume continuation of above strata). (Circa 2.00m bgl becomes very loose) (Circa 3.00m bgl becomes dense).
		1.00		N=17 (7,6/4,4,5,5,4)				
		2.00		N=4 (3,0/0,0,2,2)				
		3.00		50 (10,12/50 for 30mm)	3.00			End of borehole at 3.00 m

Remarks

1.Terminated due to refusal on cobble within Made Ground at 3.00m bgl. 2.No return from 1.00m to 2.00m bgl. 3.Monitoring well installed.

Borehole Log

Borehole No. **WS107**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30			MADE GROUND: Brown slightly clayey sandy gravel. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick.
					0.80			MADE GROUND: Brown sandy gravel (ashy) with frequent cobbles. Gravel is sub-angular of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick.
		1.00		N=20 (5,7/6,6,5,3)				MADE GROUND: Medium dense brown gravelly fine to medium sand. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete and brick.
		2.00		N=17 (3,4/4,5,4,4)	2.00			MADE GROUND: Medium dense brown sandy gravel with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of concrete. Cobbles are sub-angular of concrete.
		3.00		N=12 (3,3/2,3,3,4)				
		4.00		N=16 (4,6/5,5,3,3)				
					4.45			End of borehole at 4.45 m

Remarks

1.Terminated at 4.45m bgl due to continued collapse at 3.00m bgl. 2.Only 20% of core recovered at 3.00 to 4.00m bgl. 3.Monitoring well installed. 4.Slow groundwater strike at 3.00m bgl.

Borehole Log

Borehole No. **WS108**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Brown slightly clayey sandy gravel. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick.
		1.00		N=23 (7,6/6,7,5,5)				MADE GROUND: Black sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick.
					1.30			MADE GROUND: Very stiff high strength brown slightly gravelly clay with occasional cobbles. (Reworked Clay). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete and brick. Cobbles are sub-angular of brick.
		2.00		N=30 (4,5/5,8,9,8)				
					2.30			MADE GROUND: Black sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick.
					2.50			MADE GROUND: Very soft very low strength brown slightly gravelly clay with occasional cobbles. (Reworked Clay). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete and brick. Cobbles are sub-angular of brick.
		2.80	ES					
		3.00		N=0 (2,1/0,0,0,0)	3.00			
					4.45			No return- assume strata as: MADE GROUND: Very loose black sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick.
								End of borehole at 4.45 m

Remarks

1.Terminated at 4.45m bgl due to continued collapse. 2.No return from 3.10 to 4.00m bgl. 3.Monitoring well installed.

Borehole Log

Borehole No. **WS109**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MAE GROUND: Brown slightly clayey sandy gravel. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick.
		1.00		N=16 (3,4/4,3,5,4)				MADE GROUND: Medium dense red brown gravelly fine to medium sand. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, ash, concrete and brick. (Circa 2.00m bgl becomes loose) (Circa 3.00m bgl becomes medium dense).
		2.00		N=8 (2,1/1,2,3,2)				
		3.00		N=21 (7,7/6,5,4,6)				
		4.00		N=13 (3,4/4,3,3,3)				
					4.45			End of borehole at 4.45 m

Remarks

1.Terminated at 4.00m bgl due to continued collapse to 3.00m bgl. 2.Monitoring well installed.

Borehole Log

Borehole No. **WS110**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.50	ES		0.20			MADE GROUND: Brown slightly clayey sandy gravel. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick.
		1.00		N=8 (3,2/2,2,2,2)				MADE GROUND: Loose black sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, mudstone, concrete and brick. Cobbles are sub-angular of brick. (Becoming medium dense at circa 2.00m) (Becoming dense at circa 3.00m bgl).
		2.00		N=28 (7,9/8,8,7,5)				
		3.00		50 (10,13/50 for 35mm)	3.00			End of borehole at 3.00 m

Remarks

1.Terminated at 3.00m bgl due to refusal on cobble within Made Ground. 2.Monitoring well installed.

Borehole Log

Borehole No. **WS111**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Brown slightly clayey sandy gravel. (Reworked Topsoil). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick.
	▼	1.00		N=23 (4,5/5,6,5,7)	1.00			MADE GROUND: Medium dense black red sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, , ash, asphalt, brick and concrete. Cobbles are sub-angular of brick and concrete.
		2.00		N=27 (4,3/7,8,6,6)				MADE GROUND: Medium dense brown sandy gravel. Gravel is fine to coarse sub-angular to sub-rounded of limestone and sandstone.
					2.20			
					2.40			MADE GROUND: Medium dense black red sandy gravel (ashy) with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, , ash, asphalt, brick and concrete. Cobbles are sub-angular of brick and concrete.
		2.70	ES		2.80			MADE GROUND: Blue grey clayey medium sand (Ash).
		3.00		N=1 (2,3/1,0,0,0)				MADE GROUND: Very loose black red sandy gravel with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, brick and concrete. Cobbles are sub-angular of brick and concrete.
					4.00			End of borehole at 4.00 m

Remarks

1.Terminated at 4.00m bgl due to continued collapse back to 3.00m bgl. 2.Slow groundwater strike at 1.20m bgl 3.Monitoring well installed.

Borehole Log

Borehole No. **WS112**

Sheet 1 of 1

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type WS
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Asphalt.
					0.40			MADE GROUND: Brown sandy gravel with frequent cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete and asphalt. Cobbles are angular to sub-rounded of concrete.
		1.00		N=18 (4,4/5,5,4,4)	0.90 1.00			MADE GROUND: Black gravelly coarse sand (ashy). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, concrete, brick and asphalt.
		2.00		N=12 (4,5/4,3,2,3)	2.00			MADE GROUND: Brown gravelly clay. Gravel is fine to coarse, sub-angular to sub-rounded of concrete and brick.
		2.30	ES					MADE GROUND: Medium dense black gravelly coarse sand (ashy). Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, concrete, brick and asphalt.
		3.00		N=4 (3,4/3,0,0,1)				MADE GROUND: Stiff medium strength brown gravelly clay. Gravel is fine to coarse, sub-angular to sub-rounded of concrete and brick. (Circa 3.00m bgl becomes soft very low strength).
					3.45			End of borehole at 3.45 m

Remarks
1.Terminated at 3.45m bgl due to continued collapse. 2.Monitoring well installed.

Borehole Log

Borehole No. **CP101**

Sheet 1 of 2

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type CP
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular to concrete and brick. (Reworked Topsoil)
		1.00 1.00	B	N=7 (4,4/3,2,1,1)				MADE GROUND: Loose brown sandy clayey gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete, ash and brick. Cobbles are sub-angular of concrete.
	▼	2.00		N=7 (1,2/2,1,2,2)	2.00			MADE GROUND: Loose brown, sandy, clayey gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, metal, timber concrete and brick. Cobbles are sub-angular of concrete.
		3.00 3.00	B	N=9 (4,5/3,2,2,2)	3.00			MADE GROUND: Loose brown, , sandy, clayey gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, metal, timber concrete and brick. Cobbles are sub-angular of concrete.
		4.00		N=20 (1,3/4,4,5,7)				
		5.00 5.00	B	N=8 (3,3/2,2,2,2)	5.00			MADE GROUND: Loose brown, sandy, clayey gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, metal, timber concrete and brick. Cobbles are sub-angular of concrete.
		6.50		N=37 (3,5/6,9,10,12)	6.50			MADE GROUND: Medium dense brown, , sandy, clayey gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, metal, ash, timber concrete and brick. Cobbles are sub-angular of concrete.
		8.00 8.00	B	N=15 (2,2/3,3,4,5)				
		9.50		N=15 (2,2/3,3,4,5)				

Continued on next sheet

Remarks

1.Complete. 2.Chiselled from 6.70 m to 7.10 m for 1 hour. 3.Chiselled from 7.30 m to 7.60 m for 45 minutes. 4.Chiselled from 10.20 m to 10.40m for half an hour. 5.Chiselled from 11.30 m to 11.70 m for 45 minutes. 6.Chiselled from 14.00 m to 14.50 m for 1 hour. 7.Monitoring well installed. 7.Rapid groundwater strike at 2.00m bgl.

Borehole Log

Borehole No. **CP101**
Sheet 2 of 2

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type CP
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		11.00 11.00	B	N=36 (3,4/6,9,10,11)	11.00			MADE GROUND: Dense brown, , sandy, clayey gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, metal, timber concrete and brick. Cobbles are sub-angular of concrete.
		12.50		N=20 (2,2/3,3,5,9)	12.70			Stiff medium strength brown sandy CLAY with bands of fine to medium SAND. (Becoming very stiff very high strength at circa 14.00m bgl).
		14.00		50 (9,10/50 for 285mm)				
		14.50		50 (7,12/50 for 255mm)				
					14.90			End of borehole at 14.90 m

11 12 13 14 15 16 17 18 19 20

Remarks
1.Complete. 2.Chiselled from 6.70 m to 7.10 m for 1 hour. 3.Chiselled from 7.30 m to 7.60 m for 45 minutes. 4.Chiselled from 10.20 m to 10.40m for half an hour. 5.Chiselled from 11.30 m to 11.70 m for 45 minutes. 6.Chiselled from 14.00 m to 14.50 m for 1 hour. 7.Monitoring well installed. 7.Rapid groundwater strike at 2.00m bgl.

Borehole Log

Borehole No. **CP102**

Sheet 1 of 2

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type CP
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30	D		0.20			MADE GROUND: Brown slightly sandy gravel with occasional cobbles and frequent rootlets. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone, concrete and brick. Cobbles are sub-angular to concrete and brick. (Reworked Topsoil)
		1.00 1.00 1.00	B D	N=10 (1,1/2,3,3,2)				MADE GROUND: Medium dense brown sandy gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, ash, concrete and brick. Cobbles are sub-angular of concrete.
		2.00		N=14 (2,3/4,4,3,3)				
	▼							
		3.00 3.00 3.00	B D	N=26 (3,4/6,6,7,7)				
		4.00		N=46 (2,4/7,9,15,15)	4.00			MADE GROUND: Dense brown sandy gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete, ash and brick. Cobbles are sub-angular of concrete.
		5.00 5.00 5.00	B D	51 (7,12/51 for 190mm)	5.00			MADE GROUND: Very dense brown sandy gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete, ash and brick. Cobbles are sub-angular of concrete.
		6.50		N=25 (4,4/6,7,7,5)	6.50			MADE GROUND: Medium dense brown sandy gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, concrete, ash and brick. Cobbles are sub-angular of concrete.
		8.00 8.00 8.00	B D	N=23 (2,4/6,6,6,5)				
		9.50 9.50	D	N=32 (7,9/11,9,8,4)	9.50			MADE GROUND: Medium dense brown sandy gravel (ashy) with occasional cobbles. Gravel is fine to coarse, sub-angular to sub-rounded of

Continued on next sheet

Remarks

1.Complete. 2.Chiselled from 4.30 m to 4.70 m for 45 minutes. 3.Chiselled from 5.00 m to 5.50 m fr 1 hour. 4.Chiselled from 5.80 m to 6.10 m for half an hour. 5.Chiselled from 9.70 m to 9.90 m for 30 minutes. 6.Chiselled from 13.80 m to 14.00 m for 1 hour. 7.Monitoring well installed. 8.Rapid groundwater strike at 2.30m bgl.

Borehole Log

Borehole No. **CP102**
Sheet 2 of 2

Project Name: Rye Bank Road	Project No. 13533	Co-ords: -	Hole Type CP
Location: Chorlton		Level:	Scale 1:50
Client: Step Places		Dates: 04/12/2019 -	Logged By E.Moss

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		11.00 11.00	D	N=28 (3,4/6,6,7,9)	10.20			sandstone, ash, concrete and brick. Cobbles are sub-angular of concrete. Very stiff high strength brown sandy CLAY with bands of fine to medium SAND. (Becoming very stiff very high strength at circa 12.50m bgl).
		12.50		50 (6,10/50 for 285mm)				
		14.00		52 (7,10/52 for 226mm)	14.16			End of borehole at 14.16 m

11 12 13 14 15 16 17 18 19 20

Remarks
1.Complete. 2.Chiselled from 4.30 m to 4.70 m for 45 minutes. 3.Chiselled from 5.00 m to 5.50 m fr 1 hour. 4.Chiselled from 5.80 m to 6.10 m for half an hour. 5.Chiselled from 9.70 m to 9.90 m for 30 minutes. 6.Chiselled from 13.80 m to 14.00 m for 1 hour. 7.Monitoring well installed. 8.Rapid groundwater strike at 2.30m bgl.

Trial Pit Log

TrialPit No: TP201
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 381047.03 - 394528.93 Level: 27.73	Date 08/07/2024
Location: Chorlton		Dimensions (m): 2.00 x 0.70 Depth 2.10	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged G.CALVERT

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	27.43		MADE GROUND: Dark brown very sandy clay with frequent rootlets and rare fragments of brick. (Reworked Topsoil)
	0.60	ES					MADE GROUND: Blackish brown slightly clayey gravelly fine to medium sand. Gravel is fine to coarse subangular to subrounded of mudstone and sandstone with frequent fragments of brick, clinker, concrete, metal, plastic fragments and inclusions of ash.
1.55 ▼				1.60	26.13		
	1.80	D					MADE GROUND: Dark brown mottled light blue slightly sandy slightly gravelly clay. Gravel is fine to coarse subangular to subrounded of mudstone and sandstone with frequent fragments of brick, clinker and concrete.
	2.00	ES		2.10	25.63		End of Pit at 2.10m

Remarks: 1. Complete. 2. Water strike encountered at 1.55m bgl, recorded as seepage.

Stability: STABLE

Trial Pit Log

TrialPit No: TP202
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 381065.73 - 394529.75 Level: 27.66	Date 08/07/2024
Location: Chorlton		Dimensions (m): 2.00 × 0.70 Depth 2.30	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged G.CALVERT

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.25	27.41		MADE GROUND: Dark brown sandy clay with frequent rootlets and rare fragments of brick. (Reworked Topsoil)
	0.50	B					MADE GROUND: Dark brown slightly gravelly clayey fine to medium sand. Gravel is fine to coarse subangular to subrounded of sandstone and mudstone with frequent fragments of brick, plastic, ceramic, metal, timber, fabric, concrete, ash inclusions, clinker and rare fragments of asbestos cement.
	1.00 1.10	ES		0.90	26.76		MADE GROUND: Dark mottled grey slightly sandy gravelly clay. Gravel is fine to coarse subangular to subrounded of sandstone and mudstone with frequent fragments of brick, glass, plastic, ceramic, metal, timber, fabric, concrete, ash inclusions, clinker and rare fragments of asbestos cement,
▼ 1.90				1.40	26.26		MADE GROUND: Dark brown slightly gravelly clayey fine to medium sand. Gravel is fine to coarse subangular to subrounded of sandstone and mudstone with frequent fragments of brick, plastic, ceramic, metal, timber, fabric, concrete, ash inclusions, clinker and rare fragments of asbestos cement.
				2.30	25.36		End of Pit at 2.30m

1 2 3 4

Remarks: 1. Complete. 2. Water strike encountered at 1.90m bgl, recorded as seepage to moderate ingress.

Stability: STABLE

Borehole Log

Borehole No. **WS201**

Sheet 1 of 1

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381023.22 - 394492.59	Hole Type WS
Location:	Chorlton		Level:	28.23	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	09/07/2024 -	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.40	ES		0.25	27.98		MADE GROUND: Dark brown very sandy clay with frequent rootlets and rare fragments of brick. (Reworked Topsoil)
		1.00		N=9 (1,2/2,2,3,2)	0.90	27.33		MADE GROUND: Brown slightly sandy gravelly clay. Gravel is fine to medium subangular to subrounded of sandstone and mudstone with frequent fragments of brick, concrete, glass, ceramic, clinker and ash inclusions.
		2.00		N=4 (1,1/1,1,1,1)	1.70	26.53		MADE GROUND: Blackish brown slightly clayey gravelly fine to medium sand. Gravel is fine to medium subangular to subrounded of sandstone and mudstone with frequent fragments of clinker and brick. (Becoming more clayey from 1.30m bgl.)
	▼	2.80	ES					
		3.00		N=20 (2,4/7,5,4,4)	3.00	25.23		MADE GROUND: Dark grey slightly sandy slightly gravelly clay. Gravel is fine to medium subangular to subrounded of mudstone and frequent fragments of brick, clinker and ash inclusions. (Frequent lenses of clayey gravelly fine to medium sand throughout) (Black staining 2.80-3.00m bgl)
		4.00		N=15 (2,3/4,4,4,3)				MADE GROUND: Blackish brown slightly clayey gravelly fine to medium sand. Gravel is fine to medium subangular to subrounded of sandstone and mudstone with frequent fragments of clinker and brick.
					4.45	23.78		End of borehole at 4.45 m

Remarks

1. Terminated due to hole collapsing to 3.00m bgl. 2. Water strike encountered at 2.80m bgl.3. Black staining from 2.80-3.00m bgl. 4. Monitoring well installed. 5. Response zone 2.00-3.00m bgl.

Borehole Log

Borehole No. **WS202**

Sheet 1 of 1

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381031.81 - 394467.20	Hole Type WS
Location:	Chorlton		Level:	28.34	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	09/07/2024 -	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.25	28.08		MADE GROUND: Dark brown clayey fine to medium sand with frequent rootlets and frequent fragments of brick, concrete and plastic. (Reworked Topsoil)
		1.00		N=10 (1,2/3,3,2,2)	1.00	27.34		MADE GROUND: Brown mottled slightly sandy gravelly clay. Gravel is fine to medium subangular to subrounded of sandstone and mudstone with frequent fragments of brick, clinker, ash inclusions, concrete, ceramic and metal. (Lens of clinker gravel 0.80-0.90m bgl)
		1.30	ES					
		2.00		N=4 (1,1/1,1,1,1)	1.90	26.44		MADE GROUND: Black slightly silty sandy gravel. Gravel is fine to coarse very angular to subangular of mudstone and frequent fragments of clinker, brick and ash inclusions.
	▼				2.80	25.54		MADE GROUND: Dark greyish black clayey sandy gravel. Gravel is fine to coarse angular to subrounded of mudstone with frequent fragments of brick and ash inclusions.
		3.00	ES					
		3.00		N=5 (1,1/1,1,1,2)				MADE GROUND: Black clayey sandy gravel. Gravel is fine to medium subangular to subrounded of mudstone with frequent fragments of concrete, brick, clinker and ash inclusions. (Strong hydrocarbon odour)
		4.00		N=5 (2,2/1,1,1,2)				
		4.70		N=35 (12,12/12,20,2,1)				
					5.15	23.18		End of borehole at 5.15 m

Remarks

1. Refusal on a concrete cobble at 5.15m bgl. 2. Water strike encountered at 2.80m bgl with an oily sheen and hydrcarbon odour. 3. Strong hydrocarbon odour 2.80-4.70m bgl. 4. Monitoring well installed. 5. Response zone 2.50-4.50m bgl.

Borehole Log

Borehole No. **WS203**

Sheet 1 of 1

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	380961.71 - 394473.40	Hole Type WS
Location:	Chorlton		Level:	28.12	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	10/07/2024 -	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	27.92		MADE GROUND: Brown slightly sandy slightly gravelly clay with frequent rootlets. Gravel is fine subangular to subrounded of mudstone with frequent fragments of brick and clinker. (Reworked Topsoil)
					0.70	27.42		MADE GROUND: Dark brown slightly sandy gravelly clay. Gravel is fine to medium subangular to subrounded of sandstone and mudstone with frequent fragments of brick, concrete, ceramic, clinker and ash inclusions.
		1.00 1.00	ES	N=9 (1,2/2,3,2,2)				
					1.50	26.62		MADE GROUND: Brown slightly gravelly very clayey fine to medium sand. Gravel is fine subangular to subrounded of sandstone with fragments of brick.
	▼	2.00		N=2 (0,0/0,0,1,1)				Very soft, extremely low strength brown sandy gravelly CLAY. Gravel is fine to medium subrounded of sandstone, mudstone and coal. (Becoming soft very low strength circa 3.00m bgl.)
		2.50	ES					
		3.00		N=4 (1,1/1,1,1,1)				
		4.00 4.00 - 5.00	B	N=3 (0,0/0,1,1,1)				
					4.45	23.67		No recovery assumed to be firm, low strength brown sandy gravelly CLAY. Gravel is fine to medium subrounded of sandstone, mudstone and coal.
		5.00		N=8 (0,0/1,2,2,3)				
					5.45	22.67		End of borehole at 5.45 m

Remarks

1. Complete. 2. Water strike encountered at 2.00m bgl.

Borehole Log

Borehole No. **WS204**

Sheet 1 of 1

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381003.94 - 394449.79	Hole Type WS
Location:	Chorlton		Level:	28.48	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	10/07/2024 -	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.20	28.28		MADE GROUND: Dark brown slightly sandy clay with frequent rootlets. (Reworked Topsoil)
					0.90	27.58		MADE GROUND: Grey sandy gravel. Gravel is fine subangular to subrounded of sandstone and limestone.
		1.00		N=9 (2,2/2,2,2,3)				MADE GROUND: Blackish brown slightly clayey gravelly fine to medium sand. Gravel is fine to medium subangular to subrounded of mudstone and sandstone with frequent fragments of brick, concrete, clinker, metal and ash inclusions. (Strong hydrocarbon odour from 3.00m bgl)
		1.70	ES					
	▼	2.00		N=4 (1,1/1,1,1,1)				
		3.00		N=4 (2,1/1,1,1,1)				
		3.50	ES					
		4.00		N=10 (3,2/2,2,3,3)				
		5.00		N=13 (2,2/3,3,3,4)				
					5.45	23.03		End of borehole at 5.45 m

Remarks

1. Complete. 2. Water strike encountered at 2.00m bgl with an oily sheen and hydrocarbon odour. 3. Strong hydrocarbon odour from 3.00-5.45m bgl.

Borehole Log

Borehole No. **WS205**

Sheet 1 of 1

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381162.72 - 394663.59	Hole Type WS
Location:	Chorlton		Level:	27.33	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	12/07/2024 -	Logged By J.WAUGH

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30	27.03		MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
					0.80	26.53		MADE GROUND: Dark brown silty sandy gravel. Gravel is fine to coarse very angular to subangular of mudstone with frequent fragments of ash, brick, clinker and glass fragments.
		1.00 1.00	ES	N=7 (3,3/2,2,2,1)	1.00	26.33		MADE GROUND: Brown silty sandy gravelly clay. Gravel is fine to coarse very angular to subangular of mudstone and sandstone with frequent fragments of ash, brick, clinker and glass.
		1.50	ES		1.80	25.53		No recovery assumed to beMADE GROUND: Dark brown silty sandy gravel. Gravel is fine to coarse very angular to subangular of mudstone with frequent fragments of ash, brick, clinker and glass.
	▼	2.00 2.00	ES	N=16 (3,4/4,5,4,3)	2.00	25.33		MADE GROUND: Brown silty sandy gravelly clay. Gravel is fine to coarse very angular to subangular of mudstone with frequent fragments of ash, brick, clinker and glass.
		3.00		N=7 (3,3/2,2,2,1)	3.00	24.33		MADE GROUND: Dark grey to black silty sandy gravel with hydrocarbon odour. Gravel is fine to coarse angular to subangular of mudstone with ash and clinker fragments. (Strong hydrocarbon odour)
		4.00		N=15 (8,4/4,3,3,5)				NO RECOVERY: Assumed to be dark grey to black silty sandy gravel. (Made Ground)
		4.50		32 (25,18/32 for 100mm)	4.80	22.53		End of borehole at 4.80 m

Remarks

1. Complete. 2. Water strike encountered at 2.00m bgl with an oily sheen and hydrocarbon odour. 3. Strong hydrocarbon odour from 2.00-3.00m bgl. 4. Monitoring well installed. 5. Response zone 2.50-4.50m bgl.

Borehole Log

Borehole No. **WS206**

Sheet 1 of 1

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381143.23 - 394646.73	Hole Type WS
Location:	Chorlton		Level:	27.33	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	12/07/2024 -	Logged By J.WAUGH

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	27.13		MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
		0.80	ES		0.70	26.63		MADE GROUND: Grey to light greyish brown silty sandy gravel with occasional cobbles. Gravel is fine to coarse angular to subangular of mudstone with frequent fragments of ash, brick, clinker and concrete. Cobbles are angular of brick.
		1.00		N=7 (5,5/4,1,1,1)	1.00	26.33		
	▼	1.50	ES		1.30 1.50	26.03 25.83		MADE GROUND: Dark brown clayey silty gravelly sand. Gravel is fine to coarse angular to subangular of ash, brick, clinker and concrete fragments.
		2.00		N=22 (4,5/6,5,5,6)	2.00	25.33		MADE GROUND: Reddish brown to grey silty sandy gravel with occasional cobbles. Gravel is fine to coarse angular to subangular of ash, brick, clinker and concrete fragments. Cobbles are angular to subangular of brick and concrete.
		3.00		50 (3,5/50 for 250mm)				MADE GROUND: Reddish brown stained grey silty sandy gravel. Gravel is fine to coarse angular to subangular of ash, brick, clinker and concrete fragments.
					3.41	23.92		MADE GROUND: Grey clayey silty sandy gravel. Gravel is fine to coarse angular to subangular of ash, brick, clinker and concrete fragments.
								NO RECOVERY: Assumed to be dark grey to black silty sandy gravel. (Made Ground)
								End of borehole at 3.41 m

Remarks

1. Refusal on cobble within Made Ground. 2. Water strike encountered at 1.50m bgl.

Borehole Log

Borehole No. **WS207**

Sheet 1 of 1

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381132.48 - 394628.28	Hole Type WS
Location:	Chorlton		Level:	27.31	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	12/07/2024 -	Logged By J.WAUGH

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.40	ES		0.30	27.00		MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
		1.00		N=7 (3,3/3,2,1,1)				MADE GROUND: Grey to light greyish brown silty sandy gravel with occasional cobbles. Gravel is fine to coarse angular to subangular of ash, brick, clinker and concrete fragments. Cobbles are angular of brick.
		1.20	ES					
		2.00		N=8 (3,3/1,1,1,5)	2.00	25.30		MADE GROUND: Brown silty sandy gravel. Gravel is fine to coarse angular to subrounded of sandstone with ash, brick and clinker fragments.
					2.50	24.80		MADE GROUND: Grey silty sandy CLAY.
		2.80	ES					
		3.00		N=8 (3,3/2,1,1,4)				
		4.00		N=26 (4,5/6,6,6,8)	3.90	23.40		MADE GROUND: Dark greyish brown silty sandy gravel. Gravel is fine to coarse angular to subrounded of sandstone with ash, brick and clinker fragments.
					4.80	22.50		End of borehole at 4.80 m

Remarks

1. Refusal on a cobble within CLAY. 2. Monitoring well installed. 5. Response zone 2.00-3.00m bgl.

Trial Pit Log

TrialPit No HP201
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 380970.08 - 394489.58 Level: 27.99	Date 18/07/2024
Location: Chorlton		Dimensions (m): 0.40 x 0.40 Depth 1.00	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged J.WAUGH

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10	ES		0.15	27.84		MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
				0.30	27.69		MADE GROUND: Dark grey to black silty sandy gravel. Gravel is fine to coarse angular to subrounded of mudstone with fragments of ash, brick and clinker .
	0.80	ES					MADE GROUND: Brown clayey silty gravelly sand with occasional cobbles. Gravel is fine to coarse angular to subrounded of mudstone with fragments of ash, brick and clinker. Cobbles are angular of brick.
				1.00	26.99		End of Pit at 1.00m

1
2
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4

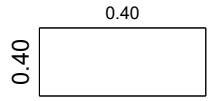
Remarks: 1. Complete.

Stability: STABLE

Trial Pit Log

TrialPit No HP202
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 380990.00 - 394507.00 Level:	Date 18/07/2024
Location: Chorlton		Dimensions (m): Depth 1.00	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged J.WAUGH



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 silty sandy clay with frequent rootlets. (Reworked Topsoil)
	0.90	ES		1.00			MADE GROUND: Dark brown clayey silty gravelly sand. Gravel is fine to coarse angular to subangular of mudstone with fragmetns of ash, brick, clinker and concrete.
							End of Pit at 1.00m

Remarks: 1. Complete.

Stability: STABLE

Trial Pit Log

TrialPit No HP203
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 381018.00 - 394546.00 Level:	Date 18/07/2024
Location: Chorlton		Dimensions (m): 0.40 x 0.40 Depth 1.00	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged J.WAUGH

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.20			MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
	0.70	ES		1.00			MADE GROUND: Dark brown clayey silty gravelly sand. Gravel is fine to coarse angular to subangular of mudstone with fragments of ash, brick, clinker and concrete.
							End of Pit at 1.00m

1
2
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4

Remarks: 1. Complete.

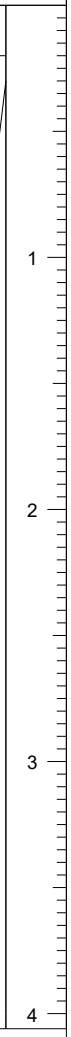
Stability: STABLE

Trial Pit Log

TrialPit No: HP204A
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 381147.82 - 394678.48 Level: 27.36	Date 18/07/2024
Location: Chorlton		Dimensions (m): 0.40 x 0.40 Depth 0.30	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged J.WAUGH

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	27.16		MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
				0.30	27.06		MADE GROUND: Dark brown to black silty sandy gravel with frequent cobbles. Gravel is fine to coarse angular to subangular of ash, brick, clinker and concrete fragments. Cobbles are angular of brick and concrete.
							End of Pit at 0.30m



Remarks: 1. Terminated on frequent cobbles in Made Ground.

Stability: STABLE

Trial Pit Log

TrialPit No HP204B
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 381146.00 - 394677.00 Level:	Date 18/07/2024
Location: Chorlton		Dimensions (m): 0.40 x 0.40 Depth 0.40	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged J.WAUGH

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.10	ES		0.20			MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
	0.30	ES		0.40			MADE GROUND: Dark brown to black silty sandy gravel with frequent cobbles. Gravel is fine to coarse angular to subangular of mudstone with frequent fragments of ash, brick, clinker and concrete. Cobbles are angular of brick and concrete.
							End of Pit at 0.40m

1
2
3
4

Remarks: 1. Terminated on frequent cobbles in Made Ground.

Stability: STABLE

Trial Pit Log

TrialPit No HP205
Sheet 1 of 1

Project Name: Ryebank Fields	Project No. 17403	Co-ords: 381054.78 - 394520.50 Level: 27.68	Date 18/07/2024
Location: Chorlton		Dimensions (m): 0.40 x 0.40 Depth 1.00	Scale 1:30
Client: Step Places, Southway Housing Trust and Manchester Metropolitan University			Logged J.WAUGH

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20	27.48		MADE GROUND: Dark brown silty sandy clay with frequent rootlets. (Reworked Topsoil)
	0.50	B		0.50	27.18		MADE GROUND: Brown to greyish brown silty sandy gravelly clay. Gravel is fine to coarse angular to subangular of mudstone with fragments of ash, brick, clinker, concrete and glass.
				1.00	26.68		MADE GROUND: Greyish brown to black clayey silty sandy gravel with occasional cobbles. Gravel is fine to coarse angular to subangular of sandstone with fragments of ash, brick, clinker and concrete. Cobbles are angular of brick and concrete.
							End of Pit at 1.00m

1
2
3
4

Remarks: 1. Complete.

Stability: STABLE

Borehole Log

Borehole No. **CP201**

Sheet 1 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381057.98 - 394544.51	Hole Type CP
Location:	Chorlton		Level:	27.44	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	08/07/2024 - 11/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20	27.24		MADE GROUND: Dark brown very sandy clay with frequent rootlets and rare fragments of brick. (Reworked Topsoil)
		1.20		N=39 (8,10/10,12,9,8)				MADE GROUND: Brown sandy gravel. Gravel is fine to coarse angular to rounded of mudstone with frequent fragments of brick, metal and wood.
	▼	2.00		N=19 (2,1/8,2,5,4)	1.90	25.54		MADE GROUND: Black silty sandy gravel. Gravel is fine to coarse angular to subrounded of ash, brick, clinker and wood fragments. (Strong hydrocarbon odour)
		3.00		N=8 (2,2/2,2,2,2)				
	▼	4.00		N=25 (4,6/9,11,3,2)				
		5.00	ES					
		5.00		N=9 (3,4/3,2,1,3)				
		6.00		N=12 (3,3/3,3,3,3)				
		7.50		N=21 (3,4/5,4,9,3)				
		9.00		N=11 (1,2/3,3,2,3)				
					9.80	17.64		MADE GROUND: Brown sandy gravelly clay.

Continued on next sheet

Remarks

1. Refusal on a cobble within CLAY. 2. Water strikes encountered at 1.90 and 4.00m bgl. 3. Hydrocarbon odour and oily sheen from 1.90-9.80m bgl. 4. Chissiling on a cobble within CLAY. 5. Monitoring well installed. 6. Response zone 11.00-15.50m bgl.

Borehole Log

Borehole No. **CP201** Sheet 2 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381057.98 - 394544.51	Hole Type CP
Location:	Chorlton		Level:	27.44	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	08/07/2024 - 11/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.50		N=26 (3,6/6,6,7,7)	10.50	16.94		Gravel is fine to coarse angular to subangular of brick and wood fragments.
		11.00	ES					Very stiff, high strength brown sandy gravelly CLAY. Gravel is fine to medium subrounded to rounded of mudstone and sandstone.
					12.00	15.44		
		12.50	U	Ublow=100				Very stiff, very high strength brown CLAY with frequent cobbles and occasional boulders. Cobbles and boulders are subrounded to rounded of sandstone.
		13.50		50 (10,12/50 for 290mm)				
		15.00		50 (25 for 90mm/50 for 195mm)				
					15.67	11.77		*Chiseling (Large cobble)*
								End of borehole at 15.67 m

Remarks

1. Refusal on a cobble within CLAY. 2. Water strikes encountered at 1.90 and 4.00m bgl. 3. Hydrocarbon odour and oily sheen from 1.90-9.80m bgl. 4. Chissiling on a cobble within CLAY. 5. Monitoring well installed. 6. Response zone 11.00-15.50m bgl.

Borehole Log

Borehole No. **CP202**

Sheet 1 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381043.94 - 394518.38	Hole Type CP
Location:	Chorlton		Level:	27.87	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	08/07/2024 - 11/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30	D		0.20	27.66		MADE GROUND: Dark brown very sandy clay with frequent rootlets and rare fragments of brick. (Reworked Topsoil)
		1.00		N=11 (3,4/4,3,2,2)				MADE GROUND: Black sandy gravel. Gravel is fine to coarse angular to subrounded of mudstone with frequent fragments of ash, brick, clinker metal and concrete. (Strong hydrocarbon odour)
								Chiseling
	▼	2.00		N=2 (1,0/1,0,0,1)				
		3.00	B					
		3.00		N=6 (1,1/1,1,1,3)				
		4.00	ES					
		4.00		N=34 (1,3/6,7,12,9)				
		5.00		50 (6,13/50 for 130mm)				*Chiseling*
		6.50		N=7 (1,0/1,2,2,2)				
		8.00		N=38 (2,4/9,12,10,7)				*Chiseling*
		9.50		N=32 (3,4/6,7,9,10)				
								Continued on next sheet

Remarks

1. Refusal due to very stiff CLAY. 2. Water strike encountered at 2.00m bgl with an oily sheen. 3. Hydrocarbon odour and and oily sheen noted between 2.30-13.50m bgl. 4. Chiselling throughout Made Ground due to obstructions. 5. Monitoring well installed. 6. Response zone 4.00-13.00m bgl.

Borehole Log

Borehole No. **CP202**

Sheet 2 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381043.94 - 394518.38	Hole Type CP
Location:	Chorlton		Level:	27.87	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	08/07/2024 - 11/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								Chiseling
		11.00		N=8 (1,1/2,2,2,2)				
		12.50		N=0 (1,1/0,0,0,0)				
					13.50	14.36		Very Stiff, very high strength brown sandy CLAY with occasional boulders. Boulders are sandstone.
		14.00 14.00	B	50 (9,12/50 for 190mm)				*Chiseling*
								Chiseling
		15.50		50 (25 for 120mm/50 for 110mm)				
		16.00 16.00	ES	50 (25 for 125mm/50 for 140mm)				*Chiseling*
		17.50		50 (6,10/50 for 195mm)				
					17.83	10.04		End of borehole at 17.83 m

11 12 13 14 15 16 17 18 19 20

Remarks

1. Refusal due to very stiff CLAY. 2. Water strike encountered at 2.00m bgl with an oily sheen. 3. Hydrocarbon odour and and oily sheen noted between 2.30-13.50m bgl. 4. Chiselling throughout Made Ground due to obstructions. 5. Monitoring well installed. 6. Response zone 4.00-13.00m bgl.

Borehole Log

Borehole No. **CP203**

Sheet 1 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381053.47 - 394486.15	Hole Type CP
Location:	Chorlton		Level:	28.13	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	11/07/2024 - 12/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30	27.83		MADE GROUND: Dark brown very sandy clay with frequent rootlets and rare fragments of brick. (Reworked Topsoil)
		1.00 1.00 1.20	B ES	N=34 (2,7/11,9,10,4)				MADE GROUND: Brown sandy gravel. Gravel is fine to coarse angular to rounded of mudstone with brick and wood fragments.
		2.00		N=12 (2,1/3,4,3,2)				
	▼				2.50	25.63		
		3.00 3.00	B	N=17 (1,0/4,4,8,1)				MADE GROUND: Brown sandy gravel. Gravel is fine to coarse angular to subangular of brick, metal and wood fragments.
		4.00		N=2 (2,1/0,0,1,1)				
		5.00 5.00	ES	N=14 (2,3/3,4,5,2)				
		6.00 6.00	B	N=12 (9,2/2,3,3,4)				
	▼	7.50		N=16 (6,4/7,2,2,5)	7.50	20.63		
		9.00 9.00	B	N=27 (2,3/5,7,8,7)				MADE GROUND: Black silty sandy gravel with strong hydrocarbon odour. Gravel is fine to coarse angular to subrounded of ash, brick, clinker and wood fragments.

Continued on next sheet

Remarks

1. Refusal on a cobble within CLAY. 2. Water strike encountered at 4.20m bgl and 13.00 m bgl. 3. Hydrocarbon odour and oily sheen from 2.50-11.00m bgl. 4. Chissiling on a cobble within CLAY. 5. Monitoring well installed. 6. Response zone 5.00-12.00m bgl.

Borehole Log

Borehole No. **CP203**
Sheet 2 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381053.47 - 394486.15	Hole Type CP
Location:	Chorlton		Level:	28.13	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	11/07/2024 - 12/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.50		N=31 (3,3/4,9,11,7)				
		11.00	B					*Chiseling*
		12.00		50 (25 for 45mm/50 for 25mm)				
	▼							
		13.20	ES		13.20	14.93		
		13.20		50 (25 for 15mm/50 for 130mm)				Very Stiff, very high strength brown CLAY with frequent cobbles and occasional boulders. Cobbles and boulders are subrounded to rounded of sandstone.
		13.65	U	Ublow=100				
		13.70		50 (25 for 60mm/50 for 45mm)				*Chiseling*
		14.00	B		14.15	13.98		End of borehole at 14.15 m

11 12 13 14 15 16 17 18 19 20

Remarks
1. Refusal on a cobble within CLAY. 2. Water strike encountered at 4.20m bgl and 13.00 m bgl. 3. Hydrocarbon odour and oily sheen from 2.50-11.00m bgl. 4. Chissiling on a cobble within CLAY. 5. Monitoring well installed. 6. Response zone 5.00-12.00m bgl.

Borehole Log

Borehole No. **CP204**

Sheet 1 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381027.44 - 394442.37	Hole Type CP
Location:	Chorlton		Level:	28.53	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	11/07/2024 - 12/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10	28.43		MADE GROUND: Asphalt.
					0.20	28.33		MADE GROUND: Concrete.
		0.30	D					MADE GROUND: Brown sandy gravel. Gravel is fine to coarse angular to subrounded of mudstone with frequent fragments of ash, asphalt, tar, brick, clinker and concrete.
		0.50	B					
		1.00		N=28 (2,4/6,6,7,9)				
		2.00		N=21 (2,2/3,4,6,8)				
		2.50	ES					
	▼	3.00		N=10 (1,2/2,3,2,3)				
		4.00		N=20 (2,3/4,4,6,6)				
		5.00		N=47 (5,7/12,13,12,10)				
								Chiseling
		6.50		50 (25 for 110mm/50 for 200mm)				
					7.50	21.03		Stiff, medium strength brown sandy CLAY with occasional boulders. Boulders are sandstone.
		8.00		N=18 (2,3/4,4,5,5)				
		9.50		N=21 (2,3/4,5,6,6)				
		10.00	U	Ublow=67				

Continued on next sheet

Remarks

1. Complete. 2. Water strike encountered at 3.00 and 7.50m bgl. 3. Water strike at 3.00m with an oily sheen and hydrocarbon odour. 3. Monitoring well installed. 4. Response zone 8.00-10.50m bgl.

Borehole Log

Borehole No.
CP204
Sheet 2 of 2

Project Name:	Ryebank Fields	Project No. 17403	Co-ords:	381027.44 - 394442.37	Hole Type CP
Location:	Chorlton		Level:	28.53	Scale 1:50
Client:	Step Places, Southway Housing Trust and Manchester Metropolitan University		Dates:	11/07/2024 - 12/07/2024	Logged By G.CALVERT

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.50	D		10.50	18.03		End of borehole at 10.50 m

11
12
13
14
15
16
17
18
19
20

Remarks
1. Complete. 2. Water strike encountered at 3.00 and 7.50m bgl. 3. Water strike at 3.00m with an oily sheen and hydrocarbon odour. 3. Monitoring well installed. 4. Response zone 8.00-10.50m bgl.

APPENDIX VII CHEMICAL TESTING RESULTS



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Combine Report Ryebank Chorlton

Project / Site name:	Ryebank Chorlton	**Samples received on:**	06/12/2019
Your job number:	13533	**Samples instructed on:**	09/12/2019
Your order number:	34146	**Analysis completed by:**	16/12/2019
Report Issue Number:	1	**Report issued on:**	09/01/2020
Samples Analysed:	4 leachate samples - 17 soil samples		

Signed:

Zina Abdul Razzak
Senior Quality 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

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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.

Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
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	%	N/A	NONE	13	25	33	23	14
Total mass of sample received	kg	0.001	NONE	0.39	0.44	0.30	0.35	0.39
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	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	-	9.0	-	12.3	11.2
Total Cyanide	mg/kg	1	MCERTS	1	< 1	< 1	< 1	1
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	650	-	3200	770
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	0.046	-	0.15	0.11
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	91	-	300	220
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	45.6	-	152	111
Sulphide	mg/kg	1	MCERTS	-	7.0	-	91	36
Total Sulphur	mg/kg	50	MCERTS	-	610	-	1600	1100
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.8	-	-	-	2.4
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	< 1.0	-	1.2	< 1.0

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The results included within the report are representative of the samples submitted for analysis.

Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.35	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	0.59	0.76	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	0.59	0.53	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	4.0	5.1	< 0.05	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	0.93	1.0	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	5.8	5.9	< 0.05	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	5.2	5.8	< 0.05	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	3.1	3.4	< 0.05	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	2.8	2.8	< 0.05	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.0	2.8	< 0.05	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.5	1.5	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.7	2.7	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.3	1.2	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.42	0.39	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.5	1.5	< 0.05	< 0.05	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	33.7	35.4	< 0.80	< 0.80	-

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
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	15	21	< 1.0	< 1.0	20
Barium (aqua regia extractable)	mg/kg	1	MCERTS	290	-	12	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	-	0.67	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	0.8	< 0.2	< 0.2	1.8
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	36	-	26	23
Copper (aqua regia extractable)	mg/kg	1	MCERTS	99	120	10	14	160
Lead (aqua regia extractable)	mg/kg	1	MCERTS	180	820	7.4	4.8	180
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.3	0.6	< 0.3	< 0.3	2.8
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	21	23	3.9	4.6	40
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	1.7
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	32	-	5.7	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	230	310	6.0	58	530

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Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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
Petroleum Hydrocarbons								

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Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	8.1
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	35
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	67
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	110
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	7.9
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	200
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	1100
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	910
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	2200
TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	-
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	-
TPH (C10 - C12)	mg/kg	2	MCERTS	40	3.8	< 2.0	< 2.0	-
TPH (C12 - C16)	mg/kg	4	MCERTS	21	14	< 4.0	< 4.0	-
TPH (C16 - C21)	mg/kg	1	MCERTS	67	47	< 1.0	10	-
TPH (C21 - C35)	mg/kg	1	MCERTS	170	110	< 1.0	78	-
TPH (C35 - C40)	mg/kg	10	MCERTS	42	22	< 10	< 10	-
TPH Total C5 - C40	mg/kg	10	MCERTS	390	200	< 10	91	-

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Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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
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

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-	-	-	-	0.5
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	-	-	-	-	0.62
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	5.7
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	3.6
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	-	-	-	-	9.1
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	-	-	-	-	55
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	17
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	4.1
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	1.8
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	53
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	42
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	19
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	16
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	14
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	6.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	13
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	7.5
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	2.1
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	7.9

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386182	1386183	1386184	1386186	1386187
Sample Reference				TP103	TP105	TP111	TP115	TP116
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.30	0.10	1.20	1.60	1.50
Date Sampled				04/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					

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Project / Site name: Ryebank Chorlton
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Lab Sample Number				1386189	1386190	1386191	1386192	1386193
Sample Reference				TP127	TP128	WS101	WS102	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
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	%	N/A	NONE	13	13	23	22	36
Total mass of sample received	kg	0.001	NONE	0.39	0.38	0.30	0.41	0.31
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	-	Chrysotile & Amosite	Chrysotile	-
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Detected	Detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	-	1.183	0.036	-
Asbestos Quantification Total	%	0.001	ISO 17025	-	-	1.18	0.036	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	-	-	U/S	9.0	12.4
Total Cyanide	mg/kg	1	MCERTS	1	6	2	1	3
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	-	U/S	4900	3500
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	-
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	g/l	0.00125	MCERTS	-	-	U/S	0.97	0.055
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/kg	2.5	MCERTS	-	-	U/S	1900	110
Water Soluble SO4 (2:1 Leach. Equiv.) 1hr extraction	mg/l	1.25	MCERTS	-	-	U/S	966	55.3
Sulphide	mg/kg	1	MCERTS	-	-	U/S	470	19
Total Sulphur	mg/kg	50	MCERTS	-	-	U/S	17000	1600
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.9	-	U/S	3.2	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	47

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386189	1386190	1386191	1386192	1386193
Sample Reference				TP127	TP128	WS101	WS102	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	-	0.45	-	-	0.61
Acenaphthylene	mg/kg	0.05	MCERTS	-	0.47	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	2.8	-	-	< 0.05
Fluorene	mg/kg	0.05	MCERTS	-	2.7	-	-	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	-	19	-	-	0.23
Anthracene	mg/kg	0.05	MCERTS	-	5.4	-	-	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	-	25	-	-	0.33
Pyrene	mg/kg	0.05	MCERTS	-	21	-	-	0.29
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	10	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	8.7	-	-	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	11	-	-	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	3.9	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	8.9	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	3.8	-	-	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	1.1	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	4.4	-	-	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	-	127	-	-	1.46

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Sample Reference				TP127	TP128	WS101	WS102	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
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	14	18	U/S	34	1.4
Barium (aqua regia extractable)	mg/kg	1	MCERTS	350	380	-	-	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.1	0.98	-	-	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.5	1.2	U/S	3.3	< 0.2
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	U/S	43	6.0
Copper (aqua regia extractable)	mg/kg	1	MCERTS	130	2600	U/S	400	14
Lead (aqua regia extractable)	mg/kg	1	MCERTS	230	460	U/S	1100	16
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.6	U/S	1.0	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	22	25	U/S	58	6.2
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	1.1	U/S	2.1	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	34	28	-	-	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	260	760	U/S	1600	23

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Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-

Petroleum Hydrocarbons

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Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	2.5	-	-	13	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	11	-	-	20	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	25	-	-	76	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	49	-	-	450	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	88	-	-	560	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	5.5	-	-	6.2	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	41	-	-	34	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	110	-	-	180	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	250	-	-	510	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	410	-	-	730	-
TPH (C5 - C6)	mg/kg	1	NONE	-	< 1.0	< 1.0	-	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	-	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	-	2.3	U/S	-	< 2.0
TPH (C12 - C16)	mg/kg	4	MCERTS	-	22	U/S	-	< 4.0
TPH (C16 - C21)	mg/kg	1	MCERTS	-	150	U/S	-	7.9
TPH (C21 - C35)	mg/kg	1	MCERTS	-	460	U/S	-	85
TPH (C35 - C40)	mg/kg	10	MCERTS	-	47	U/S	-	< 10
TPH Total C5 - C40	mg/kg	10	MCERTS	-	680	< 10	-	95

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Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Chloroethane	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
Bromomethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Vinyl Chloride	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
Trichlorofluoromethane	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
1,1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
Benzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Tetrachloroethene	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
Chlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
p & m-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Styrene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Tribromomethane	µg/kg	1	NONE	< 1.0	-	< 1.0	< 1.0	-
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,3-Dichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
p-Isopropyltoluene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,4-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-
1,2,4-Trichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	< 1.0	-	< 1.0	< 1.0	-

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Combine Report Ryebank Chorlton

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Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	mg/kg	0.1	NONE	< 0.1	-	U/S	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	< 0.2	-	U/S	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
Hexachloroethane	mg/kg	0.05	MCERTS	< 0.05	-	U/S	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	< 0.2	-	U/S	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
2-Nitrophenol	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	5.1	-	U/S	1.4	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	< 0.1	-	U/S	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	< 0.1	-	U/S	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	4.0	-	U/S	0.7	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	MCERTS	< 0.1	-	U/S	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	2.4	-	U/S	0.61	-
Acenaphthene	mg/kg	0.05	MCERTS	4.6	-	U/S	3.0	-
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	3.0	-	U/S	1.1	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	ISO 17025	< 0.3	-	U/S	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
4-Nitroaniline	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	5.7	-	U/S	3.6	-
Azobenzene	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	< 0.3	-	U/S	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	24	-	U/S	19	-
Anthracene	mg/kg	0.05	MCERTS	7.5	-	U/S	5.6	-
Carbazole	mg/kg	0.3	MCERTS	2.3	-	U/S	1.1	-
Dibutyl phthalate	mg/kg	0.2	MCERTS	< 0.2	-	U/S	< 0.2	-
Anthraquinone	mg/kg	0.3	MCERTS	< 0.3	-	U/S	0.9	-
Fluoranthene	mg/kg	0.05	MCERTS	27	-	U/S	25	-
Pyrene	mg/kg	0.05	MCERTS	22	-	U/S	21	-
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	< 0.3	-	U/S	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	12	-	U/S	9.6	-
Chrysene	mg/kg	0.05	MCERTS	9.2	-	U/S	9.9	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	10	-	U/S	8.5	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	5.9	-	U/S	4.8	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	9.7	-	U/S	7.6	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	4.1	-	U/S	4.4	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	1.1	-	U/S	1.4	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	4.6	-	U/S	4.6	-

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386189	1386190	1386191	1386192	1386193
Sample Reference				TP127	TP128	WS101	WS102	WS105
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.80	1.80	3.20	3.80
Date Sampled				05/12/2019	05/12/2019	04/12/2019	04/12/2019	04/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
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	%	N/A	NONE	14	39	23	14	17
Total mass of sample received	kg	0.001	NONE	0.41	0.33	0.31	0.34	0.36
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	Not-detected	Not-detected
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	0.014	-	-	-	-
Asbestos Quantification Total	%	0.001	ISO 17025	0.014	-	-	-	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	-	-	-	-	10.3
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	2	120	2
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	-	-	-	1100
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-	-	-	250
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-	-	-	0.13
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	125
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	-	-	-	-	2.3
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	1300
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.1	-	-	-	-
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-	-	-	< 1.0

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	0.94	0.54	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	11	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	0.35	< 0.05	2.4	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.39	< 0.05	17	-
Phenanthrene	mg/kg	0.05	MCERTS	0.54	3.1	0.81	150	-
Anthracene	mg/kg	0.05	MCERTS	0.11	0.90	0.25	46	-
Fluoranthene	mg/kg	0.05	MCERTS	0.51	5.1	1.7	150	-
Pyrene	mg/kg	0.05	MCERTS	0.54	5.2	1.8	130	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.29	2.4	0.91	44	-
Chrysene	mg/kg	0.05	MCERTS	0.27	2.3	1.0	37	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.31	3.0	1.1	50	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.14	0.98	0.59	15	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.22	2.5	1.1	45	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.3	0.51	30	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.44	0.20	7.2	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	1.5	0.58	25	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	3.87	30.0	10.6	763	-

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
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	15	13	17	23	32
Barium (aqua regia extractable)	mg/kg	1	MCERTS	780	200	150	440	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	5.0	0.64	0.79	1.2	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.0	0.7	0.4	1.6	0.4
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-	-	-	24
Copper (aqua regia extractable)	mg/kg	1	MCERTS	320	150	72	620	160
Lead (aqua regia extractable)	mg/kg	1	MCERTS	110	220	180	1000	680
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.5	0.7	1.4	1.0
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	80	14	17	27	33
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	3.8	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	100	16	21	32	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	2500	320	130	1000	280

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Your Order No: 34146

Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-	-	-	-	-

Petroleum Hydrocarbons

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Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH (C10 - C12)	mg/kg	2	MCERTS	4.4	5.6	3.7	6.3	12
TPH (C12 - C16)	mg/kg	4	MCERTS	9.6	13	16	220	40
TPH (C16 - C21)	mg/kg	1	MCERTS	33	44	51	1700	140
TPH (C21 - C35)	mg/kg	1	MCERTS	85	110	110	1300	230
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	19	20	40	18
TPH Total C5 - C40	mg/kg	10	MCERTS	140	200	200	3300	460

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Combine Report Ryebank Chorlton

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Your Order No: 34146

Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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
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

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-	-	-	-	0.61
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	-	-	-	-	0.7
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	-	-	-	-	0.72
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	-	0.94
2,4-Dinitrotoluene	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	-	0.5
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	-	-	-	-	1.5
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	-	-	-	-	11
Anthracene	mg/kg	0.05	MCERTS	-	-	-	-	2.0
Carbazole	mg/kg	0.3	MCERTS	-	-	-	-	0.4
Dibutyl phthalate	mg/kg	0.2	MCERTS	-	-	-	-	< 0.2
Anthraquinone	mg/kg	0.3	MCERTS	-	-	-	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	14
Pyrene	mg/kg	0.05	MCERTS	-	-	-	-	14
Butyl benzyl phthalate	mg/kg	0.3	ISO 17025	-	-	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	6.8
Chrysene	mg/kg	0.05	MCERTS	-	-	-	-	5.5
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	6.6
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	-	-	-	-	2.5
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	5.6
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	-	2.8
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	-	1.0
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	-	3.6

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1386194	1389778	1389779	1389780	1389781
Sample Reference				WS112	TP101	TP113	TP119	TP120
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				2.30	0.10	0.10	0.10	2.10
Date Sampled				05/12/2019	04/12/2019	05/12/2019	05/12/2019	05/12/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	30	11			
Total mass of sample received	kg	0.001	NONE	0.38	0.36			
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	-	Chrysotile			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Detected			
Asbestos Quantification (Stage 2)	%	0.001	ISO 17025	-	< 0.001			
Asbestos Quantification Total	%	0.001	ISO 17025	-	< 0.001			
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	-	-			
Total Cyanide	mg/kg	1	MCERTS	< 1	-			
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	-			
Water Soluble Sulphate as SO_4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	-	-			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	-	-			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	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)	%	0.1	MCERTS	-	1.6			
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	-	-			

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	0.32			
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.24			
Phenanthrene	mg/kg	0.05	MCERTS	3.1	1.3			
Anthracene	mg/kg	0.05	MCERTS	0.90	0.36			
Fluoranthene	mg/kg	0.05	MCERTS	5.8	1.7			
Pyrene	mg/kg	0.05	MCERTS	5.7	1.5			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	2.5	1.2			
Chrysene	mg/kg	0.05	MCERTS	2.6	0.82			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	3.3	0.77			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	1.2	0.50			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.8	0.66			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.5	0.33			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.42	< 0.05			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.7	0.40			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	31.3	10.0			

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				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	18	-			
Barium (aqua regia extractable)	mg/kg	1	MCERTS	250	-			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.0	-			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.6	-			
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	-			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	-	-			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	110	-			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	230	-			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.9	-			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	23	-			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	28	-			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	200	-			

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Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-	-			
Petroleum Hydrocarbons								

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Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-			
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-			
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-			
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-			
TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0			
TPH (C6 - C8)	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH (C8 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1			
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0			
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	8.2			
TPH (C16 - C21)	mg/kg	1	MCERTS	15	27			
TPH (C21 - C35)	mg/kg	1	MCERTS	27	44			
TPH (C35 - C40)	mg/kg	10	MCERTS	< 10	< 10			
TPH Total C5 - C40	mg/kg	10	MCERTS	43	81			

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-	-			
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	-	-			

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
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	-	-			
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	-	-			

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Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton
Your Order No: 34146

Lab Sample Number				1389782	1389783			
Sample Reference				TP125	WS110			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.10	0.50			
Date Sampled				05/12/2019	05/12/2019			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					

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Analytical Report : **Combine Report Ryebank Chorlton**
Project / Site name: **Ryebank Chorlton**
Your Order No: **34146**

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 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
1386191	WS101	1.80	80	Loose Fibrous Debris	**Chrysotile & Amosite**	1.183	**1.18**
1386192	WS102	3.20	120	Bitumen	**Chrysotile**	0.036	**0.036**
1386194	WS112	2.30	133	Hard/ Cement Type Material	**Chrysotile**	0.014	**0.014**
1389783	WS110	0.50	118	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 : Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton

Your Order No: 34146

Lab Sample Number				1386195	1386196	1386197	1386198	
Sample Reference				TP103	TP106	WS106	WS111	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				2.10	1.50	0.80	2.70	
Date Sampled				04/12/2019	04/12/2019	04/12/2019	05/12/2019	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	12.6	8.2	8.3	12.6	
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	7.4	< 1.0	1.5	5.2	
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	22	4.6	2.0	8.9	
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
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	
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01	
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	
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	
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	NONE	< 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	
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2	
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	12	5.5	2.0	4.4	
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08	
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	20	< 5.0	< 5.0	
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.5	0.7	3.1	0.6	
Copper (dissolved)	µg/l	0.7	ISO 17025	14	110	9.0	13	
Lead (dissolved)	µg/l	1	ISO 17025	1.5	9.8	26	< 1.0	
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5	
Nickel (dissolved)	µg/l	0.3	ISO 17025	11	7.1	2.0	5.3	
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0	
Zinc (dissolved)	µg/l	0.4	ISO 17025	6.4	73	13	2.7	

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Analytical Report : Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton

Your Order No: 34146

Lab Sample Number				1386195	1386196	1386197	1386198	
Sample Reference				TP103	TP106	WS106	WS111	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				2.10	1.50	0.80	2.70	
Date Sampled				04/12/2019	04/12/2019	04/12/2019	05/12/2019	
Time Taken				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	
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	10	NONE	< 10	< 10	< 10	< 10	
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	

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Analytical Report : Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton

* 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 *
1386182	TP103	None Supplied	1.30	Brown loam and sand with gravel.
1386183	TP105	None Supplied	0.10	Brown clay and sand with vegetation.
1386184	TP111	None Supplied	1.20	Grey clay.
1386186	TP115	None Supplied	1.60	Grey clay.
1386187	TP116	None Supplied	1.50	Brown clay and sand with gravel.
1386189	TP127	None Supplied	1.80	Brown clay and sand with gravel.
1386190	TP128	None Supplied	0.80	Brown sand with gravel and clinker
1386191	WS101	None Supplied	1.80	Brown clay and sand.
1386192	WS102	None Supplied	3.20	Brown sand with clinker.
1386193	WS105	None Supplied	3.80	Grey clay.
1386194	WS112	None Supplied	2.30	Brown sand with clinker.
1389778	TP101	None Supplied	0.10	Brown loam and clay with vegetation.
1389779	TP113	None Supplied	0.10	Brown loam with vegetation.
1389780	TP119	None Supplied	0.10	Brown loam and sand with gravel.
1389781	TP120	None Supplied	2.10	Brown clay and sand with clinker.
1389782	TP125	None Supplied	0.10	Brown loam and clay with vegetation.
1389783	WS110	None Supplied	0.50	Brown sand with clinker.

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Analytical Report : Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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
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
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
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
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
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	MCERTS
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
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
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In-house method based on BS1377 Part 2, 1990, Classification tests	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
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-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
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

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Analytical Report : Combine Report Ryebank Chorlton

Project / Site name: Ryebank Chorlton

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (1hr extraction)	Sulphate, water soluble, in soil (1hr extraction)	In-house method	L038-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 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
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
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 based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-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
TPH1 (Leachates)	Determination of dichloromethane extractable hydrocarbons in leachate by GC-MS.	In-house method	L070-PL	W	NONE
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
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

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.

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Analytical Report Number : 19-78337

Project / Site name:	Ryebank	**Samples received on:**	17/12/2019
Your job number:	13533	**Samples instructed on:**	18/12/2019
Your order number:	34269	**Analysis completed by:**	30/12/2019
Report Issue Number:	1	**Report issued on:**	30/12/2019
Samples Analysed:	4 water samples		

Signed: A. Czerwińska

Agnieszka Czerwińska

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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Analytical Report Number: 19-78337

Project / Site name: Ryebank

Your Order No: 34269

Lab Sample Number				1397016	1397017	1397018	1397019	
Sample Reference				WS101	WS110	CP101	CP102	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				16/12/2019	16/12/2019	16/12/2019	16/12/2019	
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	7.2	7.8	11.1	10.7	
Total Cyanide (Low Level 1 µg/l)	µg/l	1	ISO 17025	5.2	31	160	81	
Total Phenols								
Total Phenols (monohydric)	µg/l	1	ISO 17025	5.1	34	190	310	
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	3.63	15.4	12.8	14.0	
Cadmium (dissolved)	µg/l	0.02	ISO 17025	0.03	0.06	0.04	0.03	
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0	
Chromium (dissolved)	µg/l	0.2	ISO 17025	0.7	0.9	5.7	1.3	
Copper (dissolved)	µg/l	0.5	ISO 17025	4.3	9.1	7.5	5.0	
Lead (dissolved)	µg/l	0.2	ISO 17025	0.4	16	4.4	9.5	
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05	< 0.05	0.18	0.17	
Nickel (dissolved)	µg/l	0.5	ISO 17025	4.7	22	6.4	15	
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.4	3.1	5.3	3.8	
Zinc (dissolved)	µg/l	0.5	ISO 17025	14	48	62	34	
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0	< 1.0	11.3	7.0	
Toluene	µg/l	1	ISO 17025	< 1.0	< 1.0	4.6	4.4	
Ethylbenzene	µg/l	1	ISO 17025	< 1.0	< 1.0	1.8	1.6	
p & m-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	4.3	5.3	
o-xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	3.3	3.1	
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	µg/l	10	NONE	< 10	< 10	360	150	
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	< 1.0	< 1.0	
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0	< 1.0	11	7.0	
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0	< 1.0	4.6	4.4	
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0	< 1.0	11	12	
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10	< 10	63	48	
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10	< 10	220	63	
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10	< 10	79	41	
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10	< 10	< 10	< 10	
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10	< 10	390	180	

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Analytical Report Number: 19-78337

Project / Site name: Ryebank

Your Order No: 34269

Lab Sample Number				1397016	1397017	1397018	1397019	
Sample Reference				WS101	WS110	CP101	CP102	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				16/12/2019	16/12/2019	16/12/2019	16/12/2019	
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	9.1	< 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	11.3	7.0	
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	4.6	4.4	
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	1.8	1.6	
p & m-Xylene	µg/l	1	ISO 17025	< 1.0	< 1.0	4.3	5.3	
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	3.3	3.1	
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	1.9	1.7	
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	
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	

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The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-78337

Project / Site name: Ryebank

Your Order No: 34269

Lab Sample Number				1397016	1397017	1397018	1397019	
Sample Reference				WS101	WS110	CP101	CP102	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				None Supplied	None Supplied	None Supplied	None Supplied	
Date Sampled				16/12/2019	16/12/2019	16/12/2019	16/12/2019	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
SVOCs								
Aniline	µg/l	0.05	NONE	< 0.05	4.5	9.7	10	
Phenol	µg/l	0.05	NONE	< 0.05	< 0.05	6.0	17	
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	17	39	
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	26	55	
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	2.0	38	76	
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	16	3.4	
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	0.50	< 0.01	
Acenaphthene	µg/l	0.01	ISO 17025	5.2	< 0.01	0.35	< 0.01	
2,4-Dinitrotoluene	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenzofuran	µg/l	0.05	NONE	0.97	< 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	2.0	< 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	1.0	< 0.01	< 0.01	< 0.01	
Anthracene	µg/l	0.01	ISO 17025	0.25	< 0.01	< 0.01	< 0.01	
Carbazole	µg/l	0.05	NONE	< 0.05	< 0.05	3.2	1.7	
Dibutyl phthalate	µg/l	0.05	NONE	< 0.05	6.9	20	5.8	
Anthraquinone	µg/l	0.05	NONE	< 0.05	< 0.05	< 0.05	1.8	
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	
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	

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 : 19-78337

Project / Site name: Ryebank

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
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
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
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
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
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-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
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-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

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.

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The results included within the report are representative of the samples submitted for analysis.

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
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Final Report

Report No.:	24-22675-1
Initial Date of Issue:	25-Jul-2024
Re-Issue Details:	
Client	E3P
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ
Contact(s):	Rebecca Hodnett
Project	17-403 Rybank Fields

Quotation No.:		**Date Received:**	17-Jul-2024
Order No.:		**Date Instructed:**	17-Jul-2024
No. of Samples:	23		
Turnaround (Wkdays):	5	**Results Due:**	23-Jul-2024
Date Approved:	25-Jul-2024		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Leachate

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836712	1836728
				Client Sample ID.:		WS202	CP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		1.30	4.00
				Date Sampled:		09-Jul-2024	09-Jul-2024
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
pH at 20C	U	1010	2:1		4.0	7.8	8.2
Cyanide (Total)	U	1300	2:1	mg/l	0.050	< 0.050	< 0.050
Arsenic (Dissolved)	U	1455	2:1	µg/l	0.20	5.2	10
Cadmium (Dissolved)	U	1455	2:1	µg/l	0.11	< 0.11	< 0.11
Chromium (Dissolved)	U	1455	2:1	µg/l	0.50	0.56	0.55
Copper (Dissolved)	U	1455	2:1	µg/l	0.50	0.63	5.6
Mercury (Dissolved)	U	1455	2:1	µg/l	0.05	< 0.05	< 0.05
Nickel (Dissolved)	U	1455	2:1	µg/l	0.50	19	< 0.50
Lead (Dissolved)	U	1455	2:1	µg/l	0.50	< 0.50	0.89
Selenium (Dissolved)	U	1455	2:1	µg/l	0.50	< 0.50	< 0.50
Zinc (Dissolved)	U	1455	2:1	µg/l	2.5	3.7	2.5
Chromium (Hexavalent)	U	1490	2:1	µg/l	20	< 20	< 20
C2 Aliphatic TPH >C5-C6	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C6-C8	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aliphatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0	< 5.0
C2 Aromatic TPH >C5-C7	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aromatic TPH >C7-C8	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aromatic TPH >C8-C10	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aromatic TPH >C10-C12	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aromatic TPH >C12-C16	N	1675	2:1	µg/l	0.10	< 0.10	45
C2 Aromatic TPH >C16-C21	N	1675	2:1	µg/l	0.10	< 0.10	66
C2 Aromatic TPH >C21-C35	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Aromatic TPH >C35-C44	N	1675	2:1	µg/l	0.10	< 0.10	< 0.10
C2 Total Aromatic Hydrocarbons	N	1675	2:1	µg/l	5.0	< 5.0	110
Total Petroleum Hydrocarbons	N	1675	2:1	µg/l	10	< 10	110
Benzene	U	1760	2:1	µg/l	1.0	< 1.0	< 1.0
Toluene	U	1760	2:1	µg/l	1.0	< 1.0	< 1.0
Ethylbenzene	U	1760	2:1	µg/l	1.0	< 1.0	< 1.0
m & p-Xylene	U	1760	2:1	µg/l	1.0	< 1.0	< 1.0
o-Xylene	U	1760	2:1	µg/l	1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	N	1760	2:1	µg/l	1.0	< 1.0	< 1.0
Naphthalene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Acenaphthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010

Results - Leachate

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836712	1836728
				Client Sample ID.:		WS202	CP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		1.30	4.00
				Date Sampled:		09-Jul-2024	09-Jul-2024
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**		
Fluorene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Phenanthrene	N	1800	2:1	µg/l	0.010	< 0.010	12
Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Chrysene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[b]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[k]fluoranthene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[a]pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Indeno(1,2,3-c,d)Pyrene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Dibenz(a,h)Anthracene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Benzo[g,h,i]perylene	N	1800	2:1	µg/l	0.010	< 0.010	< 0.010
Total Of 16 PAH's	N	1800	2:1	µg/l	0.20	< 0.20	12
Total Phenols	U	1920	2:1	mg/l	0.030	< 0.030	< 0.030

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836706	1836707	1836708	1836709	1836710	1836711	1836713
				Client Sample ID.:		TP201	TP202	TP202	WS201	WS201	WS202	WS202
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.00	0.10	1.00	0.40	2.80	0.10	3.00
				Date Sampled:		08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
ACM Type		U	2192		N/A	-	-	-	-	Fibres/Clumps	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	Chrysotile	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry		U	2192	%	0.001					0.70		
Total Asbestos		U	2192	%	0.001					0.70		
Moisture		N	2030	%	0.020	37	31	16	17	23	24	26
Soil Colour		N	2040		N/A	Grey	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones and Roots	Stones and Roots	Stones and Roots	Stones, Roots and Glass	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Loam	Clay	Loam	Loam	Loam	Loam	Loam
pH at 20C		M	2010		4.0	11.6	9.1	11.5	9.6	11.7	6.9	8.9
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.77	0.047	0.36	0.035	0.64	0.033	0.80
Total Sulphur		U	2175	%	0.010	1.1	0.22	0.15	0.049	0.27	0.049	0.71
Cyanide (Total)		M	2300	mg/kg	0.50	1.1	0.60	< 0.50	< 0.50	0.90	< 0.50	73
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	110	14	10	25	4.0	5.8	21
Sulphate (Total)		U	2430	%	0.010	0.68	0.14	0.23	0.075	0.52	0.11	1.4
Arsenic		M	2455	mg/kg	0.5	11	7.9	17	12	40	9.9	150
Cadmium		M	2455	mg/kg	0.10	1.1	0.30	0.21	0.28	0.62	0.15	0.68
Chromium		M	2455	mg/kg	0.5	14	20	22	18	33	12	34
Copper		M	2455	mg/kg	0.50	440	80	110	56	260	59	450
Mercury		M	2455	mg/kg	0.05	0.71	0.59	0.23	0.62	0.52	0.37	1.2
Nickel		M	2455	mg/kg	0.50	17	16	30	22	62	10	33
Lead		M	2455	mg/kg	0.50	510	250	280	130	950	140	1700
Selenium		M	2455	mg/kg	0.25	0.48	0.48	0.52	0.61	1.4	0.33	0.92
Zinc		M	2455	mg/kg	0.50	560	150	270	170	580	120	310
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05							< 0.05
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05							< 0.05
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05							< 0.05
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10							< 0.10
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05							3.5
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25							3.5
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00							120
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00							87
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00							980
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00							2800
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00							210
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00							4000

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836706	1836707	1836708	1836709	1836710	1836711	1836713
				Client Sample ID.:		TP201	TP202	TP202	WS201	WS201	WS202	WS202
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.00	0.10	1.00	0.40	2.80	0.10	3.00
				Date Sampled:		08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00							4200
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05							< 0.05
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05							< 0.05
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05							< 0.05
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25							< 0.25
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00							57
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00							79
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00							430
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00							9.7
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00							38
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00							580
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00							610
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50							3.5
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00							4600
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00							4800
Organic Matter		M	2625	%	0.40		13	13	3.9	11	14	
Total Organic Carbon		M	2625	%	0.20	2.2	7.7	7.6	2.3	6.6	8.4	12
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	53	< 1.0	
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	38	< 1.0	
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	27	20	180	16	
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	35	23	1100	30	
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	20	18	820	16	
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	67	51	1000	76	5600
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0	< 1.0	12	7.0	220	13	590
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	< 10	< 10	160	120	3400	150	12000
Dichlorodifluoromethane		U	2760	µg/kg	1.0	< 1.0						< 1.0
Chloromethane		M	2760	µg/kg	1.0	< 1.0						< 1.0
Vinyl Chloride		M	2760	µg/kg	1.0	< 1.0						< 1.0
Bromomethane		M	2760	µg/kg	20	< 20						< 20
Chloroethane		U	2760	µg/kg	2.0	< 2.0						< 2.0
Trichlorofluoromethane		M	2760	µg/kg	1.0	< 1.0						< 1.0
1,1-Dichloroethene		M	2760	µg/kg	1.0	< 1.0						< 1.0
Dichloromethane		N	2760	µg/kg	50	< 50						< 50
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0						< 1.0
1,1-Dichloroethane		M	2760	µg/kg	1.0	< 1.0						< 1.0
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0						< 1.0
Bromochloromethane		U	2760	µg/kg	5.0	< 5.0						< 5.0
Trichloromethane		M	2760	µg/kg	1.0	< 1.0						< 1.0

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836706	1836707	1836708	1836709	1836710	1836711	1836713
				Client Sample ID.:		TP201	TP202	TP202	WS201	WS201	WS202	WS202
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.00	0.10	1.00	0.40	2.80	0.10	3.00
				Date Sampled:		08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
1,1,1-Trichloroethane		M	2760	µg/kg	1.0	< 1.0						< 1.0
Tetrachloromethane		M	2760	µg/kg	1.0	< 1.0						< 1.0
1,1-Dichloropropene		U	2760	µg/kg	1.0	< 1.0						< 1.0
Benzene		M	2760	µg/kg	1.0	4.3						6.6
1,2-Dichloroethane		M	2760	µg/kg	2.0	< 2.0						< 2.0
Trichloroethene		N	2760	µg/kg	1.0	< 1.0						< 1.0
1,2-Dichloropropane		M	2760	µg/kg	1.0	< 1.0						< 1.0
Dibromomethane		M	2760	µg/kg	1.0	< 1.0						< 1.0
Bromodichloromethane		M	2760	µg/kg	5.0	< 5.0						< 5.0
cis-1,3-Dichloropropene		N	2760	µg/kg	10	< 10						< 10
Toluene		M	2760	µg/kg	1.0	< 1.0						< 1.0
Trans-1,3-Dichloropropene		N	2760	µg/kg	10	< 10						< 10
1,1,2-Trichloroethane		M	2760	µg/kg	10	< 10						< 10
Tetrachloroethene		M	2760	µg/kg	1.0	< 1.0						< 1.0
1,3-Dichloropropane		U	2760	µg/kg	2.0	< 2.0						< 2.0
Dibromochloromethane		U	2760	µg/kg	10	< 10						< 10
1,2-Dibromoethane		M	2760	µg/kg	5.0	< 5.0						< 5.0
Chlorobenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0	< 2.0						< 2.0
Ethylbenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
m & p-Xylene		M	2760	µg/kg	1.0	< 1.0						< 1.0
o-Xylene		M	2760	µg/kg	1.0	< 1.0						< 1.0
Styrene		M	2760	µg/kg	1.0	< 1.0						< 1.0
Tribromomethane		U	2760	µg/kg	1.0	< 1.0						< 1.0
Isopropylbenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
Bromobenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
1,2,3-Trichloropropane		N	2760	µg/kg	50	< 50						< 50
N-Propylbenzene		U	2760	µg/kg	1.0	< 1.0						< 1.0
2-Chlorotoluene		M	2760	µg/kg	1.0	< 1.0						< 1.0
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
4-Chlorotoluene		U	2760	µg/kg	1.0	< 1.0						< 1.0
Tert-Butylbenzene		U	2760	µg/kg	1.0	< 1.0						< 1.0
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0	< 1.0						30
Sec-Butylbenzene		U	2760	µg/kg	1.0	< 1.0						< 1.0
1,3-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
4-Isopropyltoluene		U	2760	µg/kg	1.0	< 1.0						< 1.0
1,4-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
N-Butylbenzene		U	2760	µg/kg	1.0	< 1.0						< 1.0
1,2-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836706	1836707	1836708	1836709	1836710	1836711	1836713
				Client Sample ID.:		TP201	TP202	TP202	WS201	WS201	WS202	WS202
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.00	0.10	1.00	0.40	2.80	0.10	3.00
				Date Sampled:		08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50	< 50						< 50
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0	< 1.0						< 1.0
Hexachlorobutadiene		N	2760	µg/kg	1.0	< 1.0						< 1.0
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0	< 2.0						< 2.0
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0						< 1.0
N-Nitrosodimethylamine		M	2790	mg/kg	0.50	< 0.50						< 0.50
Phenol		M	2790	mg/kg	0.50	< 0.50						< 0.50
2-Chlorophenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50	< 0.50						< 0.50
1,3-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50						< 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50	< 0.50						< 0.50
1,2-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50						< 0.50
2-Methylphenol		M	2790	mg/kg	0.50	< 0.50						< 0.50
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50	< 0.50						< 0.50
Hexachloroethane		N	2790	mg/kg	0.50	< 0.50						< 0.50
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50	< 0.50						< 0.50
4-Methylphenol		M	2790	mg/kg	0.50	< 0.50						< 0.50
Nitrobenzene		N	2790	mg/kg	0.50	< 0.50						< 0.50
Isophorone		M	2790	mg/kg	0.50	< 0.50						< 0.50
2-Nitrophenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50	< 0.50						< 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50	< 0.50						< 0.50
Naphthalene		M	2790	mg/kg	0.50	< 0.50						< 0.50
4-Chloroaniline		N	2790	mg/kg	0.50	< 0.50						< 0.50
Hexachlorobutadiene		M	2790	mg/kg	0.50	< 0.50						< 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
2-Methylnaphthalene		M	2790	mg/kg	0.50	< 0.50						< 0.50
4-Nitrophenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50						< 0.50
2-Chloronaphthalene		M	2790	mg/kg	0.50	< 0.50						< 0.50
2-Nitroaniline		N	2790	mg/kg	0.50	< 0.50						< 0.50
Acenaphthylene		M	2790	mg/kg	0.50	< 0.50						< 0.50
Dimethylphthalate		M	2790	mg/kg	0.50	< 0.50						< 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50						< 0.50
Acenaphthene		M	2790	mg/kg	0.50	< 0.50						8.5
3-Nitroaniline		N	2790	mg/kg	0.50	< 0.50						< 0.50

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836706	1836707	1836708	1836709	1836710	1836711	1836713
				Client Sample ID.:		TP201	TP202	TP202	WS201	WS201	WS202	WS202
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.00	0.10	1.00	0.40	2.80	0.10	3.00
				Date Sampled:		08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Dibenzofuran		M	2790	mg/kg	0.50	< 0.50						< 0.50
4-Chlorophenylphenylether		M	2790	mg/kg	0.50	< 0.50						< 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50						< 0.50
Fluorene		M	2790	mg/kg	0.50	< 0.50						2.9
Diethyl Phthalate		M	2790	mg/kg	0.50	< 0.50						< 0.50
4-Nitroaniline		N	2790	mg/kg	0.50	< 0.50						< 0.50
Azobenzene		M	2790	mg/kg	0.50	< 0.50						< 0.50
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50	< 0.50						< 0.50
Hexachlorobenzene		M	2790	mg/kg	0.50	< 0.50						< 0.50
Phenanthrene		M	2790	mg/kg	0.50	< 0.50						3.3
Anthracene		M	2790	mg/kg	0.50	< 0.50						1.5
Carbazole		M	2790	mg/kg	0.50	< 0.50						< 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50	< 0.50						< 0.50
Fluoranthene		M	2790	mg/kg	0.50	< 0.50						8.8
Pyrene		M	2790	mg/kg	0.50	< 0.50						7.9
Butylbenzyl Phthalate		N	2790	mg/kg	0.50	< 0.50						< 0.50
Benzo[a]anthracene		M	2790	mg/kg	0.50	< 0.50						3.0
Chrysene		M	2790	mg/kg	0.50	< 0.50						3.5
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50	< 0.50						< 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50	< 0.50						< 0.50
Benzo[b]fluoranthene		M	2790	mg/kg	0.50	< 0.50						3.8
Benzo[k]fluoranthene		M	2790	mg/kg	0.50	< 0.50						1.2
Benzo[a]pyrene		M	2790	mg/kg	0.50	< 0.50						2.9
Indeno(1,2,3-c,d)Pyrene		N	2790	mg/kg	0.50	< 0.50						1.6
Dibenz(a,h)Anthracene		N	2790	mg/kg	0.50	< 0.50						< 0.50
Benzo[g,h,i]perylene		M	2790	mg/kg	0.50	< 0.50						1.9
Naphthalene		M	2800	mg/kg	0.10		0.39	0.51	1.1	0.71	< 0.10	
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10	0.67	< 0.10	< 0.10	< 0.10	
Acenaphthene		M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Fluorene		M	2800	mg/kg	0.10		< 0.10	< 0.10	0.48	< 0.10	< 0.10	
Phenanthrene		M	2800	mg/kg	0.10		1.5	32	3.2	12	0.70	
Anthracene		M	2800	mg/kg	0.10		0.32	8.7	0.87	3.0	0.18	
Fluoranthene		M	2800	mg/kg	0.10		2.7	27	3.1	13	1.4	
Pyrene		M	2800	mg/kg	0.10		2.6	19	2.8	11	1.3	
Benzo[a]anthracene		M	2800	mg/kg	0.10		1.3	11	1.2	5.2	0.76	
Chrysene		M	2800	mg/kg	0.10		1.4	9.4	1.2	4.9	0.81	
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		2.1	12	1.7	7.1	1.2	
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		0.60	4.4	0.55	2.4	0.40	
Benzo[a]pyrene		M	2800	mg/kg	0.10		1.5	9.7	1.2	5.4	0.95	

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836706	1836707	1836708	1836709	1836710	1836711	1836713
				Client Sample ID.:		TP201	TP202	TP202	WS201	WS201	WS202	WS202
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		2.00	0.10	1.00	0.40	2.80	0.10	3.00
				Date Sampled:		08-Jul-2024	08-Jul-2024	08-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024	09-Jul-2024
				Asbestos Lab:		NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**							
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		1.1	6.1	0.89	3.7	0.80	
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10	1.5	< 0.10	0.91	< 0.10	
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		0.93	4.8	0.83	3.1	0.70	
Total Of 16 PAH's		N	2800	mg/kg	2.0		16	150	19	72	9.2	
PCB 28		U	2815	mg/kg	0.010	< 0.010						
PCB 52		U	2815	mg/kg	0.010	< 0.010						
PCB 101		U	2815	mg/kg	0.010	< 0.010						
PCB 118		U	2815	mg/kg	0.010	< 0.010						
PCB 153		U	2815	mg/kg	0.010	< 0.010						
PCB 138		U	2815	mg/kg	0.010	< 0.010						
PCB 180		U	2815	mg/kg	0.010	< 0.010						
Total PCBs (7 Congeners)		N	2815	mg/kg	0.10	< 0.10						
Total Phenols		M	2920	mg/kg	0.10	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.42

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836714	1836715	1836717	1836718	1836719	1836721	1836722	1836725
				Client Sample ID.:		WS203	WS203	WS204	WS204	WS205	WS205	WS206	WS207
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.50	1.70	3.50	1.00	2.00	0.80	2.80
				Date Sampled:		10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024
				Asbestos Lab:		NEW-ASB		NEW-ASB	NEW-ASB		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type		U	2192		N/A	-		-	-		-	-	-
Asbestos Identification		U	2192		N/A	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Asbestos by Gravimetry		U	2192	%	0.001								
Total Asbestos		U	2192	%	0.001								
Moisture		N	2030	%	0.020	8.6	23	24	25	17	19	18	35
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Black	Brown	Brown	Brown	Grey
Other Material		N	2040		N/A	Stones	Stones and Roots	Stones	Stones	Stones and Roots	Stones	Stones and Roots	Stones and Roots
Soil Texture		N	2040		N/A	Sand	Clay	Loam	Loam	Loam	Loam	Clay	Loam
pH at 20C		M	2010		4.0	7.9	11.5	8.5	7.7		10.5	8.8	11.7
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.077	1.0	0.10	0.31		1.8	0.023	0.85
Total Sulphur		U	2175	%	0.010	0.026	0.20	0.34	1.8		0.43	0.070	0.55
Cyanide (Total)		M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	1.5
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	28	3.9	9.0	200		4.3	25	54
Sulphate (Total)		U	2430	%	0.010	0.052	0.35	0.24	0.78		1.1	0.18	0.80
Arsenic		M	2455	mg/kg	0.5	7.1	5.7	77	27		15	20	1.3
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	1.3	0.60		0.11	0.46	< 0.10
Chromium		M	2455	mg/kg	0.5	9.4	9.5	46	15		16	24	2.8
Copper		M	2455	mg/kg	0.50	10	11	500	260		41	110	39
Mercury		M	2455	mg/kg	0.05	0.05	0.08	0.07	2.7		0.16	0.42	0.07
Nickel		M	2455	mg/kg	0.50	9.6	11	110	24		15	26	6.1
Lead		M	2455	mg/kg	0.50	14	41	170	450		150	350	880
Selenium		M	2455	mg/kg	0.25	0.34	< 0.25	2.3	1.1		0.43	0.97	< 0.25
Zinc		M	2455	mg/kg	0.50	26	37	730	440		100	300	43
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50		< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05								
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05								
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05								
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10								
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05								
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25								
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00								
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00								
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00								
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00								
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00								
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00								

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836714	1836715	1836717	1836718	1836719	1836721	1836722	1836725
				Client Sample ID.:		WS203	WS203	WS204	WS204	WS205	WS205	WS206	WS207
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.50	1.70	3.50	1.00	2.00	0.80	2.80
				Date Sampled:		10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024
				Asbestos Lab:		NEW-ASB		NEW-ASB	NEW-ASB		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00								
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05								
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05								
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05								
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25								
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00								
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00								
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00								
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00								
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00								
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00								
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00								
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50								
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00								
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00								
Organic Matter		M	2625	%	0.40	0.90	1.8	43	3.8		2.3	12	3.5
Total Organic Carbon		M	2625	%	0.20	0.52	1.1	25	2.2		1.3	7.1	2.0
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	2.6
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	49		20	< 1.0	29
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	110		15	3.7	20
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	940		24	21	44
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	10000		35	26	67
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	17000		54	15	43
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	33000		110	67	130
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0	< 1.0		< 1.0	5900		9.1	9.8	8.3
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10	< 10		< 10	67000		260	140	340
Dichlorodifluoromethane		U	2760	µg/kg	1.0								
Chloromethane		M	2760	µg/kg	1.0								
Vinyl Chloride		M	2760	µg/kg	1.0								
Bromomethane		M	2760	µg/kg	20								
Chloroethane		U	2760	µg/kg	2.0								
Trichlorofluoromethane		M	2760	µg/kg	1.0								
1,1-Dichloroethene		M	2760	µg/kg	1.0								
Dichloromethane		N	2760	µg/kg	50								
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0								
1,1-Dichloroethane		M	2760	µg/kg	1.0								
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0								
Bromochloromethane		U	2760	µg/kg	5.0								
Trichloromethane		M	2760	µg/kg	1.0								

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836714	1836715	1836717	1836718	1836719	1836721	1836722	1836725
				Client Sample ID.:		WS203	WS203	WS204	WS204	WS205	WS205	WS206	WS207
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.50	1.70	3.50	1.00	2.00	0.80	2.80
				Date Sampled:		10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024
				Asbestos Lab:		NEW-ASB		NEW-ASB	NEW-ASB		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
1,1,1-Trichloroethane		M	2760	µg/kg	1.0								
Tetrachloromethane		M	2760	µg/kg	1.0								
1,1-Dichloropropene		U	2760	µg/kg	1.0								
Benzene		M	2760	µg/kg	1.0								
1,2-Dichloroethane		M	2760	µg/kg	2.0								
Trichloroethene		N	2760	µg/kg	1.0								
1,2-Dichloropropane		M	2760	µg/kg	1.0								
Dibromomethane		M	2760	µg/kg	1.0								
Bromodichloromethane		M	2760	µg/kg	5.0								
cis-1,3-Dichloropropene		N	2760	µg/kg	10								
Toluene		M	2760	µg/kg	1.0								
Trans-1,3-Dichloropropene		N	2760	µg/kg	10								
1,1,2-Trichloroethane		M	2760	µg/kg	10								
Tetrachloroethene		M	2760	µg/kg	1.0								
1,3-Dichloropropane		U	2760	µg/kg	2.0								
Dibromochloromethane		U	2760	µg/kg	10								
1,2-Dibromoethane		M	2760	µg/kg	5.0								
Chlorobenzene		M	2760	µg/kg	1.0								
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0								
Ethylbenzene		M	2760	µg/kg	1.0								
m & p-Xylene		M	2760	µg/kg	1.0								
o-Xylene		M	2760	µg/kg	1.0								
Styrene		M	2760	µg/kg	1.0								
Tribromomethane		U	2760	µg/kg	1.0								
Isopropylbenzene		M	2760	µg/kg	1.0								
Bromobenzene		M	2760	µg/kg	1.0								
1,2,3-Trichloropropane		N	2760	µg/kg	50								
N-Propylbenzene		U	2760	µg/kg	1.0								
2-Chlorotoluene		M	2760	µg/kg	1.0								
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0								
4-Chlorotoluene		U	2760	µg/kg	1.0								
Tert-Butylbenzene		U	2760	µg/kg	1.0								
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0								
Sec-Butylbenzene		U	2760	µg/kg	1.0								
1,3-Dichlorobenzene		M	2760	µg/kg	1.0								
4-Isopropyltoluene		U	2760	µg/kg	1.0								
1,4-Dichlorobenzene		M	2760	µg/kg	1.0								
N-Butylbenzene		U	2760	µg/kg	1.0								
1,2-Dichlorobenzene		M	2760	µg/kg	1.0								

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836714	1836715	1836717	1836718	1836719	1836721	1836722	1836725
				Client Sample ID.:		WS203	WS203	WS204	WS204	WS205	WS205	WS206	WS207
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.50	1.70	3.50	1.00	2.00	0.80	2.80
				Date Sampled:		10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024
				Asbestos Lab:		NEW-ASB		NEW-ASB	NEW-ASB		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50								
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0								
Hexachlorobutadiene		N	2760	µg/kg	1.0								
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0								
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0								
N-Nitrosodimethylamine		M	2790	mg/kg	0.50								
Phenol		M	2790	mg/kg	0.50								
2-Chlorophenol		N	2790	mg/kg	0.50								
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50								
1,3-Dichlorobenzene		M	2790	mg/kg	0.50								
1,4-Dichlorobenzene		N	2790	mg/kg	0.50								
1,2-Dichlorobenzene		M	2790	mg/kg	0.50								
2-Methylphenol		M	2790	mg/kg	0.50								
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50								
Hexachloroethane		N	2790	mg/kg	0.50								
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50								
4-Methylphenol		M	2790	mg/kg	0.50								
Nitrobenzene		N	2790	mg/kg	0.50								
Isophorone		M	2790	mg/kg	0.50								
2-Nitrophenol		N	2790	mg/kg	0.50								
2,4-Dimethylphenol		N	2790	mg/kg	0.50								
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50								
2,4-Dichlorophenol		N	2790	mg/kg	0.50								
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50								
Naphthalene		M	2790	mg/kg	0.50								
4-Chloroaniline		N	2790	mg/kg	0.50								
Hexachlorobutadiene		M	2790	mg/kg	0.50								
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50								
2-Methylnaphthalene		M	2790	mg/kg	0.50								
4-Nitrophenol		N	2790	mg/kg	0.50								
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50								
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50								
2-Chloronaphthalene		M	2790	mg/kg	0.50								
2-Nitroaniline		N	2790	mg/kg	0.50								
Acenaphthylene		M	2790	mg/kg	0.50								
Dimethylphthalate		M	2790	mg/kg	0.50								
2,6-Dinitrotoluene		N	2790	mg/kg	0.50								
Acenaphthene		M	2790	mg/kg	0.50								
3-Nitroaniline		N	2790	mg/kg	0.50								

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836714	1836715	1836717	1836718	1836719	1836721	1836722	1836725
				Client Sample ID.:		WS203	WS203	WS204	WS204	WS205	WS205	WS206	WS207
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.50	1.70	3.50	1.00	2.00	0.80	2.80
				Date Sampled:		10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024
				Asbestos Lab:		NEW-ASB		NEW-ASB	NEW-ASB		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Dibenzofuran		M	2790	mg/kg	0.50								
4-Chlorophenylphenylether		M	2790	mg/kg	0.50								
2,4-Dinitrotoluene		N	2790	mg/kg	0.50								
Fluorene		M	2790	mg/kg	0.50								
Diethyl Phthalate		M	2790	mg/kg	0.50								
4-Nitroaniline		N	2790	mg/kg	0.50								
Azobenzene		M	2790	mg/kg	0.50								
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50								
Hexachlorobenzene		M	2790	mg/kg	0.50								
Phenanthrene		M	2790	mg/kg	0.50								
Anthracene		M	2790	mg/kg	0.50								
Carbazole		M	2790	mg/kg	0.50								
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50								
Fluoranthene		M	2790	mg/kg	0.50								
Pyrene		M	2790	mg/kg	0.50								
Butylbenzyl Phthalate		N	2790	mg/kg	0.50								
Benzo[a]anthracene		M	2790	mg/kg	0.50								
Chrysene		M	2790	mg/kg	0.50								
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50								
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50								
Benzo[b]fluoranthene		M	2790	mg/kg	0.50								
Benzo[k]fluoranthene		M	2790	mg/kg	0.50								
Benzo[a]pyrene		M	2790	mg/kg	0.50								
Indeno(1,2,3-c,d)Pyrene		N	2790	mg/kg	0.50								
Dibenz(a,h)Anthracene		N	2790	mg/kg	0.50								
Benzo[g,h,i]perylene		M	2790	mg/kg	0.50								
Naphthalene		M	2800	mg/kg	0.10	< 0.10	< 0.10	0.54	< 0.10		0.72	< 0.10	0.20
Acenaphthylene		N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Acenaphthene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	0.35
Fluorene		M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	0.40
Phenanthrene		M	2800	mg/kg	0.10	< 0.10	2.6	0.17	< 0.10		1.2	2.5	3.3
Anthracene		M	2800	mg/kg	0.10	< 0.10	0.80	< 0.10	2.9		0.27	0.60	0.74
Fluoranthene		M	2800	mg/kg	0.10	0.39	3.4	0.75	7.9		1.2	4.1	5.2
Pyrene		M	2800	mg/kg	0.10	0.41	3.0	0.70	7.6		1.1	3.6	4.2
Benzo[a]anthracene		M	2800	mg/kg	0.10	< 0.10	1.5	0.20	< 0.10		0.51	1.8	1.9
Chrysene		M	2800	mg/kg	0.10	< 0.10	1.4	0.43	< 0.10		0.46	1.9	2.1
Benzo[b]fluoranthene		M	2800	mg/kg	0.10	< 0.10	2.0	< 0.10	< 0.10		0.84	2.8	2.4
Benzo[k]fluoranthene		M	2800	mg/kg	0.10	< 0.10	1.1	0.18	< 0.10		0.30	0.88	0.88
Benzo[a]pyrene		M	2800	mg/kg	0.10	< 0.10	1.6	0.47	< 0.10		0.53	2.0	1.8

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836714	1836715	1836717	1836718	1836719	1836721	1836722	1836725
				Client Sample ID.:		WS203	WS203	WS204	WS204	WS205	WS205	WS206	WS207
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		1.00	2.50	1.70	3.50	1.00	2.00	0.80	2.80
				Date Sampled:		10-Jul-2024	10-Jul-2024	10-Jul-2024	10-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024	12-Jul-2024
				Asbestos Lab:		NEW-ASB		NEW-ASB	NEW-ASB		NEW-ASB	NEW-ASB	NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**								
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10	< 0.10	1.2	< 0.10	< 0.10		0.52	1.5	1.2
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10	< 0.10	0.50	< 0.10	< 0.10		< 0.10	< 0.10	0.28
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10	< 0.10	1.1	0.37	< 0.10		0.46	1.4	1.1
Total Of 16 PAH's		N	2800	mg/kg	2.0	< 2.0	20	3.8	18		8.1	23	26
PCB 28		U	2815	mg/kg	0.010	< 0.010				< 0.010			
PCB 52		U	2815	mg/kg	0.010	< 0.010				< 0.010			
PCB 101		U	2815	mg/kg	0.010	< 0.010				< 0.010			
PCB 118		U	2815	mg/kg	0.010	< 0.010				< 0.010			
PCB 153		U	2815	mg/kg	0.010	< 0.010				< 0.010			
PCB 138		U	2815	mg/kg	0.010	< 0.010				< 0.010			
PCB 180		U	2815	mg/kg	0.010	< 0.010				< 0.010			
Total PCBs (7 Congeners)		N	2815	mg/kg	0.10	< 0.10				< 0.10			
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10		< 0.10	< 0.10	< 0.10

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836726	1836727	1836729	1836730	1836731	1836732
				Client Sample ID.:		CP201	CP201	CP202	CP203	CP203	CP203
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		5.00	11.00	16.00	1.00	5.00	13.20
				Date Sampled:		09-Jul-2024	09-Jul-2024	09-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024
				Asbestos Lab:		NEW-ASB			NEW-ASB	NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
ACM Type		U	2192		N/A	Free Fibres			-	-	
Asbestos Identification		U	2192		N/A	Amosite Chrysotile Crocidolite			No Asbestos Detected	No Asbestos Detected	
Asbestos by Gravimetry		U	2192	%	0.001	0.65					
Total Asbestos		U	2192	%	0.001	0.65					
Moisture		N	2030	%	0.020	20	14	9.9	16	16	13
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones, Roots and	Stones and Roots	Stones	Stones and Roots	Stones, Roots and	Stones
Soil Texture		N	2040		N/A	Loam	Clay	Clay	Clay	Loam	Clay
pH at 20C		M	2010		4.0	8.6	9.3	8.7	8.1	9.6	8.4
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	0.28	0.089	0.014	0.28	0.98	0.099
Total Sulphur		U	2175	%	0.010	0.63	0.10	0.039	0.093	0.24	0.15
Cyanide (Total)		M	2300	mg/kg	0.50	1.7	< 0.50	< 0.50	0.50	1.3	1.2
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50	8.0	9.6	6.1	8.9	83	4.9
Sulphate (Total)		U	2430	%	0.010	1.0	0.31	0.11	0.31	0.66	0.21
Arsenic		M	2455	mg/kg	0.5	15	< 0.5	< 0.5	8.4	13	21
Cadmium		M	2455	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	1.9	< 0.10
Chromium		M	2455	mg/kg	0.5	19	6.1	7.4	14	33	6.5
Copper		M	2455	mg/kg	0.50	860	18	6.7	60	1200	100
Mercury		M	2455	mg/kg	0.05	3.0	0.06	< 0.05	0.43	1.1	2.9
Nickel		M	2455	mg/kg	0.50	24	11	9.6	15	28	19
Lead		M	2455	mg/kg	0.50	610	21	1.5	190	750	310
Selenium		M	2455	mg/kg	0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
Zinc		M	2455	mg/kg	0.50	1400	72	27	130	460	150
Chromium (Hexavalent)		N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Aliphatic VPH >C5-C6	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05				< 0.05	
Aliphatic VPH >C6-C7	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05				0.13	
Aliphatic VPH >C7-C8	HS_2D_AL	U	2780	mg/kg	0.05	< 0.05				1.4	
Aliphatic VPH >C6-C8 (Sum)	HS_2D_AL	N	2780	mg/kg	0.10	< 0.10				1.6	
Aliphatic VPH >C8-C10	HS_2D_AL	U	2780	mg/kg	0.05	1.3				35	
Total Aliphatic VPH >C5-C10	HS_2D_AL	U	2780	mg/kg	0.25	1.3				37	
Aliphatic EPH >C10-C12 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	18				90	
Aliphatic EPH >C12-C16 MC	EH_2D_AL_#1	M	2690	mg/kg	1.00	9.8				33	
Aliphatic EPH >C16-C21 MC	EH_2D_AL_#1	M	2690	mg/kg	2.00	22				28	
Aliphatic EPH >C21-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	3.00	250				88	
Aliphatic EPH >C35-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	70				19	
Total Aliphatic EPH >C10-C35 MC	EH_2D_AL_#1	M	2690	mg/kg	5.00	300				240	

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836726	1836727	1836729	1836730	1836731	1836732
				Client Sample ID.:		CP201	CP201	CP202	CP203	CP203	CP203
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		5.00	11.00	16.00	1.00	5.00	13.20
				Date Sampled:		09-Jul-2024	09-Jul-2024	09-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024
				Asbestos Lab:		NEW-ASB			NEW-ASB	NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Total Aliphatic EPH >C10-C40 MC	EH_2D_AL_#1	N	2690	mg/kg	10.00	370				260	
Aromatic VPH >C5-C7	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05				< 0.05	
Aromatic VPH >C7-C8	HS_2D_AR	U	2780	mg/kg	0.05	< 0.05				0.18	
Aromatic VPH >C8-C10	HS_2D_AR	U	2780	mg/kg	0.05	0.83				7.6	
Total Aromatic VPH >C5-C10	HS_2D_AR	U	2780	mg/kg	0.25	0.83				7.7	
Aromatic EPH >C10-C12 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	22				50	
Aromatic EPH >C12-C16 MC	EH_2D_AR_#1	U	2690	mg/kg	1.00	110				55	
Aromatic EPH >C16-C21 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	420				110	
Aromatic EPH >C21-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	2.00	280				87	
Aromatic EPH >C35-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	1.00	44				14	
Total Aromatic EPH >C10-C35 MC	EH_2D_AR_#1	U	2690	mg/kg	5.00	830				300	
Total Aromatic EPH >C10-C40 MC	EH_2D_AR_#1	N	2690	mg/kg	10.00	870				320	
Total VPH >C5-C10	HS_2D_Total	U	2780	mg/kg	0.50	2.2				45	
Total EPH >C10-C35 MC	EH_2D_Total_#1	U	2690	mg/kg	10.00	1100				540	
Total EPH >C10-C40 MC	EH_2D_Total_#1	N	2690	mg/kg	10.00	1200				580	
Organic Matter		M	2625	%	0.40		2.7	1.2	10		10
Total Organic Carbon		M	2625	%	0.20	7.2	1.6	0.72	6.0	27	6.1
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0		< 1.0	< 1.0	< 1.0		2.3
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0		8.0	< 1.0	< 1.0		25
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0		12	< 1.0	4.2		28
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0		25	< 1.0	23		30
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0		42	< 1.0	38		33
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0		16	< 1.0	25		11
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0		27	< 1.0	61		28
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0		6.3	< 1.0	8.3		6.3
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10		140	< 10	160		160
Dichlorodifluoromethane		U	2760	µg/kg	1.0	< 1.0				< 1.0	
Chloromethane		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Vinyl Chloride		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Bromomethane		M	2760	µg/kg	20	< 20				< 20	
Chloroethane		U	2760	µg/kg	2.0	< 2.0				< 2.0	
Trichlorofluoromethane		M	2760	µg/kg	1.0	< 1.0				< 1.0	
1,1-Dichloroethene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Dichloromethane		N	2760	µg/kg	50	< 50				< 50	
Trans 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
1,1-Dichloroethane		M	2760	µg/kg	1.0	< 1.0				< 1.0	
cis 1,2-Dichloroethene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Bromochloromethane		U	2760	µg/kg	5.0	< 5.0				< 5.0	
Trichloromethane		M	2760	µg/kg	1.0	< 1.0				< 1.0	

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836726	1836727	1836729	1836730	1836731	1836732
				Client Sample ID.:		CP201	CP201	CP202	CP203	CP203	CP203
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		5.00	11.00	16.00	1.00	5.00	13.20
				Date Sampled:		09-Jul-2024	09-Jul-2024	09-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024
				Asbestos Lab:		NEW-ASB			NEW-ASB	NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
1,1,1-Trichloroethane		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Tetrachloromethane		M	2760	µg/kg	1.0	< 1.0				< 1.0	
1,1-Dichloropropene		U	2760	µg/kg	1.0	< 1.0				< 1.0	
Benzene		M	2760	µg/kg	1.0	48				50	
1,2-Dichloroethane		M	2760	µg/kg	2.0	< 2.0				< 2.0	
Trichloroethene		N	2760	µg/kg	1.0	< 1.0				< 1.0	
1,2-Dichloropropane		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Dibromomethane		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Bromodichloromethane		M	2760	µg/kg	5.0	< 5.0				< 5.0	
cis-1,3-Dichloropropene		N	2760	µg/kg	10	< 10				< 10	
Toluene		M	2760	µg/kg	1.0	< 1.0				210	
Trans-1,3-Dichloropropene		N	2760	µg/kg	10	< 10				< 10	
1,1,2-Trichloroethane		M	2760	µg/kg	10	< 10				< 10	
Tetrachloroethene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
1,3-Dichloropropane		U	2760	µg/kg	2.0	< 2.0				< 2.0	
Dibromochloromethane		U	2760	µg/kg	10	< 10				< 10	
1,2-Dibromoethane		M	2760	µg/kg	5.0	< 5.0				< 5.0	
Chlorobenzene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
1,1,1,2-Tetrachloroethane		M	2760	µg/kg	2.0	< 2.0				< 2.0	
Ethylbenzene		M	2760	µg/kg	1.0	7.6				360	
m & p-Xylene		M	2760	µg/kg	1.0	19				1700	
o-Xylene		M	2760	µg/kg	1.0	21				970	
Styrene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Tribromomethane		U	2760	µg/kg	1.0	< 1.0				< 1.0	
Isopropylbenzene		M	2760	µg/kg	1.0	73				250	
Bromobenzene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
1,2,3-Trichloropropane		N	2760	µg/kg	50	< 50				< 50	
N-Propylbenzene		U	2760	µg/kg	1.0	85				470	
2-Chlorotoluene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
1,3,5-Trimethylbenzene		M	2760	µg/kg	1.0	13				2200	
4-Chlorotoluene		U	2760	µg/kg	1.0	< 1.0				< 1.0	
Tert-Butylbenzene		U	2760	µg/kg	1.0	< 1.0				< 1.0	
1,2,4-Trimethylbenzene		M	2760	µg/kg	1.0	270				6500	
Sec-Butylbenzene		U	2760	µg/kg	1.0	30				210	
1,3-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
4-Isopropyltoluene		U	2760	µg/kg	1.0	< 1.0				370	
1,4-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
N-Butylbenzene		U	2760	µg/kg	1.0	25				< 1.0	
1,2-Dichlorobenzene		M	2760	µg/kg	1.0	< 1.0				< 1.0	

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836726	1836727	1836729	1836730	1836731	1836732
				Client Sample ID.:		CP201	CP201	CP202	CP203	CP203	CP203
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		5.00	11.00	16.00	1.00	5.00	13.20
				Date Sampled:		09-Jul-2024	09-Jul-2024	09-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024
				Asbestos Lab:		NEW-ASB			NEW-ASB	NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
1,2-Dibromo-3-Chloropropane		U	2760	µg/kg	50	< 50				< 50	
1,2,4-Trichlorobenzene		M	2760	µg/kg	1.0	< 1.0				< 1.0	
Hexachlorobutadiene		N	2760	µg/kg	1.0	< 1.0				< 1.0	
1,2,3-Trichlorobenzene		U	2760	µg/kg	2.0	< 2.0				< 2.0	
Methyl Tert-Butyl Ether		M	2760	µg/kg	1.0	< 1.0				< 1.0	
N-Nitrosodimethylamine		M	2790	mg/kg	0.50	< 0.50				< 0.50	
Phenol		M	2790	mg/kg	0.50	< 0.50				< 0.50	
2-Chlorophenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50	< 0.50				< 0.50	
1,3-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50				< 0.50	
1,4-Dichlorobenzene		N	2790	mg/kg	0.50	< 0.50				< 0.50	
1,2-Dichlorobenzene		M	2790	mg/kg	0.50	< 0.50				< 0.50	
2-Methylphenol		M	2790	mg/kg	0.50	< 0.50				< 0.50	
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50	< 0.50				< 0.50	
Hexachloroethane		N	2790	mg/kg	0.50	< 0.50				< 0.50	
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50	< 0.50				< 0.50	
4-Methylphenol		M	2790	mg/kg	0.50	< 0.50				< 0.50	
Nitrobenzene		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Isophorone		M	2790	mg/kg	0.50	< 0.50				< 0.50	
2-Nitrophenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
2,4-Dimethylphenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50	< 0.50				< 0.50	
2,4-Dichlorophenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50	< 0.50				< 0.50	
Naphthalene		M	2790	mg/kg	0.50	1.9				19	
4-Chloroaniline		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Hexachlorobutadiene		M	2790	mg/kg	0.50	< 0.50				< 0.50	
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
2-Methylnaphthalene		M	2790	mg/kg	0.50	2.4				4.1	
4-Nitrophenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50	< 0.50				< 0.50	
2-Chloronaphthalene		M	2790	mg/kg	0.50	< 0.50				< 0.50	
2-Nitroaniline		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Acenaphthylene		M	2790	mg/kg	0.50	0.84				< 0.50	
Dimethylphthalate		M	2790	mg/kg	0.50	< 0.50				< 0.50	
2,6-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Acenaphthene		M	2790	mg/kg	0.50	6.8				6.8	
3-Nitroaniline		N	2790	mg/kg	0.50	< 0.50				< 0.50	

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836726	1836727	1836729	1836730	1836731	1836732
				Client Sample ID.:		CP201	CP201	CP202	CP203	CP203	CP203
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		5.00	11.00	16.00	1.00	5.00	13.20
				Date Sampled:		09-Jul-2024	09-Jul-2024	09-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024
				Asbestos Lab:		NEW-ASB			NEW-ASB	NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Dibenzofuran		M	2790	mg/kg	0.50	8.7				4.2	
4-Chlorophenylphenylether		M	2790	mg/kg	0.50	< 0.50				< 0.50	
2,4-Dinitrotoluene		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Fluorene		M	2790	mg/kg	0.50	18				5.1	
Diethyl Phthalate		M	2790	mg/kg	0.50	< 0.50				< 0.50	
4-Nitroaniline		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Azobenzene		M	2790	mg/kg	0.50	< 0.50				< 0.50	
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50	< 0.50				< 0.50	
Hexachlorobenzene		M	2790	mg/kg	0.50	< 0.50				< 0.50	
Phenanthrene		M	2790	mg/kg	0.50	90				35	
Anthracene		M	2790	mg/kg	0.50	25				6.7	
Carbazole		M	2790	mg/kg	0.50	8.2				2.6	
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Fluoranthene		M	2790	mg/kg	0.50	73				27	
Pyrene		M	2790	mg/kg	0.50	54				22	
Butylbenzyl Phthalate		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Benzo[a]anthracene		M	2790	mg/kg	0.50	26				7.3	
Chrysene		M	2790	mg/kg	0.50	22				7.0	
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50	0.75				< 0.50	
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50	< 0.50				< 0.50	
Benzo[b]fluoranthene		M	2790	mg/kg	0.50	23				7.2	
Benzo[k]fluoranthene		M	2790	mg/kg	0.50	7.5				2.6	
Benzo[a]pyrene		M	2790	mg/kg	0.50	17				6.2	
Indeno(1,2,3-c,d)Pyrene		N	2790	mg/kg	0.50	7.7				2.9	
Dibenz(a,h)Anthracene		N	2790	mg/kg	0.50	2.0				0.65	
Benzo[g,h,i]perylene		M	2790	mg/kg	0.50	7.8				3.3	
Naphthalene		M	2800	mg/kg	0.10		0.54	< 0.10	0.36		4.5
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10		< 0.10	< 0.10	0.30		< 0.10
Fluorene		M	2800	mg/kg	0.10		< 0.10	< 0.10	0.31		< 0.10
Phenanthrene		M	2800	mg/kg	0.10		0.99	< 0.10	2.3		7.2
Anthracene		M	2800	mg/kg	0.10		0.38	< 0.10	0.59		1.7
Fluoranthene		M	2800	mg/kg	0.10		0.77	< 0.10	3.1		4.5
Pyrene		M	2800	mg/kg	0.10		0.60	< 0.10	2.6		3.7
Benzo[a]anthracene		M	2800	mg/kg	0.10		< 0.10	< 0.10	0.21		1.4
Chrysene		M	2800	mg/kg	0.10		< 0.10	< 0.10	1.2		1.5
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		< 0.10	< 0.10	0.57		1.7
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		< 0.10	< 0.10	0.52		0.54
Benzo[a]pyrene		M	2800	mg/kg	0.10		< 0.10	< 0.10	1.3		1.4

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22675	24-22675	24-22675	24-22675	24-22675	24-22675
Quotation No.:				**Chemtest Sample ID.:**		1836726	1836727	1836729	1836730	1836731	1836732
				Client Sample ID.:		CP201	CP201	CP202	CP203	CP203	CP203
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		5.00	11.00	16.00	1.00	5.00	13.20
				Date Sampled:		09-Jul-2024	09-Jul-2024	09-Jul-2024	11-Jul-2024	11-Jul-2024	11-Jul-2024
				Asbestos Lab:		NEW-ASB			NEW-ASB	NEW-ASB	
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		< 0.10	< 0.10	< 0.10		0.80
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10	< 0.10	0.23		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		< 0.10	< 0.10	0.53		0.71
Total Of 16 PAH's		N	2800	mg/kg	2.0		3.3	< 2.0	14		30
PCB 28		U	2815	mg/kg	0.010						
PCB 52		U	2815	mg/kg	0.010						
PCB 101		U	2815	mg/kg	0.010						
PCB 118		U	2815	mg/kg	0.010						
PCB 153		U	2815	mg/kg	0.010						
PCB 138		U	2815	mg/kg	0.010						
PCB 180		U	2815	mg/kg	0.010						
Total PCBs (7 Congeners)		N	2815	mg/kg	0.10						
Total Phenols		M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	6.2

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection	
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.	
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters by GC-MS	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Pentane extraction / GCMS detection	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2690	EPH A/A Split	Aliphatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40 Aromatics: >C10–C12, >C12–C16, >C16–C21, >C21– C35, >C35– C40	Acetone/Heptane extraction / GCxGC FID detection	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2780	VPH A/A Split	Aliphatics: >C5–C6, >C6–C7,>C7–C8,>C8-C10 Aromatics: >C5–C7,>C7-C8,>C8–C10	Water extraction / Headspace GCxGC FID detection	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	24-22676-1
Initial Date of Issue:	31-Jul-2024
Re-Issue Details:	
Client	E3P
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ
Contact(s):	Rebecca Hodnett
Project	17-403 Rybank Fields

Quotation No.:		**Date Received:**	17-Jul-2024
Order No.:		**Date Instructed:**	17-Jul-2024
No. of Samples:	2		
Turnaround (Wkdays):	7	**Results Due:**	25-Jul-2024
Date Approved:	31-Jul-2024		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: 17-403 Rybank Fields

Client: E3P				**Chemtest Job No.:**		24-22676	24-22676
Quotation No.:				**Chemtest Sample ID.:**		1836733	1836734
				Client Sample ID.:		WS207	CP204
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.40	2.50
				Date Sampled:		12-Jul-2024	12-Jul-2024
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Moisture		N	2030	%	0.020	14	16

Results - 2 Stage WAC

Project: 17-403 Rybank Fields

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-22676								
Chemtest Sample ID:	1836733								
Sample Ref:									
Sample ID:	WS207								
Sample Location:									
Top Depth(m):	0.40								
Bottom Depth(m):									
Sampling Date:	12-Jul-2024								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			3.7	3	5	6
Loss On Ignition	2610	M	%			7.0	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			270	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg			200	100	--	--
pH at 20C	2010	M				8.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.0090	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0028	0.0039	0.0055	0.038	0.5	2	25
Barium	1455	U	0.15	0.14	0.30	1.4	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0044	0.0040	0.0087	0.040	0.5	10	70
Copper	1455	U	0.020	0.014	0.040	0.024	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0092	0.0059	0.018	0.063	0.5	10	30
Nickel	1455	U	0.0008	0.0009	0.0015	0.0086	0.4	10	40
Lead	1455	U	0.0038	0.0041	0.0075	0.041	0.5	10	50
Antimony	1455	U	0.025	0.027	0.050	0.26	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.026	0.010	0.051	0.12	4	50	200
Chloride	1220	U	1.6	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.45	0.41	< 1.0	4.1	10	150	500
Sulphate	1220	U	12	6.9	24	75	1000	20000	50000
Total Dissolved Solids	1020	N	170	110	340	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	6.7	4.0	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	14

Leachate Test Information	
Leachant volume 1st extract/l	0.321
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.208

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

Project: 17-403 Rybank Fields

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-22676								
Chemtest Sample ID:	1836734								
Sample Ref:									
Sample ID:	CP204								
Sample Location:									
Top Depth(m):	2.50								
Bottom Depth(m):									
Sampling Date:	12-Jul-2024								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			3.8	3	5	6
Loss On Ignition	2610	M	%			5.8	--	--	10
Total BTEX	2760	M	mg/kg			0.021	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			120	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg			15	100	--	--
pH at 20C	2010	M				11.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.0070	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.017	0.016	0.033	0.16	0.5	2	25
Barium	1455	U	0.029	0.014	0.057	0.16	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0059	0.0031	0.012	0.035	0.5	10	70
Copper	1455	U	0.029	0.0080	0.056	0.049	2	50	100
Mercury	1455	U	0.00037	0.00007	0.00072	0.0012	0.01	0.2	2
Molybdenum	1455	U	0.12	0.019	0.24	0.36	0.5	10	30
Nickel	1455	U	0.0061	0.0013	0.012	0.021	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.038	0.011	0.074	0.16	0.06	0.7	5
Selenium	1455	U	0.0028	0.0010	0.0054	0.013	0.1	0.5	7
Zinc	1455	U	< 0.003	0.003	< 0.003	0.027	4	50	200
Chloride	1220	U	50	5.5	98	130	800	15000	25000
Fluoride	1220	U	1.3	0.54	2.6	6.7	10	150	500
Sulphate	1220	U	120	23	240	400	1000	20000	50000
Total Dissolved Solids	1020	N	290	130	580	1600	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	4.7	< 50	67	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	16

Leachate Test Information	
Leachant volume 1st extract/l	0.316
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.296

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

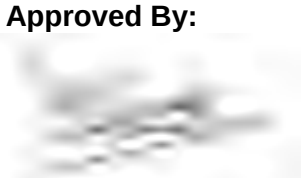
HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	24-23593-1
Initial Date of Issue:	02-Aug-2024
Re-Issue Details:	
Client	E3P
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ
Contact(s):	jwaugh@e3p.co.uk; rhodnett@e3p.co.uk; gcalvert@e3p.co.uk; ndawson@e3p.co.uk
Project	Reybank Fields - Hand pits
Quotation No.:	Q23-31421
Date Received:	25-Jul-2024
Order No.:	8801
Date Instructed:	25-Jul-2024
No. of Samples:	2
Turnaround (Wkdays):	5
Results Due:	31-Jul-2024
Date Approved:	02-Aug-2024
Approved By:	



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		U	2192		N/A		-
Asbestos Identification		U	2192		N/A		No Asbestos Detected
Moisture		N	2030	%	0.020	29	12
Soil Colour		N	2040		N/A		Brown
Other Material		N	2040		N/A		Stones and Roots
Soil Texture		N	2040		N/A		Loam
pH at 20C		M	2010		4.0		8.4
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010
Total Sulphur		U	2175	%	0.010		0.060
Cyanide (Total)		M	2300	mg/kg	0.50		0.70
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		4.2
Sulphate (Total)		U	2430	%	0.010		0.026
Arsenic		M	2455	mg/kg	0.5		6.6
Cadmium		M	2455	mg/kg	0.10		< 0.10
Chromium		M	2455	mg/kg	0.5		6.8
Copper		M	2455	mg/kg	0.50		150
Mercury		M	2455	mg/kg	0.05		0.21
Nickel		M	2455	mg/kg	0.50		6.9
Lead		M	2455	mg/kg	0.50		57
Selenium		M	2455	mg/kg	0.25		< 0.25
Zinc		M	2455	mg/kg	0.50		54
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50
Organic Matter		M	2625	%	0.40		5.0
Total Organic Carbon		M	2625	%	0.20		2.9
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0		< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0		< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0		< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0		8.4
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0		12
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0		7.4
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0		19
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0		3.3
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10		51
N-Nitrosodimethylamine		M	2790	mg/kg	0.50		< 0.50
Phenol		M	2790	mg/kg	0.50		< 0.50

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
2-Chlorophenol		N	2790	mg/kg	0.50		< 0.50
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50		< 0.50
1,3-Dichlorobenzene		M	2790	mg/kg	0.50		< 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50		< 0.50
1,2-Dichlorobenzene		M	2790	mg/kg	0.50		< 0.50
2-Methylphenol		M	2790	mg/kg	0.50		< 0.50
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50		< 0.50
Hexachloroethane		N	2790	mg/kg	0.50		< 0.50
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50		< 0.50
4-Methylphenol		M	2790	mg/kg	0.50		< 0.50
Nitrobenzene		N	2790	mg/kg	0.50		< 0.50
Isophorone		M	2790	mg/kg	0.50		< 0.50
2-Nitrophenol		N	2790	mg/kg	0.50		< 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50		< 0.50
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50		< 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50		< 0.50
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50		< 0.50
Naphthalene		M	2790	mg/kg	0.50		< 0.50
4-Chloroaniline		N	2790	mg/kg	0.50		< 0.50
Hexachlorobutadiene		M	2790	mg/kg	0.50		< 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50		< 0.50
2-Methylnaphthalene		M	2790	mg/kg	0.50		< 0.50
4-Nitrophenol		N	2790	mg/kg	0.50		< 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50		< 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50		< 0.50
2-Chloronaphthalene		M	2790	mg/kg	0.50		< 0.50
2-Nitroaniline		N	2790	mg/kg	0.50		< 0.50
Acenaphthylene		M	2790	mg/kg	0.50		< 0.50
Dimethylphthalate		M	2790	mg/kg	0.50		< 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50		< 0.50
Acenaphthene		M	2790	mg/kg	0.50		< 0.50
3-Nitroaniline		N	2790	mg/kg	0.50		< 0.50
Dibenzofuran		M	2790	mg/kg	0.50		< 0.50
4-Chlorophenylphenylether		M	2790	mg/kg	0.50		< 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50		< 0.50
Fluorene		M	2790	mg/kg	0.50		< 0.50
Diethyl Phthalate		M	2790	mg/kg	0.50		< 0.50

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
4-Nitroaniline		N	2790	mg/kg	0.50		< 0.50
Azobenzene		M	2790	mg/kg	0.50		< 0.50
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50		< 0.50
Hexachlorobenzene		M	2790	mg/kg	0.50		< 0.50
Phenanthrene		M	2790	mg/kg	0.50		0.74
Anthracene		M	2790	mg/kg	0.50		< 0.50
Carbazole		M	2790	mg/kg	0.50		< 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50		< 0.50
Fluoranthene		M	2790	mg/kg	0.50		1.3
Pyrene		M	2790	mg/kg	0.50		1.4
Butylbenzyl Phthalate		N	2790	mg/kg	0.50		< 0.50
Benzo[a]anthracene		M	2790	mg/kg	0.50		0.78
Chrysene		M	2790	mg/kg	0.50		0.70
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50		< 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50		< 0.50
Benzo[b]fluoranthene		M	2790	mg/kg	0.50		0.98
Benzo[k]fluoranthene		M	2790	mg/kg	0.50		< 0.50
Benzo[a]pyrene		M	2790	mg/kg	0.50		0.83
Indeno(1,2,3-c,d)Pyrene		N	2790	mg/kg	0.50		< 0.50
Dibenz(a,h)Anthracene		N	2790	mg/kg	0.50		< 0.50
Benzo[g,h,i]perylene		M	2790	mg/kg	0.50		< 0.50
Naphthalene		M	2800	mg/kg	0.10		0.41
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10		2.4
Anthracene		M	2800	mg/kg	0.10		0.55
Fluoranthene		M	2800	mg/kg	0.10		3.4
Pyrene		M	2800	mg/kg	0.10		3.1
Benzo[a]anthracene		M	2800	mg/kg	0.10		1.4
Chrysene		M	2800	mg/kg	0.10		1.8
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		1.9
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		0.71
Benzo[a]pyrene		M	2800	mg/kg	0.10		1.6
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		1.0
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		1.0

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Of 16 PAH's		N	2800	mg/kg	2.0		19
Total Phenols		M	2920	mg/kg	0.10		< 0.10

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

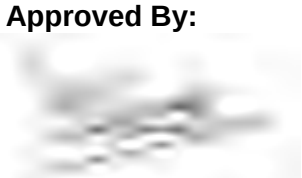
If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	24-23593-3		
Initial Date of Issue:	02-Aug-2024	**Date of Re-Issue:**	02-Aug-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-23593-2 in its entirety		
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	jwaugh@e3p.co.uk; rhodnett@e3p.co.uk; gcalvert@e3p.co.uk; ndawson@e3p.co.uk		
Project	Reybank Fields - Hand pits		
Quotation No.:	Q23-31421	**Date Received:**	25-Jul-2024
Order No.:	8801	**Date Instructed:**	25-Jul-2024
No. of Samples:	2		
Turnaround (Wkdays):	5	**Results Due:**	31-Jul-2024
Date Approved:	02-Aug-2024		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type		U	2192		N/A		-
Asbestos Identification		U	2192		N/A		No Asbestos Detected
Moisture		N	2030	%	0.020	29	12
Soil Colour		N	2040		N/A		Brown
Other Material		N	2040		N/A		Stones and Roots
Soil Texture		N	2040		N/A		Loam
pH at 20C		M	2010		4.0		8.4
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010		< 0.010
Total Sulphur		U	2175	%	0.010		0.060
Cyanide (Total)		M	2300	mg/kg	0.50		0.70
Sulphide (Easily Liberatable)		N	2325	mg/kg	0.50		4.2
Sulphate (Total)		U	2430	%	0.010		0.026
Arsenic		M	2455	mg/kg	0.5		6.6
Cadmium		M	2455	mg/kg	0.10		< 0.10
Chromium		M	2455	mg/kg	0.5		6.8
Copper		M	2455	mg/kg	0.50		150
Mercury		M	2455	mg/kg	0.05		0.21
Nickel		M	2455	mg/kg	0.50		6.9
Lead		M	2455	mg/kg	0.50		57
Selenium		M	2455	mg/kg	0.25		< 0.25
Zinc		M	2455	mg/kg	0.50		54
Chromium (Hexavalent)		N	2490	mg/kg	0.50		< 0.50
Organic Matter		M	2625	%	0.40		5.0
Total Organic Carbon		M	2625	%	0.20		2.9
TPH >C6-C8	EH_1D_Total	N	2670	mg/kg	1.0		< 1.0
TPH >C8-C10	EH_1D_Total	N	2670	mg/kg	1.0		< 1.0
TPH >C10-C12	EH_1D_Total	N	2670	mg/kg	1.0		< 1.0
TPH >C12-C16	EH_1D_Total	N	2670	mg/kg	1.0		8.4
TPH >C16-C21	EH_1D_Total	N	2670	mg/kg	1.0		12
TPH >C21-C25	EH_1D_Total	N	2670	mg/kg	1.0		7.4
TPH >C25-C35	EH_1D_Total	N	2670	mg/kg	1.0		19
TPH >C35-C40	EH_1D_Total	N	2670	mg/kg	1.0		3.3
Total TPH >C6-C40	EH_1D_Total	M	2670	mg/kg	10		51
N-Nitrosodimethylamine		M	2790	mg/kg	0.50		< 0.50
Phenol		M	2790	mg/kg	0.50		< 0.50

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
2-Chlorophenol		N	2790	mg/kg	0.50		< 0.50
Bis-(2-Chloroethyl)Ether		M	2790	mg/kg	0.50		< 0.50
1,3-Dichlorobenzene		M	2790	mg/kg	0.50		< 0.50
1,4-Dichlorobenzene		N	2790	mg/kg	0.50		< 0.50
1,2-Dichlorobenzene		M	2790	mg/kg	0.50		< 0.50
2-Methylphenol		M	2790	mg/kg	0.50		< 0.50
Bis(2-Chloroisopropyl)Ether		M	2790	mg/kg	0.50		< 0.50
Hexachloroethane		N	2790	mg/kg	0.50		< 0.50
N-Nitrosodi-n-propylamine		M	2790	mg/kg	0.50		< 0.50
4-Methylphenol		M	2790	mg/kg	0.50		< 0.50
Nitrobenzene		N	2790	mg/kg	0.50		< 0.50
Isophorone		M	2790	mg/kg	0.50		< 0.50
2-Nitrophenol		N	2790	mg/kg	0.50		< 0.50
2,4-Dimethylphenol		N	2790	mg/kg	0.50		< 0.50
Bis(2-Chloroethoxy)Methane		M	2790	mg/kg	0.50		< 0.50
2,4-Dichlorophenol		N	2790	mg/kg	0.50		< 0.50
1,2,4-Trichlorobenzene		M	2790	mg/kg	0.50		< 0.50
Naphthalene		M	2790	mg/kg	0.50		< 0.50
4-Chloroaniline		N	2790	mg/kg	0.50		< 0.50
Hexachlorobutadiene		M	2790	mg/kg	0.50		< 0.50
4-Chloro-3-Methylphenol		N	2790	mg/kg	0.50		< 0.50
2-Methylnaphthalene		M	2790	mg/kg	0.50		< 0.50
4-Nitrophenol		N	2790	mg/kg	0.50		< 0.50
2,4,6-Trichlorophenol		N	2790	mg/kg	0.50		< 0.50
2,4,5-Trichlorophenol		N	2790	mg/kg	0.50		< 0.50
2-Chloronaphthalene		M	2790	mg/kg	0.50		< 0.50
2-Nitroaniline		N	2790	mg/kg	0.50		< 0.50
Acenaphthylene		M	2790	mg/kg	0.50		< 0.50
Dimethylphthalate		M	2790	mg/kg	0.50		< 0.50
2,6-Dinitrotoluene		N	2790	mg/kg	0.50		< 0.50
Acenaphthene		M	2790	mg/kg	0.50		< 0.50
3-Nitroaniline		N	2790	mg/kg	0.50		< 0.50
Dibenzofuran		M	2790	mg/kg	0.50		< 0.50
4-Chlorophenylphenylether		M	2790	mg/kg	0.50		< 0.50
2,4-Dinitrotoluene		N	2790	mg/kg	0.50		< 0.50
Fluorene		M	2790	mg/kg	0.50		< 0.50
Diethyl Phthalate		M	2790	mg/kg	0.50		< 0.50

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
4-Nitroaniline		N	2790	mg/kg	0.50		< 0.50
Azobenzene		M	2790	mg/kg	0.50		< 0.50
4-Bromophenylphenyl Ether		M	2790	mg/kg	0.50		< 0.50
Hexachlorobenzene		M	2790	mg/kg	0.50		< 0.50
Phenanthrene		M	2790	mg/kg	0.50		0.74
Anthracene		M	2790	mg/kg	0.50		< 0.50
Carbazole		M	2790	mg/kg	0.50		< 0.50
Di-N-Butyl Phthalate		N	2790	mg/kg	0.50		< 0.50
Fluoranthene		M	2790	mg/kg	0.50		1.3
Pyrene		M	2790	mg/kg	0.50		1.4
Butylbenzyl Phthalate		N	2790	mg/kg	0.50		< 0.50
Benzo[a]anthracene		M	2790	mg/kg	0.50		0.78
Chrysene		M	2790	mg/kg	0.50		0.70
Bis(2-Ethylhexyl)Phthalate		N	2790	mg/kg	0.50		< 0.50
Di-N-Octyl Phthalate		N	2790	mg/kg	0.50		< 0.50
Benzo[b]fluoranthene		M	2790	mg/kg	0.50		0.98
Benzo[k]fluoranthene		M	2790	mg/kg	0.50		< 0.50
Benzo[a]pyrene		M	2790	mg/kg	0.50		0.83
Indeno(1,2,3-c,d)Pyrene		N	2790	mg/kg	0.50		< 0.50
Dibenz(a,h)Anthracene		N	2790	mg/kg	0.50		< 0.50
Benzo[g,h,i]perylene		M	2790	mg/kg	0.50		< 0.50
Naphthalene		M	2800	mg/kg	0.10		0.41
Acenaphthylene		N	2800	mg/kg	0.10		< 0.10
Acenaphthene		M	2800	mg/kg	0.10		< 0.10
Fluorene		M	2800	mg/kg	0.10		< 0.10
Phenanthrene		M	2800	mg/kg	0.10		2.4
Anthracene		M	2800	mg/kg	0.10		0.55
Fluoranthene		M	2800	mg/kg	0.10		3.4
Pyrene		M	2800	mg/kg	0.10		3.1
Benzo[a]anthracene		M	2800	mg/kg	0.10		1.4
Chrysene		M	2800	mg/kg	0.10		1.8
Benzo[b]fluoranthene		M	2800	mg/kg	0.10		1.9
Benzo[k]fluoranthene		M	2800	mg/kg	0.10		0.71
Benzo[a]pyrene		M	2800	mg/kg	0.10		1.6
Indeno(1,2,3-c,d)Pyrene		M	2800	mg/kg	0.10		1.0
Dibenz(a,h)Anthracene		N	2800	mg/kg	0.10		< 0.10
Benzo[g,h,i]perylene		M	2800	mg/kg	0.10		1.0

Results - Soil

Project: Reybank Fields - Hand pits

Client: E3P				**Chemtest Job No.:**		24-23593	24-23593
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1840274	1840275
Order No.: 8801				Client Sample Ref.:		HP201	HP202
				Client Sample ID.:		HP201	HP202
				Sample Type:		SOIL	SOIL
				Top Depth (m):		0.10	0.90
				Date Sampled:		18-Jul-2024	18-Jul-2024
				Time Sampled:		12:00	12:00
				Asbestos Lab:			NEW-ASB
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Total Of 16 PAH's		N	2800	mg/kg	2.0		19
Total Phenols		M	2920	mg/kg	0.10		< 0.10

Results - 2 Stage WAC

Project: Reybank Fields - Hand pits

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	24-23593								
Chemtest Sample ID:	1840274								
Sample Ref:	HP201								
Sample ID:	HP201								
Sample Location:									
Top Depth(m):	0.10								
Bottom Depth(m):									
Sampling Date:	18-Jul-2024								
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			10	3	5	6
Loss On Ignition	2610	M	%			16	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg			< 2.0	100	--	--
pH at 20C	2010	M				8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.011	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative mg/kg 10:1**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0014	0.0014	0.0027	0.014	0.5	2	25
Barium	1455	U	0.034	0.012	0.065	0.13	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0008	0.0005	0.0015	0.0054	0.5	10	70
Copper	1455	U	0.0039	0.0022	0.0074	0.0031	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0028	0.0008	0.0052	0.0099	0.5	10	30
Nickel	1455	U	0.0013	< 0.0005	0.0025	0.0011	0.4	10	40
Lead	1455	U	0.0008	0.0014	0.0015	0.013	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.003	0.003	0.006	0.034	4	50	200
Chloride	1220	U	2.3	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.13	0.12	< 1.0	1.2	10	150	500
Sulphate	1220	U	< 1.0	< 1.0	< 10	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	140	67	260	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	12	5.4	< 50	58	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	29

Leachate Test Information	
Leachant volume 1st extract/l	0.279
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.141

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity at 25°C and Total Dissolved Solids (TDS) in Waters	Conductivity Meter	
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	
2010	pH Value of Soils	pH at 20°C	pH Meter	
2015	Acid Neutralisation Capacity	Acid Reserve	Titration	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry	
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.	
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	
2455	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.	
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.	
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID	
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.	
2790	Semi-Volatile Organic Compounds (SVOCs) in Soils by GC-MS	Semi-volatile organic compounds(cf. USEPA Method 8270)	Acetone/Hexane extraction / GC-MS	

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS	
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS. Reported PCB 101 results may contain contributions from PCB 90 due to inseparable chromatography.	
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.	
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	
650	Characterisation of Waste (Leaching WAC)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Results - 2 Stage WAC

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:			24-22676				**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Chemtest Sample ID:			1836733						
Sample Ref:									
Sample ID:			WS207						
Sample Location:									
Top Depth(m):			0.40						
Bottom Depth(m):									
Sampling Date:			12-Jul-2024						
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			3.7	3	5	6
Loss On Ignition	2610	M	%			7.0	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			270	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg			200	100	--	--
pH at 20C	2010	M				8.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.0090	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative 10:1 mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0028	0.0039	0.0055	0.038	0.5	2	25
Barium	1455	U	0.15	0.14	0.30	1.4	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0044	0.0040	0.0087	0.040	0.5	10	70
Copper	1455	U	0.020	0.014	0.040	0.024	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0092	0.0059	0.018	0.063	0.5	10	30
Nickel	1455	U	0.0008	0.0009	0.0015	0.0086	0.4	10	40
Lead	1455	U	0.0038	0.0041	0.0075	0.041	0.5	10	50
Antimony	1455	U	0.025	0.027	0.050	0.26	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.026	0.010	0.051	0.12	4	50	200
Chloride	1220	U	1.6	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.45	0.41	< 1.0	4.1	10	150	500
Sulphate	1220	U	12	6.9	24	75	1000	20000	50000
Total Dissolved Solids	1020	N	170	110	340	1100	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	6.7	4.0	< 50	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	14

Leachate Test Information	
Leachant volume 1st extract/l	0.321
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.208

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:			24-22676				**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Chemtest Sample ID:			1836734						
Sample Ref:									
Sample ID:			CP204						
Sample Location:									
Top Depth(m):			2.50						
Bottom Depth(m):									
Sampling Date:			12-Jul-2024						
Determinand	**SOP**	**Accred.**	**Units**						
Total Organic Carbon	2625	M	%			3.8	3	5	6
Loss On Ignition	2610	M	%			5.8	--	--	10
Total BTEX	2760	M	mg/kg			0.021	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			120	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg			15	100	--	--
pH at 20C	2010	M				11.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.0070	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative 10:1 mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.017	0.016	0.033	0.16	0.5	2	25
Barium	1455	U	0.029	0.014	0.057	0.16	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0059	0.0031	0.012	0.035	0.5	10	70
Copper	1455	U	0.029	0.0080	0.056	0.049	2	50	100
Mercury	1455	U	0.00037	0.00007	0.00072	0.0012	0.01	0.2	2
Molybdenum	1455	U	0.12	0.019	0.24	0.36	0.5	10	30
Nickel	1455	U	0.0061	0.0013	0.012	0.021	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.038	0.011	0.074	0.16	0.06	0.7	5
Selenium	1455	U	0.0028	0.0010	0.0054	0.013	0.1	0.5	7
Zinc	1455	U	< 0.003	0.003	< 0.003	0.027	4	50	200
Chloride	1220	U	50	5.5	98	130	800	15000	25000
Fluoride	1220	U	1.3	0.54	2.6	6.7	10	150	500
Sulphate	1220	U	120	23	240	400	1000	20000	50000
Total Dissolved Solids	1020	N	290	130	580	1600	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	17	4.7	< 50	67	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	16

Leachate Test Information	
Leachant volume 1st extract/l	0.316
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.296

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - 2 Stage WAC

							Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:			24-23593						
Chemtest Sample ID:			1840274						
Sample Ref:			HP201						
Sample ID:			HP201						
Sample Location:									
Top Depth(m):			0.10						
Bottom Depth(m):									
Sampling Date:			18-Jul-2024						
Determinand	**SOP**	**Accred.**	**Units**				**Inert Waste Landfill**	**Stable Non-reactive Hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%			10	3	5	6
Loss On Ignition	2610	M	%			16	--	--	10
Total BTEX	2760	M	mg/kg			< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg			< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg			< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg			< 2.0	100	--	--
pH at 20C	2010	M				8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg			0.011	--	To evaluate	To evaluate
Eluate Analysis			**2:1 mg/l**	**8:1 mg/l**	**2:1 mg/kg**	**Cumulative 10:1 mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0014	0.0014	0.0027	0.014	0.5	2	25
Barium	1455	U	0.034	0.012	0.065	0.13	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0008	0.0005	0.0015	0.0054	0.5	10	70
Copper	1455	U	0.0039	0.0022	0.0074	0.0031	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0028	0.0008	0.0052	0.0099	0.5	10	30
Nickel	1455	U	0.0013	< 0.0005	0.0025	0.0011	0.4	10	40
Lead	1455	U	0.0008	0.0014	0.0015	0.013	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.003	0.003	0.006	0.034	4	50	200
Chloride	1220	U	2.3	< 1.0	< 10	< 10	800	15000	25000
Fluoride	1220	U	0.13	0.12	< 1.0	1.2	10	150	500
Sulphate	1220	U	< 1.0	< 1.0	< 10	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	140	67	260	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.030	< 0.30	< 0.50	1	-	-
Dissolved Organic Carbon	1610	U	12	5.4	< 50	58	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.175
Moisture (%)	29

Leachate Test Information	
Leachant volume 1st extract/l	0.279
Leachant volume 2nd extract/l	1.400
Eluant recovered from 1st extract/l	0.141

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

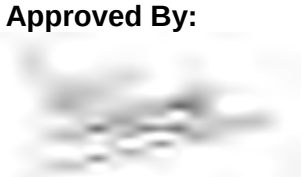
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	24-24409-1
Initial Date of Issue:	08-Aug-2024
Re-Issue Details:	
Client	E3P
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ
Contact(s):	ndawson@e3p.co.uk; gcalvert@e3p.co.uk; rhodnett@e3p.co.uk
Project	Ryebank Fields

Quotation No.:	Q23-31421	**Date Received:**	31-Jul-2024
Order No.:	009006	**Date Instructed:**	31-Jul-2024
No. of Samples:	3		
Turnaround (Wkdays):	5	**Results Due:**	06-Aug-2024
Date Approved:	08-Aug-2024		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: Ryebank Fields

Client: E3P				**Chemtest Job No.:**		24-24409	24-24409
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1843943	1843944
				Client Sample ID.:		WS202	WS205
				Sample Type:		WATER	WATER
				Sample Sub Type:			
				Date Sampled:		29-Jul-2024	29-Jul-2024
				Time Sampled:		12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
pH at 20C		U	1010		4.0	8.7	8.9
Cyanide (Total) Low-Level		N	1300	mg/l	0.0050	< 0.0050	< 0.0050
Calcium (Dissolved)		U	1455	mg/l	2.00	21	17
Arsenic (Dissolved)		U	1455	µg/l	0.20	18	28
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11
Chromium (Dissolved)		U	1455	µg/l	0.50	3.1	2.7
Copper (Dissolved)		U	1455	µg/l	0.50	2.7	2.3
Manganese (Dissolved)		U	1455	µg/l	0.50	6.4	3.2
Nickel (Dissolved)		U	1455	µg/l	0.50	5.2	6.1
Lead (Dissolved)		U	1455	µg/l	0.50	4.0	1.3
Selenium (Dissolved)		U	1455	µg/l	0.50	1.9	4.3
Zinc (Dissolved)		U	1455	µg/l	2.5	7.6	7.2
Mercury Low Level		U	1460	µg/l	0.010	< 0.010	< 0.010
Chromium (Hexavalent)		U	1490	µg/l	20	< 20	< 20
Dissolved Organic Carbon		U	1610	mg/l	2.0	20	14
Aliphatic TPH >C5-C6	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	EH_2D_AL_#1	N	1675	µg/l	5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C8-C10	EH_2D_AR_#1	N	1675	µg/l	0.10	150	< 0.10
Aromatic TPH >C10-C12	EH_2D_AR_#1	N	1675	µg/l	0.10	130	< 0.10
Aromatic TPH >C12-C16	EH_2D_AR_#1	N	1675	µg/l	0.10	69	< 0.10
Aromatic TPH >C16-C21	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	EH_2D_AR_#1	N	1675	µg/l	5.0	340	< 5.0
Total Petroleum Hydrocarbons	EH_2D_Total_#1	N	1675	µg/l	10	350	< 10
Dichlorodifluoromethane		U	1760	µg/l	1.0	< 1.0	< 1.0
Chloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0
Vinyl Chloride		N	1760	µg/l	1.0	< 1.0	< 1.0
Bromomethane		U	1760	µg/l	5	< 5	< 5
Chloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0

Results - Water

Project: Ryebank Fields

Client: E3P				**Chemtest Job No.:**		24-24409	24-24409
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1843943	1843944
				Client Sample ID.:		WS202	WS205
				Sample Type:		WATER	WATER
				Sample Sub Type:			
				Date Sampled:		29-Jul-2024	29-Jul-2024
				Time Sampled:		12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
Trichlorofluoromethane		U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloroethane		U	1760	µg/l	1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0
Bromochloromethane		U	1760	µg/l	5	< 5	< 5
Trichloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0
1,1,1-Trichloroethane		U	1760	µg/l	1.0	< 1.0	< 1.0
Tetrachloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0
1,1-Dichloropropene		U	1760	µg/l	1.0	< 1.0	< 1.0
Benzene		U	1760	µg/l	1.0	17	< 1.0
1,2-Dichloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0
Trichloroethene		N	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichloropropane		U	1760	µg/l	1.0	< 1.0	< 1.0
Dibromomethane		U	1760	µg/l	10	< 10	< 10
Bromodichloromethane		U	1760	µg/l	5	< 5	< 5
cis-1,3-Dichloropropene		N	1760	µg/l	10	< 10	< 10
Toluene		U	1760	µg/l	1.0	1.7	< 1.0
Trans-1,3-Dichloropropene		N	1760	µg/l	10	< 10	< 10
1,1,2-Trichloroethane		U	1760	µg/l	10	< 10	< 10
Tetrachloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,3-Dichloropropane		U	1760	µg/l	2.0	< 2.0	< 2.0
Dibromochloromethane		U	1760	µg/l	10	< 10	< 10
1,2-Dibromoethane		U	1760	µg/l	5	< 5	< 5
Chlorobenzene		N	1760	µg/l	1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0
Ethylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
m & p-Xylene		U	1760	µg/l	1.0	< 1.0	< 1.0
o-Xylene		U	1760	µg/l	1.0	3.7	< 1.0
Styrene		U	1760	µg/l	1.0	< 1.0	< 1.0
Tribromomethane		U	1760	µg/l	1.0	< 1.0	< 1.0
Isopropylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
Bromobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,2,3-Trichloropropane		N	1760	µg/l	50	< 50	< 50
N-Propylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
2-Chlorotoluene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene		U	1760	µg/l	1.0	3.2	< 1.0
4-Chlorotoluene		U	1760	µg/l	1.0	< 1.0	< 1.0
Tert-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0

Results - Water

Project: Ryebank Fields

Client: E3P				**Chemtest Job No.:**		24-24409	24-24409
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1843943	1843944
				Client Sample ID.:		WS202	WS205
				Sample Type:		WATER	WATER
				Sample Sub Type:			
				Date Sampled:		29-Jul-2024	29-Jul-2024
				Time Sampled:		12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
1,2,4-Trimethylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
Sec-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,3-Dichlorobenzene		N	1760	µg/l	1.0	< 1.0	< 1.0
4-Isopropyltoluene		U	1760	µg/l	1.0	2.3	< 1.0
1,4-Dichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
N-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane		U	1760	µg/l	50	< 50	< 50
1,2,4-Trichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0
Hexachlorobutadiene		U	1760	µg/l	1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene		U	1760	µg/l	2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether		N	1760	µg/l	1.0	< 1.0	< 1.0
N-Nitrosodimethylamine		N	1790	µg/l	0.50	< 0.50	< 0.50
Phenol		N	1790	µg/l	0.50	< 0.50	< 0.50
2-Chlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether		N	1790	µg/l	0.50	< 0.50	< 0.50
1,3-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50
1,4-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50
1,2-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)		N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether		N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachloroethane		N	1790	µg/l	0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine		N	1790	µg/l	0.50	< 0.50	< 0.50
4-Methylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50
Nitrobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50
Isophorone		N	1790	µg/l	0.50	< 0.50	< 0.50
2-Nitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dimethylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane		N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50
Naphthalene		N	1790	µg/l	0.50	< 0.50	< 0.50
4-Chloroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorobutadiene		N	1790	µg/l	0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methylnaphthalene		N	1790	µg/l	0.50	1.6	< 0.50
2,4,6-Trichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50
2-Chloronaphthalene		N	1790	µg/l	0.50	< 0.50	< 0.50

Results - Water

Project: Ryebank Fields

Client: E3P				**Chemtest Job No.:**		24-24409	24-24409
Quotation No.: Q23-31421				**Chemtest Sample ID.:**		1843943	1843944
				Client Sample ID.:		WS202	WS205
				Sample Type:		WATER	WATER
				Sample Sub Type:			
				Date Sampled:		29-Jul-2024	29-Jul-2024
				Time Sampled:		12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**		
2-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50
Acenaphthylene		N	1790	µg/l	0.50	6.3	< 0.50
Dimethylphthalate		N	1790	µg/l	0.50	< 0.50	< 0.50
2,6-Dinitrotoluene		N	1790	µg/l	0.50	< 0.50	< 0.50
Acenaphthene		N	1790	µg/l	0.50	11	< 0.50
3-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50
Dibenzofuran		N	1790	µg/l	0.50	4.7	< 0.50
4-Chlorophenylphenylether		N	1790	µg/l	0.50	< 0.50	< 0.50
2,4-Dinitrotoluene		N	1790	µg/l	0.50	< 0.50	< 0.50
Fluorene		N	1790	µg/l	0.50	4.3	< 0.50
Diethyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50
4-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50
Azobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether		N	1790	µg/l	0.50	< 0.50	< 0.50
Hexachlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50
Phenanthrene		N	1790	µg/l	0.50	< 0.50	< 0.50
Anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50
Carbazole		N	1790	µg/l	0.50	7.5	< 0.50
Di-N-Butyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50
Fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50
Pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50
Butylbenzyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[a]anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50
Chrysene		N	1790	µg/l	0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[b]fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[k]fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[a]pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene		N	1790	µg/l	0.50	< 0.50	< 0.50
4-Nitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50
Total Phenols		U	1920	mg/l	0.030	0.083	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1460	Mercury low-level in Waters by AFS	Mercury	Atomic Fluorescence Spectrometry, with collimated UV source, wavelength 253.7 nm.	PL GW
1490	Hexavalent Chromium in Waters	Chromium [VI]	Automated colorimetric analysis by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.	PL GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection	
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.	PL GW
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Amended Report

Report No.:	24-28971-2		
Initial Date of Issue:	25-Sep-2024	**Date of Re-Issue:**	25-Sep-2024
Re-Issue Details:	This report has been revised and directly supersedes 24-28971-1 in its entirety		
Client	E3P		
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ		
Contact(s):	ndawson@e3p.co.uk		
Project	Ryebank Fields Waters		
Quotation No.:		**Date Received:**	09-Sep-2024
Order No.:	009567	**Date Instructed:**	09-Sep-2024
No. of Samples:	6		
Turnaround (Wkdays):	13	**Results Due:**	25-Sep-2024
Date Approved:	13-Sep-2024		
Approved By:			
Details:	David Smith, Technical Director		

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: Ryebank Fields Waters

Client: E3P			**Chemtest Job No.:**			24-28971	24-28971	24-28971	24-28971	24-28971	24-28971
Quotation No.:			**Chemtest Sample ID.:**			1863710	1863711	1863712	1863713	1863714	1863715
			Client Sample ID.:			CP201	CP203	CP204	WS201	WS202	WS205
			Sample Type:			WATER	WATER	WATER	WATER	WATER	WATER
			Sample Sub Type:								
			Date Sampled:			02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024
			Time Sampled:			12:00	12:00	12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
pH at 20C		U	1010		4.0	8.2	8.3	8.0	8.3	8.6	9.1
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.12	0.060
Calcium (Dissolved)		U	1455	mg/l	2.00	84	93	130	52	23	16
Arsenic (Dissolved)		U	1455	µg/l	0.20	2.3	8.5	2.7	6.3	6.5	27
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)		U	1455	µg/l	0.50	3.0	3.5	4.4	1.7	1.5	< 0.50
Copper (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Mercury (Dissolved)		U	1455	µg/l	0.05	0.09	< 0.05	< 0.05	0.06	0.14	0.06
Manganese (Dissolved)		U	1455	µg/l	0.50	100	300	880	47	20	1.6
Nickel (Dissolved)		U	1455	µg/l	0.50	1.5	1.3	1.6	2.1	0.92	3.3
Lead (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50	2.4	1.1	< 0.50
Selenium (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)		U	1455	µg/l	2.5	3.3	3.8	4.4	3.3	2.8	3.2
Dissolved Organic Carbon		U	1610	mg/l	2.0	43	35	52	32	18	14
Aliphatic TPH >C5-C6	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C21-C35	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	EH_2D_AL_#1	N	1675	µg/l	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C7-C8	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	8.3	< 0.10	< 0.10
Aromatic TPH >C8-C10	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	12	< 0.10	350	< 0.10	< 0.10
Aromatic TPH >C10-C12	EH_2D_AR_#1	N	1675	µg/l	0.10	11	15	33	430	< 0.10	< 0.10
Aromatic TPH >C12-C16	EH_2D_AR_#1	N	1675	µg/l	0.10	12	6.2	16	170	< 0.10	< 0.10
Aromatic TPH >C16-C21	EH_2D_AR_#1	N	1675	µg/l	0.10	4.4	4.1	5.6	34	< 0.10	< 0.10
Aromatic TPH >C21-C35	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	EH_2D_AR_#1	N	1675	µg/l	5.0	27	37	55	990	< 5.0	< 5.0
Total Petroleum Hydrocarbons	EH_2D_Total_#1	N	1675	µg/l	10	27	37	55	990	< 10	< 10
Dichlorodifluoromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5	< 5	< 5
Chloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Water

Project: Ryebank Fields Waters

Client: E3P				**Chemtest Job No.:**		24-28971	24-28971	24-28971	24-28971	24-28971	24-28971
Quotation No.:				**Chemtest Sample ID.:**		1863710	1863711	1863712	1863713	1863714	1863715
				Client Sample ID.:		CP201	CP203	CP204	WS201	WS202	WS205
				Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
				Sample Sub Type:							
				Date Sampled:		02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024
				Time Sampled:		12:00	12:00	12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
1,1-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5	< 5	< 5
Trichloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene		U	1760	µg/l	1.0	87	70	< 1.0	< 1.0	< 1.0	1.9
1,2-Dichloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane		U	1760	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
Bromodichloromethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene		N	1760	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
Toluene		U	1760	µg/l	1.0	< 1.0	42	< 1.0	< 1.0	< 1.0	< 1.0
Trans-1,3-Dichloropropene		N	1760	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane		U	1760	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
Tetrachloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane		U	1760	µg/l	10	< 10	< 10	< 10	< 10	< 10	< 10
1,2-Dibromoethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5	< 5	< 5
Chlorobenzene		N	1760	µg/l	1.0	< 1.0	4.9	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1,2-Tetrachloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene		U	1760	µg/l	1.0	< 1.0	33	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene		U	1760	µg/l	1.0	2.6	56	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene		U	1760	µg/l	1.0	3.4	78	< 1.0	< 1.0	< 1.0	< 1.0
Styrene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene		U	1760	µg/l	1.0	1.3	8.3	< 1.0	< 1.0	< 1.0	< 1.0
Bromobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane		N	1760	µg/l	50	< 50	< 50	< 50	< 50	< 50	< 50
N-Propylbenzene		U	1760	µg/l	1.0	< 1.0	5.8	< 1.0	< 1.0	< 1.0	< 1.0
2-Chlorotoluene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene		U	1760	µg/l	1.0	< 1.0	19	< 1.0	< 1.0	< 1.0	< 1.0
4-Chlorotoluene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene		U	1760	µg/l	1.0	40	19	< 1.0	< 1.0	< 1.0	< 1.0

Results - Water

Project: Ryebank Fields Waters

Client: E3P				**Chemtest Job No.:**		24-28971	24-28971	24-28971	24-28971	24-28971	24-28971
Quotation No.:				**Chemtest Sample ID.:**		1863710	1863711	1863712	1863713	1863714	1863715
				Client Sample ID.:		CP201	CP203	CP204	WS201	WS202	WS205
				Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
				Sample Sub Type:							
				Date Sampled:		02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024
				Time Sampled:		12:00	12:00	12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Sec-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichlorobenzene		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene		U	1760	µg/l	1.0	< 1.0	1.7	< 1.0	< 1.0	< 1.0	< 1.0
1,4-Dichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane		U	1760	µg/l	50	< 50	< 50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)		N	1790	µg/l	0.50	0.56	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol		N	1790	µg/l	0.50	2.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroethoxy)Methane		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene		N	1790	µg/l	0.50	95	5.0	270	7.4	9.7	1.3
4-Chloroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene		N	1790	µg/l	0.50	4.2	0.56	11	3.6	1.2	< 0.50
2,4,6-Trichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Water

Project: Ryebank Fields Waters

Client: E3P				**Chemtest Job No.:**		24-28971	24-28971	24-28971	24-28971	24-28971	24-28971
Quotation No.:				**Chemtest Sample ID.:**		1863710	1863711	1863712	1863713	1863714	1863715
				Client Sample ID.:		CP201	CP203	CP204	WS201	WS202	WS205
				Sample Type:		WATER	WATER	WATER	WATER	WATER	WATER
				Sample Sub Type:							
				Date Sampled:		02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024	02-Sep-2024
				Time Sampled:		12:00	12:00	12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**						
Acenaphthylene		N	1790	µg/l	0.50	0.82	< 0.50	12	< 0.50	< 0.50	< 0.50
Dimethylphthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene		N	1790	µg/l	0.50	3.4	0.73	17	11	4.5	< 0.50
3-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran		N	1790	µg/l	0.50	1.7	< 0.50	7.1	4.1	1.2	< 0.50
4-Chlorophenylphenylether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene		N	1790	µg/l	0.50	1.6	< 0.50	6.5	4.0	1.8	< 0.50
Diethyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene		N	1790	µg/l	0.50	3.4	0.84	7.3	5.3	3.4	< 0.50
Anthracene		N	1790	µg/l	0.50	0.71	< 0.50	1.0	0.75	0.55	< 0.50
Carbazole		N	1790	µg/l	0.50	13	< 0.50	14	8.3	1.1	< 0.50
Di-N-Butyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene		N	1790	µg/l	0.50	1.0	< 0.50	1.1	0.59	1.0	< 0.50
Pyrene		N	1790	µg/l	0.50	0.71	< 0.50	0.75	< 0.50	0.65	< 0.50
Butylbenzyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Phenols		U	1920	mg/l	0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection	
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.	PL GW
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.
Any comments or interpretations are outside the scope of UKAS accreditation.
The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.
Uncertainty of measurement for the determinands tested are available upon request .
None of the results in this report have been recovery corrected.
All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.
All Asbestos testing is performed at the indicated laboratory .
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.
All water samples will be retained for 14 days from the date of receipt.
Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water
GW - Ground Water
LE - Land Leachate
NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	24-34371-1
Initial Date of Issue:	28-Oct-2024
Re-Issue Details:	
Client	E3P
Client Address:	Taylor Road Trafford Park Urmston Manchester M41 7JQ
Contact(s):	ndawson@e3p.co.uk
Project	Ryebank Fields Waters

Quotation No.:		**Date Received:**	23-Oct-2024
Order No.:	009813	**Date Instructed:**	23-Oct-2024
No. of Samples:	4		
Turnaround (Wkdays):	5	**Results Due:**	29-Oct-2024
Date Approved:	28-Oct-2024		

Approved By:



Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Water

Project: Ryebank Fields Waters

Client: E3P				**Chemtest Job No.:**		24-34371	24-34371	24-34371	24-34371
Quotation No.:				**Chemtest Sample ID.:**		1884639	1884640	1884641	1884642
				Client Sample ID.:		CP201	CP202	CP203	CP204
				Sample Type:		WATER	WATER	WATER	WATER
				Sample Sub Type:					
				Date Sampled:		21-Oct-2024	21-Oct-2024	21-Oct-2024	21-Oct-2024
				Time Sampled:		12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
pH at 20C		U	1010		4.0	8.2	8.3	8.4	8.1
Cyanide (Total)		U	1300	mg/l	0.050	< 0.050	< 0.050	< 0.050	< 0.050
Calcium (Dissolved)		U	1455	mg/l	2.00	110	95	95	150
Arsenic (Dissolved)		U	1455	µg/l	0.20	1.8	11	3.8	2.0
Cadmium (Dissolved)		U	1455	µg/l	0.11	< 0.11	< 0.11	< 0.11	< 0.11
Chromium (Dissolved)		U	1455	µg/l	0.50	0.67	< 0.50	< 0.50	< 0.50
Copper (Dissolved)		U	1455	µg/l	0.50	0.96	0.92	0.92	0.68
Mercury (Dissolved)		U	1455	µg/l	0.05	0.05	< 0.05	< 0.05	< 0.05
Manganese (Dissolved)		U	1455	µg/l	0.50	110	390	220	630
Nickel (Dissolved)		U	1455	µg/l	0.50	1.3	1.3	0.76	1.9
Lead (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	1.6	< 0.50
Selenium (Dissolved)		U	1455	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Zinc (Dissolved)		U	1455	µg/l	2.5	530	400	490	530
Dissolved Organic Carbon		U	1610	mg/l	2.0	3.8	44	22	38
Aliphatic TPH >C5-C6	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C6-C8	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C8-C10	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C10-C12	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C12-C16	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C16-C21	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	170	< 0.10
Aliphatic TPH >C21-C35	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aliphatic TPH >C35-C44	EH_2D_AL_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aliphatic Hydrocarbons	EH_2D_AL_#1	N	1675	µg/l	5.0	< 5.0	< 5.0	170	< 5.0
Aromatic TPH >C5-C7	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	0.84	< 0.10	< 0.10
Aromatic TPH >C7-C8	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	57	24	< 0.10
Aromatic TPH >C8-C10	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	390	330	< 0.10
Aromatic TPH >C10-C12	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	270	190	< 0.10
Aromatic TPH >C12-C16	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	120	< 0.10
Aromatic TPH >C16-C21	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C21-C35	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Aromatic TPH >C35-C44	EH_2D_AR_#1	N	1675	µg/l	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Aromatic Hydrocarbons	EH_2D_AR_#1	N	1675	µg/l	5.0	< 5.0	720	670	< 5.0
Total Petroleum Hydrocarbons	EH_2D_Total_#1	N	1675	µg/l	10	< 10	720	840	< 10
Dichlorodifluoromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Chloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vinyl Chloride		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromomethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5
Chloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichlorofluoromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Water

Project: Ryebank Fields Waters

Client: E3P				**Chemtest Job No.:**		24-34371	24-34371	24-34371	24-34371
Quotation No.:				**Chemtest Sample ID.:**		1884639	1884640	1884641	1884642
				Client Sample ID.:		CP201	CP202	CP203	CP204
				Sample Type:		WATER	WATER	WATER	WATER
				Sample Sub Type:					
				Date Sampled:		21-Oct-2024	21-Oct-2024	21-Oct-2024	21-Oct-2024
				Time Sampled:		12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
1,1-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Trans 1,2-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloroethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
cis 1,2-Dichloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Bromochloromethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5
Trichloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1,1-Trichloroethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tetrachloromethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,1-Dichloropropene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Benzene		U	1760	µg/l	1.0	130	31	93	< 1.0
1,2-Dichloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Trichloroethene		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichloropropane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Dibromomethane		U	1760	µg/l	10	< 10	< 10	< 10	< 10
Bromodichloromethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5
cis-1,3-Dichloropropene		N	1760	µg/l	10	< 10	< 10	< 10	< 10
Toluene		U	1760	µg/l	1.0	1.2	42	58	< 1.0
Trans-1,3-Dichloropropene		N	1760	µg/l	10	< 10	< 10	< 10	< 10
1,1,2-Trichloroethane		U	1760	µg/l	10	< 10	< 10	< 10	< 10
Tetrachloroethene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3-Dichloropropane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Dibromochloromethane		U	1760	µg/l	10	< 10	< 10	< 10	< 10
1,2-Dibromoethane		U	1760	µg/l	5	< 5	< 5	< 5	< 5
Chlorobenzene		N	1760	µg/l	1.0	1.3	25	5.9	< 1.0
1,1,1,2-Tetrachloroethane		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Ethylbenzene		U	1760	µg/l	1.0	1.6	21	60	< 1.0
m & p-Xylene		U	1760	µg/l	1.0	4.3	83	100	< 1.0
o-Xylene		U	1760	µg/l	1.0	4.0	51	35	< 1.0
Styrene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tribromomethane		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Isopropylbenzene		U	1760	µg/l	1.0	16	4.3	15	< 1.0
Bromobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichloropropane		N	1760	µg/l	50	< 50	< 50	< 50	< 50
N-Propylbenzene		U	1760	µg/l	1.0	11	2.6	11	< 1.0
2-Chlorotoluene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,3,5-Trimethylbenzene		U	1760	µg/l	1.0	< 1.0	18	33	< 1.0
4-Chlorotoluene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Tert-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,4-Trimethylbenzene		U	1760	µg/l	1.0	27	38	55	< 1.0

Results - Water

Project: Ryebank Fields Waters

Client: E3P				**Chemtest Job No.:**		24-34371	24-34371	24-34371	24-34371
Quotation No.:				**Chemtest Sample ID.:**		1884639	1884640	1884641	1884642
				Client Sample ID.:		CP201	CP202	CP203	CP204
				Sample Type:		WATER	WATER	WATER	WATER
				Sample Sub Type:					
				Date Sampled:		21-Oct-2024	21-Oct-2024	21-Oct-2024	21-Oct-2024
				Time Sampled:		12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Sec-Butylbenzene		U	1760	µg/l	1.0	2.1	< 1.0	2.9	< 1.0
1,3-Dichlorobenzene		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
4-Isopropyltoluene		U	1760	µg/l	1.0	< 1.0	1.7	4.1	< 1.0
1,4-Dichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Butylbenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2-Dibromo-3-Chloropropane		U	1760	µg/l	50	< 50	< 50	< 50	< 50
1,2,4-Trichlorobenzene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Hexachlorobutadiene		U	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
1,2,3-Trichlorobenzene		U	1760	µg/l	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Methyl Tert-Butyl Ether		N	1760	µg/l	1.0	< 1.0	< 1.0	< 1.0	< 1.0
N-Nitrosodimethylamine		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis-(2-Chloroethyl)Ether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,3-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,4-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2-Dichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylphenol (o-Cresol)		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Chloroisopropyl)Ether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachloroethane		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
N-Nitrosodi-n-propylamine		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Methylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Nitrobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Isophorone		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dimethylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50	3.9	< 0.50
Bis(2-Chloroethoxy)Methane		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
1,2,4-Trichlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene		N	1790	µg/l	0.50	1.9	27	130	< 0.50
4-Chloroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobutadiene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Chloro-3-Methylphenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methylnaphthalene		N	1790	µg/l	0.50	< 0.50	3.4	6.6	< 0.50
2,4,6-Trichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4,5-Trichlorophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Chloronaphthalene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50

Results - Water

Project: Ryebank Fields Waters

Client: E3P				**Chemtest Job No.:**		24-34371	24-34371	24-34371	24-34371
Quotation No.:				**Chemtest Sample ID.:**		1884639	1884640	1884641	1884642
				Client Sample ID.:		CP201	CP202	CP203	CP204
				Sample Type:		WATER	WATER	WATER	WATER
				Sample Sub Type:					
				Date Sampled:		21-Oct-2024	21-Oct-2024	21-Oct-2024	21-Oct-2024
				Time Sampled:		12:00	12:00	12:00	12:00
Determinand	**HWOL Code**	**Accred.**	**SOP**	**Units**	**LOD**				
Acenaphthylene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dimethylphthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,6-Dinitrotoluene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Acenaphthene		N	1790	µg/l	0.50	2.5	6.5	5.5	< 0.50
3-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenzofuran		N	1790	µg/l	0.50	1.0	2.2	2.5	< 0.50
4-Chlorophenylphenylether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2,4-Dinitrotoluene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluorene		N	1790	µg/l	0.50	< 0.50	2.9	2.1	< 0.50
Diethyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitroaniline		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
2-Methyl-4,6-Dinitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Azobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Bromophenylphenyl Ether		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Hexachlorobenzene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Phenanthrene		N	1790	µg/l	0.50	1.2	3.1	2.8	< 0.50
Anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Carbazole		N	1790	µg/l	0.50	2.1	5.2	8.0	< 0.50
Di-N-Butyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Butylbenzyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Chrysene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Bis(2-Ethylhexyl)Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Di-N-Octyl Phthalate		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[b]fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[k]fluoranthene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[a]pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Indeno(1,2,3-c,d)Pyrene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Dibenz(a,h)Anthracene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Benzo[g,h,i]perylene		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
4-Nitrophenol		N	1790	µg/l	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Phenols		U	1920	mg/l	0.030	< 0.030	0.062	0.28	< 0.030

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
1010	pH Value of Waters	pH at 20°C	pH Meter	RE PW TE TS PL DW GW
1300	Cyanides & Thiocyanate in Waters	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Continuous Flow Analysis.	GW
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).	RE PW PL SW DW GW
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation	PL SW GW
1675	TPH Aliphatic/Aromatic split in Waters by GC-FID(cf. Texas Method 1006 / TPH CWG)	Aliphatics: >C5–C6, >C6–C8, >C8– C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Pentane extraction / GCxGC FID detection	
1760	Volatile Organic Compounds (VOCs) in Waters by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics. (cf. USEPA Method 8260)	Automated headspace gas chromatographic (GC) analysis of water samples with mass spectrometric (MS) detection of volatile organic compounds.	PL GW
1790	Semi-Volatile Organic Compounds (SVOCs) in Waters by GC-MS	Semi-volatile organic compounds	Solvent extraction / GCMS detection	
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.	PL GW

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection
NEW-ASB	Eurofins Chemtest Limited, 11 Depot Road, Newmarket, CB8 0AL
DURHAM	Eurofins Chemtest Limited, Unit A North Wing, Prospect Business Park, Crookhall Lane, Consett, Co Durham, DH8 7PW

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at ≤ 30°C prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

DW - Drinking Water

Report Information

GW - Ground Water
LE - Land Leachate
NA - Not Applicable
PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

APPENDIX VIII
GEOTECHNICAL TESTING RESULTS



LABORATORY REPORT

4043

Contract Number: PSL19/7862

Report Date: 15 January 2020

Client's Reference: 13533

Client Name: E3P
Heliport Business Park
Liverpool Road
Eccles
Manchester
M30 7RU

For the attention of: Ella Moss

Contract Title: Ryebank

Date Received: 23/12/2019
Date Commenced: 23/12/2019
Date Completed: 15/1/2020

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:

R Gunson (Director)	A Watkins (Director)	R Berriman (Quality Manager)
S Royle (Laboratory Manager)	S Eyre (Senior Technician)	L Knight (Senior Technician)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rgunson@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
CP101	3	BB	3.00	3.45	MADE GROUND dark grey very gravelly very sandy clay.
CP101	8	BB	8.00	8.45	MADE GROUND dark brown slightly sandy gravel.
CP102	1	BB	1.00	1.45	MADE GROUND dark brown sandy slightly clayey gravel with many cobbles.
CP102	3	BB	3.00	3.45	MADE GROUND dark brown sandy slightly clayey gravel with many cobbles.
CP102	5	BB	5.00	5.45	MADE GROUND brown sandy gravel.
TP120		BB	2.10		MADE GROUND dark brown very sandy clayey gravel.
TP129		BB	1.30		MADE GROUND brown clayey sand & gravel.
CP101		D	14.45	14.95	Dark brown gravelly very sandy CLAY.
CP102		D	12.50	12.95	Dark brown gravelly very sandy CLAY.
CP102		D	14.00	14.45	Dark brown gravelly very sandy CLAY.

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
CP101	3	BB	3.00	3.45	31							
CP101	8	BB	8.00	8.45	16							
CP102	1	BB	1.00	1.45	14							
CP102	3	BB	3.00	3.45	19							
TP120		BB	2.10		20							
TP129		BB	1.30		28							
CP101		D	14.45	14.95	11			28	15	13	78	Low plasticity CL.
CP102		D	12.50	12.95	10			26	14	12	77	Low plasticity CL.
CP102		D	14.00	14.45	16			36	19	17	84	Intermediate plasticity CI.

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

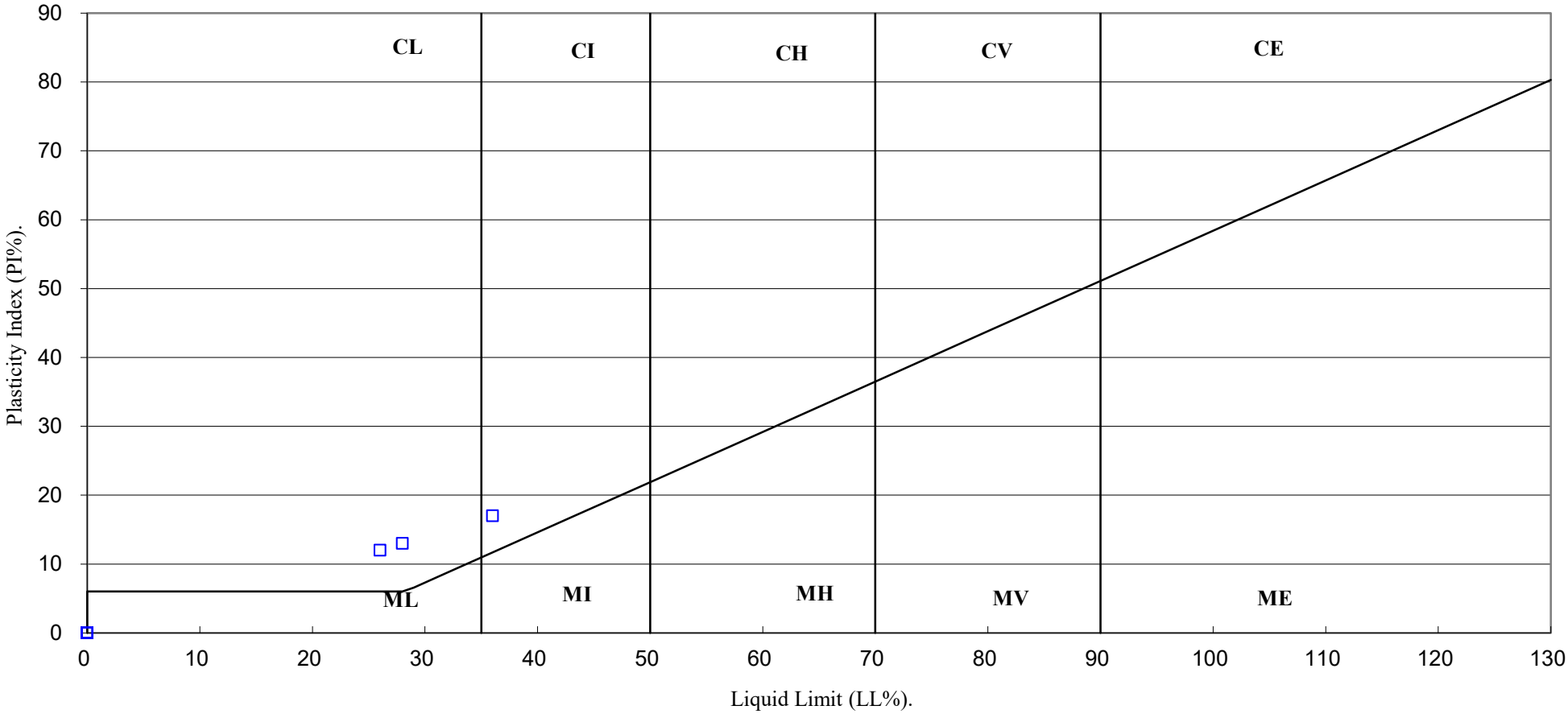
UKAS TESTING 4043

PSL Professional Soils Laboratory

Ryebank

Contract No:
PSL19/7862
Client Ref:
13533

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



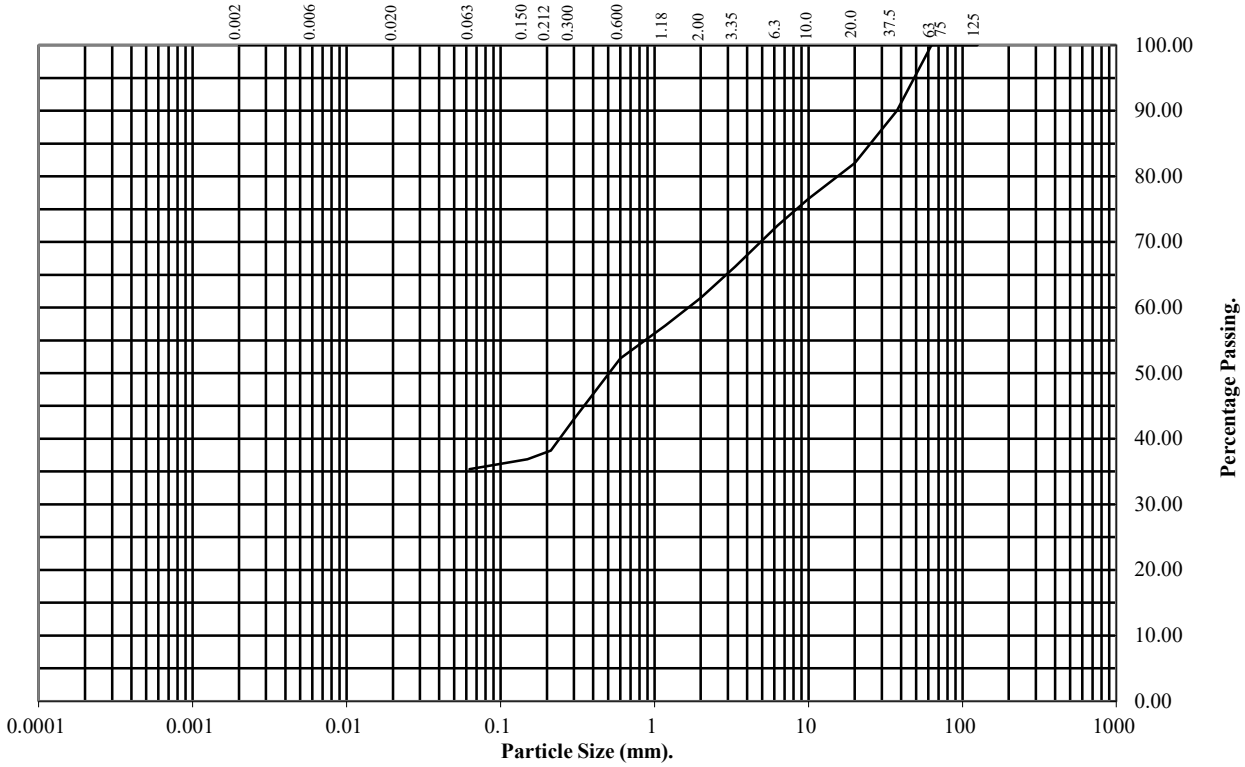
UKAS TESTING 4043	PSL Professional Soils Laboratory	Ryebank	Contract No: PSL19/7862 Client Ref: 13533

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP101**	**Top Depth (m):**	**3.00**
Sample Number:	**3**	**Base Depth(m):**	**3.45**
Sample Type:	**BB**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	90
20	82
10	77
6.3	72
3.35	66
2	61
1.18	57
0.6	52
0.3	43
0.212	38
0.15	37
0.063	35

Soil Fraction	Total Percentage
Cobbles	0
Gravel	39
Sand	26
Silt/Clay	35

Remarks:

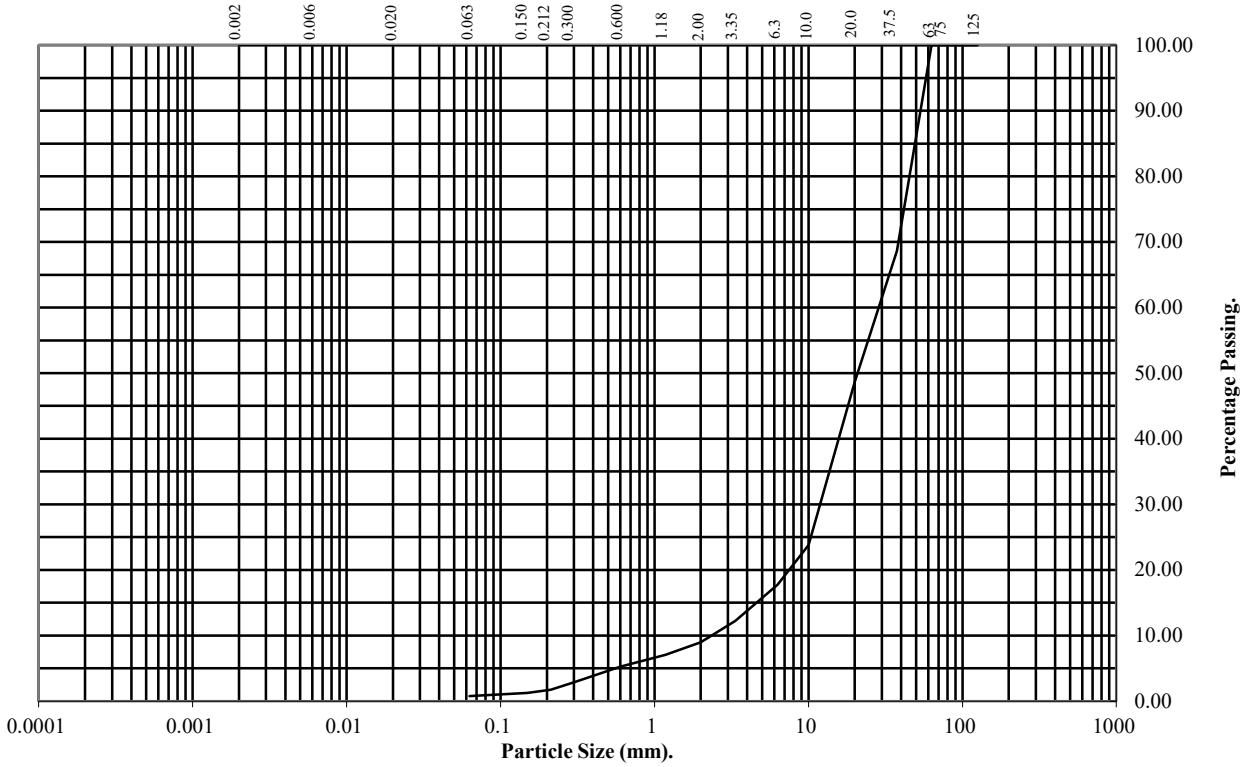
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP101**	**Top Depth (m):**	**8.00**
Sample Number:	**8**	**Base Depth(m):**	**8.45**
Sample Type:	**BB**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	69
20	49
10	24
6.3	18
3.35	12
2	9
1.18	7
0.6	5
0.3	3
0.212	2
0.15	1
0.063	1

Soil Fraction	Total Percentage
Cobbles	0
Gravel	91
Sand	8
Silt/Clay	1

Remarks:

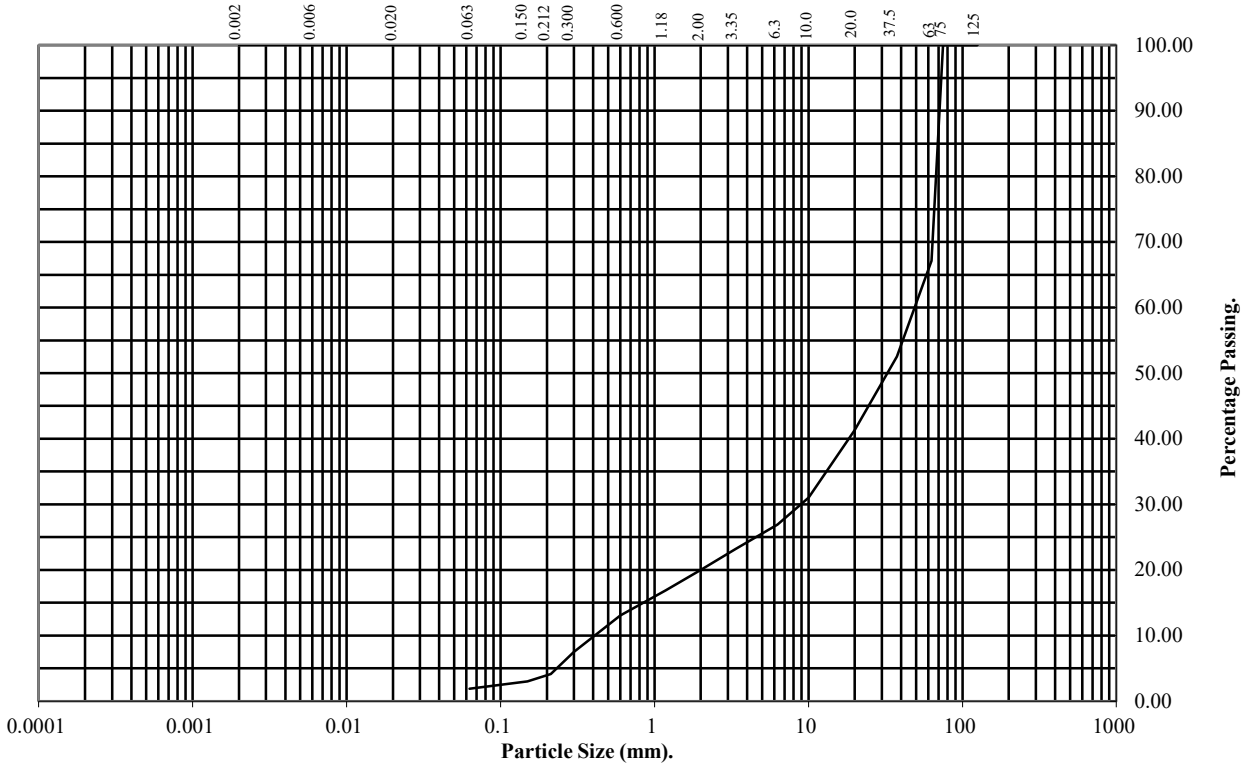
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP102**	**Top Depth (m):**	**1.00**
Sample Number:	**1**	**Base Depth(m):**	**1.45**
Sample Type:	**BB**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	67
37.5	53
20	41
10	31
6.3	27
3.35	23
2	20
1.18	17
0.6	13
0.3	8
0.212	4
0.15	3
0.063	2

Soil Fraction	Total Percentage
Cobbles	33
Gravel	47
Sand	18
Silt/Clay	2

Remarks:

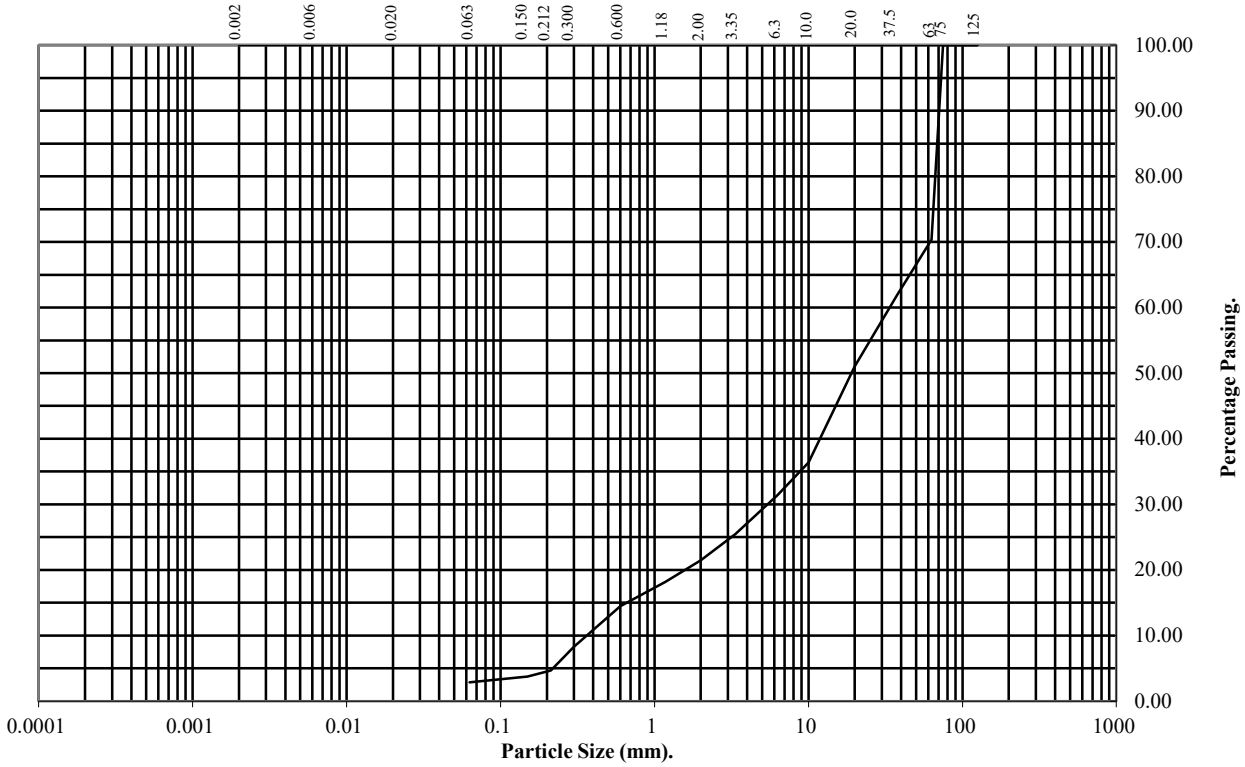
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP102**	**Top Depth (m):**	**3.00**
Sample Number:	**3**	**Base Depth(m):**	**3.45**
Sample Type:	**BB**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	70
37.5	62
20	51
10	36
6.3	31
3.35	25
2	21
1.18	18
0.6	14
0.3	8
0.212	5
0.15	4
0.063	3

Soil Fraction	Total Percentage
Cobbles	30
Gravel	49
Sand	18
Silt/Clay	3

Remarks:

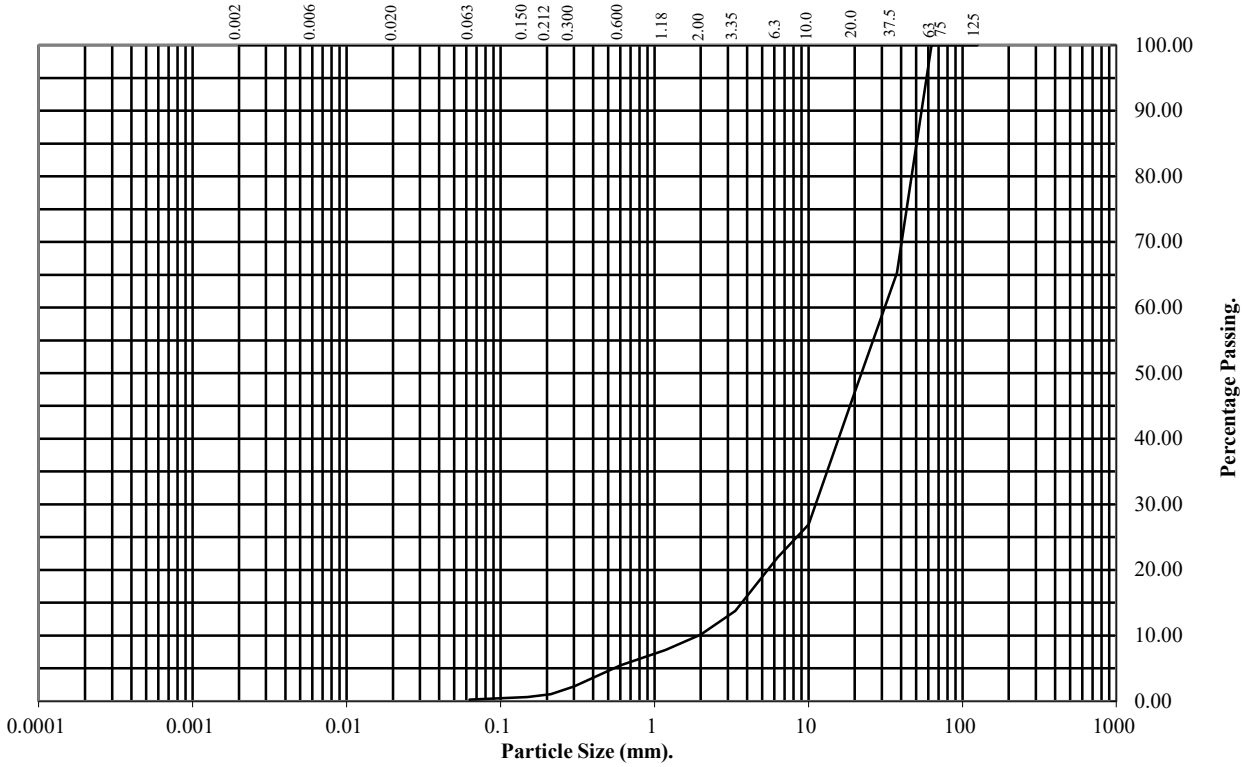
See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:	**CP102**	**Top Depth (m):**	**5.00**
Sample Number:	**5**	**Base Depth(m):**	**5.45**
Sample Type:	**BB**		



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	65
20	47
10	27
6.3	22
3.35	14
2	10
1.18	8
0.6	5
0.3	2
0.212	1
0.15	1
0.063	0

Soil Fraction	Total Percentage
Cobbles	0
Gravel	90
Sand	10
Silt/Clay	0

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

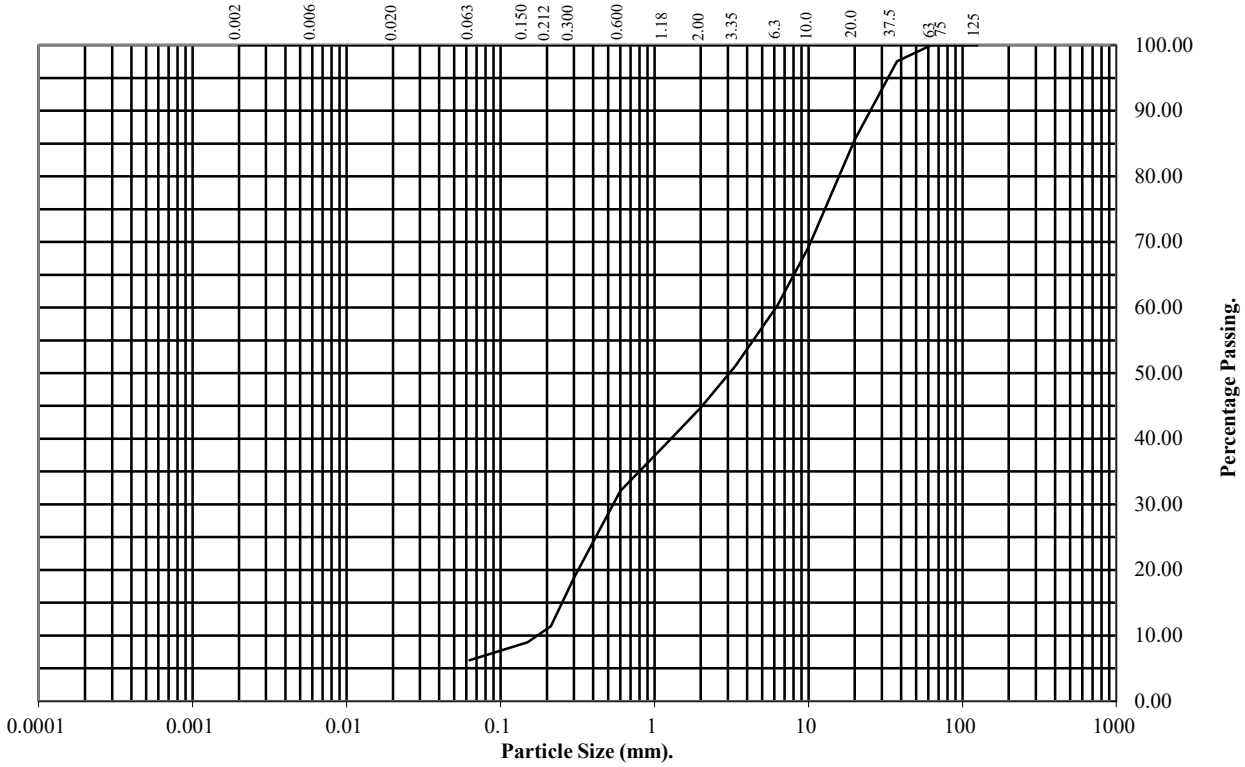
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP120 **Top Depth (m):** 2.10

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

Sample Type: BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	98
20	86
10	69
6.3	60
3.35	51
2	45
1.18	39
0.6	32
0.3	19
0.212	11
0.15	9
0.063	6

Soil Fraction	Total Percentage
Cobbles	0
Gravel	55
Sand	39
Silt/Clay	6

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

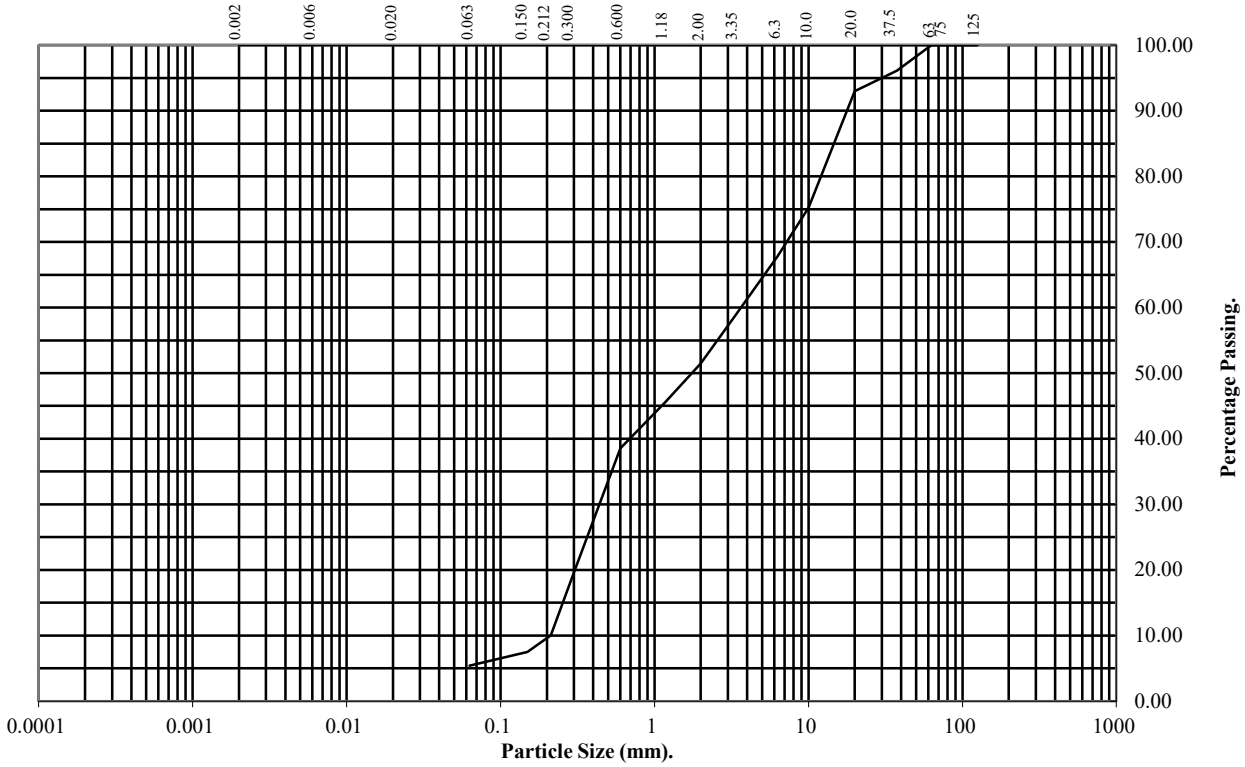
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: TP129 **Top Depth (m):** 1.30

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

Sample Type: BB



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	96
20	93
10	75
6.3	68
3.35	59
2	51
1.18	46
0.6	39
0.3	20
0.212	10
0.15	8
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	49
Sand	46
Silt/Clay	5

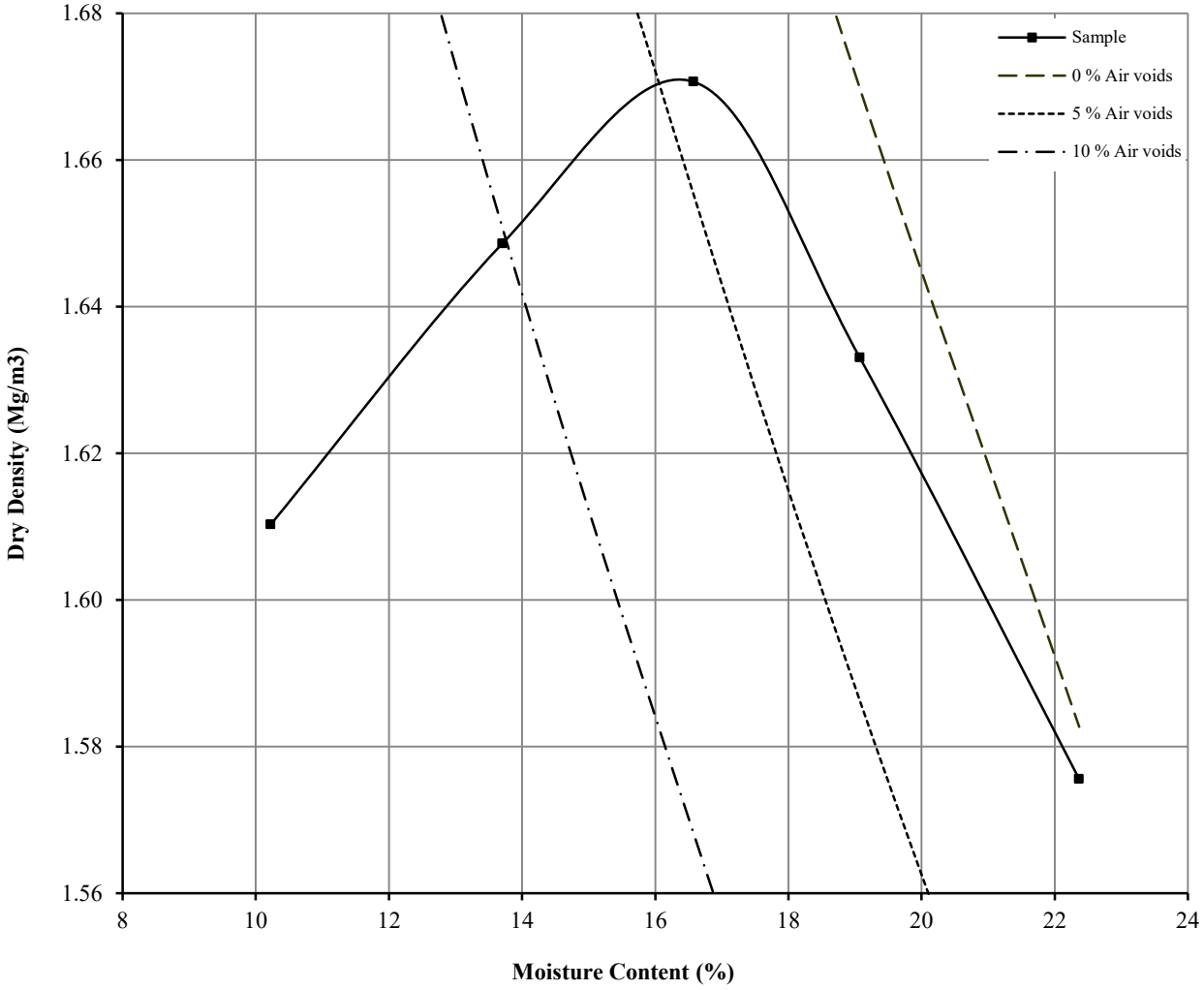
Remarks:

See Summary of Soil Descriptions

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number:	**CP101**	**Top Depth (m) :**	**3.00**
Sample Number:	**3**	**Base Depth (m) :**	**3.45**
Sample Type:	**BB**		



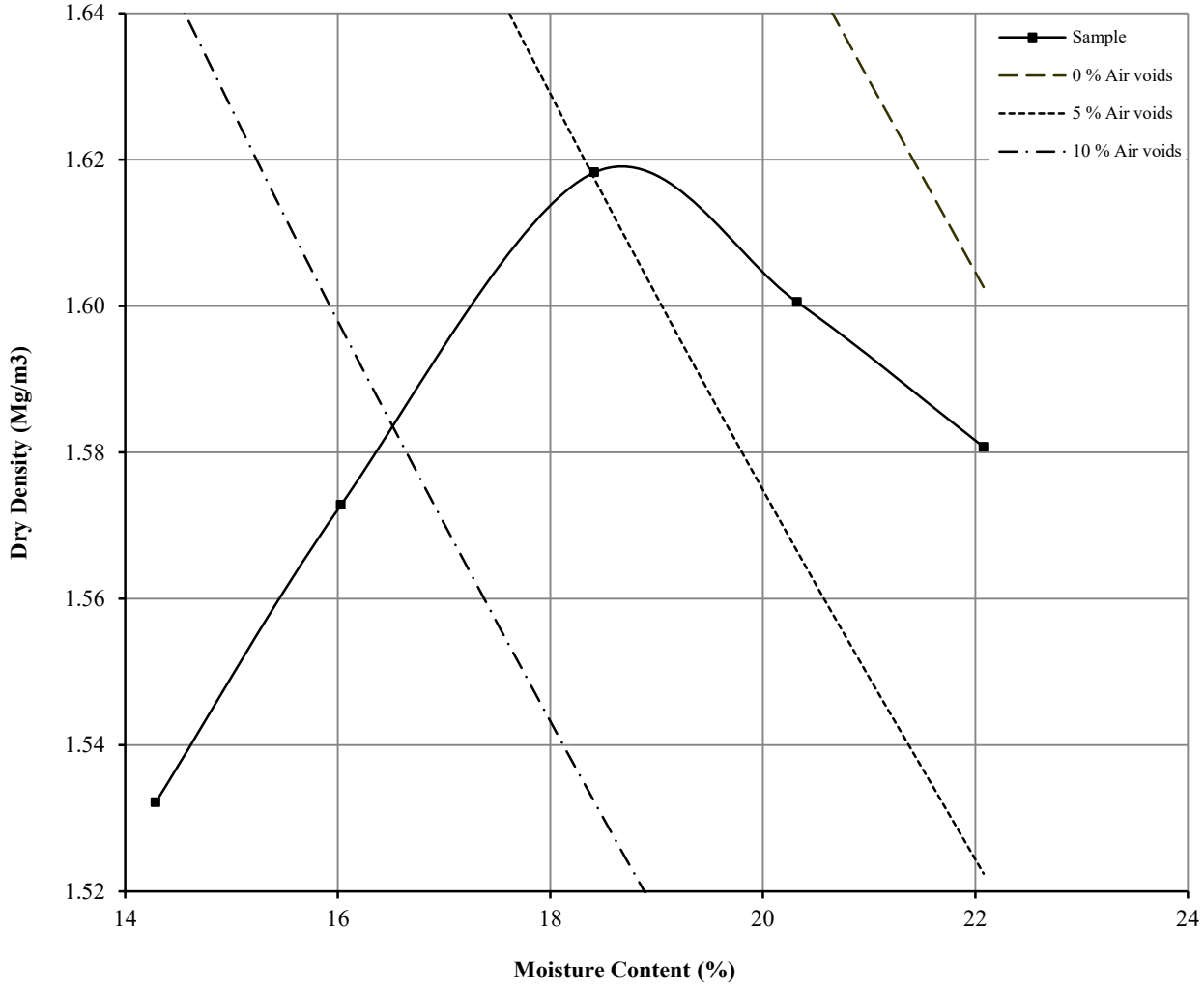
Initial Moisture Content:		31	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.45	Assumed	Material Retained on 37.5 mm Test Sieve (%):		10
Maximum Dry Density (Mg/m3):		1.67	Material Retained on 20.0 mm Test Sieve (%):		8
Optimum Moisture Content (%):		17			
Remarks See summary of soil descriptions.					

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Ryebank**	**Contract** **PSL19/7862** **Client Ref** **13533**

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number:	**CP101**	**Top Depth (m) :**	**8.00**
Sample Number:	**8**	**Base Depth (m) :**	**8.45**
Sample Type:	**BB**		



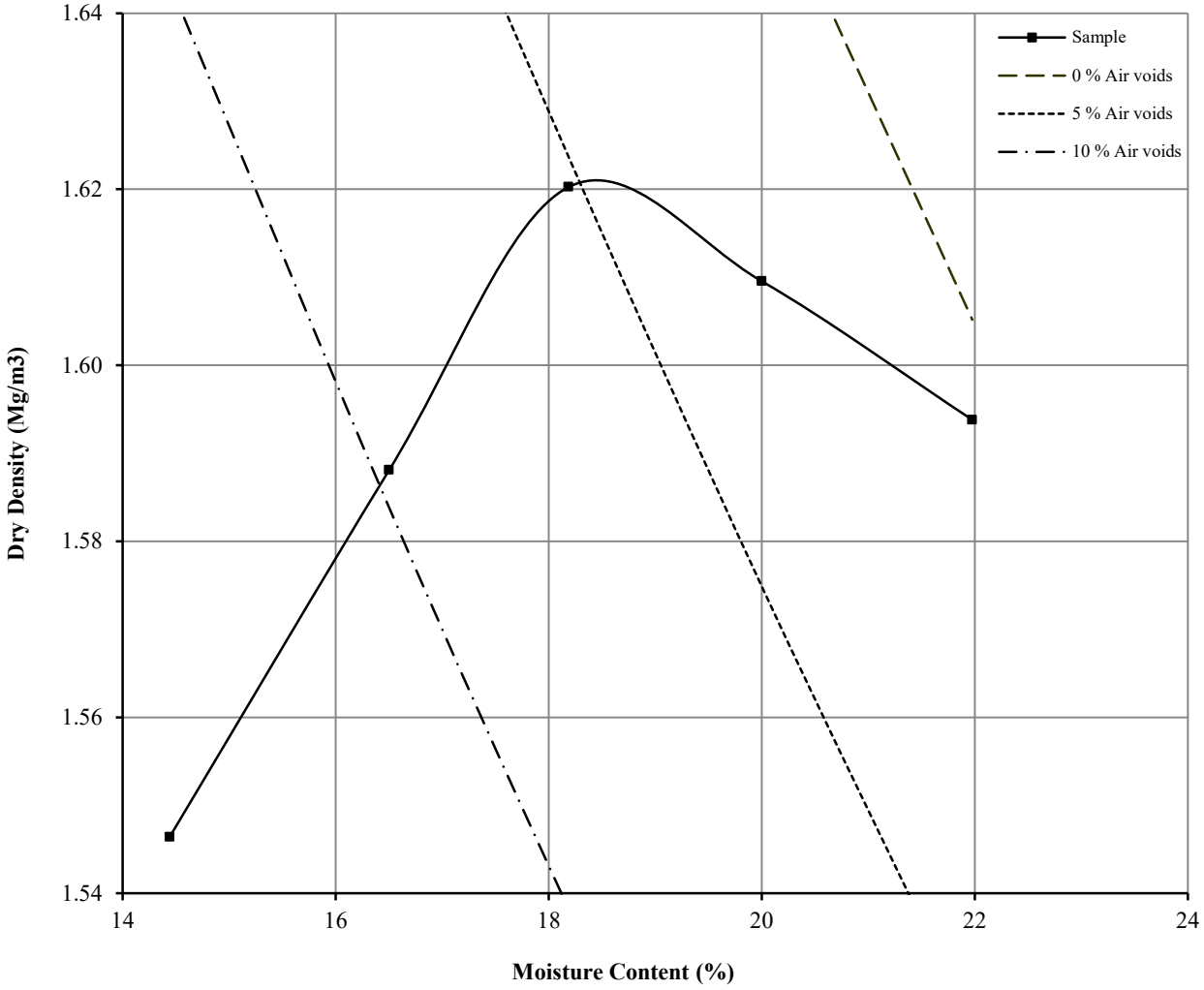
Initial Moisture Content:		16	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.48	Assumed	Material Retained on 37.5 mm Test Sieve (%):		31
Maximum Dry Density (Mg/m3):		1.62	Material Retained on 20.0 mm Test Sieve (%):		20
Optimum Moisture Content (%):		18			
Remarks See summary of soil descriptions.					

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Ryebank**	**Contract** **PSL19/7862** **Client Ref** **13533**

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number:	**CP102**	**Top Depth (m) :**	**1.00**
Sample Number:	**1**	**Base Depth (m) :**	**1.45**
Sample Type:	**BB**		



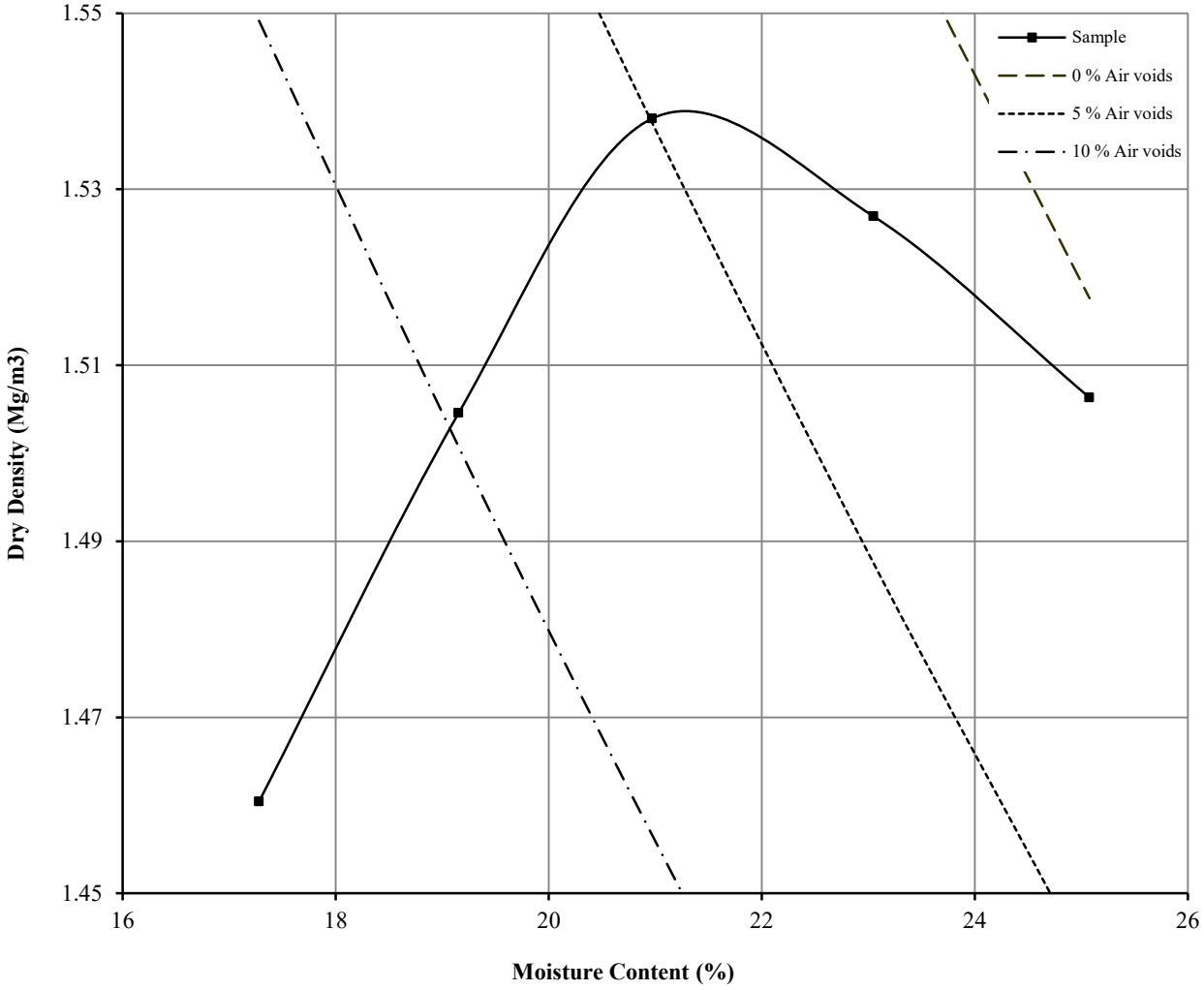
Initial Moisture Content:		14	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.48	Assumed	Material Retained on 37.5 mm Test Sieve (%):		47
Maximum Dry Density (Mg/m3):		1.62	Material Retained on 20.0 mm Test Sieve (%):		12
Optimum Moisture Content (%):		18			
Remarks See summary of soil descriptions.					

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Ryebank**	**Contract** **PSL19/7862** **Client Ref** **13533**

DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

Non compliance with BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number:	**CP102**	**Top Depth (m) :**	**3.00**
Sample Number:	**3**	**Base Depth (m) :**	**3.45**
Sample Type:	**BB**		



Initial Moisture Content:		19	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.45	Assumed	Material Retained on 37.5 mm Test Sieve (%):		38
Maximum Dry Density (Mg/m3):		1.54	Material Retained on 20.0 mm Test Sieve (%):		11
Optimum Moisture Content (%):		21			
Remarks See summary of soil descriptions.					

UKAS TESTING 4043	PSL Professional Soils Laboratory	**Ryebank**	**Contract** **PSL19/7862** **Client Ref** **13533**

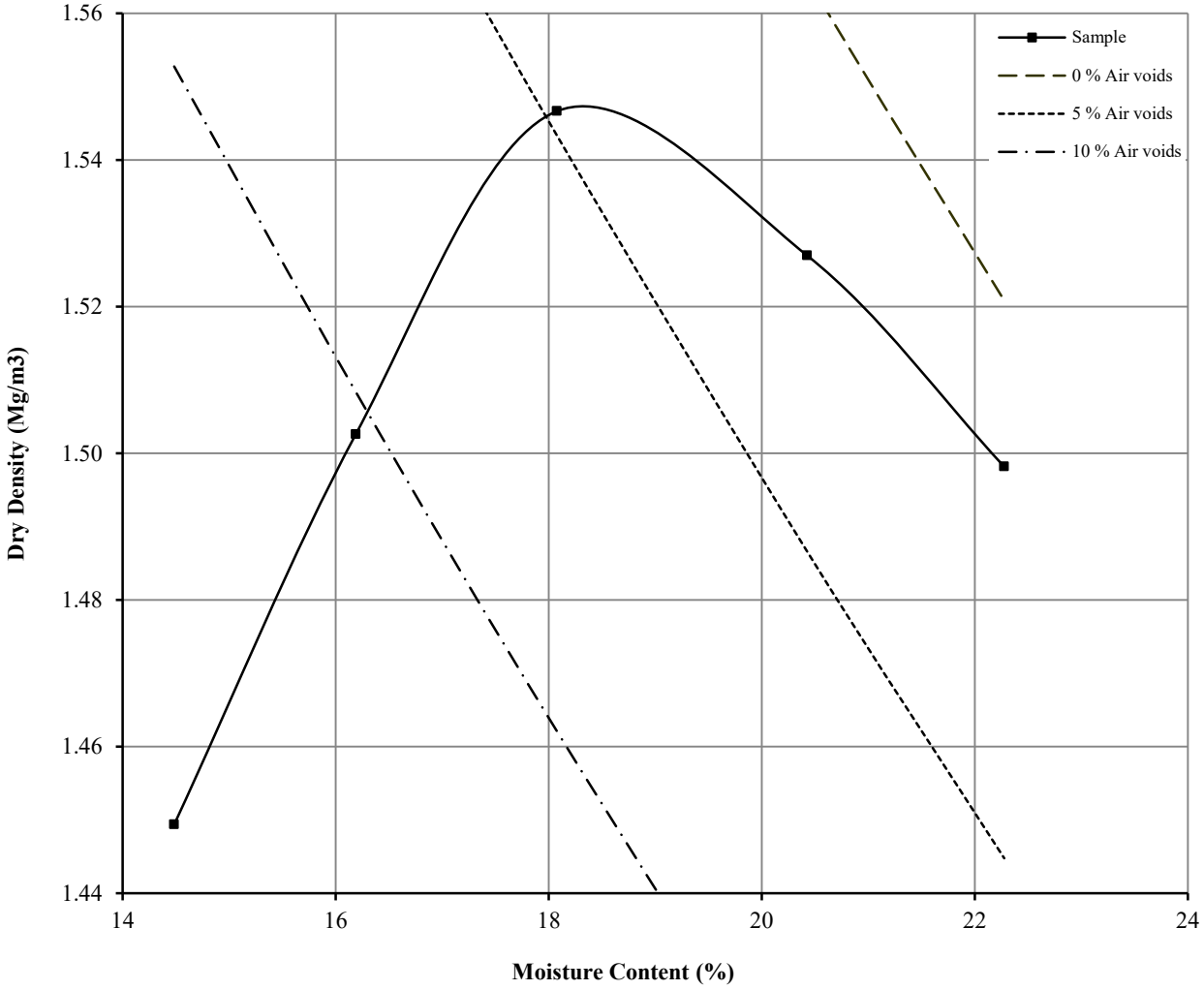
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number: TP120 **Top Depth (m) :** 2.10

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

Sample Type: BB



Initial Moisture Content:		20	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.3	Assumed	Material Retained on 37.5 mm Test Sieve (%):		2
Maximum Dry Density (Mg/m3):		1.55	Material Retained on 20.0 mm Test Sieve (%):		12
Optimum Moisture Content (%):		18			
Remarks See summary of soil descriptions.					

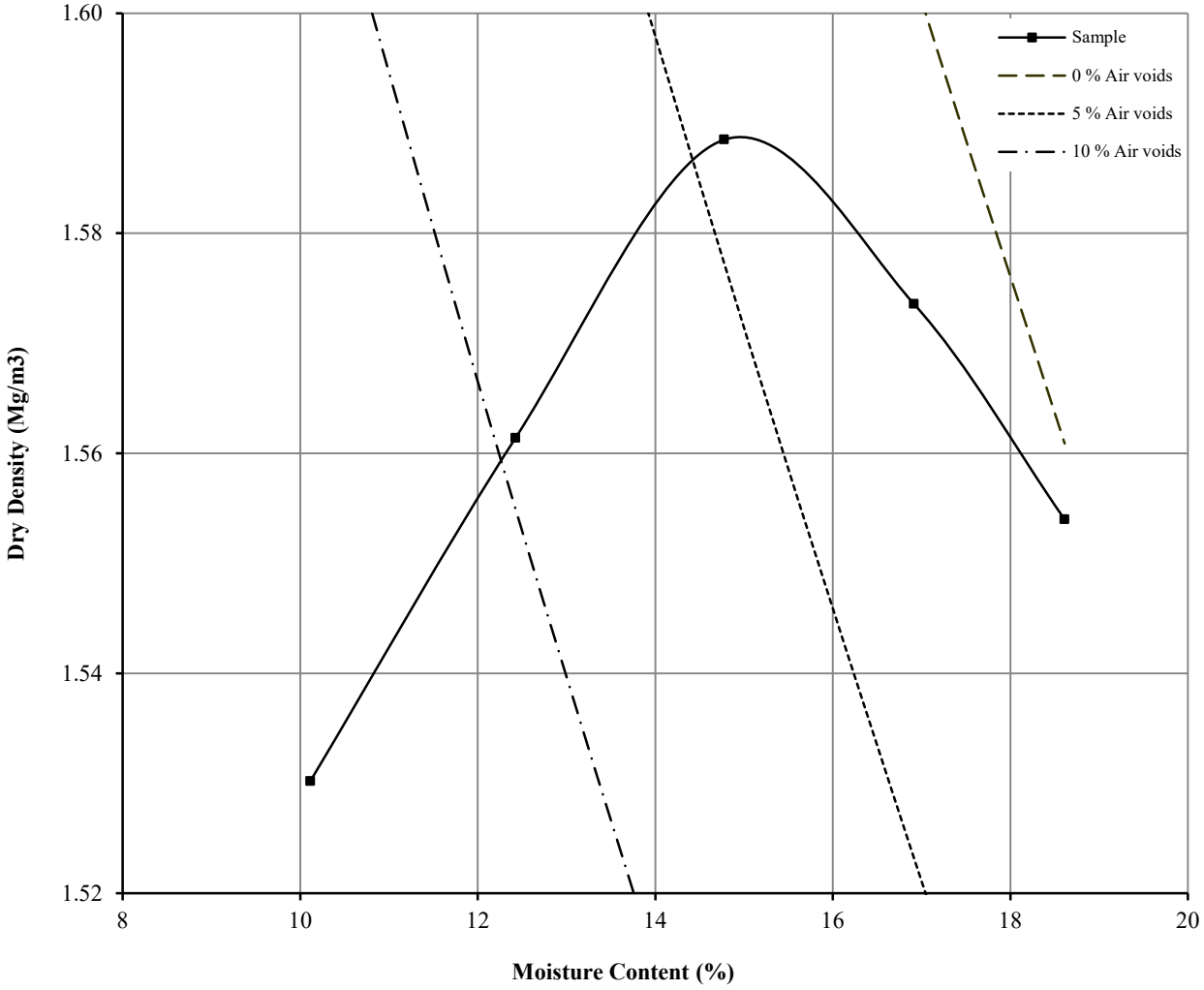
DRY DENSITY / MOISTURE CONTENT RELATIONSHIP

BS 1377 : Part 4 : Clause 3.4 : 1990

Hole Number: TP129 **Top Depth (m) :** 1.30

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

Sample Type: BB



Initial Moisture Content:		28	Method of Compaction:	2.5kg	Separate Samples
Particle Density (Mg/m3):	2.2	Assumed	Material Retained on 37.5 mm Test Sieve (%):		4
Maximum Dry Density (Mg/m3):		1.59	Material Retained on 20.0 mm Test Sieve (%):		3
Optimum Moisture Content (%):		15			
Remarks See summary of soil descriptions.					

MURRAY RIX
CONSULTANCY, SITE INVESTIGATION
CONSTRUCTION MATERIALS TESTING

TEST REPORT

Client e3p

Address Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

Contract Ryebank Fields

Job Number MRN 24005/184
Date of Issue 31 August 2024

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

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

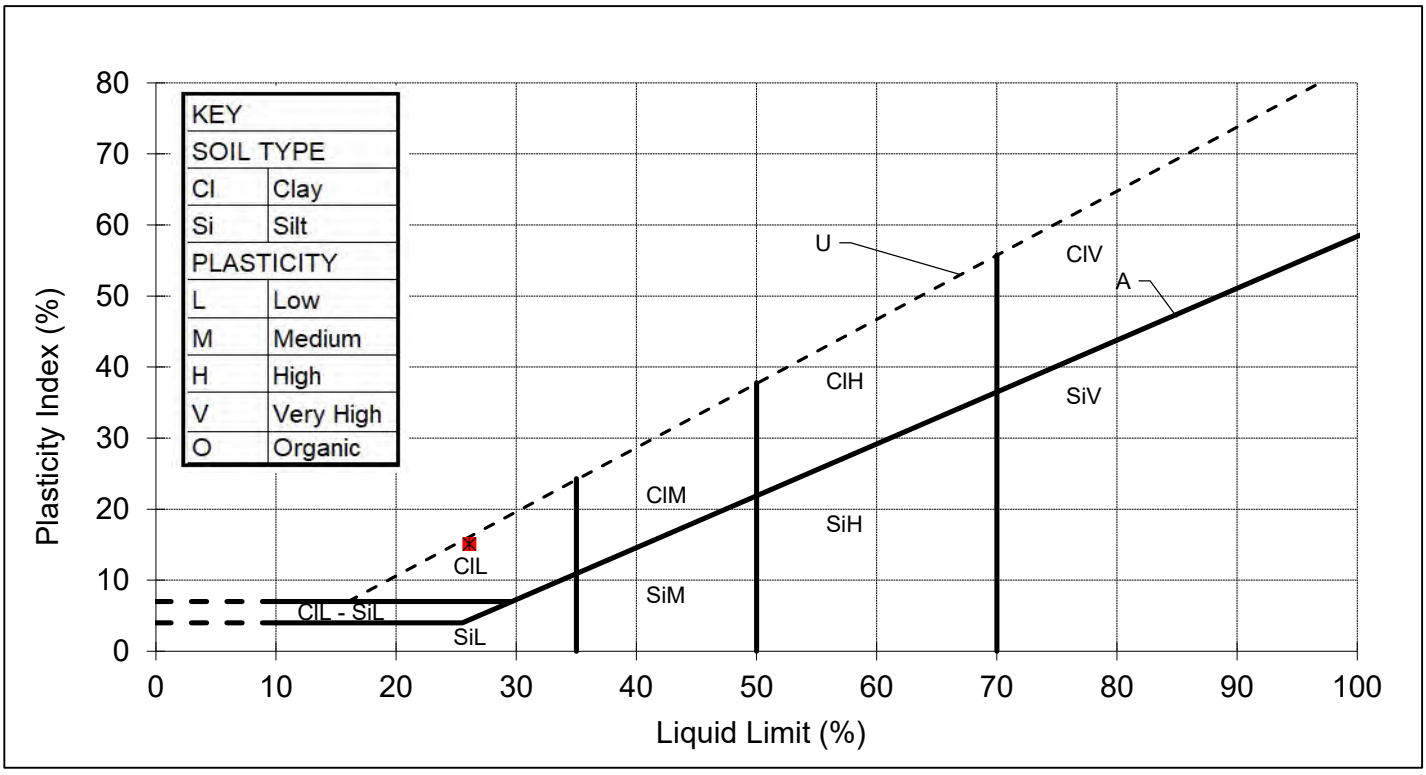
CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP201 10.5	DATE SAMPLED	Not advised
SAMPLE No.	528201	DATE RECEIVED	07-Aug-24
DATE TESTED	13-Aug-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Hand Picked

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	21.4	26.9	0.979	
Determination 2 (avg)	21.3	26.4		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
12.7	26	11	15	98



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

LIQUID LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.3 (30° FALL CONE) 1 POINT METHOD
PLASTIC LIMIT BS EN ISO 17892-12:2018+A2:2022 Clause 5.5
WATER CONTENT METHOD BS EN ISO 17892-1:2014+A1:2022

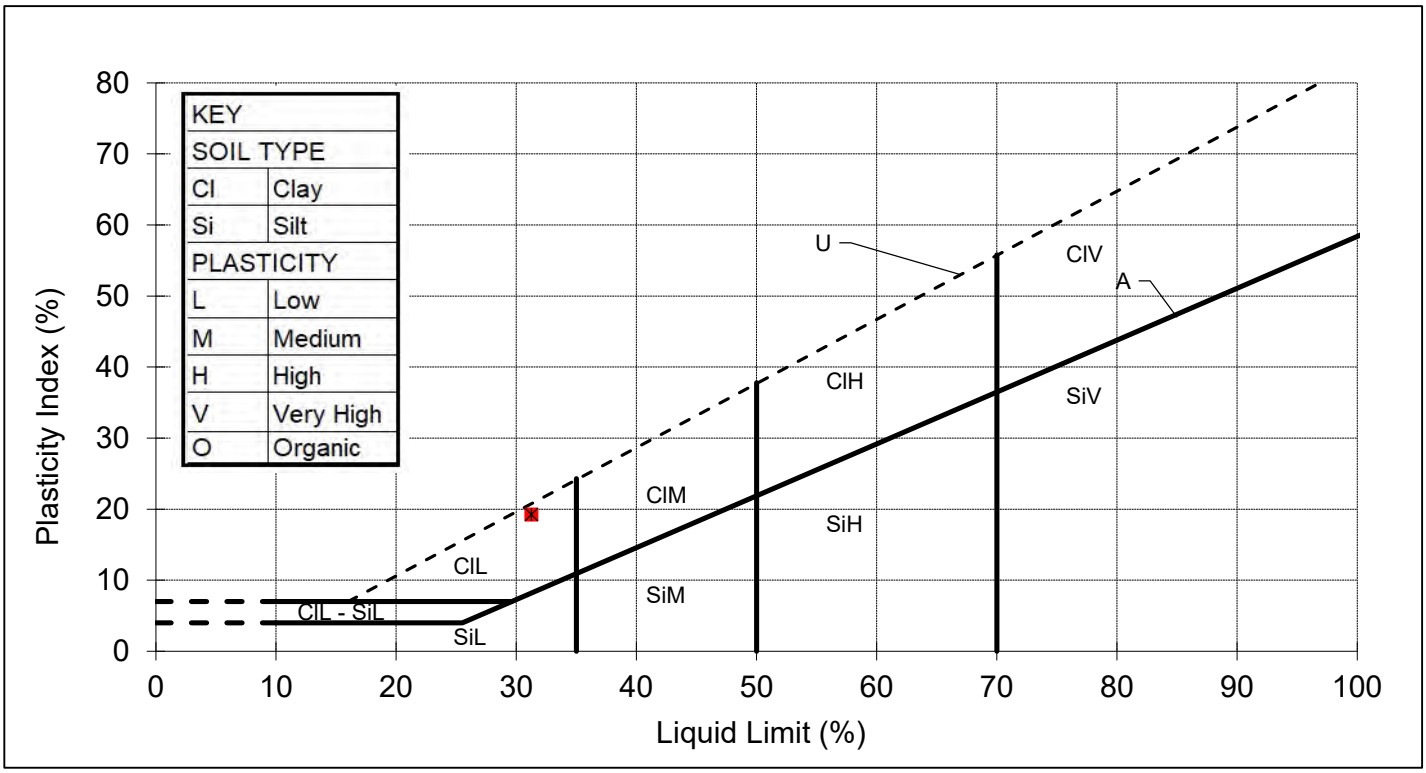
CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP204 8	DATE SAMPLED	Not advised
SAMPLE No.	528209	DATE RECEIVED	07-Aug-24
DATE TESTED	13-Aug-24	SAMPLED BY	Client

MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample	WATER CONTENT	Increasing
SAMPLE HISTORY	Natural State	% RET. 425um BY	Hand Picked

Test Readings mm (average)		Water Content %	Correction Factor	Correction factor from Clayton and Jukes 1978
Determination 1 (avg)	21.6	32.0	0.976	
Determination 2 (avg)	21.7	32.1		

Natural Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 425 micron (%)
21.2	31	12	19	99



REMARKS

SIGNED

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

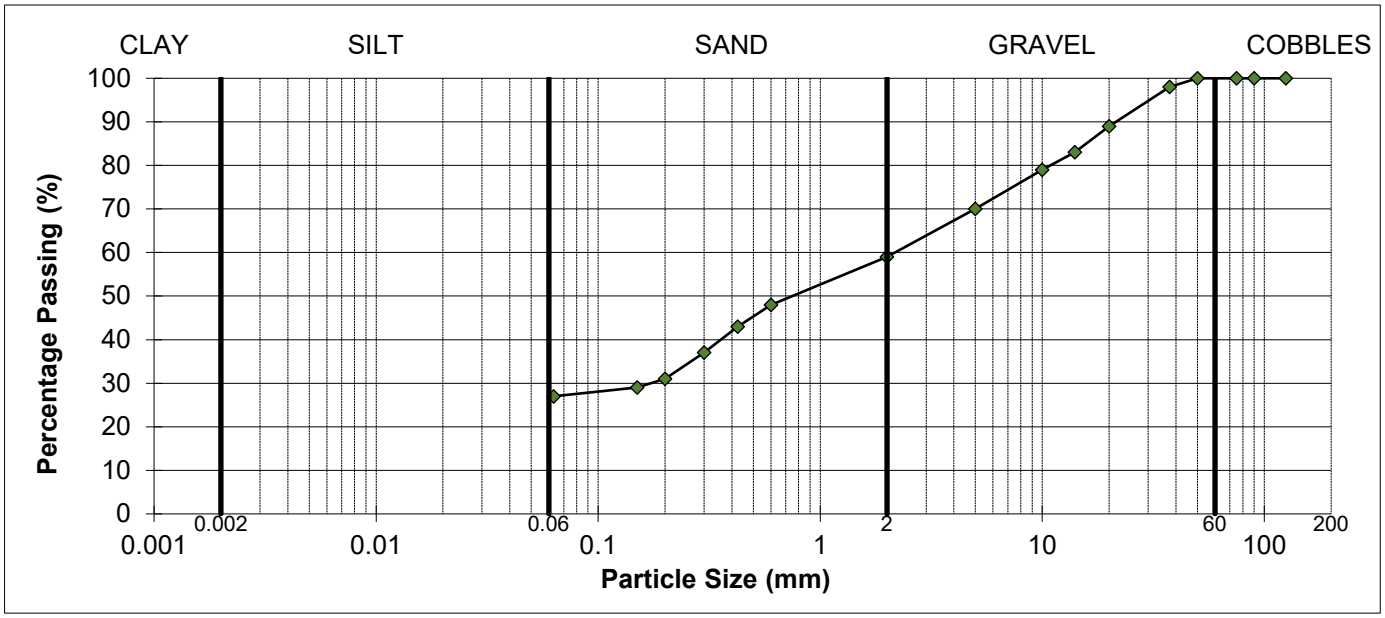
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP201 1.5	DATE SAMPLED	Not advised
LAB SAMPLE No	528203	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100	100	5	70	
90	100		2	59	15-80
75	100		0.6	48	
50	100		0.425	43	
37.5	98		0.3	37	
20	89		0.2	31	
14	83		0.15	29	
10	79		0.063	27	15-80



SOIL FRACTIONS			
COBBLES	0%	SAND	32%
GRAVEL	41%	SILT / CLAY	27%

As received water content	25.2%

REMARKS
Sample complies with the advised grading specification for a 2C material (SHW 2016)

SIGNED

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

M U R R A Y R I X
ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

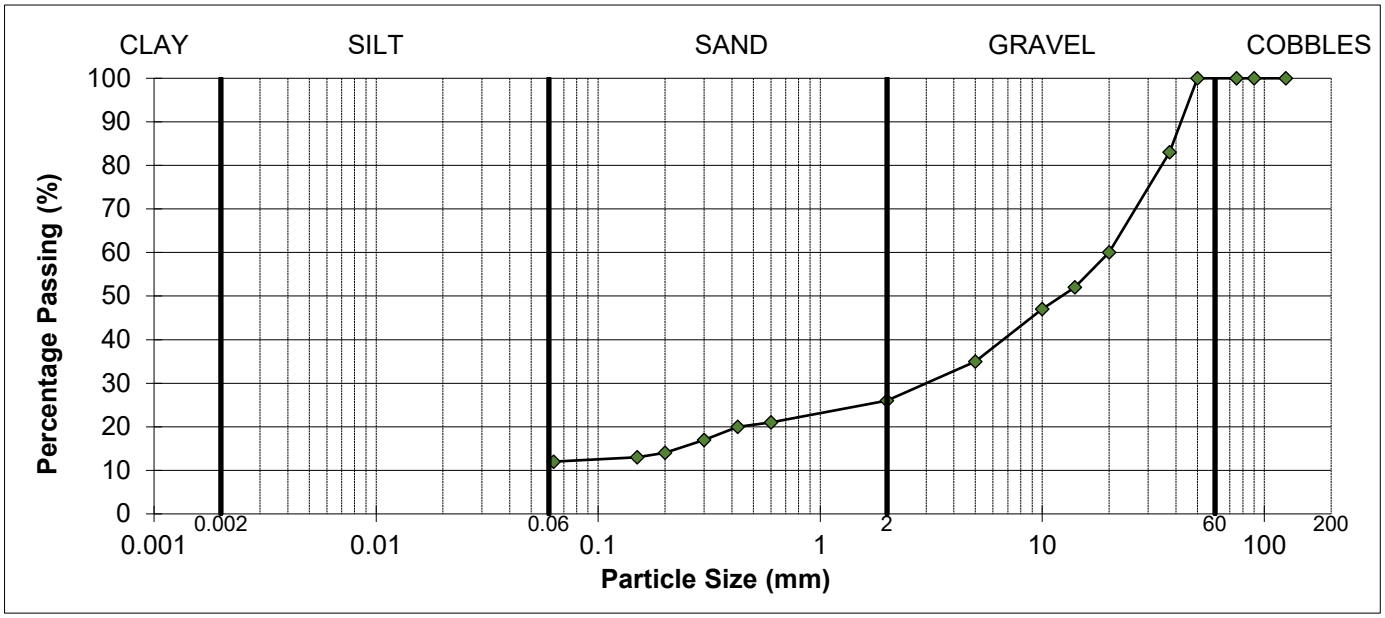
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP202 4	DATE SAMPLED	Not advised
LAB SAMPLE No	528205	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100	95-100	5	35	
90	100		2	26	
75	100		0.6	21	
50	100		0.425	20	
37.5	83		0.3	17	
20	60		0.2	14	
14	52		0.15	13	
10	47		0.063	12	<15



SOIL FRACTIONS			
COBBLES	0%	SAND	14%
GRAVEL	74%	SILT / CLAY	12%

As received water content	20.3%

REMARKS

Sample complies with the advised grading specification for a 1A material (SHW 2016), Uniformity coefficient = >10

SIGNED

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

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DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

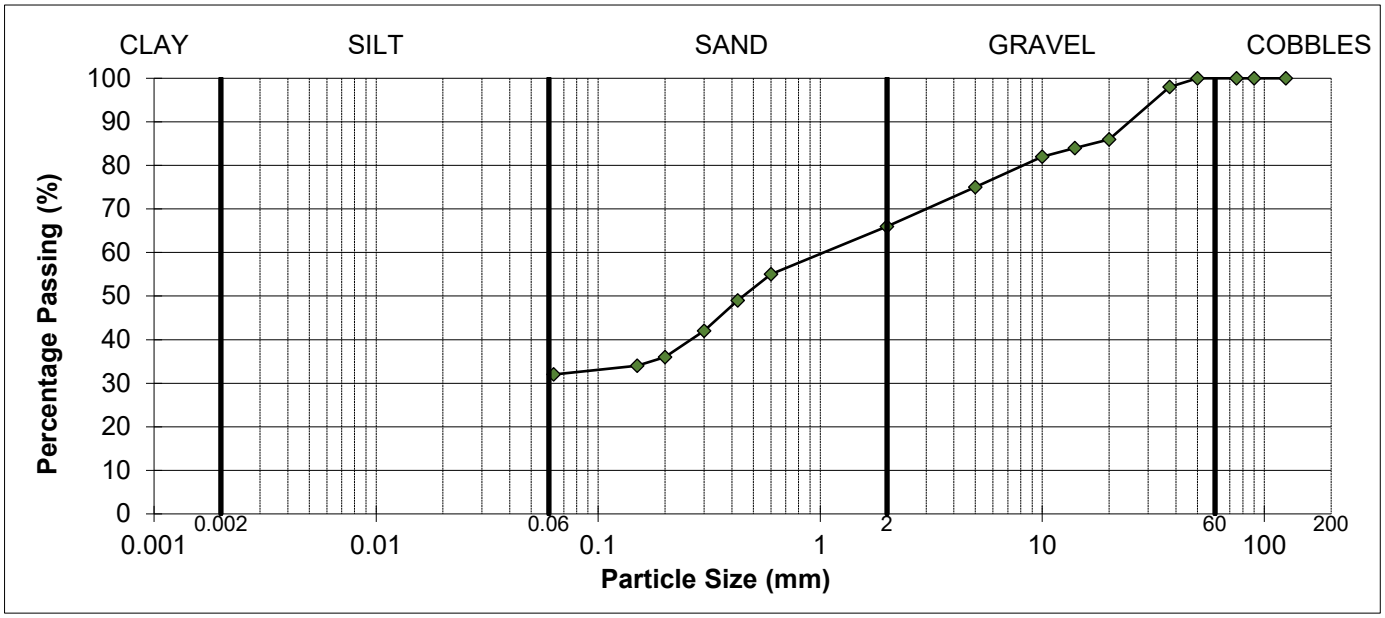
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP203 1	DATE SAMPLED	Not advised
LAB SAMPLE No	528207	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100	100	5	75	
90	100		2	66	15-80
75	100		0.6	55	
50	100		0.425	49	
37.5	98		0.3	42	
20	86		0.2	36	
14	84		0.15	34	
10	82		0.063	32	15-80



SOIL FRACTIONS			
COBBLES	0%	SAND	34%
GRAVEL	34%	SILT / CLAY	32%

As received water content	21.0%

REMARKS
Sample complies with the advised grading specification for a 2C material (SHW 2016)

SIGNED

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

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UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

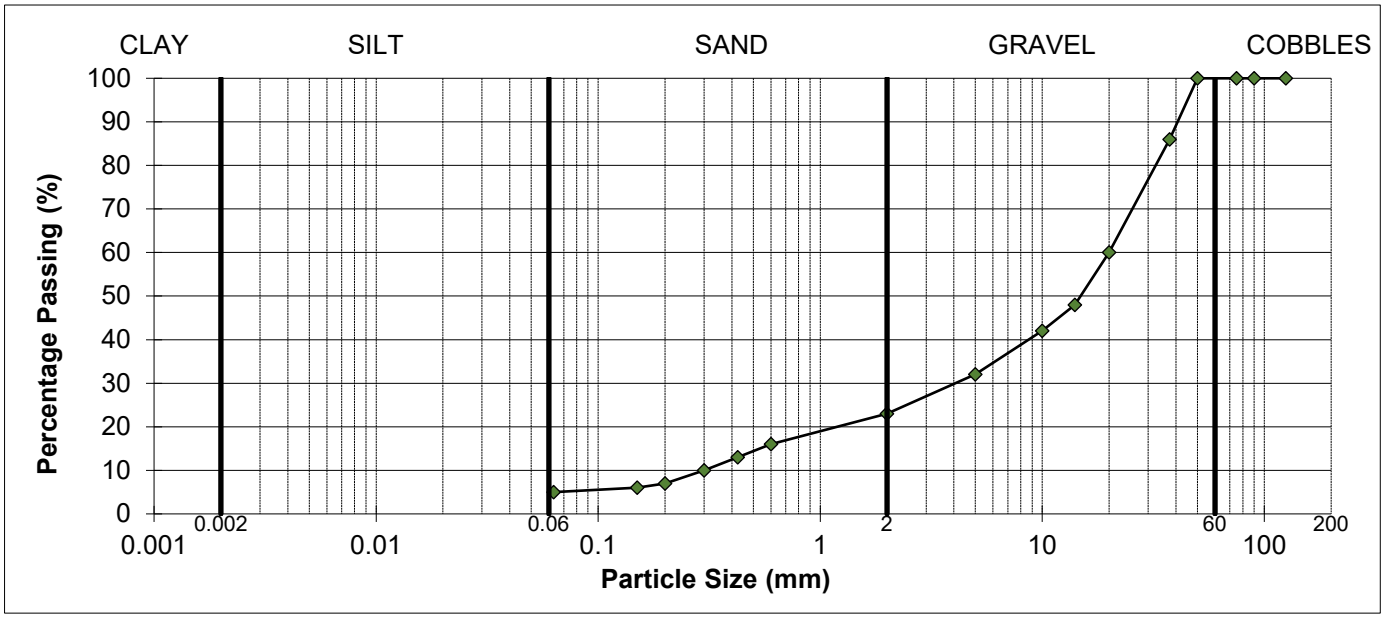
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP203 9	DATE SAMPLED	Not advised
LAB SAMPLE No	528208	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100	95-100	5	32	
90	100		2	23	
75	100		0.6	16	
50	100		0.425	13	
37.5	86		0.3	10	
20	60		0.2	7	
14	48		0.15	6	
10	42		0.063	5	<15



SOIL FRACTIONS			
COBBLES	0%	SAND	18%
GRAVEL	77%	SILT / CLAY	5%

As received water content	15.7%

REMARKS

Sample complies with the advised grading specification for a 1A material (SHW 2016), Uniformity coefficient = >10

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NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

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UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

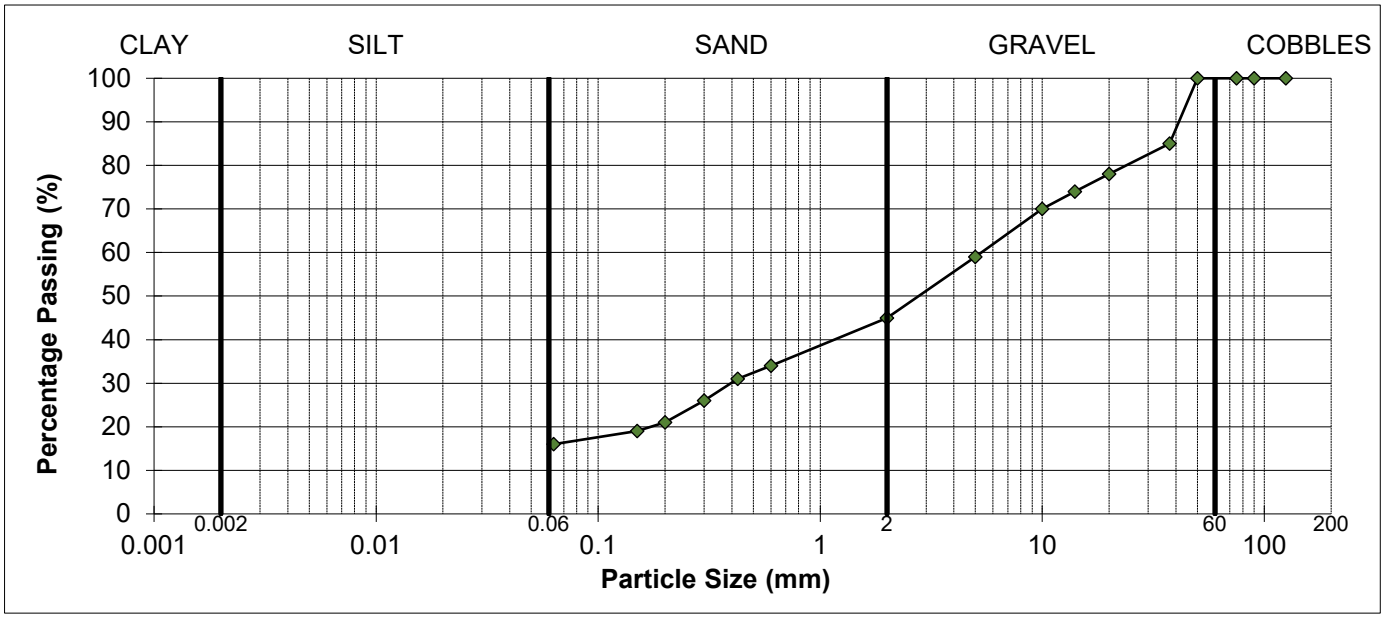
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP204 0.5	DATE SAMPLED	Not advised
LAB SAMPLE No	528211	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100	100	5	59	
90	100		2	45	15-80
75	100		0.6	34	
50	100		0.425	31	
37.5	85		0.3	26	
20	78		0.2	21	
14	74		0.15	19	
10	70		0.063	16	15-80



SOIL FRACTIONS			
COBBLES	0%	SAND	29%
GRAVEL	55%	SILT / CLAY	16%

As received water content	16.6%

REMARKS
Sample complies with the advised grading specification for a 2C material (SHW 2016)

SIGNED

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

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UKAS TESTING 1580

TEST CERTIFICATE

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4:2016

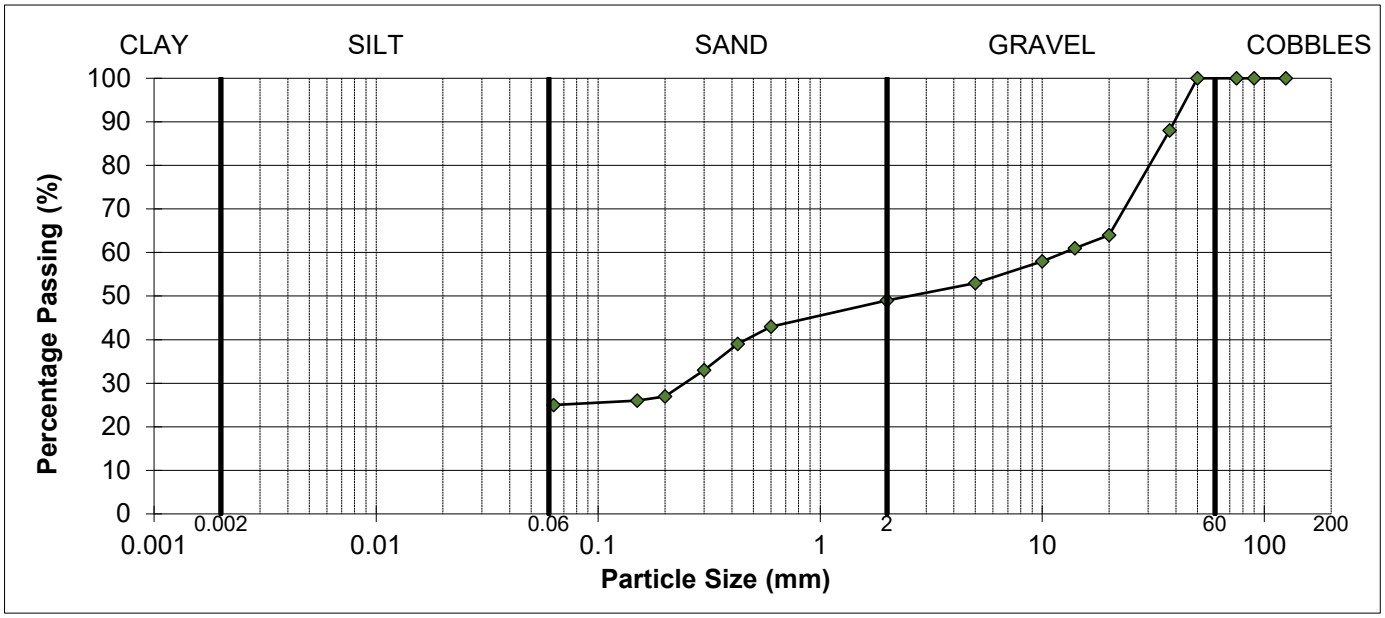
Determination of Water Content in accordance with BS EN ISO 17892-1:2014+A1:2022 (Oven Dry)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	HP205 0.8	DATE SAMPLED	Not advised
LAB SAMPLE No	528212	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample

Sieve Size (mm)	% Passing (%)	Specification (%)	Sieve Size (mm)	% Passing (%)	Specification (%)
125	100	100	5	53	
90	100		2	49	15-80
75	100		0.6	43	
50	100		0.425	39	
37.5	88		0.3	33	
20	64		0.2	27	
14	61		0.15	26	
10	58		0.063	25	15-80



SOIL FRACTIONS			
COBBLES	0%	SAND	24%
GRAVEL	51%	SILT / CLAY	25%

As received water content	17.2%

REMARKS
Sample complies with the advised grading specification for a 2C material (SHW 2016)

SIGNED

NAME O.P. Davies BA (Hons) (Director / Head of Laboratory) DATE 31-Aug-24

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5kg RAMMER
BS 1377-2:2022 Cl.11
PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

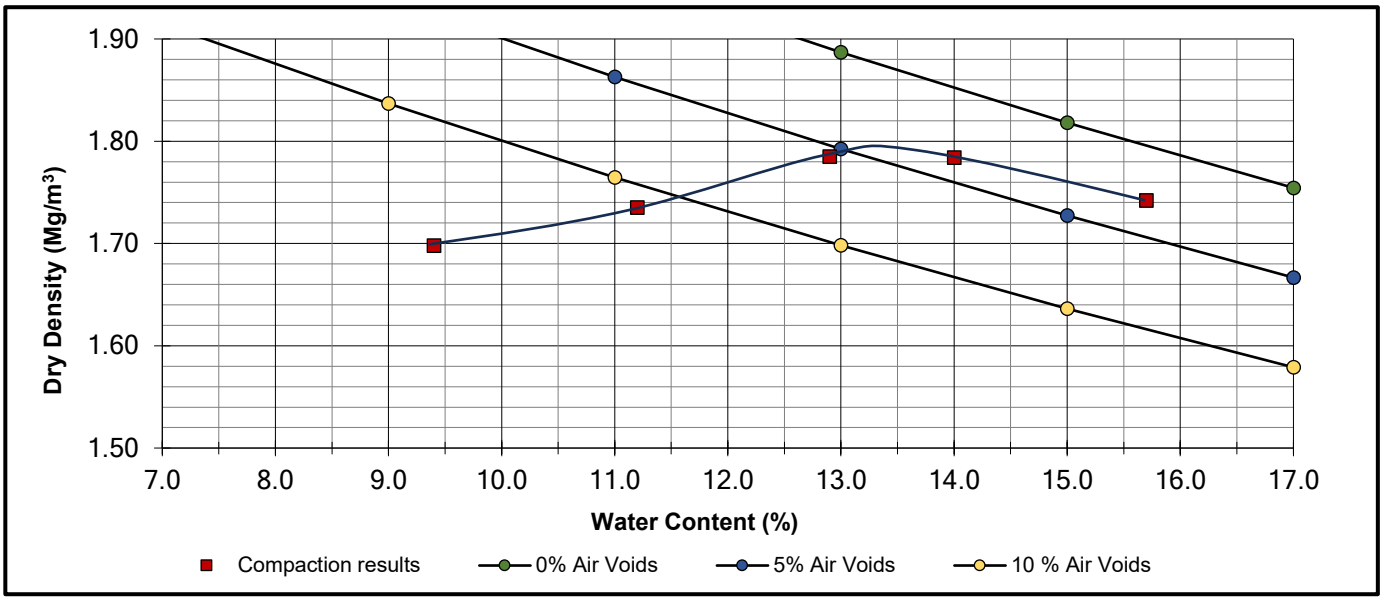
CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP201 1.5	DATE SAMPLED	Not advised
SAMPLE NUMBER	528203	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	2 %	GRADING ZONE	Zone 4
RETAINED 20mm	11 %	PARTICLE DENSITY	2.50 Mg/m3 (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m^3)
1	9.4	1.698
2	11.2	1.735
3	12.9	1.785
4	14.0	1.784
5	15.7	1.742



OPTIMUM WATER CONTENT	**13**	(%)
MAXIMUM DRY DENSITY	**1.79**	(Mg/m^3)

REMARKS

NAME O.P. Davies BA (Hons) SIGNED DATE 31-Aug-24
(Director / Head of Laboratory)

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UKAS TESTING 1580

TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5kg RAMMER
BS 1377-2:2022 Cl.11
PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

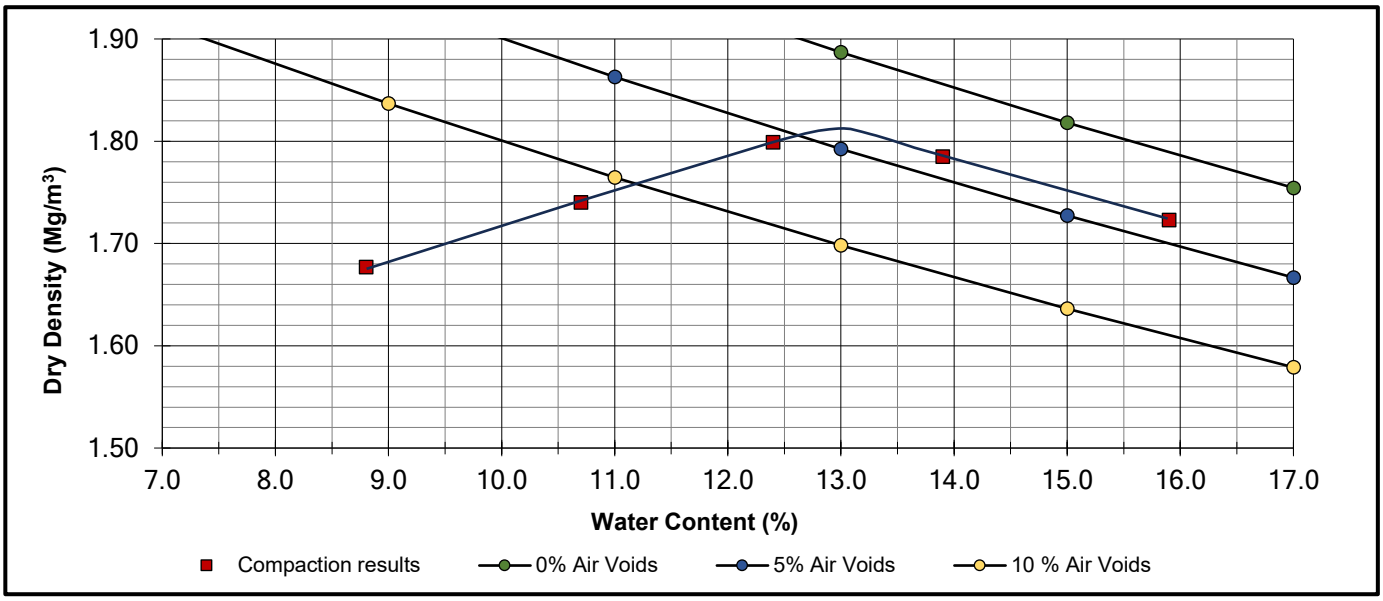
CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP202 4	DATE SAMPLED	Not advised
SAMPLE NUMBER	528205	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	17 %	GRADING ZONE	Zone X
RETAINED 20mm	40 %	PARTICLE DENSITY	2.50 Mg/m3 (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m^3)
1	8.8	1.677
2	10.7	1.740
3	12.4	1.799
4	13.9	1.785
5	15.9	1.723



OPTIMUM WATER CONTENT	**13**	(%)
MAXIMUM DRY DENSITY	**1.81**	(Mg/m^3)

REMARKS

NAME O.P. Davies BA (Hons) SIGNED DATE 31-Aug-24
(Director / Head of Laboratory)

MURRAY RIX

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DUKINFIELD, CHESHIRE SK16 4QX
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UKAS TESTING 1580

TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5kg RAMMER
BS 1377-2:2022 Cl.11
PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

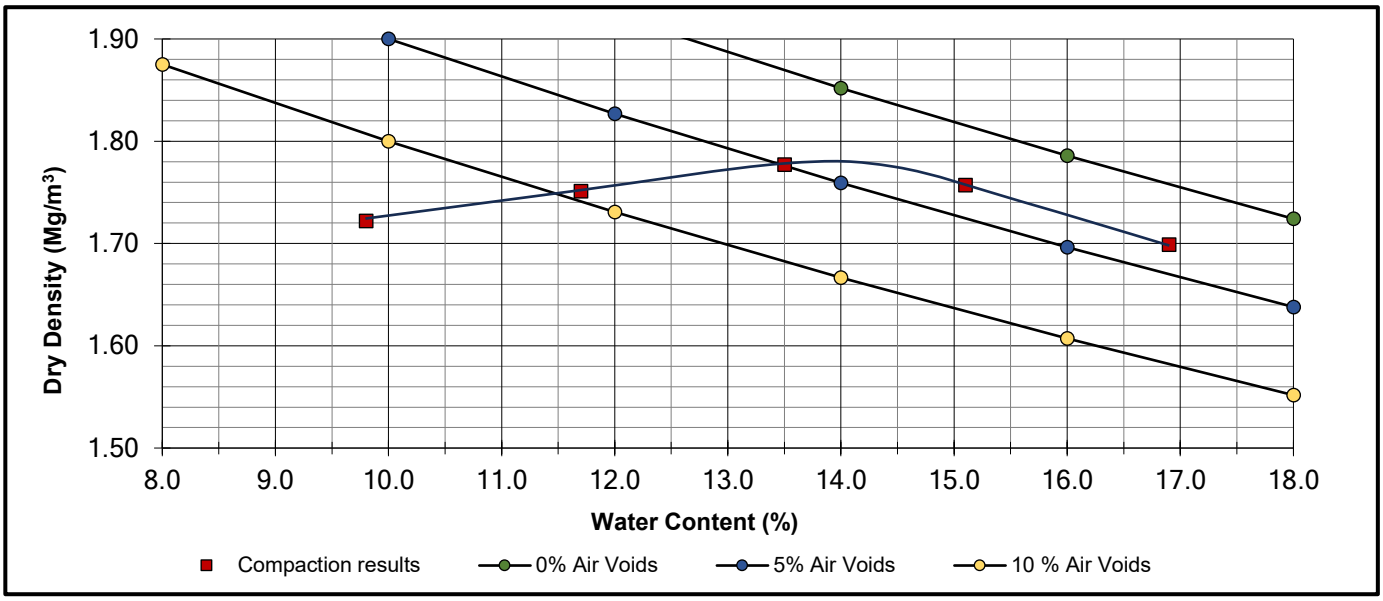
CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP203 1	DATE SAMPLED	Not advised
SAMPLE NUMBER	528207	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	2 %	GRADING ZONE	Zone 4
RETAINED 20mm	14 %	PARTICLE DENSITY	2.50 Mg/m3 (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m^3)
1	9.8	1.722
2	11.7	1.751
3	13.5	1.777
4	15.1	1.757
5	16.9	1.699



OPTIMUM WATER CONTENT	**14**	(%)
MAXIMUM DRY DENSITY	**1.78**	(Mg/m^3)

REMARKS

NAME O.P. Davies BA (Hons) SIGNED DATE 31-Aug-24
(Director / Head of Laboratory)

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
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UKAS TESTING 1580

TEST CERTIFICATE

DRY DENSITY/WATER CONTENT RELATIONSHIP 4.5kg RAMMER
BS 1377-2:2022 Cl.11
PARTICLE DENSITY METHOD BS 1377-2:2022 Cl.9.2

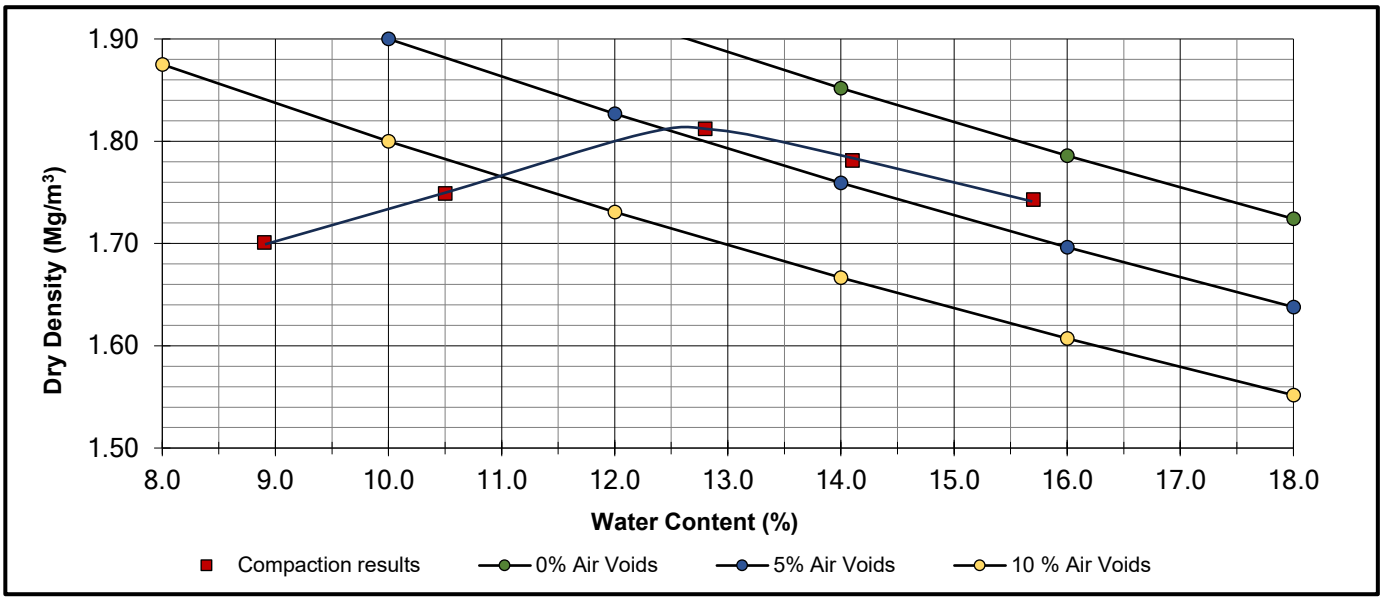
CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	HP205 0.8	DATE SAMPLED	Not advised
SAMPLE NUMBER	528212	DATE RECEIVED	07-Aug-24
DATE TESTED	09-Aug-24	SAMPLED BY	Client

MATERIAL	Made Ground
ADVISED SOURCE	Site Investigation Sample
PRE TREATMENT	Air Dried / Separate Batches

RETAINED 37.5mm	12 %	GRADING ZONE	Zone X
RETAINED 20mm	36 %	PARTICLE DENSITY	2.50 Mg/m3 (Assumed)

POINT NUMBER	WATER CONTENT (%)	DRY DENSITY (Mg/m^3)
1	8.9	1.701
2	10.5	1.749
3	12.8	1.812
4	14.1	1.781
5	15.7	1.743



OPTIMUM WATER CONTENT	**13**	(%)
MAXIMUM DRY DENSITY	**1.81**	(Mg/m^3)

REMARKS

NAME O.P. Davies BA (Hons) SIGNED DATE 31-Aug-24
(Director / Head of Laboratory)

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UKAS TESTING 1580

TEST CERTIFICATE

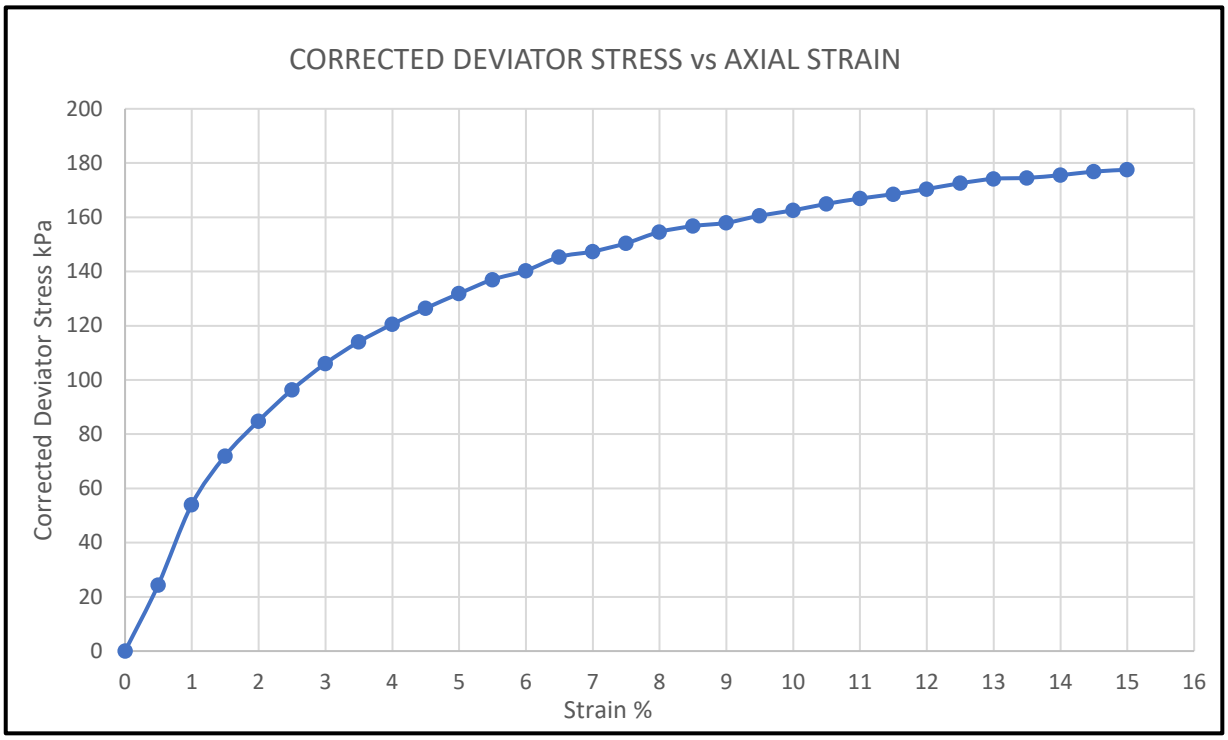
UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP201 12-12.45	**DATE SAMPLED**	Not advised
LAB SAMPLE No.	528202	**DATE RECEIVED**	07-Aug-24
DATE TESTED	09-Aug-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

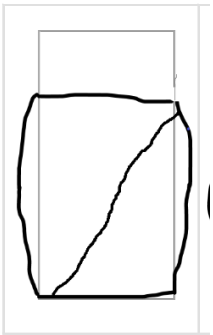
INITIAL CONDITIONS

Specimen Location 	Sample Length (mm)	450	Specimen depth from top of Sample (mm)	100
	Sample Orientation	Vertical	Specimen Condition	Undisturbed
	Specimen Length (mm)	199	Specimen Water Content (%)	13.0
	Specimen Diameter (mm)	99	Specimen Bulk Density (Mg/m3)	2.22
	Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.96
	Membrane Correction	4.52		



TEST TYPE
SINGLE STAGE

SKETCH OF SPECIMEN AT FAILURE



COMBINED

Cell Pressure (kPa)	Failure Strain (%)	Rate of Strain (%/min)	Corrected Deviator Stress (kPa)	Shear Strength Cu (kPa)
245	15.0	2.0	177	89

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed 

Date 31 August 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION
BS EN ISO 17892-8:2018

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

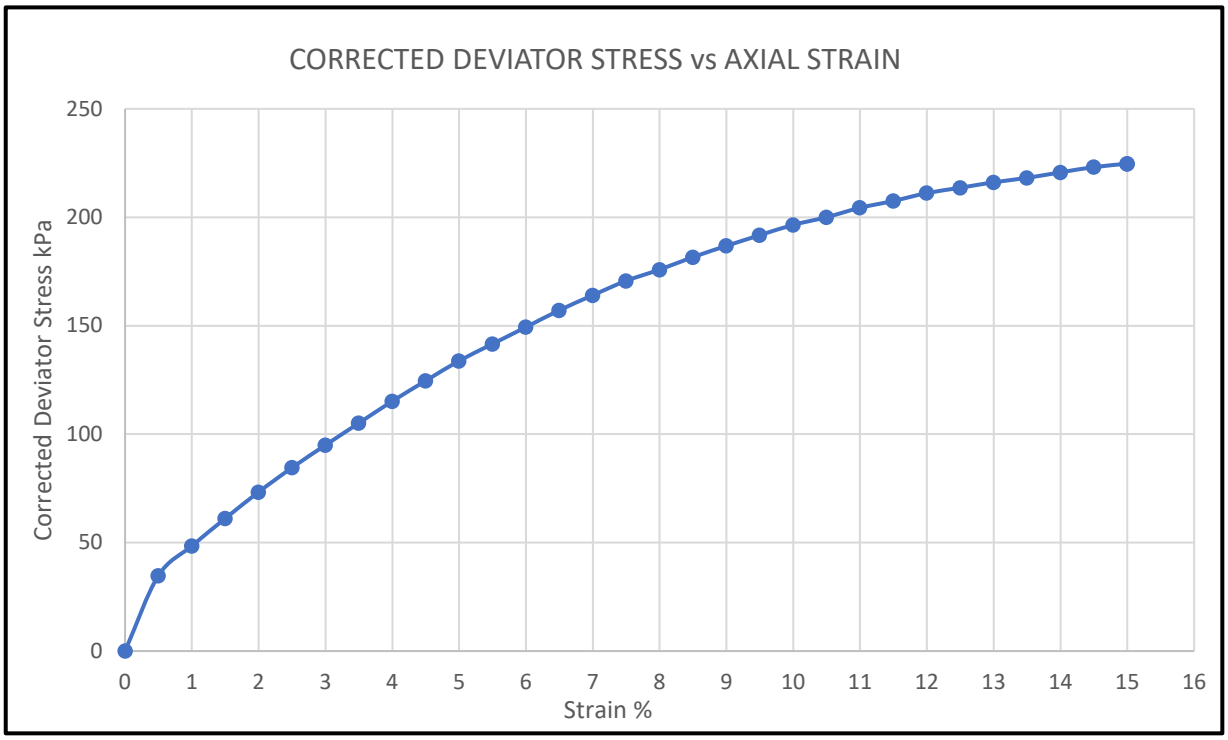
SAMPLE LABEL	CP204 10-10.45	**DATE SAMPLED**	Not advised
LAB SAMPLE No.	528210	**DATE RECEIVED**	07-Aug-24
DATE TESTED	09-Aug-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

INITIAL CONDITIONS

Specimen Location

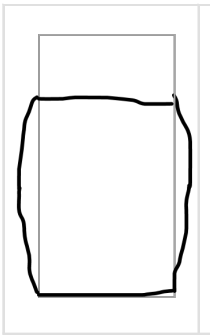


Sample Length (mm)	450	Specimen depth from top of Sample (mm)	30
Sample Orientation	Vertical	Specimen Condition	Undisturbed
Specimen Length (mm)	201	Specimen Water Content (%)	19.2
Specimen Diameter (mm)	100	Specimen Bulk Density (Mg/m3)	2.08
Membrane Thickness (mm)	0.4	Specimen Dry Density (Mg/m3)	1.74
Membrane Correction	3.39		



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)
205	15.0	2.0	225	112

Remarks/Abnormalities

Name O.P. Davies BA (Hons)
(Director / Head of Laboratory)

Signed 

Date 31 August 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

UKAS TESTING 1580

TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST
BS EN ISO 17892-5:2017

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP201 12-12.45	**DATE SAMPLED**	Not advised
LAB SAMPLE No.	528202	**DATE RECEIVED**	07-Aug-24
DATE TESTED	09-Aug-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

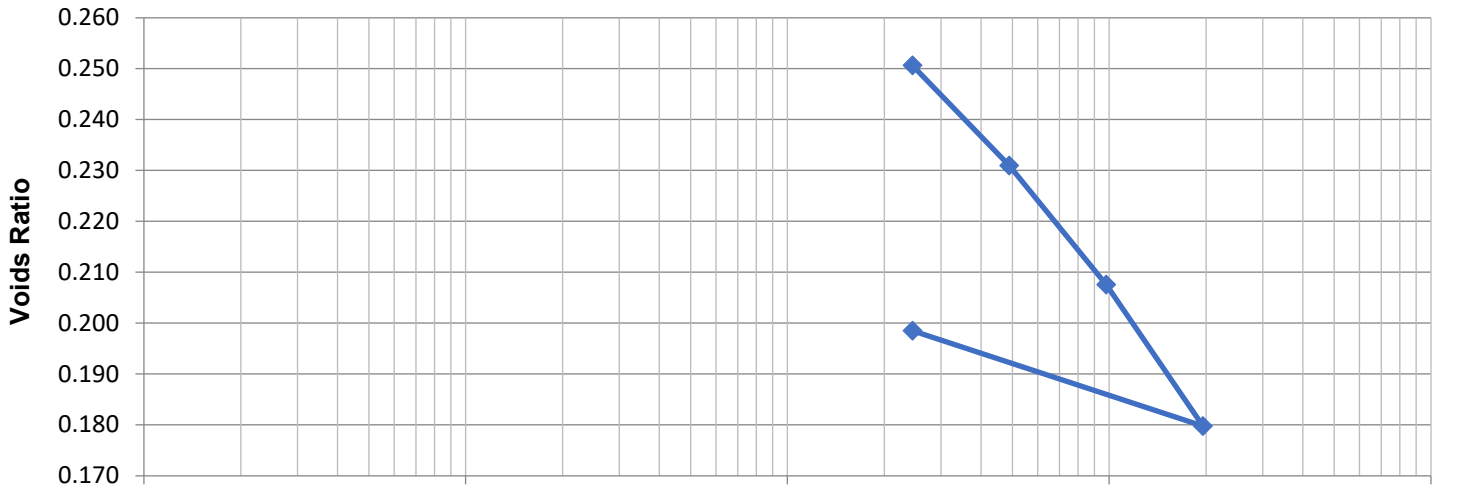
Specimen Location	Sample Length (mm)	450	Specimen depth from top of Sample (mm)		40
	Sample Orientation	Vertical	Specimen Condition		Undisturbed

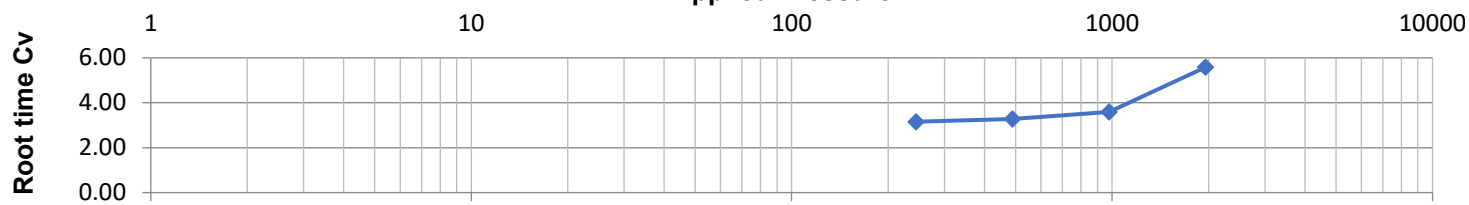
INITIAL CONDITIONS

Height	20.2	mm	Particle density	2.65	Ass
Diameter	69.7	mm	Initial void ratio	0.34	
Weight wet	170.7	g	Deg. of sat.	97	%
Water cont.*	12.6	%	Swell. press.	0	kN/m^2
Bulk Density	2.22	Mg/m^3	Dry density	1.97	Mg/m^3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m^2/MN	Temp °C	Cv t90 root m^2/yr	Cv t50 log m^2/yr
1	245	18.77	0.251	0.28	20	3.16	3.06
2	489	18.48	0.231	0.06	20	3.28	3.23
3	978	18.13	0.208	0.04	20	3.59	3.96
4	1956	17.71	0.180	0.02	20	5.58	5.02
5	245	17.99	0.199	0.01	20		
6							
7							





Remarks/Abnormalities

Name O.P. Davies BA (Hons) (Director / Head of Laboratory) Signed Date 31 August 2024

MURRAY RIX

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

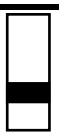
UKAS TESTING 1580

TEST CERTIFICATE

INCREMENTAL LOADING OEDOMETER TEST
BS EN ISO 17892-5:2017

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE LABEL	CP204 10-10.45	**DATE SAMPLED**	Not advised
LAB SAMPLE No.	528210	**DATE RECEIVED**	07-Aug-24
DATE TESTED	09-Aug-24	**SAMPLED BY**	Client
MATERIAL	Brown silty slightly sandy slightly gravelly CLAY		
ADVISED SOURCE	Site Investigation Sample		

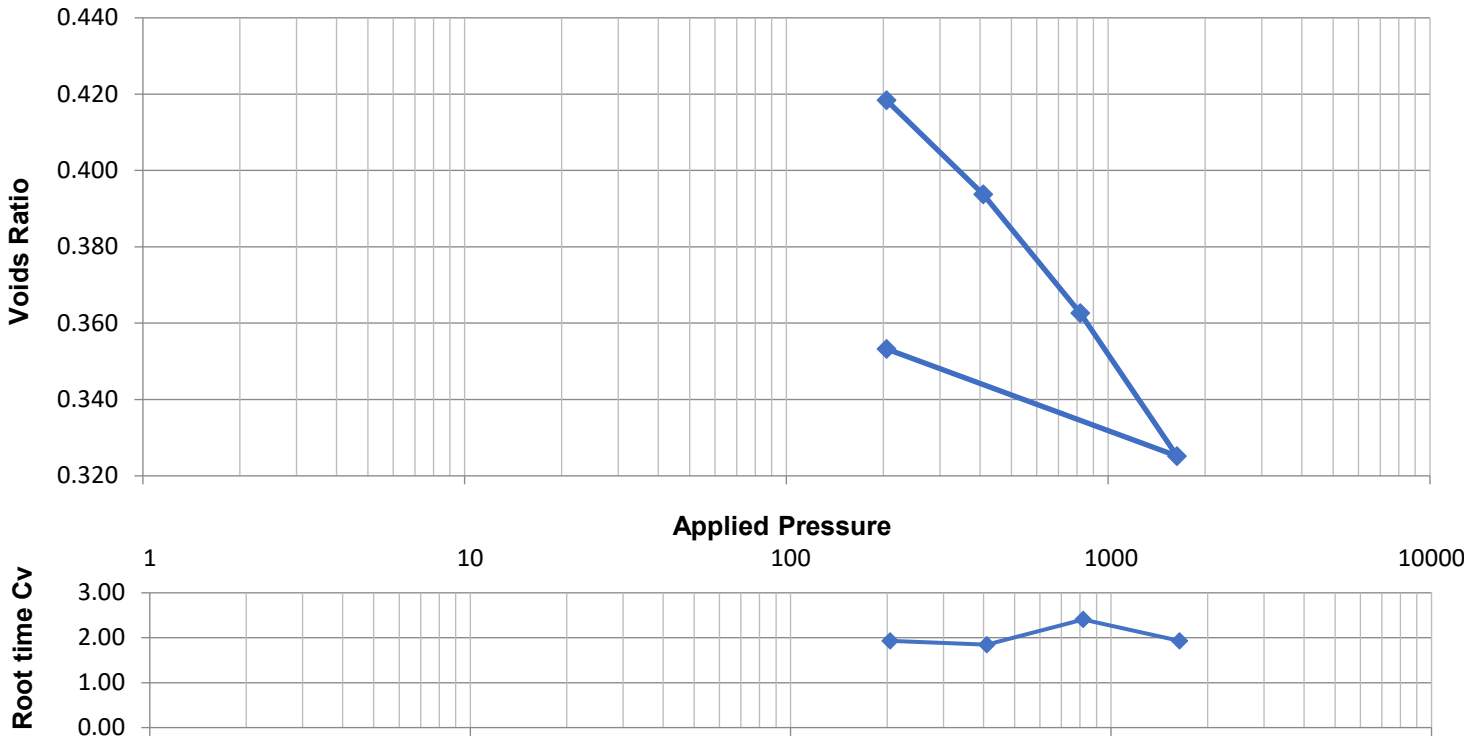
Specimen Location		Sample Length (mm)	450	Specimen depth from top of Sample (mm)	240
		Sample Orientation	Vertical	Specimen Condition	Undisturbed

INITIAL CONDITIONS

Height	20.3	mm	Particle density	2.65	Ass
Diameter	69.3	mm	Initial void ratio	0.52	
Weight wet	159.8	g	Deg. of sat.	98	%
Water cont.*	19.0	%	Swell. press.	0	kN/m^2
Bulk Density	2.08	Mg/m^3	Dry density	1.75	Mg/m^3

*determined from specimen trimmings

Load No.	Applied Pressure kPa	Sample Height mm	Void Ratio	Mv m^2/MN	Temp °C	Cv t90 root m^2/yr	Cv t50 log m^2/yr
1	205	19.04	0.418	0.31	20	1.93	1.93
2	409	18.71	0.394	0.09	20	1.85	2.05
3	818	18.29	0.363	0.05	20	2.41	2.42
4	1636	17.79	0.325	0.03	20	1.93	2.45
5	205	18.17	0.353	0.01	20		
6							
7							



Remarks/Abnormalities

Name O.P. Davies BA (Hons) (Director / Head of Laboratory) Signed Date 31 August 2024

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST SUMMARY

DETERMINATION OF VOID RATIO & TOTAL POROSITY

DETERMINATION OF BULK DENSITY, LINEAR MEASUREMENT METHOD - BS EN ISO 17892-2:2014
DETERMINATION OF PARTICLE DENSITY - BS 1377-2:2022 Cl. 9.2 (GAS JAR)
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022 (OVEN DRY)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE DETAILS

Laboratory sample number	:	528204
Site mark	:	CP201 12.5
Advised source	:	Site Investigation Sample
Material	:	Brown silty slightly sandy slightly gravelly CLAY
Date of sampling	:	Not advised
Date received at Laboratory	:	07-Aug-24
Date of start of test	:	08-Aug-24
Sampling Location	:	CP201
Sampled by	:	Client

TEST RESULTS

Particle Density		:	2.68	Mg/m^3
Bulk Density		:	2.24	Mg/m^3
Water Content		:	13.2	%
Dry Density		:	1.98	Mg/m^3
Volume of Voids		:	0.261	m^3
Volume of Solids		:	0.739	m^3
VOIDS RATIO	***(e)***	**:**	**0.35**	
TOTAL POROSITY	***(n)***	:	**0.26**	**(%)**
AIR FILLED POROSITY		:	0.26	(%)
WATER FILLED POROSITY		:	0.00	(%)

Comment / Remarks
Air-Filled & Water-Filled porosity reported as a percentage of the whole not a percentage of the voids.

SIGNED 

NAME O.P. Davies BA (Hons DATE 31-Aug-24
(Director / Head of Laboratory)

M U R R A Y R I X

ANDREW HOUSE, HADFIELD STREET,
DUKINFIELD, CHESHIRE SK16 4QX
TEL 0161 475 0870

TEST SUMMARY

DETERMINATION OF VOID RATIO & TOTAL POROSITY

DETERMINATION OF BULK DENSITY, LINEAR MEASUREMENT METHOD - BS EN ISO 17892-2:2014
DETERMINATION OF PARTICLE DENSITY - BS 1377-2:2022 Cl. 9.2 (GAS JAR)
DETERMINATION OF WATER CONTENT - BS EN ISO 17892-1:2014+A1:2022 (OVEN DRY)

CLIENT	e3p
SITE	Ryebank Fields
JOB NUMBER	MRN 24005/184

SAMPLE DETAILS

Laboratory sample number	:	528206
Site mark	:	CP202 14
Advised source	:	Site Investigation Sample
Material	:	Brown silty slightly sandy slightly gravelly CLAY
Date of sampling	:	Not advised
Date received at Laboratory	:	07-Aug-24
Date of start of test	:	08-Aug-24
Sampling Location	:	CP201
Sampled by	:	Client

TEST RESULTS

Particle Density		:	2.66	Mg/m^3
Bulk Density		:	2.22	Mg/m^3
Water Content		:	13.9	%
Dry Density		:	1.95	Mg/m^3
Volume of Voids		:	0.268	m^3
Volume of Solids		:	0.732	m^3
VOIDS RATIO	***(e)***	**:**	**0.37**	
TOTAL POROSITY	***(n)***	:	**0.27**	**(%)**
AIR-FILLED POROSITY		:	0.27	(%)
WATER-FILLED POROSITY		:	0.00	(%)

Comment / Remarks
Air-Filled & Water-Filled porosity reported as a percentage of the whole not a percentage of the voids.

SIGNED 

NAME O.P. Davies BA (Hons DATE 31-Aug-24
(Director / Head of Laboratory)

APPENDIX IX
ORIGIN OF CHEMICAL 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 X
DYNAMIC CONE PENETROMETER TEST CERTIFICATES

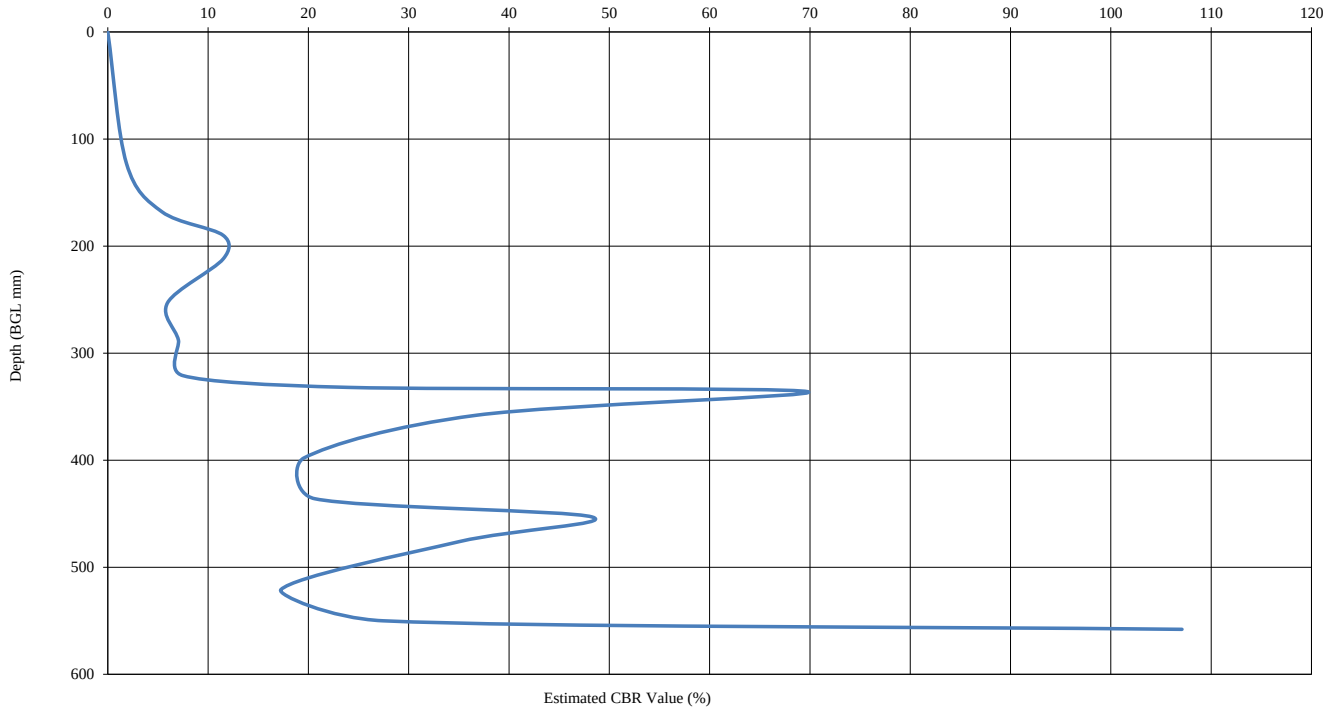


Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP101	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	558		

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	212	4	4	53.00	4.54
212	321	7	3	36.33	6.77
321	558	33	26	9.12	29.21

Comments

Terminated due to obstruction

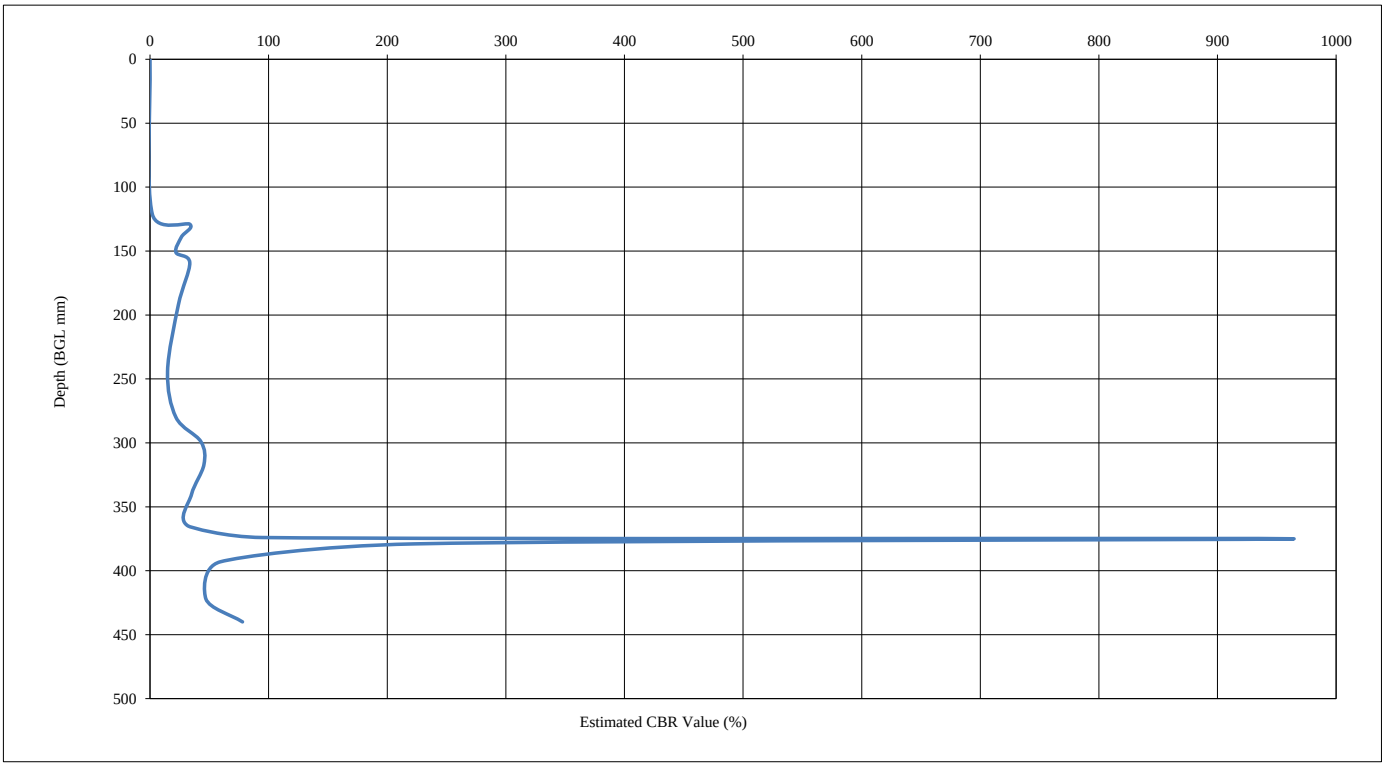
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP102	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	440		

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	2	2	64.50	3.69
129	365	26	24	9.83	26.96
365	440	48	22	3.41	82.60

Comments

Terminated due to obstruction

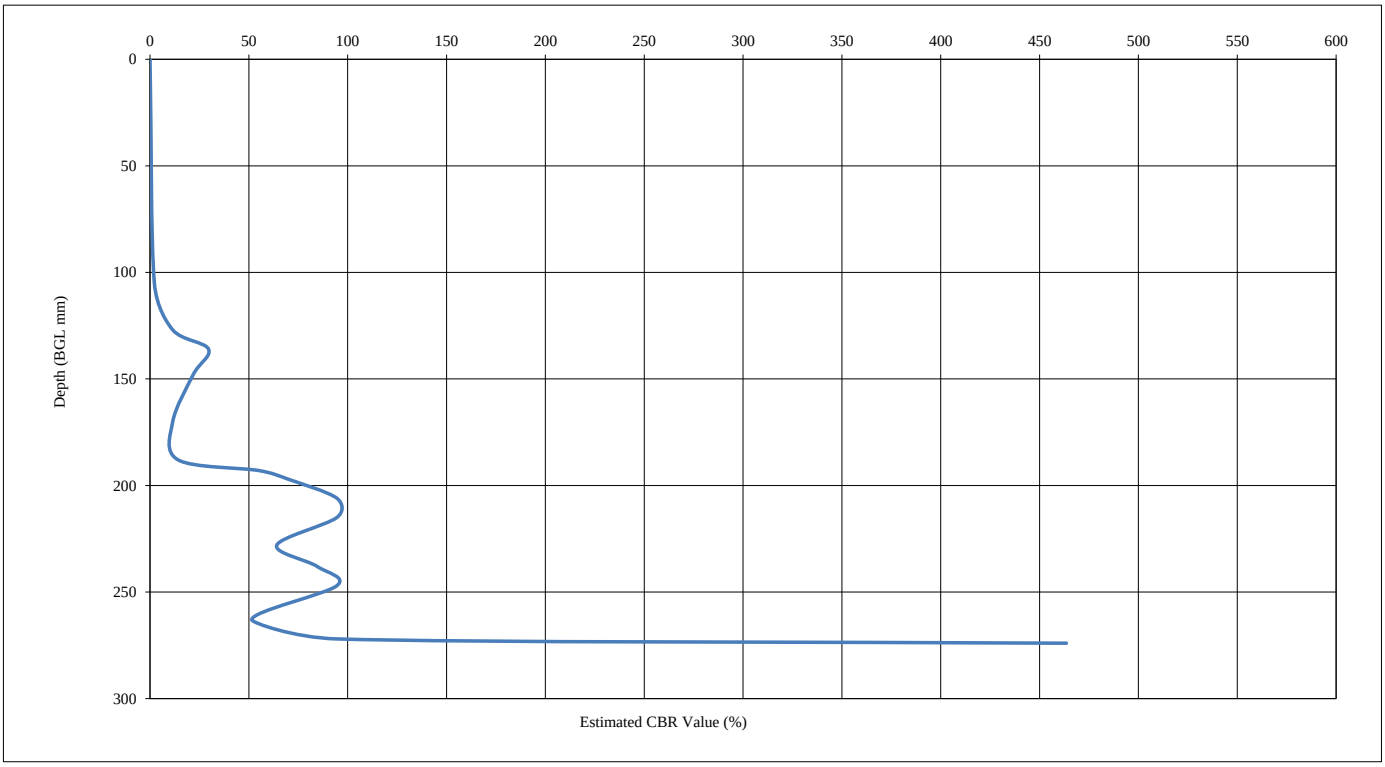
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP103	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	274		

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	3	3	45.33	5.36
136	188	6	3	17.33	14.81
188	274	32	26	3.31	85.28

Comments

Terminated Due to Obstruction.

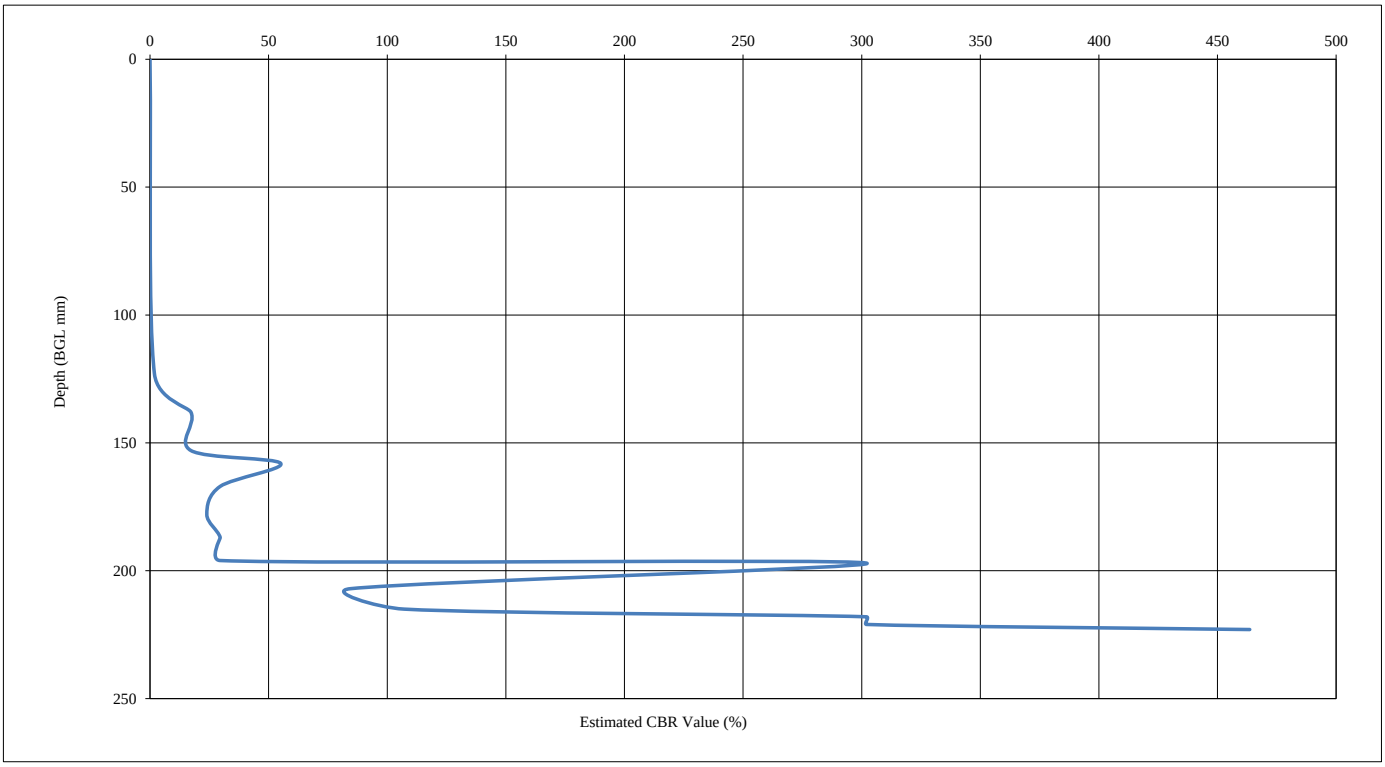
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP104	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	223		

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	138	2	2	69.00	3.44
138	196	8	6	9.67	27.45
196	223	24	16	1.69	173.70

Comments

Terminated due to obstruction.

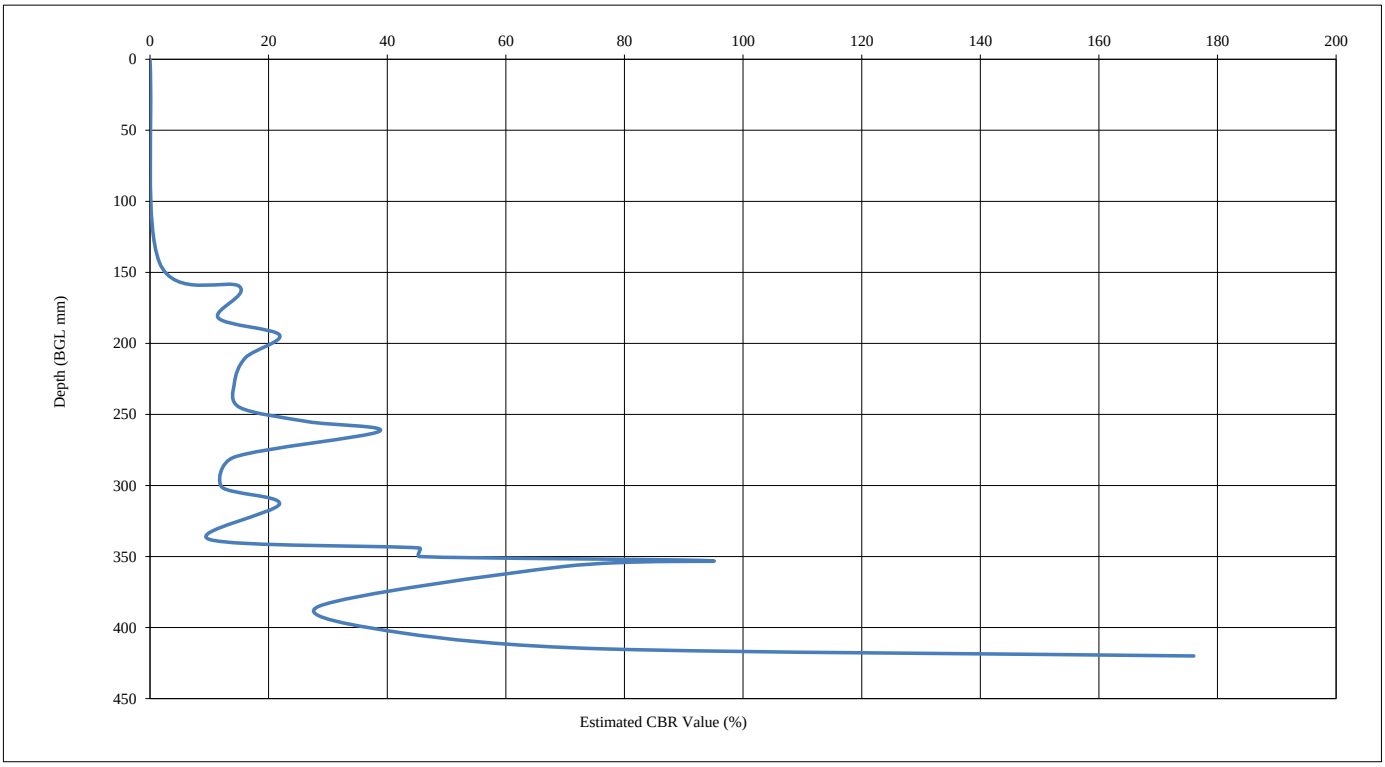
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP105	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	420		

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	2	2	80.00	2.94
160	338	13	11	16.18	15.92
338	420	29	16	5.13	53.69

Comments

Terminated due to obstruction.

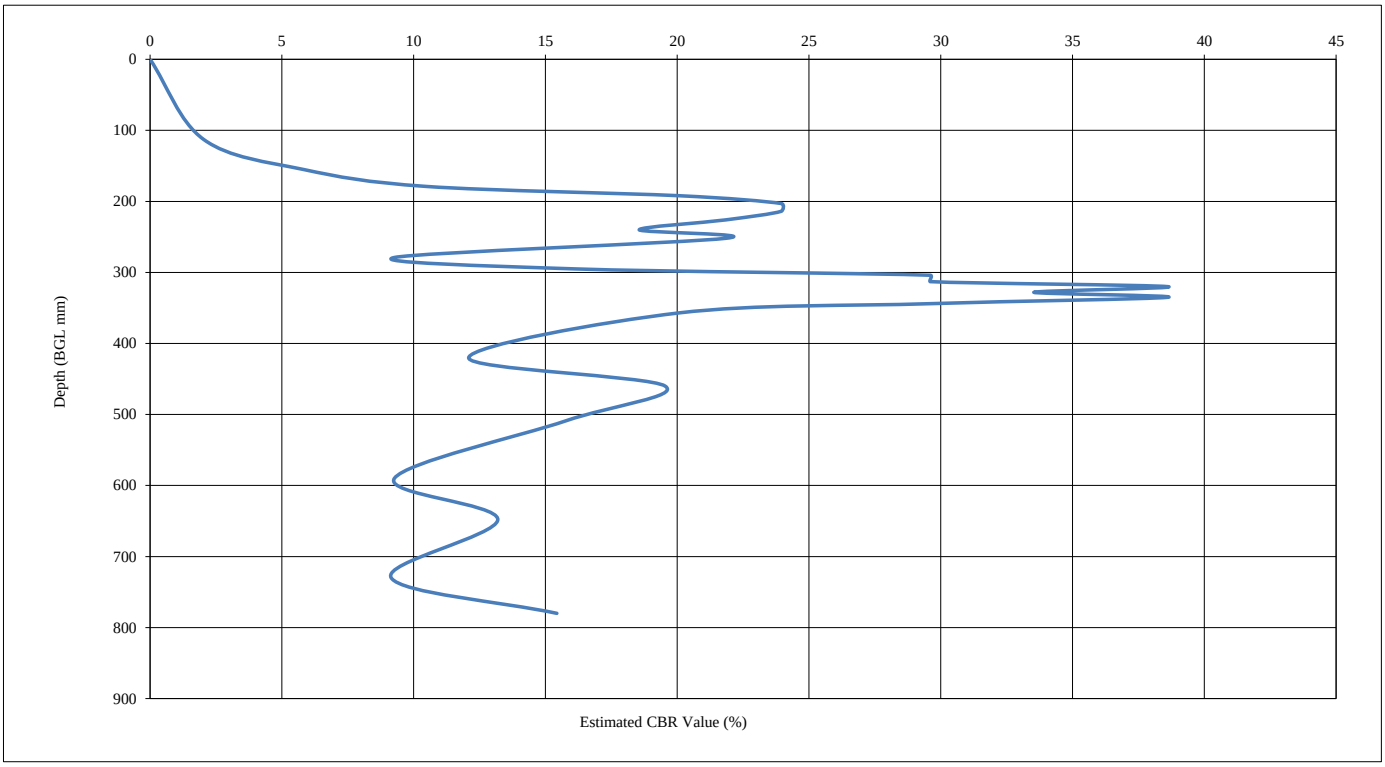
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP106	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	780		

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	179	3	3	59.67	4.01
179	420	21	18	13.39	19.45
420	780	39	18	20.00	12.73

Comments

Terminated due to obstrruction.

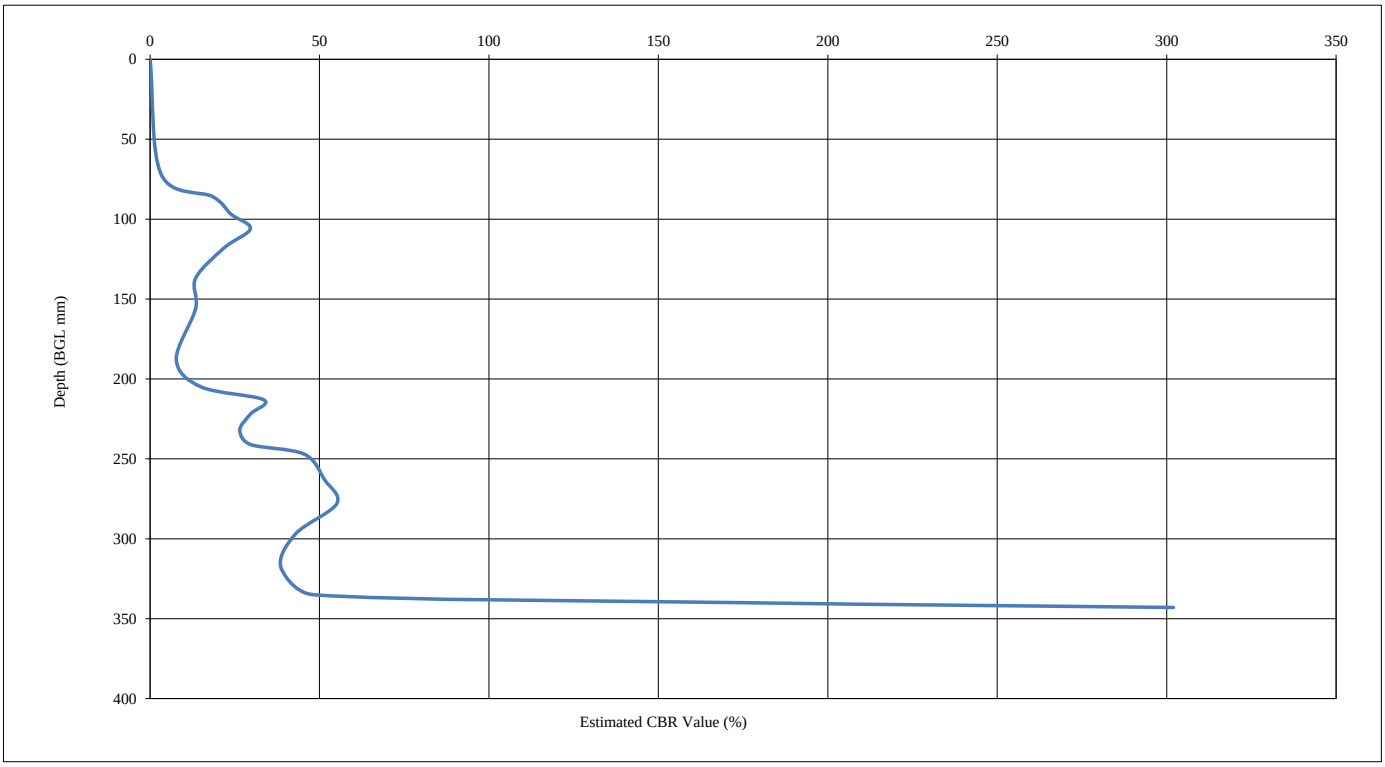
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP107	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	343		

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	106	4	4	26.50	9.45
106	188	8	4	20.50	12.40
188	343	35	27	5.74	47.62

Comments

Terminated due to obstruction

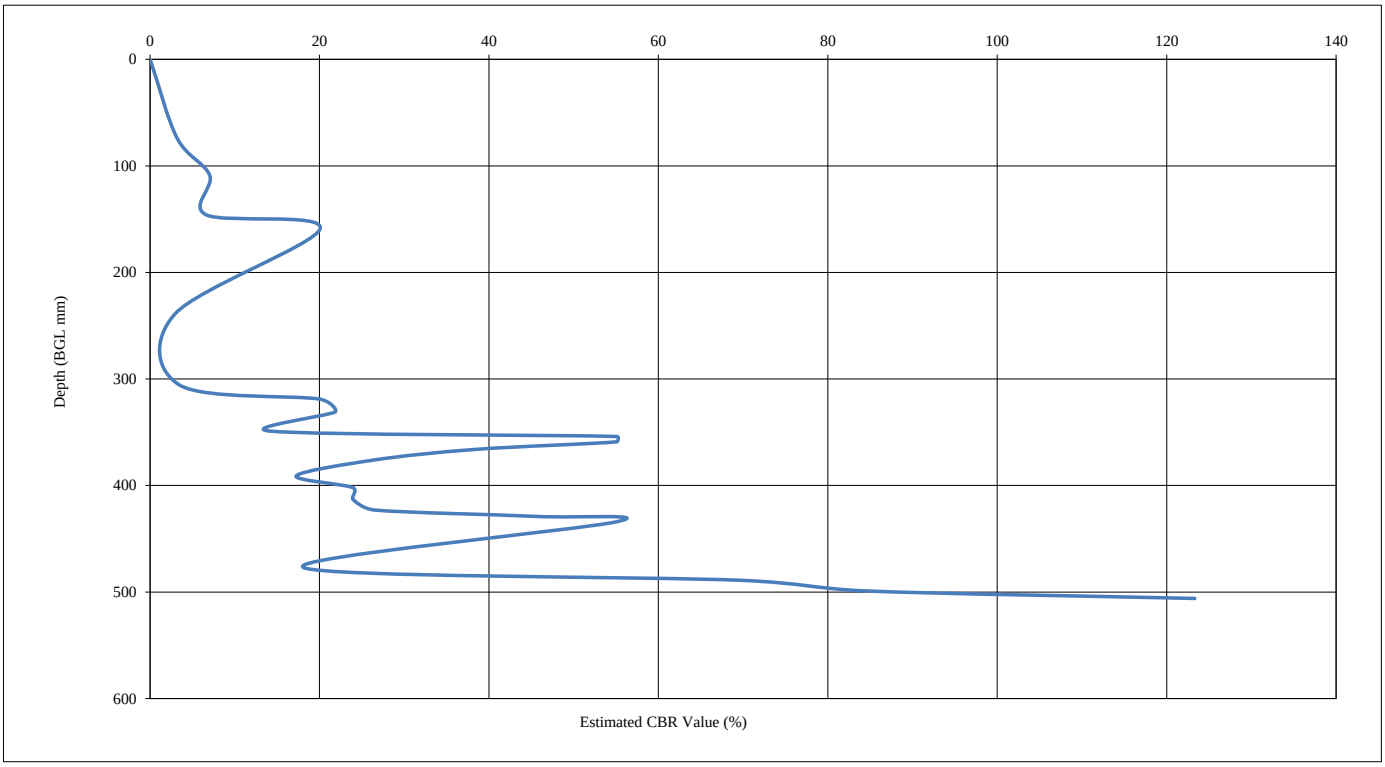
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP108	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	506		

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	146	3	3	48.67	4.97
146	306	6	3	53.33	4.51
306	506	31	25	8.00	33.53

Comments

Terminated due to obstruction

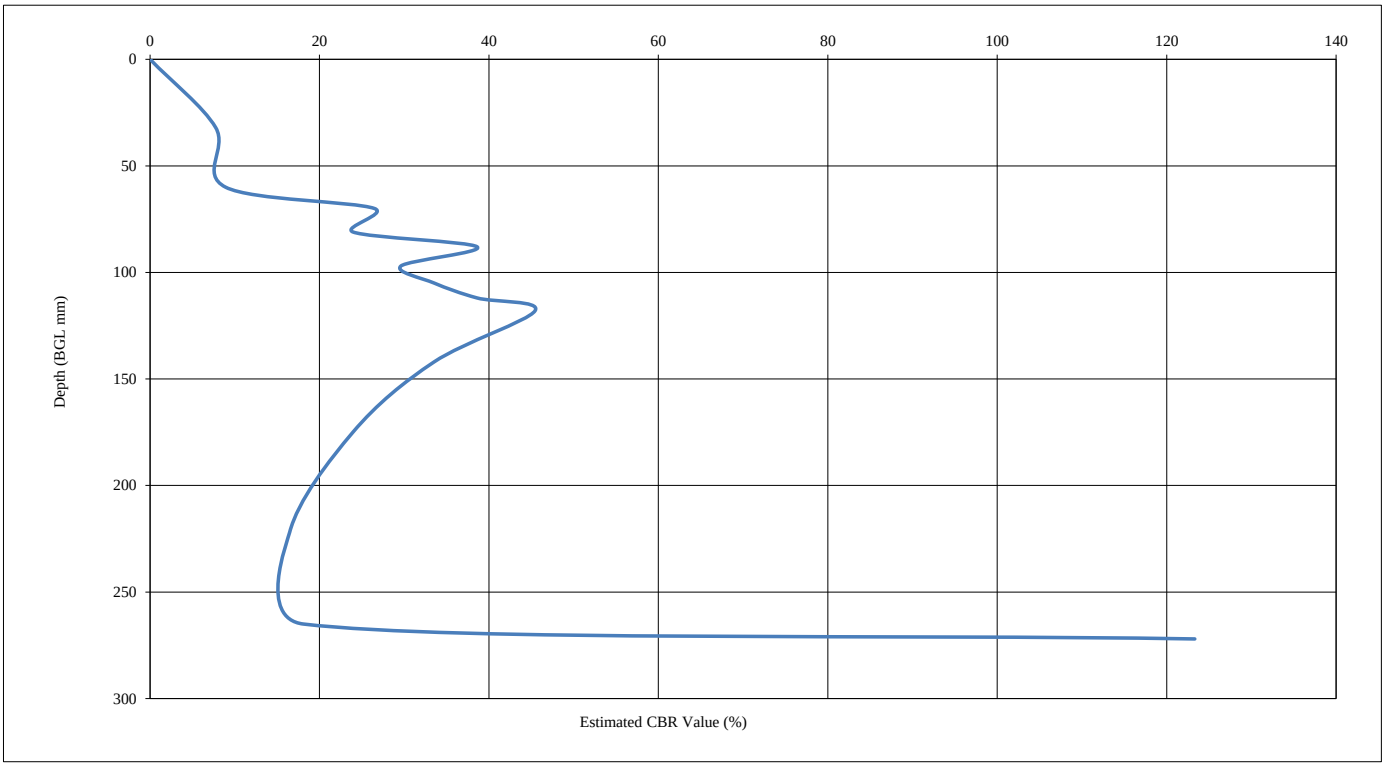
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP109	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	272		

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	2	2	30.00	8.29
60	118	9	7	8.29	32.31
118	272	24	15	10.27	25.76

Comments

Terminated due to obstruction.

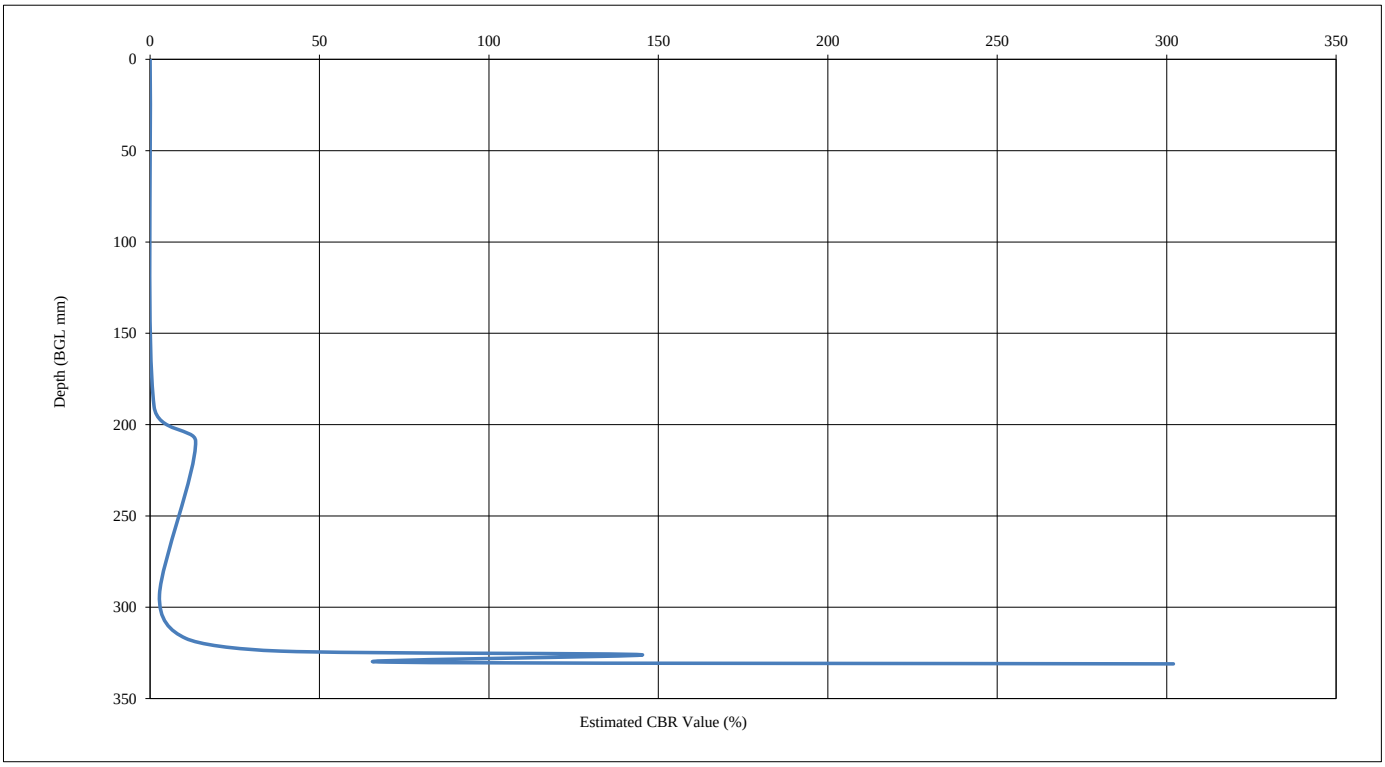
Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

Determination of Dynamic Cone Penetrometer - Estimated CBR Value (%)

In Accordance with TRL Report PR/INT/277/04

Site Name	Ryebank	**Test Date:**	05.12.19
Site Ref	13533	**Test Location:**	Ryebank, Chorlton
Test No.:	DCP110	**Easting:**	0
Initial Depth (mm BGL):	0	**Northing:**	0
Final Depth (mm BGL):	331		

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	209	2	2	104.50	2.22
209	293	3	1	84.00	2.79
293	331	8	5	7.60	35.40

Comments

Terminated due to obstruction

Site Engineer:	Checked By:	Date:	Approved By:	Date:
JN	BH	27/02/2020	MD	27/02/2020

APPENDIX XI
FALLING HEAD PERMEABILITY TEST CERTIFICATES

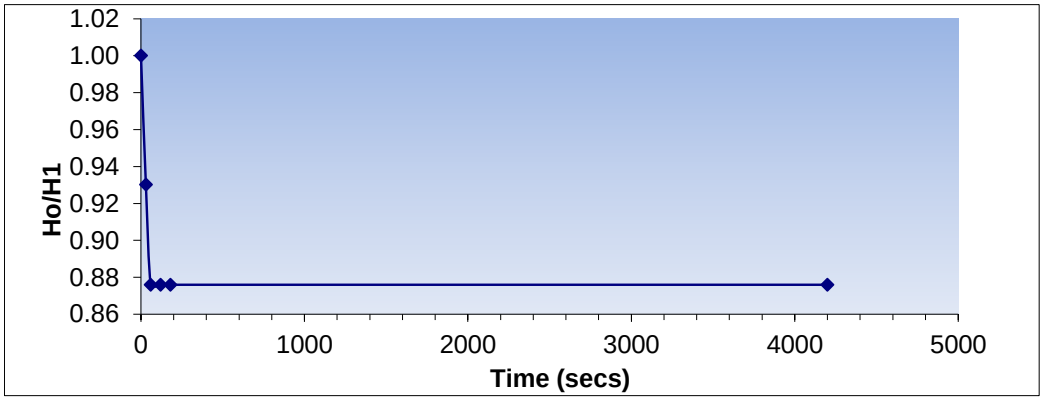


Falling Head Test

Borehole: CP101 **Test No:** 1

Contract No:	13-533	Casing Diameter: (m)	0.05
Contract Title:	Ryebank Road	Height of Casing:	0
Date of Test:	02/01/2020	Depth of Borehole: (m)	12.90

Recorded Time			Total Time			H/Ho
Hours	Minutes	Seconds	(secs)	Depth (m)		
0	0	0	0	0	0	1.0000
0	0	30	30	0.9	30	0.9302
0	1	60	60	1.6	60	0.8760
0	2	120	120	1.6	120	0.8760
0	3	180	180	1.6	180	0.8760
0	70	4200	4200	1.6	4200	0.8760



General Approach

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

k = permeability of soil

F = Intake Factor (figures 6 &7, BS5930:1999)

H_1 = variable head measured at time t_1 after commencement of test

H_2 = variable head measured at time t_2 after commencement of test

A = Cross sectional area of borehole casing or standpipe as appropiate.

H_1 =	0.9302	t_1 =	30
H_2 =	0.876	t_2 =	180
		F=	2.86

A = 0.00196349 m^2

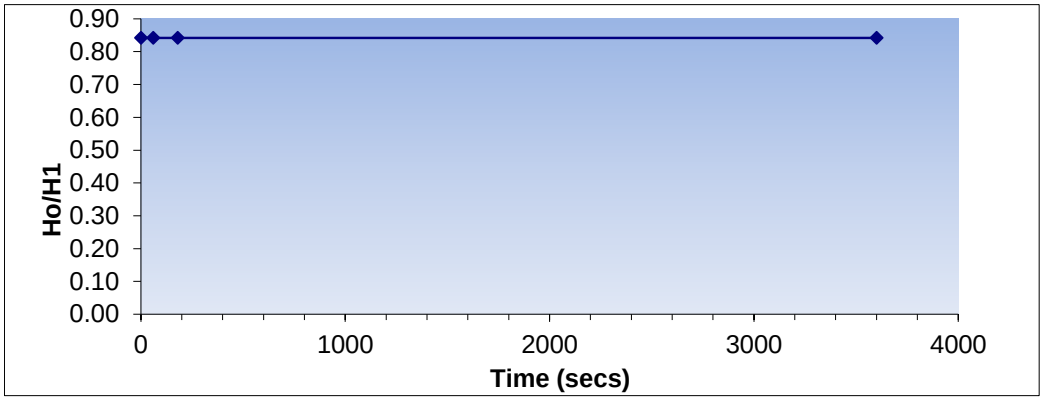
Coefficient of Permeability, k = **1.32E-05** m/s

Falling Head Test

Borehole: CP102 **Test No:** 1

Contract No:	13-533	Casing Diameter: (m)	0.05
Contract Title:	Ryebank Road	Height of Casing:	0
Date of Test:	02/01/2020	Depth of Borehole: (m)	12.90

Recorded Time			Total Time			H/Ho
Hours	Minutes	Seconds	(secs)	Depth (m)		
0	0		0	2.04	0	0.8419
0	1		60	2.04	60	0.8419
0	3		180	2.04	180	0.8419
0	60		3600	2.04	3600	0.8419



General Approach

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

k = permeability of soil

F = Intake Factor (figures 6 &7, BS5930:1999)

H_1 = variable head measured at time t_1 after commencement of test

H_2 = variable head measured at time t_2 after commencement of test

A = Cross sectional area of borehole casing or standpipe as appropiate.

H_1 =	0.8419	t_1 =	60
H_2 =	0.8419	t_2 =	180
		F=	2.86

A = 0.00196349 m^2

Coefficient of Permeability, k = **1.56E-05** m/s

APPENDIX XII
CONTINUOUS GROUND GAS MONITORING DATA



Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Grassed, uneven, damp.	Flush cover.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	12:43
Specialist	AE		

EQUIPMENT	
Model	**Serial Number**
GA5000	G503519
Tiger PID	T-111198

BOREHOLE DETAILS	
Borehole ID	WS111
Groundwater Level (mbgl)	1.44
Depth to base (mbgl)	1. 93
Atmospheric Temp (°C)	12

	Start	**End**
Atmosphere pressure (mb)	987	987
Borehole Pressure (mb)	NM	NM

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	0.1	0.1	20.7	<1	1	0.2
Initial	<0.1	0.1	0.1	20.6	<1	1	0.2
30	<0.1	0.1	1.1	19.3	<1	1	0.2
60		<0.1	1.1	19.3	<1	1	0.2
90		<0.1	1.1	19.3	<1	1	0.2
120		<0.1	1.1	19.3	<1	1	0.2
150							
180							
240							
300							
360							
420							
600							
Fresh Air	<0.1	0.1	0.1	20.7	<1	1	0.1

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	30	30	30	30	30	30
Steady state value	<0.1	<0.1	1.1	19.3	<1	<1	0.2
Peak Value (O_2 Low)	<0.1	0.1	1.1	19.3	<1	<1	0.2

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Well located within hardstanding.	Flush cover.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	11:08
Specialist	DN		

EQUIPMENT	
Model	**Serial Number**
GA5000	G504460
Tiger PID	T-107622

BOREHOLE DETAILS	
Borehole ID	WS112
Groundwater Level (mbgl)	Dry
Depth to base (mbgl)	1.78
Atmospheric Temp (°C)	11

	Start	**End**
Atmosphere pressure (mb)	988	988
Borehole Pressure (mb)	NM	NM

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	<0.1	0.1	20.4	<1	<1	3.7
Initial	<0.1	8.5	4.2	8.5	<1	<1	1.3
30	<0.1	7.9	3.8	0.4	<1	<1	2.2
60		7.9	3.8	0.2	<1	<1	2.8
90		7.9	3.8	0.1	<1	<1	3.2
120		7.9	3.9	0.1	<1	<1	3.5
150		7.9	3.9	0.1	<1	<1	3.7
180							
240							
300							
360							
420							
600							
Fresh Air	<0.1	<0.1	0.1	20.4	<1	<1	3.7

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	30	120	90	30	30	150
Steady state value	<0.1	7.9	3.9	0.1	<1	<1	3.7
Peak Value (O_2 Low)	<0.1	7.9	3.9	0.1	<1	<1	3.7

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	Bottle vac sample taken shortly prior to monitoring.
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Grassed, uneven, damp. Earth embankment nearby.	Flush cover. Soft at base.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	11:26
Specialist	DN		

EQUIPMENT	
Model	**Serial Number**
GA5000	G504460
Tiger PID	T-107622

BOREHOLE DETAILS	
Borehole ID	WS101
Groundwater Level (mbgl)	2.08
Depth to base (mbgl)	2.81
Atmospheric Temp (°C)	11

	Start	**End**
Atmosphere pressure (mb)	988	988
Borehole Pressure (mb)	NM	NM

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	<0.1	0.1	20.4	<1	<1	3.7
Initial	<0.1	8.5	4.2	8.5	<1	<1	1.3
30	<0.1	7.9	3.8	0.4	<1	<1	2.2
60		7.9	3.8	0.2	<1	<1	2.8
90		7.9	3.8	0.1	<1	<1	3.2
120		7.9	3.9	0.1	<1	<1	3.5
150		7.9	3.9	0.1	<1	<1	3.7
180							
240							
300							
360							
420							
600							
Fresh Air	<0.1	<0.1	0.1	20.4	<1	<1	3.7

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	30	120	90	30	30	150
Steady state value	<0.1	7.9	3.9	0.1	<1	<1	3.7
Peak Value (O_2 Low)	<0.1	7.9	3.9	0.1	<1	<1	3.7

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	Bottle vac sample taken shortly prior to monitoring.
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Grassed, uneven, damp.	Flush cover. Soft at base.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	11:38
Specialist	DN		

EQUIPMENT	
Model	**Serial Number**
GA5000	G504460
Tiger PID	T-107622

BOREHOLE DETAILS	
Borehole ID	WS102
Groundwater Level (mbgl)	1.70
Depth to base (mbgl)	3.45
Atmospheric Temp (°C)	11

	Start	**End**
Atmosphere pressure (mb)	988	988
Borehole Pressure (mb)	NM	NM

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

IMS Ref. GMPM Version: 2.1

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	<0.1	0.1	20.4	<1	<1	3.7
Initial	<0.1	39.6	2.1	6.6	<1	<1	0.2
30	<0.1	39.6	2.1	1.1	<1	<1	0.2
60		39.1	2.1	0.7	<1	<1	0.3
90		39.2	2.1	0.6	<1	<1	0.3
120		39.1	2.1	0.7	<1	<1	0.3
150		39.3	2.1	0.6	<1	<1	0.3
180		39.4	2.1	0.5	<1	<1	0.3
240		39.6	2.1	0.4	<1	<1	0.4
300		39.7	2.1	0.4	<1	<1	0.4
360		38.4	2.0	1.1	<1	<1	0.4
420		38.4	2.0	1.1	<1	<1	0.4
600							
Fresh Air	<0.1	<0.1	0.1	20.5	<1	<1	0.1

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	360	360	360	30	30	240
Steady state value	<0.1	38.4	2.0	1.1	<1	<1	0.4
Peak Value (O_2 Low)	<0.1	38.4	2.0	1.1	<1	<1	0.4

Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Grassed, uneven, damp.	Flush cover.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	13:18
Specialist	AE		

EQUIPMENT	
Model	**Serial Number**
GA5000	G503519
Tiger PID	T-111198

BOREHOLE DETAILS	
Borehole ID	WS106
Groundwater Level (mbgl)	Dry
Depth to base (mbgl)	1.81
Atmospheric Temp (°C)	12

	Start	**End**
Atmosphere pressure (mb)	987	987
Borehole Pressure (mb)	NM	NM

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	<0.1	0.1	20.9	<1	<1	0.2
Initial	0.1	<0.1	0.1	21.0	<1	<1	0.3
30	0.2	<0.1	0.1	21.1	<1	<1	0.2
60	0.2	<0.1	0.1	21.0	<1	<1	0.2
90	0.2	<0.1	0.1	21.1	<1	<1	0.2
120	0.2	<0.1	0.1	21.1	<1	<1	0.2
150							
180							
240							
300							
360							
420							
600							
Fresh Air	<0.1	0.1	0.1	21.0	<1	<1	0.2

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	30	30	90	30	30	30
Steady state value	0.2	<0.1	<0.1	21.1	<1	<1	0.2
Peak Value (O_2 Low)	0.2	<0.1	<0.1	21.1	<1	<1	0.2

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	Bottle vac sample taken shortly prior to monitoring.
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Grassed, uneven, damp.	Flush cover.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	13:44
Specialist	DN		

EQUIPMENT	
Model	**Serial Number**
GA5000	G504460
Tiger PID	T-107622

BOREHOLE DETAILS	
Borehole ID	WS108
Groundwater Level (mbgl)	2.11
Depth to base (mbgl)	2.22
Atmospheric Temp (°C)	12

	Start	**End**
Atmosphere pressure (mb)	988	988
Borehole Pressure (mb)	NM	NM

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	<0.1	0.1	21.2	<1	<1	<0.1
Initial	<0.1	<0.1	4.2	17.9	<1	<1	6.5
30	<0.1	<0.1	4.6	15.5	<1	<1	5.9
60		<0.1	4.0	15.7	<1	<1	5.4
90		<0.1	4.2	16.1	<1	<1	5.1
120		<0.1	4.2	16.2	<1	<1	4.8
150		<0.1	3.8	16.9	<1	<1	4.6
180		<0.1	3.7	17.7	<1	<1	4.5
240		<0.1	4.8	15.3	<1	<1	4.3
300		<0.1	4.4	15.7	<1	<1	4.0
360		<0.1	4.7	15.3	<1	<1	3.9
420		<0.1	4.7	15.4	<1	<1	3.2
600		<0.1	4.3	15.6	<1	<1	3.1
Fresh Air	<0.1	<0.1	0.1	21.3	<1	<1	0.3

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	30	N/A	N/A	30	30	N/A
Steady state value	<0.1	<0.1	N/A	N/A	<1	<1	N/A
Peak Value (O_2 Low)	<0.1	<0.1	4.7	15.3	<1	<1	3.9

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Grassed, uneven, damp.	Flush cover.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	12:55
Specialist	AE		

EQUIPMENT	
Model	**Serial Number**
GA5000	G503519
Tiger PID	T-111198

BOREHOLE DETAILS	
Borehole ID	WS109
Groundwater Level (mbgl)	2.24
Depth to base (mbgl)	2.35
Atmospheric Temp (°C)	

	Start	**End**
Atmosphere pressure (mb)	987	987
Borehole Pressure (mb)	NM	NM

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	<0.1	0.1	20.9	<1	<1	0.2
Initial	<0.1	<0.1	0.1	20.9	<1	<1	0.2
30	<0.1	<0.1	0.3	20.7	<1	<1	0.2
60	<0.1	<0.1	0.4	20.6	<1	<1	0.2
90		<0.1	0.4	20.6	<1	<1	0.1
120		<0.1	0.4	20.6	<1	1	0.1
150		<0.1	0.4	20.6	<1	<1	0.1
180							
240							
300							
360							
420							
600							
Fresh Air	<0.1	<0.1	0.1	20.9	<1	<1	0.1

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	30	60	60	30	30	90
Steady state value	<0.1	<0.1	0.4	20.6	<1	<1	0.1
Peak Value (O_2 Low)	<0.1	<0.1	0.4	20.6	<1	<1	0.1

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

Experts in Continuous Monitoring

WEATHER CONDITIONS	GENERAL COMMENTS / H&S NOTES
Generally overcast, some sunny spells and showers. Southwesterly breeze.	Bottle vac sample taken shortly prior to monitoring.
GROUND CONDITIONS	**MONITORING WELL COMMENTS**
Grassed, uneven, damp.	Flush cover.

PROJECT DETAILS			
Project ID	GGS2230	**Date**	30/04/2020
Site	Ryebank, Chorlton	**Time**	15:54
Specialist	AE		

EQUIPMENT	
Model	**Serial Number**
GA5000	G503519
Tiger PID	T-111198

BOREHOLE DETAILS	
Borehole ID	WS110
Groundwater Level (mbgl)	2.13
Depth to base (mbgl)	2.58
Atmospheric Temp (°C)	12

	Start	End
Atmosphere pressure (mb)	987	987
Borehole Pressure (mb)	NM	NM

TIME	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	CO (ppmv)	H_2S (ppmv)	TVOC (ppmv)
Fresh Air	<0.1	0.1	0.1	20.4	<1	<1	0.2
Initial	<0.1	0.1	0.1	20.7	<1	<1	0.3
30	<0.1	0.1	1.7	19.7	<1	<1	0.3
60		0.1	1.7	19.6	<1	<1	0.3
90		0.1	1.7	19.6	<1	<1	0.3
120		0.1	1.7	19.6	<1	<1	0.3
150							
180							
240							
300							
360							
420							
600							
Fresh Air	<0.1	0.1	0.1	20.6	<1	1	0.2

STEADY STATE FINAL RESULTS

	Flow (l/hr)	CH_4 (%)	CO_2 (%)	O_2 (% v/v)	CO (ppm)	H_2S (ppm)	TVOC (ppm)
Steady state time (s)	30	30	30	60	30	30	30
Steady state value	<0.1	<0.1	1.7	19.6	<1	<1	0.3
Peak Value (O_2 Low)	<0.1	<0.1	1.7	19.6	<1	<1	0.3

KEY: 0.0 = Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument



ggs
Experts in Continuous Monitoring

Title:

WS101 Time Series Graphs

Project:

GGS2230 Ryebank Fields, Chorlton

Client:

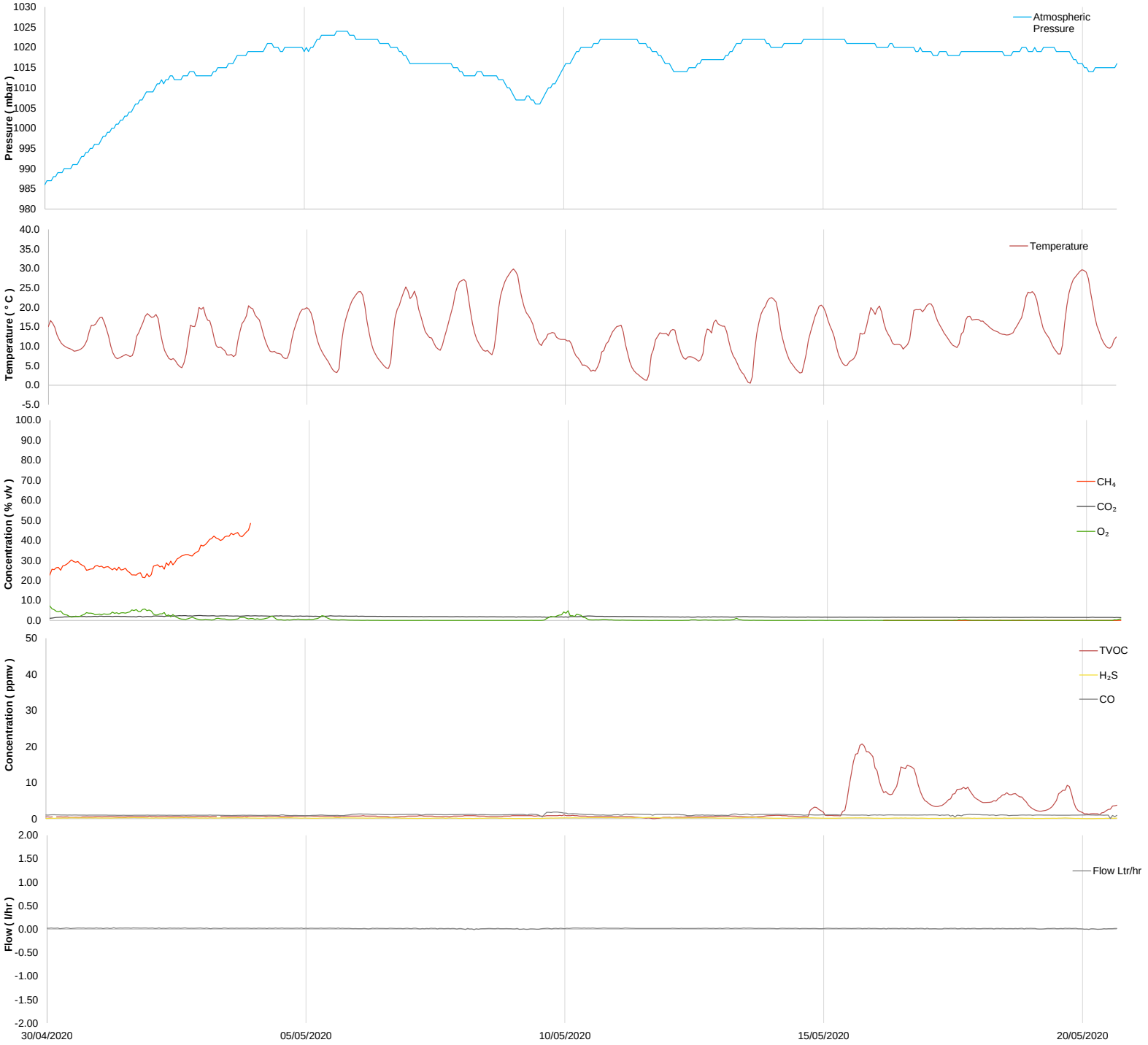
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	7.2	8.1
CO_2 (% v/v)	4.5	5.1
O_2 (% v/v)	0.1	1.9
TVOC (ppmv)	0	73
Hydrogen Sulphide (ppmv)	0	1
Carbon Monoxide (ppmv)	0	3
Atmospheric Pressure (mbar)	986	1024
Temperature (° C)	-2.1	37.4
Flow (l/hr)	0.00	0.00

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ggs
Experts in Continuous Monitoring

Title:

WS102 Time Series Graphs

Project:

GGS2230 Ryebank Fields, Chorlton

Client:

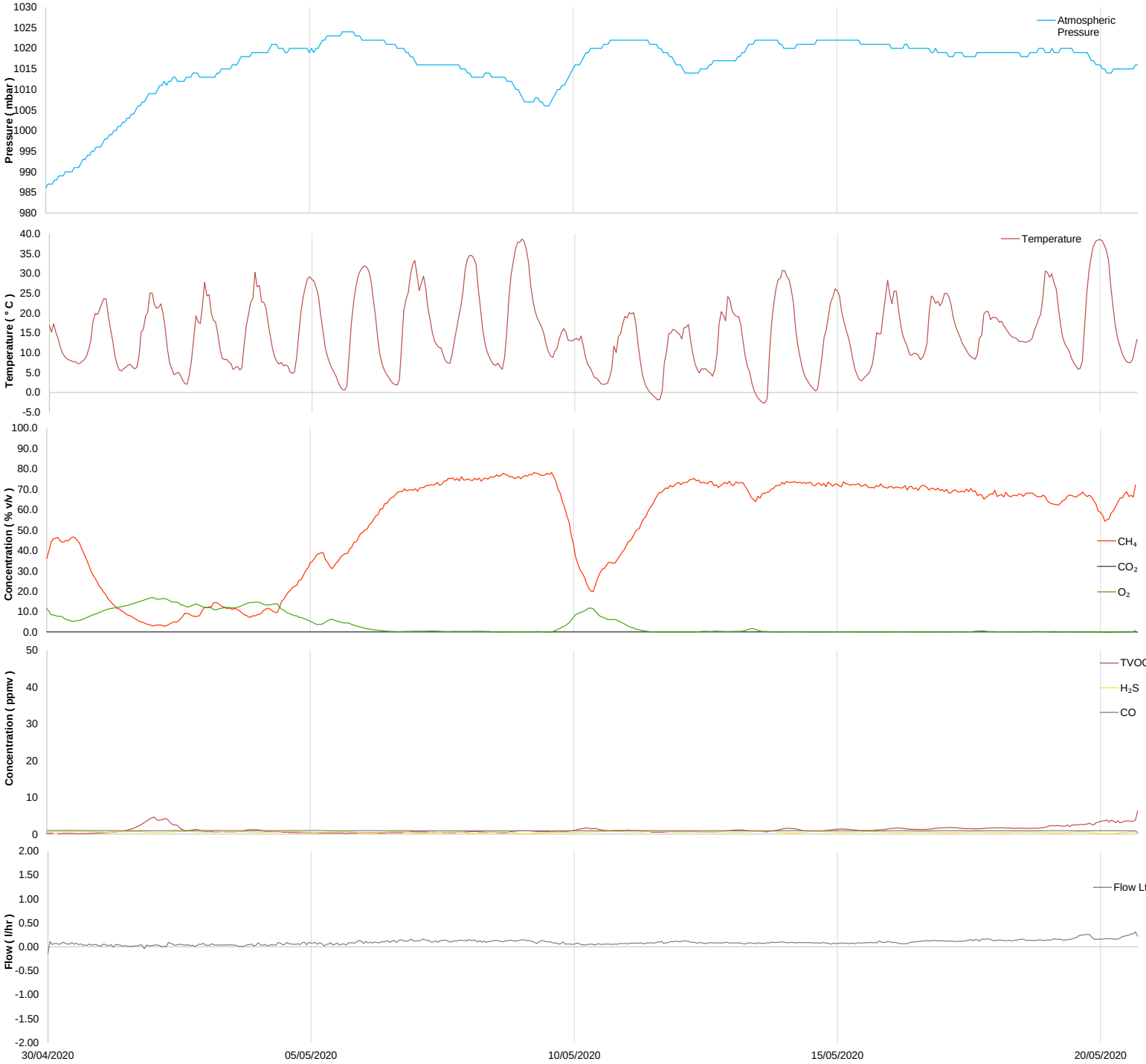
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	0.0	48.5
CO_2 (% v/v)	1.1	2.5
O_2 (% v/v)	0.0	7.3
TVOC (ppmv)	0	21
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	2
Atmospheric Pressure (mbar)	986	1024
Temperature (° C)	0.5	29.9
Flow (l/hr)	-0.01	0.03

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ggs
Experts in Continuous Monitoring

Title:

WS103 Time Series Graphs

Project:

GGS2230 Ryebank Fields, Chorlton

Client:

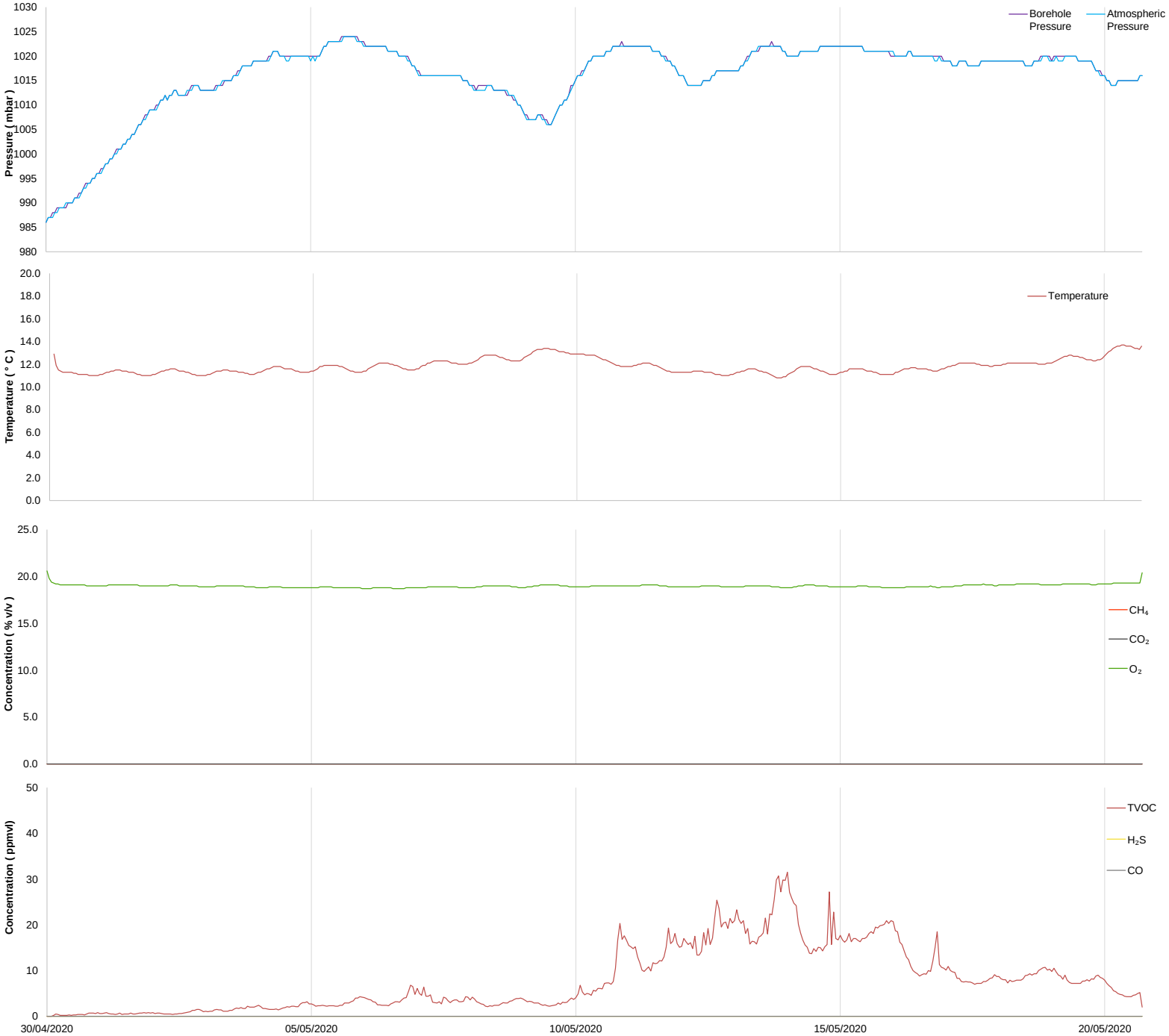
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	0.0	78.3
CO_2 (% v/v)	0.0	0.2
O_2 (% v/v)	0.0	17.0
TVOC (ppmv)	0	6
Hydrogen Sulphide (ppmv)	0	1
Carbon Monoxide (ppmv)	0	1
Atmospheric Pressure (mbar)	986	1024
Temperature (° C)	-2.6	38.7
Flow (l/hr)	-0.15	0.31

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Experts in Continuous Monitoring

Title:

WS106 Time Series Graphs

Project:

GGS2230 Ryebank Fields, Chorlton

Client:

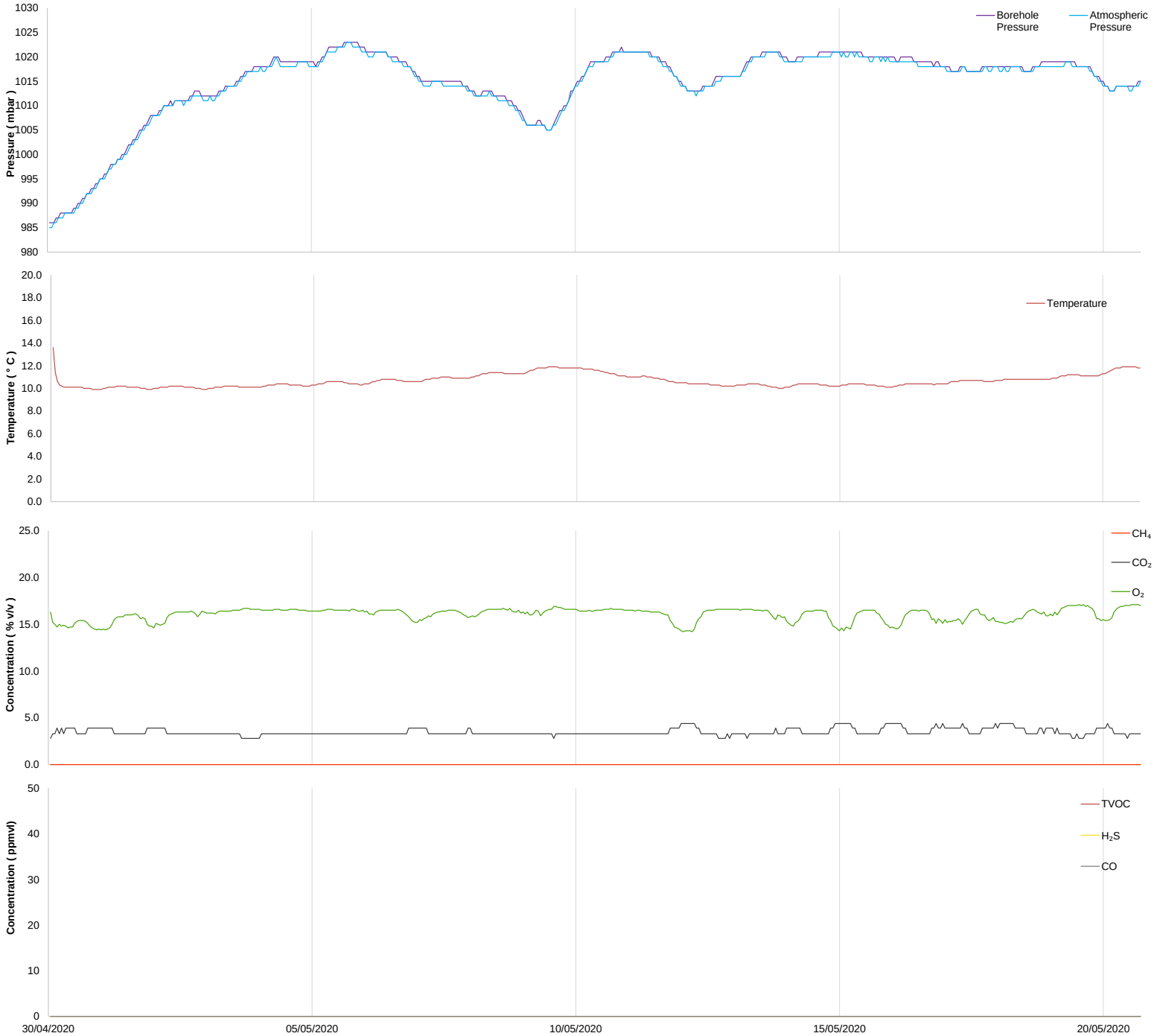
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	0.0	0.0
CO_2 (% v/v)	0.0	0.0
O_2 (% v/v)	18.7	20.6
TVOC (ppmv)	0	32
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	0
Atmospheric Pressure (mbar)	986	1024
Borehole Pressure (mbar)	986	1024
Temperature (° C)	10.8	13.7

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Experts in Continuous Monitoring

Title:

WS108 Times Series Graphs

Project:

GGS2230 Ryebank Fields, Chorlton

Client:

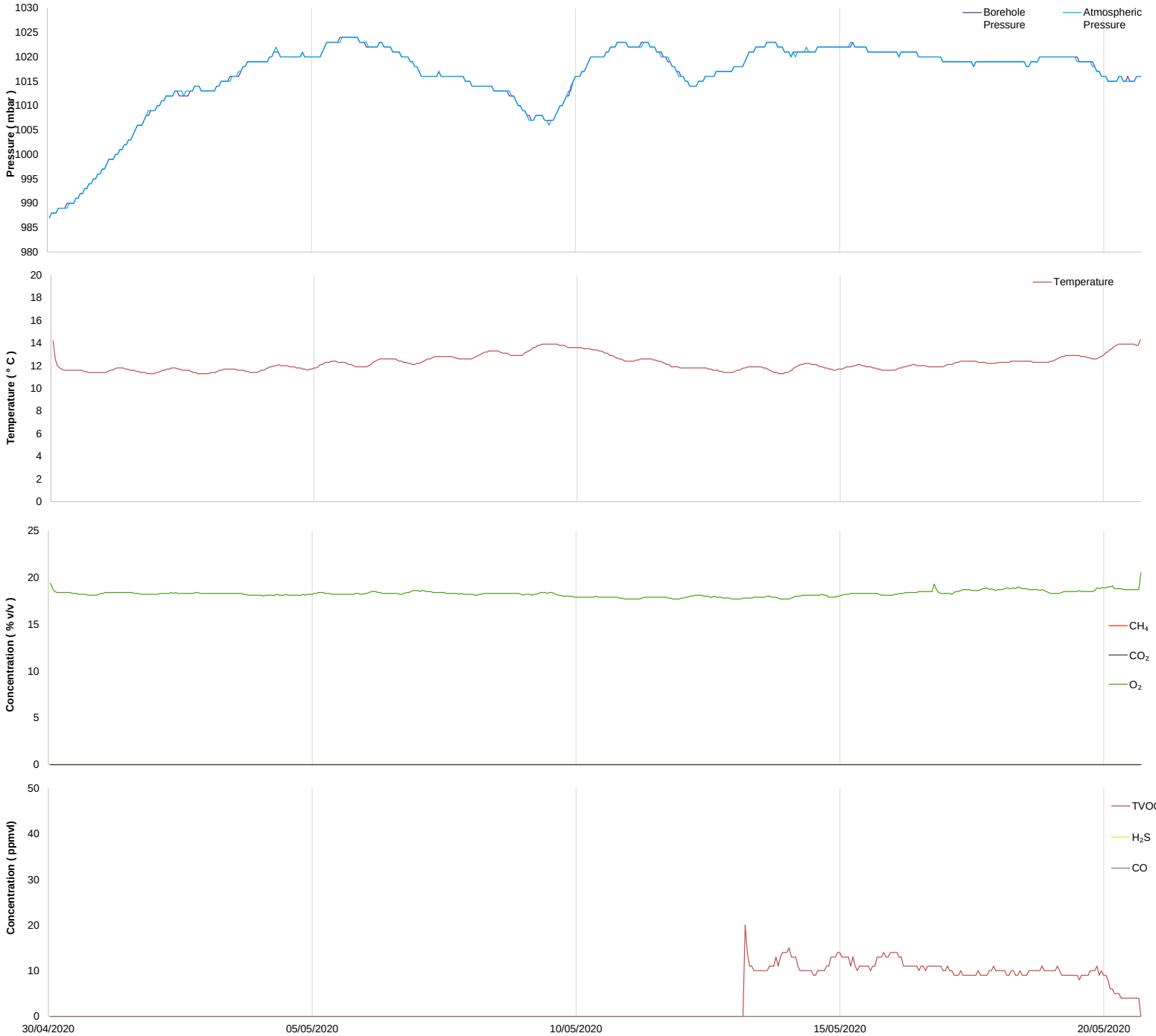
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	0.0	0.0
CO_2 (% v/v)	2.8	4.4
O_2 (% v/v)	14.2	17.1
TVOC (ppmv)	0	0
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	0
Atmospheric Pressure (mbar)	985	1023
Borehole Pressure (mbar)	986	1023
Temperature (° C)	9.9	13.6

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Experts in Continuous Monitoring

Title:

WS110 Time Series Graphs

Project:

GGS2230 Ryebank Fields, Chorlton

Client:

E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	0.0	0.0
CO_2 (% v/v)	0.0	0.0
O_2 (% v/v)	17.7	20.5
TVOC (ppmv)	0	20
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	0
Atmospheric Pressure (mbar)	987	1024
Borehole Pressure (mbar)	987	1024
Temperature (° C)	11.3	14.3

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GGS Time Series Data

Experts in Continuous Monitoring

Project Ref:	GGS2230
Location:	Ryebank Fields, Chorlton
Borehole ref:	WS101
Sentinel ID:	#03000038
Start Date:	30/04/2020 16:02
End Date:	21/05/2020 08:02

Days of monitoring:	21
Monitoring Frequency (mins):	60
Total samples taken:	497

Minimum, Maximum and Range Table

	CH_4	CO_2	O_2	TVOC	H_2S	CO	Atmospheric Pressure	Flow	Temperature
Minimum	7.2	4.5	0.1	0	0	0	986	0.00	-2.1
Maximum	8.1	5.1	1.9	73	1	3	1024	0.00	37.4
Range	1.0	0.7	1.8	73	1	3	38	0.00	39.5

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
30/04/2020 16:02	7.6	4.5	1.9	1	0	1	986	0.00	14.4
30/04/2020 17:02	7.6	4.5	1.8	1	0	1	987	0.00	15.0
30/04/2020 18:02	7.6	4.5	1.8	1	0	1	987	0.00	14.3
30/04/2020 19:02	7.6	4.5	1.8	1	0	1	987	0.00	13.7
30/04/2020 20:02	7.7	4.5	1.8	0	1	1	988	0.00	12.1
30/04/2020 21:02	7.7	4.5	1.7	1	1	1	988	0.00	10.4
30/04/2020 22:02	7.7	4.5	1.6	1	1	1	989	0.00	9.3
30/04/2020 23:02	7.6	4.5	1.5	1	1	1	989	0.00	8.6
01/05/2020 00:02	7.6	4.6	1.4	1	1	1	989	0.00	8.1
01/05/2020 01:02	7.6	4.6	1.3	1	1	1	990	0.00	7.9
01/05/2020 02:02	7.7	4.6	1.3	1	1	1	990	0.00	7.6
01/05/2020 03:02	7.7	4.6	1.2	1	1	1	990	0.00	7.5
01/05/2020 04:02	7.6	4.6	1.2	1	1	1	990	0.00	7.1
01/05/2020 05:02	7.7	4.6	1.1	1	1	1	991	0.00	8.5
01/05/2020 06:02	7.7	4.7	1.1	1	1	1	991	0.00	7.7
01/05/2020 07:02	7.7	4.7	1.1	1	1	1	991	0.00	7.8
01/05/2020 08:02	7.7	4.7	1.0	1	1	1	992	0.00	8.4
01/05/2020 09:02	7.7	4.7	1.0	1	1	1	993	0.00	9.5
01/05/2020 10:02	7.8	4.7	1.0	1	1	1	993	0.00	11.2
01/05/2020 11:02	7.7	4.6	1.1	2	1	1	994	0.00	14.8
01/05/2020 12:02	7.8	4.6	1.2	2	1	1	994	0.00	17.3
01/05/2020 13:02	7.8	4.6	1.2	2	1	1	995	0.00	17.5
01/05/2020 14:02	7.8	4.6	1.2	1	0	1	995	0.00	17.6
01/05/2020 15:02	7.8	4.6	1.3	1	0	1	996	0.00	18.9
01/05/2020 16:02	7.8	4.6	1.3	1	0	2	996	0.00	20.1
01/05/2020 17:02	7.8	4.6	1.3	1	0	2	996	0.00	19.4
01/05/2020 18:02	7.8	4.6	1.3	1	0	2	997	0.00	17.6
01/05/2020 19:02	7.7	4.6	1.3	1	0	2	998	0.00	16.0
01/05/2020 20:02	7.7	4.6	1.2	1	0	2	998	0.00	13.7
01/05/2020 21:02	7.7	4.6	1.1	1	1	1	999	0.00	10.0
01/05/2020 22:02	7.7	4.7	1.0	1	1	1	999	0.00	7.7
01/05/2020 23:02	7.6	4.7	0.9	1	1	1	1000	0.00	6.1
02/05/2020 00:02	7.7	4.7	0.8	1	1	1	1000	0.00	5.2
02/05/2020 01:02	7.7	4.7	0.8	1	1	1	1001	0.00	5.4
02/05/2020 02:02	7.7	4.7	0.8	1	1	1	1001	0.00	5.7
02/05/2020 03:02	7.7	4.7	0.7	2	1	1	1002	0.00	6.0
02/05/2020 04:02	7.7	4.8	0.7	3	1	1	1002	0.00	6.2
02/05/2020 05:02	7.7	4.8	0.7	4	1	1	1003	0.00	5.6
02/05/2020 06:02	7.7	4.8	0.7	5	1	1	1003	0.00	5.2
02/05/2020 07:02	7.7	4.8	0.7	6	1	1	1004	0.00	5.6
02/05/2020 08:02	7.8	4.8	0.7	9	1	1	1004	0.00	7.9
02/05/2020 09:02	7.8	4.8	0.7	13	1	1	1005	0.00	14.3
02/05/2020 10:02	7.8	4.7	0.8	12	1	1	1006	0.00	15.9
02/05/2020 11:02	7.8	4.7	0.8	8	1	1	1006	0.00	18.2
02/05/2020 12:02	7.9	4.7	0.8	4	0	1	1007	0.00	19.8
02/05/2020 13:02	7.9	4.7	0.9	2	0	1	1007	0.00	19.8
02/05/2020 14:02	7.9	4.7	0.9	1	0	1	1008	0.00	18.6
02/05/2020 15:02	7.8	4.7	0.9	1	0	1	1009	0.00	18.9
02/05/2020 16:02	7.8	4.7	0.9	1	0	1	1009	0.00	18.9
02/05/2020 17:02	7.8	4.7	0.8	1	0	1	1009	0.00	18.8
02/05/2020 18:02	7.8	4.7	0.8	1	0	2	1009	0.00	19.1
02/05/2020 19:02	7.8	4.7	0.8	1	0	1	1010	0.00	20.4
02/05/2020 20:02	7.8	4.7	0.8	1	0	2	1011	0.00	17.9
02/05/2020 21:02	7.8	4.7	0.7	1	0	1	1011	0.00	13.3
02/05/2020 22:02	7.8	4.7	0.7	1	1	1	1012	0.00	9.7
02/05/2020 23:02	7.8	4.8	0.6	1	1	1	1011	0.00	7.3
03/05/2020 00:02	7.8	4.8	0.5	1	1	1	1012	0.00	5.4
03/05/2020 01:02	7.8	4.8	0.5	1	1	1	1012	0.00	4.6
03/05/2020 02:02	7.8	4.8	0.4	2	1	1	1013	0.00	4.6
03/05/2020 03:02	7.8	4.9	0.4	2	1	1	1013	0.00	4.0
03/05/2020 04:02	7.8	4.9	0.4	2	1	1	1012	0.00	3.0
03/05/2020 05:02	7.9	4.9	0.3	3	1	1	1012	0.00	2.3
03/05/2020 06:02	7.8	4.9	0.3	6	1	1	1012	0.00	2.0
03/05/2020 07:02	7.9	4.9	0.3	9	1	1	1012	0.00	3.4
03/05/2020 08:02	7.9	4.9	0.3	11	1	1	1013	0.00	6.6
03/05/2020 09:02	8.0	4.9	0.3	16	1	1	1013	0.00	12.3
03/05/2020 10:02	8.0	4.9	0.4	21	1	1	1013	0.00	18.1
03/05/2020 11:02	8.0	4.8	0.4	9	1	1	1014	0.00	17.5
03/05/2020 12:02	8.1	4.8	0.4	4	0	1	1014	0.00	17.1
03/05/2020 13:02	8.0	4.8	0.5	2	0	1	1014	0.00	18.6
03/05/2020 14:02	8.0	4.7	0.5	1	0	1	1013	0.00	19.2
03/05/2020 15:02	8.1	4.8	0.4	1	0	1	1013	0.00	18.6
03/05/2020 16:02	8.1	4.7	0.4	1	0	1	1013	0.00	21.6
03/05/2020 17:02	8.1	4.7	0.4	1	0	1	1013	0.00	19.3
03/05/2020 18:02	8.0	4.7	0.4	1	0	1	1013	0.00	17.9
03/05/2020 19:02	8.0	4.7	0.4	1	0	1	1013	0.00	18.1
03/05/2020 20:02	8.0	4.8	0.4	1	0	1	1013	0.00	16.0
03/05/2020 21:02	8.0	4.8	0.3	1	0	1	1013	0.00	12.8
03/05/2020 22:02	8.0	4.8	0.3	1	1	1	1014	0.00	10.1
03/05/2020 23:02	8.0	4.8	0.3	1	1	1	1014	0.00	9.0
04/05/2020 00:02	7.9	4.8	0.3	0	1	1	1015	0.00	8.5
04/05/2020 01:02	7.9	4.9	0.3	2	1	1	1015	0.00	7.7
04/05/2020 02:02	7.9	4.9	0.2	2	1	1	1015	0.00	7.4
04/05/2020 03:02	7.9	4.9	0.2	2	1	1	1015	0.00	6.2
04/05/2020 04:02	7.9	4.9	0.2	3	1	1	1015	0.00	5.9
04/05/2020 05:02	7.9	4.9	0.2	5	1	1	1016	0.00	6.2
04/05/2020 06:02	7.9	4.9	0.2	8	1	1	1016	0.00	5.8
04/05/2020 07:02	7.9	4.9	0.2	10	1	1	1016	0.00	6.1
04/05/2020 08:02	7.9	4.9	0.2	12	1	1	1017	0.00	8.9
04/05/2020 09:02	8.0	4.9	0.3	17	1	1	1018	0.00	15.0
04/05/2020 10:02	8.0	4.8	0.3	13	0	1	1018	0.00	18.8
04/05/2020 11:02	8.1	4.8	0.3	3	0	1	1018	0.00	19.8
04/05/2020 12:02	8.0	4.7	0.4	1	0	1	1018	0.00	21.5
04/05/2020 13:02	8.0	4.7	0.4	1	0	1	1018	0.00	22.8
04/05/2020 14:02	8.1	4.7	0.4	1	0	1	1019	0.00	20.6
04/05/2020 15:02	8.1	4.7	0.4	1	0	1	1019	0.00	21.1

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
04/05/2020 16:02	8.1	4.7	0.4	1	0	1	1019	0.00	20.2
04/05/2020 17:02	8.0	4.7	0.4	1	0	1	1019	0.00	19.0
04/05/2020 18:02	8.0	4.7	0.4	1	0	1	1019	0.00	18.3
04/05/2020 19:02	8.0	4.7	0.3	1	0	1	1019	0.00	18.3
04/05/2020 20:02	8.0	4.8	0.3	1	0	1	1019	0.00	16.5
04/05/2020 21:02	8.1	4.8	0.3	1	0	1	1019	0.00	12.9
04/05/2020 22:02	8.0	4.8	0.3	1	1	1	1020	0.00	10.2
04/05/2020 23:02	8.0	4.9	0.2	1	1	0	1021	0.00	8.4
05/05/2020 00:02	7.9	4.9	0.2	1	1	0	1021	0.00	7.4
05/05/2020 01:02	7.9	4.9	0.2	1	1	0	1021	0.00	7.2
05/05/2020 02:02	7.9	4.9	0.2	2	1	0	1020	0.00	6.6
05/05/2020 03:02	7.9	4.9	0.2	2	1	0	1020	0.00	6.4
05/05/2020 04:02	7.9	4.9	0.2	2	1	0	1020	0.00	6.2
05/05/2020 05:02	7.8	4.9	0.2	3	1	0	1019	0.00	5.3
05/05/2020 06:02	7.9	4.9	0.2	4	1	0	1019	0.00	4.7
05/05/2020 07:02	7.9	4.9	0.2	5	1	0	1020	0.00	5.0
05/05/2020 08:02	7.9	4.9	0.2	7	1	0	1020	0.00	7.1
05/05/2020 09:02	8.0	4.9	0.2	11	1	0	1020	0.00	13.6
05/05/2020 10:02	8.1	4.8	0.2	13	0	0	1020	0.00	19.7
05/05/2020 11:02	8.1	4.8	0.2	7	0	1	1020	0.00	23.0
05/05/2020 12:02	8.1	4.8	0.2	2	0	1	1020	0.00	24.9
05/05/2020 13:02	8.1	4.7	0.2	1	0	1	1020	0.00	23.2
05/05/2020 14:02	8.1	4.8	0.2	1	0	1	1020	0.00	19.1
05/05/2020 15:02	8.1	4.8	0.2	1	0	1	1020	0.00	19.5
05/05/2020 16:02	8.1	4.7	0.2	1	0	1	1019	0.00	23.0
05/05/2020 17:02	8.1	4.7	0.2	1	0	1	1020	0.00	22.2
05/05/2020 18:02	8.1	4.7	0.2	1	0	1	1019	0.00	20.6
05/05/2020 19:02	8.1	4.7	0.3	1	0	1	1020	0.00	20.0
05/05/2020 20:02	8.0	4.7	0.3	1	0	1	1020	0.00	18.1
05/05/2020 21:02	8.0	4.8	0.3	1	0	1	1021	0.00	13.8
05/05/2020 22:02	7.9	4.8	0.3	1	1	1	1022	0.00	10.4
05/05/2020 23:02	7.9	4.9	0.2	1	1	0	1022	0.00	8.1
06/05/2020 00:02	7.9	4.9	0.2	1	1	1	1023	0.00	6.2
06/05/2020 01:02	7.8	4.9	0.2	1	1	0	1023	0.00	4.5
06/05/2020 02:02	7.8	4.9	0.2	1	1	0	1023	0.00	3.5
06/05/2020 03:02	7.8	4.9	0.2	2	1	0	1023	0.00	2.6
06/05/2020 04:02	7.7	4.9	0.2	2	1	0	1023	0.00	2.9
06/05/2020 05:02	7.7	4.9	0.2	3	1	0	1023	0.00	1.2
06/05/2020 06:02	7.7	4.9	0.2	4	1	0	1023	0.00	0.7
06/05/2020 07:02	7.7	4.9	0.2	7	1	0	1024	0.00	1.3
06/05/2020 08:02	7.7	4.9	0.2	12	1	0	1024	0.00	5.4
06/05/2020 09:02	7.8	4.9	0.3	23	1	1	1024	0.00	17.3
06/05/2020 10:02	7.9	4.8	0.3	28	0	1	1024	0.00	24.2
06/05/2020 11:02	8.0	4.8	0.3	7	0	1	1024	0.00	28.3
06/05/2020 12:02	8.0	4.7	0.3	2	0	1	1024	0.00	30.3
06/05/2020 13:02	8.0	4.7	0.3	1	0	1	1023	0.00	27.3
06/05/2020 14:02	7.9	4.7	0.3	1	0	1	1023	0.00	21.4
06/05/2020 15:02	8.0	4.7	0.3	1	0	1	1023	0.00	22.5
06/05/2020 16:02	8.0	4.7	0.3	1	0	1	1022	0.00	27.0
06/05/2020 17:02	8.0	4.7	0.3	1	0	1	1022	0.00	26.2
06/05/2020 18:02	8.0	4.7	0.3	1	0	1	1022	0.00	24.4
06/05/2020 19:02	8.0	4.7	0.3	0	0	1	1022	0.00	25.4
06/05/2020 20:02	8.0	4.7	0.3	0	0	1	1022	0.00	24.5
06/05/2020 21:02	8.0	4.7	0.3	0	0	1	1022	0.00	18.1
06/05/2020 22:02	7.9	4.8	0.3	1	0	1	1022	0.00	12.8
06/05/2020 23:02	7.9	4.8	0.3	1	1	1	1022	0.00	9.5
07/05/2020 00:02	7.8	4.8	0.3	1	1	1	1022	0.00	7.3
07/05/2020 01:02	7.8	4.9	0.3	1	1	1	1022	0.00	5.8
07/05/2020 02:02	7.7	4.9	0.2	1	1	1	1022	0.00	4.6
07/05/2020 03:02	7.7	4.9	0.2	1	1	0	1021	0.00	3.6
07/05/2020 04:02	7.7	4.9	0.2	2	1	0	1021	0.00	2.8
07/05/2020 05:02	7.7	4.9	0.2	2	1	0	1021	0.00	2.1
07/05/2020 06:02	7.7	4.9	0.2	2	1	0	1021	0.00	1.9
07/05/2020 07:02	7.7	4.9	0.2	3	1	0	1021	0.00	2.9
07/05/2020 08:02	7.7	4.9	0.2	5	1	0	1020	0.00	7.5
07/05/2020 09:02	7.8	4.9	0.3	11	1	1	1020	0.00	18.9
07/05/2020 10:02	7.9	4.8	0.3	10	0	1	1020	0.00	24.2
07/05/2020 11:02	8.0	4.8	0.3	3	0	1	1020	0.00	26.0
07/05/2020 12:02	8.0	4.7	0.3	1	0	1	1019	0.00	29.6
07/05/2020 13:02	8.0	4.7	0.3	1	0	1	1019	0.00	28.3
07/05/2020 14:02	8.0	4.7	0.3	1	0	1	1018	0.00	24.2
07/05/2020 15:02	8.0	4.7	0.3	1	0	1	1018	0.00	24.5
07/05/2020 16:02	7.9	4.7	0.3	1	0	1	1017	0.00	24.1
07/05/2020 17:02	8.0	4.7	0.3	1	0	1	1016	0.00	26.0
07/05/2020 18:02	8.0	4.7	0.3	0	0	1	1016	0.00	24.9
07/05/2020 19:02	7.9	4.7	0.3	0	0	1	1016	0.00	26.3
07/05/2020 20:02	8.0	4.7	0.3	0	0	1	1016	0.00	23.6
07/05/2020 21:02	8.0	4.7	0.3	0	0	1	1016	0.00	19.8
07/05/2020 22:02	7.9	4.7	0.3	1	0	1	1016	0.00	16.6
07/05/2020 23:02	7.8	4.7	0.3	1	0	1	1016	0.00	14.0
08/05/2020 00:02	7.8	4.8	0.3	1	0	1	1016	0.00	12.5
08/05/2020 01:02	7.8	4.8	0.3	1	1	1	1016	0.00	11.3
08/05/2020 02:02	7.8	4.8	0.3	1	1	1	1016	0.00	11.0
08/05/2020 03:02	7.8	4.8	0.3	1	1	1	1016	0.00	9.6
08/05/2020 04:02	7.8	4.8	0.3	1	1	1	1016	0.00	8.3
08/05/2020 05:02	7.8	4.9	0.3	2	1	1	1016	0.00	7.5
08/05/2020 06:02	7.8	4.9	0.2	2	1	1	1016	0.00	7.1
08/05/2020 07:02	7.8	4.9	0.2	2	1	1	1016	0.00	8.5
08/05/2020 08:02	7.9	4.9	0.3	2	1	1	1016	0.00	11.0
08/05/2020 09:02	7.9	4.9	0.3	3	1	1	1016	0.00	13.5
08/05/2020 10:02	7.9	4.8	0.3	3	1	1	1016	0.00	16.3
08/05/2020 11:02	7.9	4.8	0.3	2	0	1	1016	0.00	18.5
08/05/2020 12:02	7.9	4.8	0.4	1	0	1	1016	0.00	20.7
08/05/2020 13:02	7.9	4.7	0.4	1	0	1	1015	0.00	22.7
08/05/2020 14:02	7.9	4.7	0.4	1	0	1	1015	0.00	21.6
08/05/2020 15:02	7.9	4.7	0.4	1	0	1	1015	0.00	24.1
08/05/2020 16:02	7.9	4.7	0.4	1	0	2	1014	0.00	26.8
08/05/2020 17:02	7.9	4.7	0.4	1	0	2	1014	0.00	26.7
08/05/2020 18:02	7.9	4.7	0.4	1	0	2	1013	0.00	25.4
08/05/2020 19:02	8.0	4.7	0.4	0	0	2	1013	0.00	24.8
08/05/2020 20:02	7.9	4.7	0.4	0	0	2	1013	0.00	23.0
08/05/2020 21:02	7.9	4.7	0.4	1	0	2	1013	0.00	18.5
08/05/2020 22:02	7.8	4.7	0.3	1	0	1	1013	0.00	14.4
08/05/2020 23:02	7.8	4.8	0.3	1	0	1	1013	0.00	11.6
09/05/2020 00:02	7.8	4.8	0.3	1	1	1	1014	0.00	9.8
09/05/2020 01:02	7.7	4.8	0.3	1	1	1	1014	0.00	8.5
09/05/2020 02:02	7.7	4.9	0.3	1	1	1	1014	0.00	7.4
09/05/2020 03:02	7.7	4.9	0.3	1	1	1	1013	0.00	6.9
09/05/2020 04:02	7.8	4.9	0.3	2	1	1	1013	0.00	6.8
09/05/2020 05:02	7.7	4.9	0.2	2	1	1	1013	0.00	6.3
09/05/2020 06:02	7.7	4.9	0.2	2	1	1	1013	0.00	5.6
09/05/2020 07:02	7.8	4.9	0.2	2	1	1	1013	0.00	7.4
09/05/2020 08:02	7.7	4.9	0.2	3	1	1	1013	0.00	11.4
09/05/2020 09:02	7.9	4.8	0.3	6	0	1	1013	0.00	22.2

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
09/05/2020 10:02	7.9	4.7	0.4	5	0	2	1012	0.00	29.5
09/05/2020 11:02	7.9	4.7	0.4	1	0	2	1012	0.00	33.4
09/05/2020 12:02	7.9	4.7	0.4	1	0	2	1012	0.00	34.7
09/05/2020 13:02	7.9	4.6	0.4	1	0	2	1011	0.00	32.2
09/05/2020 14:02	7.9	4.7	0.3	1	0	2	1010	0.00	27.5
09/05/2020 15:02	7.9	4.7	0.3	1	0	2	1010	0.00	28.7
09/05/2020 16:02	7.9	4.6	0.3	1	0	2	1009	0.00	31.7
09/05/2020 17:02	8.0	4.7	0.3	0	0	2	1008	0.00	30.1
09/05/2020 18:02	7.9	4.6	0.3	0	0	2	1007	0.00	28.2
09/05/2020 19:02	7.9	4.7	0.3	0	0	2	1007	0.00	25.1
09/05/2020 20:02	7.9	4.7	0.3	0	0	2	1007	0.00	22.7
09/05/2020 21:02	7.9	4.7	0.3	0	0	2	1007	0.00	20.7
09/05/2020 22:02	7.9	4.7	0.3	1	0	2	1007	0.00	19.0
09/05/2020 23:02	7.8	4.7	0.3	1	0	2	1008	0.00	17.7
10/05/2020 00:02	7.9	4.7	0.3	1	0	2	1008	0.00	16.2
10/05/2020 01:02	7.8	4.8	0.3	1	0	2	1007	0.00	14.5
10/05/2020 02:02	7.9	4.8	0.3	1	0	1	1007	0.00	12.2
10/05/2020 03:02	7.8	4.8	0.3	1	0	1	1006	0.00	10.4
10/05/2020 04:02	7.8	4.8	0.2	1	1	1	1006	0.00	8.9
10/05/2020 05:02	7.8	4.8	0.2	1	1	1	1006	0.00	8.2
10/05/2020 06:02	7.8	4.9	0.2	2	1	1	1007	0.00	9.5
10/05/2020 07:02	7.8	4.8	0.3	2	1	1	1008	0.00	10.2
10/05/2020 08:02	7.8	4.9	0.3	2	1	1	1009	0.00	12.2
10/05/2020 09:02	7.8	4.8	0.3	2	1	1	1010	0.00	13.1
10/05/2020 10:02	7.8	4.8	0.4	3	1	2	1010	0.00	13.5
10/05/2020 11:02	7.9	4.8	0.4	3	1	1	1011	0.00	13.4
10/05/2020 12:02	7.8	4.8	0.4	3	1	2	1011	0.00	12.2
10/05/2020 13:02	7.8	4.8	0.4	3	1	1	1012	0.00	11.7
10/05/2020 14:02	7.9	4.8	0.4	4	1	1	1013	0.00	11.4
10/05/2020 15:02	7.8	4.8	0.4	4	1	1	1014	0.00	11.4
10/05/2020 16:02	7.8	4.8	0.5	5	1	1	1015	0.00	11.5
10/05/2020 17:02	7.8	4.8	0.5	5	1	1	1016	0.00	11.2
10/05/2020 18:02	7.8	4.8	0.5	5	1	1	1016	0.00	11.2
10/05/2020 19:02	7.9	4.9	0.5	5	1	1	1016	0.00	10.6
10/05/2020 20:02	7.8	4.8	0.5	4	1	1	1017	0.00	9.8
10/05/2020 21:02	7.8	4.9	0.5	3	1	1	1018	0.00	7.9
10/05/2020 22:02	7.7	4.9	0.5	4	1	1	1019	0.00	6.7
10/05/2020 23:02	7.7	4.9	0.5	4	1	1	1019	0.00	5.6
11/05/2020 00:02	7.7	4.9	0.5	5	1	1	1020	0.00	4.4
11/05/2020 01:02	7.7	4.9	0.5	5	1	1	1020	0.00	3.7
11/05/2020 02:02	7.7	4.9	0.5	6	1	1	1020	0.00	3.3
11/05/2020 03:02	7.7	4.9	0.4	8	1	1	1020	0.00	2.3
11/05/2020 04:02	7.7	4.9	0.4	9	1	1	1020	0.00	1.8
11/05/2020 05:02	7.7	4.9	0.4	12	1	1	1020	0.00	1.8
11/05/2020 06:02	7.7	5.0	0.4	15	1	1	1021	0.00	1.8
11/05/2020 07:02	7.7	4.9	0.4	21	1	1	1021	0.00	2.9
11/05/2020 08:02	7.7	5.0	0.4	33	1	1	1021	0.00	4.5
11/05/2020 09:02	7.7	4.9	0.4	46	1	1	1022	0.00	9.3
11/05/2020 10:02	7.7	4.9	0.5	73	1	1	1022	0.00	9.2
11/05/2020 11:02	7.7	4.9	0.5	73	1	1	1022	0.00	11.0
11/05/2020 12:02	7.7	4.9	0.5	68	1	2	1022	0.00	11.8
11/05/2020 13:02	7.7	4.8	0.6	58	1	2	1022	0.00	12.7
11/05/2020 14:02	7.8	4.9	0.6	46	1	2	1022	0.00	13.5
11/05/2020 15:02	7.7	4.8	0.7	36	1	2	1022	0.00	14.2
11/05/2020 16:02	7.8	4.8	0.7	30	0	2	1022	0.00	15.2
11/05/2020 17:02	7.8	4.8	0.7	22	0	2	1022	0.00	15.4
11/05/2020 18:02	7.8	4.8	0.7	12	0	2	1022	0.00	15.0
11/05/2020 19:02	7.8	4.8	0.7	5	0	2	1022	0.00	15.6
11/05/2020 20:02	7.7	4.8	0.7	2	0	2	1022	0.00	14.6
11/05/2020 21:02	7.7	4.8	0.6	3	1	2	1022	0.00	10.8
11/05/2020 22:02	7.7	4.9	0.5	3	1	2	1022	0.00	7.0
11/05/2020 23:02	7.7	4.9	0.5	3	1	1	1022	0.00	4.1
12/05/2020 00:02	7.7	4.9	0.4	4	1	1	1022	0.00	2.4
12/05/2020 01:02	7.7	5.0	0.3	4	1	1	1022	0.00	1.3
12/05/2020 02:02	7.7	5.0	0.3	6	1	1	1022	0.00	0.5
12/05/2020 03:02	7.7	5.0	0.2	8	1	1	1021	0.00	-0.2
12/05/2020 04:02	7.8	5.1	0.2	11	1	1	1021	0.00	0.5
12/05/2020 05:02	7.8	5.1	0.2	13	1	0	1021	0.00	-1.0
12/05/2020 06:02	7.9	5.1	0.1	17	1	0	1021	0.00	-1.3
12/05/2020 07:02	7.9	5.1	0.1	22	1	0	1020	0.00	0.1
12/05/2020 08:02	7.9	5.0	0.1	36	1	0	1020	0.00	6.2
12/05/2020 09:02	7.9	5.0	0.1	56	1	1	1019	0.00	8.5
12/05/2020 10:02	7.9	5.0	0.1	66	1	1	1019	0.00	12.1
12/05/2020 11:02	7.9	4.9	0.2	73	1	1	1019	0.00	13.0
12/05/2020 12:02	7.9	4.9	0.2	61	1	1	1018	0.00	13.7
12/05/2020 13:02	8.0	4.9	0.2	40	1	1	1018	0.00	13.3
12/05/2020 14:02	7.9	4.9	0.2	29	1	1	1017	0.00	13.1
12/05/2020 15:02	7.9	4.9	0.2	23	1	1	1016	0.00	13.2
12/05/2020 16:02	7.9	4.9	0.2	20	1	1	1016	0.00	12.5
12/05/2020 17:02	7.9	4.9	0.3	20	1	1	1016	0.00	13.6
12/05/2020 18:02	8.0	4.9	0.3	17	1	1	1015	0.00	13.8
12/05/2020 19:02	8.0	4.9	0.3	13	1	1	1014	0.00	15.4
12/05/2020 20:02	8.0	4.9	0.3	6	0	1	1014	0.00	14.7
12/05/2020 21:02	7.9	4.9	0.3	5	1	1	1014	0.00	11.7
12/05/2020 22:02	7.8	4.9	0.3	6	1	1	1014	0.00	9.2
12/05/2020 23:02	7.8	4.9	0.2	6	1	1	1014	0.00	7.5
13/05/2020 00:02	7.9	4.9	0.2	7	1	1	1014	0.00	6.5
13/05/2020 01:02	7.8	4.9	0.2	8	1	1	1014	0.00	6.6
13/05/2020 02:02	7.8	5.0	0.2	10	1	1	1015	0.00	6.3
13/05/2020 03:02	7.9	5.0	0.1	12	1	1	1015	0.00	6.1
13/05/2020 04:02	7.9	5.0	0.1	13	1	1	1015	0.00	5.7
13/05/2020 05:02	7.9	5.0	0.1	16	1	1	1015	0.00	5.2
13/05/2020 06:02	7.9	5.0	0.1	18	1	1	1016	0.00	4.6
13/05/2020 07:02	7.9	5.0	0.1	20	1	1	1016	0.00	5.1
13/05/2020 08:02	7.9	5.0	0.1	24	1	1	1017	0.00	7.3
13/05/2020 09:02	7.9	4.9	0.1	45	1	1	1017	0.00	16.2
13/05/2020 10:02	7.9	4.9	0.1	71	0	1	1017	0.00	19.6
13/05/2020 11:02	7.9	4.9	0.1	61	0	1	1017	0.00	18.7
13/05/2020 12:02	7.9	4.9	0.2	21	0	1	1017	0.00	16.1
13/05/2020 13:02	7.9	4.9	0.2	12	0	1	1017	0.00	18.3
13/05/2020 14:02	7.9	4.9	0.2	7	0	1	1017	0.00	17.3
13/05/2020 15:02	7.9	4.9	0.2	4	0	1	1017	0.00	16.4
13/05/2020 16:02	7.9	4.9	0.2	3	0	1	1017	0.00	16.2
13/05/2020 17:02	7.9	4.9	0.2	3	0	1	1017	0.00	15.8
13/05/2020 18:02	7.9	4.9	0.2	3	0	1	1017	0.00	15.2
13/05/2020 19:02	7.9	4.9	0.3	2	0	1	1018	0.00	15.3
13/05/2020 20:02	7.8	4.9	0.3	2	0	1	1018	0.00	14.7
13/05/2020 21:02	7.7	4.9	0.3	2	1	1	1019	0.00	11.0
13/05/2020 22:02	7.7	4.9	0.3	2	1	1	1019	0.00	8.1
13/05/2020 23:02	7.7	4.9	0.2	2	1	1	1020	0.00	6.0
14/05/2020 00:02	7.7	5.0	0.2	2	1	1	1021	0.00	3.8
14/05/2020 01:02	7.7	5.0	0.2	3	1	1	1021	0.00	1.7
14/05/2020 02:02	7.7	5.0	0.2	3	1	1	1021	0.00	0.4
14/05/2020 03:02	7.7	5.0	0.2	4	1	1	1022	0.00	-0.6

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
14/05/2020 04:02	7.7	5.1	0.1	5	1	0	1022	0.00	-1.3
14/05/2020 05:02	7.7	5.1	0.1	7	1	0	1022	0.00	-1.9
14/05/2020 06:02	7.8	5.1	0.1	8	1	0	1022	0.00	-2.1
14/05/2020 07:02	7.9	5.1	0.1	11	1	0	1022	0.00	-1.4
14/05/2020 08:02	7.8	5.1	0.1	19	1	1	1022	0.00	7.6
14/05/2020 09:02	7.8	5.0	0.1	40	1	1	1022	0.00	17.3
14/05/2020 10:02	7.8	4.9	0.1	73	0	1	1022	0.00	22.8
14/05/2020 11:02	7.8	4.9	0.1	51	0	1	1022	0.00	25.7
14/05/2020 12:02	7.8	4.8	0.2	11	0	2	1022	0.00	26.5
14/05/2020 13:02	7.8	4.8	0.1	2	0	2	1022	0.00	24.0
14/05/2020 14:02	7.8	4.8	0.1	2	0	2	1021	0.00	20.1
14/05/2020 15:02	7.8	4.8	0.2	1	0	1	1021	0.00	21.5
14/05/2020 16:02	7.8	4.8	0.2	1	0	2	1020	0.00	22.2
14/05/2020 17:02	7.8	4.8	0.2	1	0	2	1020	0.00	21.4
14/05/2020 18:02	7.7	4.8	0.2	1	0	2	1020	0.00	19.4
14/05/2020 19:02	7.8	4.8	0.2	1	0	2	1020	0.00	18.7
14/05/2020 20:02	7.7	4.8	0.3	1	0	2	1020	0.00	17.8
14/05/2020 21:02	7.7	4.9	0.3	1	0	1	1020	0.00	14.2
14/05/2020 22:02	7.7	4.9	0.3	1	1	1	1021	0.00	10.6
14/05/2020 23:02	7.6	4.9	0.2	1	1	1	1021	0.00	7.6
15/05/2020 00:02	7.6	4.9	0.2	2	1	1	1021	0.00	5.5
15/05/2020 01:02	7.6	5.0	0.2	2	1	1	1021	0.00	4.0
15/05/2020 02:02	7.6	5.0	0.2	2	1	1	1021	0.00	2.9
15/05/2020 03:02	7.6	5.0	0.1	2	1	1	1021	0.00	2.1
15/05/2020 04:02	7.6	5.0	0.1	2	1	1	1021	0.00	1.4
15/05/2020 05:02	7.6	5.0	0.1	3	1	1	1021	0.00	0.7
15/05/2020 06:02	7.6	5.0	0.1	3	1	0	1021	0.00	0.7
15/05/2020 07:02	7.7	5.0	0.1	4	1	1	1022	0.00	3.0
15/05/2020 08:02	7.7	5.0	0.1	6	1	1	1022	0.00	6.2
15/05/2020 09:02	7.7	5.0	0.1	8	1	1	1022	0.00	10.6
15/05/2020 10:02	7.7	4.9	0.1	13	1	1	1022	0.00	14.0
15/05/2020 11:02	7.7	4.9	0.2	13	1	1	1022	0.00	15.9
15/05/2020 12:02	7.8	4.9	0.2	12	0	1	1022	0.00	18.0
15/05/2020 13:02	7.8	4.9	0.2	8	0	1	1022	0.00	19.0
15/05/2020 14:02	7.8	4.8	0.3	4	0	2	1022	0.00	19.0
15/05/2020 15:02	7.8	4.8	0.3	2	0	2	1022	0.00	19.5
15/05/2020 16:02	7.7	4.8	0.3	2	0	2	1022	0.00	19.1
15/05/2020 17:02	7.7	4.8	0.3	1	0	2	1022	0.00	17.6
15/05/2020 18:02	7.6	4.8	0.3	1	0	2	1022	0.00	15.9
15/05/2020 19:02	7.7	4.9	0.3	2	0	2	1022	0.00	14.6
15/05/2020 20:02	7.7	4.9	0.3	2	0	1	1022	0.00	13.3
15/05/2020 21:02	7.7	4.9	0.3	2	1	1	1022	0.00	11.7
15/05/2020 22:02	7.6	4.9	0.3	2	1	1	1022	0.00	9.6
15/05/2020 23:02	7.6	4.9	0.3	2	1	1	1022	0.00	7.1
16/05/2020 00:02	7.5	4.9	0.2	3	1	1	1022	0.00	5.3
16/05/2020 01:02	7.6	5.0	0.2	3	1	1	1022	0.00	4.0
16/05/2020 02:02	7.6	5.0	0.2	4	1	1	1022	0.00	3.3
16/05/2020 03:02	7.6	5.0	0.1	4	1	1	1021	0.00	3.2
16/05/2020 04:02	7.7	5.0	0.1	6	1	1	1021	0.00	3.6
16/05/2020 05:02	7.7	5.0	0.1	7	1	1	1021	0.00	3.8
16/05/2020 06:02	7.7	5.0	0.1	8	1	0	1021	0.00	4.5
16/05/2020 07:02	7.7	5.0	0.1	10	1	1	1021	0.00	5.8
16/05/2020 08:02	7.7	5.0	0.1	14	1	1	1021	0.00	8.3
16/05/2020 09:02	7.8	5.0	0.1	21	1	1	1021	0.00	13.4
16/05/2020 10:02	7.8	5.0	0.1	23	1	1	1021	0.00	13.3
16/05/2020 11:02	7.8	4.9	0.2	20	1	1	1021	0.00	13.4
16/05/2020 12:02	7.8	4.9	0.2	18	1	1	1021	0.00	15.5
16/05/2020 13:02	7.8	4.9	0.2	21	0	1	1021	0.00	17.9
16/05/2020 14:02	7.8	4.9	0.2	13	0	1	1021	0.00	18.1
16/05/2020 15:02	7.8	4.9	0.3	6	0	2	1021	0.00	18.8
16/05/2020 16:02	7.8	4.9	0.3	3	0	2	1021	0.00	18.1
16/05/2020 17:02	7.7	4.9	0.3	2	0	2	1020	0.00	19.5
16/05/2020 18:02	7.6	4.8	0.3	2	0	2	1020	0.00	18.9
16/05/2020 19:02	7.7	4.9	0.3	1	0	2	1020	0.00	18.1
16/05/2020 20:02	7.7	4.8	0.3	1	0	2	1020	0.00	16.3
16/05/2020 21:02	7.7	4.9	0.3	2	0	1	1020	0.00	14.2
16/05/2020 22:02	7.6	4.9	0.3	2	1	1	1020	0.00	12.7
16/05/2020 23:02	7.6	4.9	0.3	2	1	1	1021	0.00	11.6
17/05/2020 00:02	7.6	4.9	0.2	2	1	1	1021	0.00	9.8
17/05/2020 01:02	7.6	4.9	0.2	3	1	1	1020	0.00	9.0
17/05/2020 02:02	7.6	4.9	0.2	4	1	1	1020	0.00	9.0
17/05/2020 03:02	7.6	4.9	0.2	5	1	1	1020	0.00	8.8
17/05/2020 04:02	7.7	4.9	0.2	6	1	1	1020	0.00	8.5
17/05/2020 05:02	7.7	4.9	0.2	7	1	1	1020	0.00	7.5
17/05/2020 06:02	7.7	4.9	0.2	8	1	1	1020	0.00	7.6
17/05/2020 07:02	7.7	5.0	0.2	10	1	1	1020	0.00	8.7
17/05/2020 08:02	7.7	4.9	0.2	13	1	1	1020	0.00	10.7
17/05/2020 09:02	7.8	4.9	0.2	17	1	1	1020	0.00	17.0
17/05/2020 10:02	7.8	4.9	0.2	23	0	1	1020	0.00	22.9
17/05/2020 11:02	7.7	4.8	0.2	3	0	1	1019	0.00	22.1
17/05/2020 12:02	7.7	4.8	0.2	1	0	2	1019	0.00	21.2
17/05/2020 13:02	7.8	4.8	0.2	1	0	2	1020	0.00	20.9
17/05/2020 14:02	7.7	4.8	0.2	1	0	2	1019	0.00	20.0
17/05/2020 15:02	7.7	4.8	0.2	1	0	2	1019	0.00	20.3
17/05/2020 16:02	7.7	4.8	0.2	1	0	2	1019	0.00	20.9
17/05/2020 17:02	7.7	4.8	0.2	1	0	2	1019	0.00	21.4
17/05/2020 18:02	7.7	4.8	0.2	1	0	2	1019	0.00	21.2
17/05/2020 19:02	7.6	4.8	0.2	1	0	2	1018	0.00	20.6
17/05/2020 20:02	7.6	4.8	0.2	1	0	2	1018	0.00	18.9
17/05/2020 21:02	7.6	4.8	0.2	1	0	2	1018	0.00	17.3
17/05/2020 22:02	7.6	4.8	0.2	1	0	1	1019	0.00	15.6
17/05/2020 23:02	7.6	4.9	0.2	1	0	1	1019	0.00	14.3
18/05/2020 00:02	7.6	4.9	0.2	1	1	1	1019	0.00	12.7
18/05/2020 01:02	7.7	4.9	0.2	1	1	1	1019	0.00	11.4
18/05/2020 02:02	7.6	4.9	0.2	2	1	1	1018	0.00	10.1
18/05/2020 03:02	7.6	4.9	0.2	2	1	1	1018	0.00	9.0
18/05/2020 04:02	7.6	4.9	0.2	2	1	1	1018	0.00	8.2
18/05/2020 05:02	7.6	4.9	0.2	2	1	1	1018	0.00	7.8
18/05/2020 06:02	7.6	4.9	0.2	3	1	1	1018	0.00	7.3
18/05/2020 07:02	7.6	5.0	0.2	4	1	1	1018	0.00	8.0
18/05/2020 08:02	7.7	4.9	0.2	7	1	1	1019	0.00	12.4
18/05/2020 09:02	7.6	4.9	0.2	7	1	1	1019	0.00	13.4
18/05/2020 10:02	7.7	4.9	0.2	9	1	1	1019	0.00	17.7
18/05/2020 11:02	7.7	4.9	0.2	5	0	1	1019	0.00	19.0
18/05/2020 12:02	7.7	4.9	0.2	2	0	1	1019	0.00	19.6
18/05/2020 13:02	7.7	4.8	0.2	1	0	1	1019	0.00	18.4
18/05/2020 14:02	7.7	4.8	0.2	1	0	1	1019	0.00	18.1
18/05/2020 15:02	7.7	4.8	0.2	1	0	2	1019	0.00	18.3
18/05/2020 16:02	7.7	4.9	0.2	1	0	1	1019	0.00	18.1
18/05/2020 17:02	7.7	4.9	0.2	1	0	1	1019	0.00	17.7
18/05/2020 18:02	7.6	4.8	0.2	1	0	1	1019	0.00	17.7
18/05/2020 19:02	7.7	4.9	0.2	1	0	1	1019	0.00	17.0
18/05/2020 20:02	7.6	4.9	0.2	1	0	1	1019	0.00	16.4
18/05/2020 21:02	7.7	4.9	0.2	1	0	1	1019	0.00	15.5

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
18/05/2020 22:02	7.6	4.9	0.2	1	0	1	1019	0.00	14.7
18/05/2020 23:02	7.6	4.9	0.2	1	0	1	1019	0.00	14.0
19/05/2020 00:02	7.7	4.9	0.2	2	1	1	1019	0.00	13.6
19/05/2020 01:02	7.7	4.9	0.2	2	1	1	1019	0.00	13.3
19/05/2020 02:02	7.7	4.9	0.2	2	1	1	1019	0.00	12.7
19/05/2020 03:02	7.6	4.9	0.2	2	1	1	1019	0.00	12.4
19/05/2020 04:02	7.7	4.9	0.2	2	1	1	1018	0.00	12.2
19/05/2020 05:02	7.7	4.9	0.2	2	1	1	1018	0.00	12.1
19/05/2020 06:02	7.7	4.9	0.2	3	1	1	1018	0.00	12.1
19/05/2020 07:02	7.7	4.9	0.2	3	1	1	1018	0.00	12.5
19/05/2020 08:02	7.7	4.9	0.2	3	1	1	1019	0.00	13.0
19/05/2020 09:02	7.7	4.9	0.2	3	1	1	1019	0.00	14.5
19/05/2020 10:02	7.7	4.9	0.2	3	0	1	1019	0.00	15.7
19/05/2020 11:02	7.7	4.9	0.2	2	0	1	1019	0.00	17.1
19/05/2020 12:02	7.7	4.9	0.2	2	0	1	1020	0.00	18.2
19/05/2020 13:02	7.7	4.9	0.2	1	0	2	1020	0.00	20.2
19/05/2020 14:02	7.7	4.8	0.3	1	0	2	1020	0.00	22.3
19/05/2020 15:02	7.7	4.8	0.3	1	0	2	1019	0.00	24.0
19/05/2020 16:02	7.6	4.8	0.3	1	0	2	1019	0.00	24.3
19/05/2020 17:02	7.6	4.8	0.3	1	0	2	1019	0.00	24.9
19/05/2020 18:02	7.6	4.8	0.3	1	0	2	1020	0.00	23.9
19/05/2020 19:02	7.6	4.8	0.3	1	0	2	1019	0.00	23.2
19/05/2020 20:02	7.6	4.8	0.3	1	0	2	1019	0.00	23.2
19/05/2020 21:02	7.6	4.8	0.3	1	0	2	1019	0.00	19.9
19/05/2020 22:02	7.5	4.8	0.3	1	0	2	1020	0.00	16.2
19/05/2020 23:02	7.5	4.9	0.3	1	0	2	1020	0.00	13.7
20/05/2020 00:02	7.6	4.9	0.3	1	0	2	1020	0.00	12.3
20/05/2020 01:02	7.5	4.9	0.3	1	1	1	1020	0.00	11.2
20/05/2020 02:02	7.5	4.9	0.2	1	1	1	1020	0.00	9.6
20/05/2020 03:02	7.5	4.9	0.2	2	1	1	1020	0.00	8.3
20/05/2020 04:02	7.5	4.9	0.2	2	1	1	1019	0.00	7.4
20/05/2020 05:02	7.6	5.0	0.2	2	1	1	1019	0.00	6.5
20/05/2020 06:02	7.5	5.0	0.2	2	1	1	1019	0.00	6.2
20/05/2020 07:02	7.5	5.0	0.2	3	1	1	1019	0.00	7.5
20/05/2020 08:02	7.6	5.0	0.2	5	1	1	1019	0.00	16.3
20/05/2020 09:02	7.7	4.9	0.2	9	0	2	1019	0.00	24.4
20/05/2020 10:02	7.7	4.8	0.3	2	0	2	1019	0.00	30.2
20/05/2020 11:02	7.7	4.7	0.3	1	0	2	1018	0.00	34.1
20/05/2020 12:02	7.7	4.7	0.3	1	0	3	1017	0.00	36.7
20/05/2020 13:02	7.7	4.6	0.3	1	0	3	1017	0.00	37.4
20/05/2020 14:02	7.6	4.7	0.3	1	0	3	1016	0.00	32.0
20/05/2020 15:02	7.7	4.7	0.3	1	0	3	1016	0.00	34.1
20/05/2020 16:02	7.6	4.6	0.3	1	0	3	1016	0.00	35.4
20/05/2020 17:02	7.7	4.6	0.3	1	0	3	1015	0.00	35.3
20/05/2020 18:02	7.7	4.6	0.3	1	0	3	1015	0.00	33.5
20/05/2020 19:02	7.6	4.6	0.3	1	0	3	1014	0.00	31.4
20/05/2020 20:02	7.7	4.7	0.3	1	0	3	1014	0.00	30.4
20/05/2020 21:02	7.7	4.7	0.3	1	0	3	1014	0.00	25.2
20/05/2020 22:02	7.6	4.7	0.2	1	0	3	1015	0.00	19.8
20/05/2020 23:02	7.6	4.8	0.2	1	0	3	1015	0.00	16.0
21/05/2020 00:02	7.6	4.9	0.2	1	0	2	1015	0.00	13.5
21/05/2020 01:02	7.6	4.9	0.2	1	0	2	1015	0.00	11.3
21/05/2020 02:02	7.6	4.9	0.2	1	1	2	1015	0.00	9.9
21/05/2020 03:02	7.7	5.0	0.2	1	1	2	1015	0.00	8.7
21/05/2020 04:02	7.7	5.0	0.2	1	1	2	1015	0.00	8.0
21/05/2020 05:02	7.5	4.9	0.2	1	1	2	1015	0.00	7.7
21/05/2020 06:02	7.8	5.1	0.2	2	1	2	1015	0.00	7.9
21/05/2020 07:02	7.6	4.7	0.2	2	1	2	1015	0.00	9.9
21/05/2020 08:02	7.2	4.6	0.3	2	1	2	1016	0.00	11.0

GGS Time Series Data

Experts in Continuous Monitoring

Project Ref:	GGS2230		
Location:	Ryebank Fields, Chorlton		
Borehole ref:	WS102		
Sentinel ID:	#03000051	Days of monitoring:	21
Start Date:	30/04/2020 15:02	Monitoring Frequency (mins):	60
End Date:	21/05/2020 07:02	Total samples taken:	497

Minimum, Maximum and Range Table

	CH_4	CO_2	O_2	TVOC	H_2S	CO	Atmospheric Pressure	Flow	Temperature
Minimum	21.3	1.1	0.0	0	0	0	986	-0.01	0.5
Maximum	48.5	2.5	7.3	21	0	2	1024	0.03	29.9
Range	27.2	1.4	7.3	21	0	2	38	0.04	29.3

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
30/04/2020 15:02	22.7	1.1	7.3	0	0	1	986	0.02	15.0
30/04/2020 16:02	25.6	1.2	5.8	0	0	1	987	0.02	16.6
30/04/2020 17:02	25.4	1.4	5.4	0	0	1	987	0.02	15.9
30/04/2020 18:02	26.3	1.5	4.6	0	0	1	987	0.02	14.9
30/04/2020 19:02	26.5	1.6	4.4	0	0	1	988	0.02	13.0
30/04/2020 20:02	25.1	1.6	4.8	0	0	1	988	0.03	11.8
30/04/2020 21:02	27.3	1.7	3.5	0	0	1	989	0.01	10.8
30/04/2020 22:02	27.6	1.8	2.9	0	0	1	989	0.02	10.3
30/04/2020 23:02	28.2	1.8	2.7	0	0	1	989	0.02	9.9
01/05/2020 00:02	29.2	1.9	2.1	0	0	1	990	0.03	9.6
01/05/2020 01:02	30.3	1.9	1.7	0	0	1	990	0.02	9.4
01/05/2020 02:02	29.5	2.0	1.8	0	0	1	990	0.01	9.1
01/05/2020 03:02	29.1	1.9	2.2	0	0	1	990	0.02	8.7
01/05/2020 04:02	29.5	2.0	2.0	0	0	1	991	0.02	8.8
01/05/2020 05:02	28.3	2.0	2.1	0	0	1	991	0.02	9.0
01/05/2020 06:02	27.6	2.0	2.7	0	0	1	991	0.03	9.2
01/05/2020 07:02	27.1	2.0	3.1	0	0	1	992	0.02	9.7
01/05/2020 08:02	25.0	1.9	3.9	0	0	1	993	0.02	10.4
01/05/2020 09:02	25.3	2.0	3.7	0	0	1	993	0.02	11.6
01/05/2020 10:02	25.7	1.9	3.7	0	0	1	994	0.02	13.8
01/05/2020 11:02	25.8	2.0	3.5	0	0	1	994	0.02	15.4
01/05/2020 12:02	27.2	2.1	2.9	0	0	1	995	0.02	15.4
01/05/2020 13:02	27.4	2.0	3.0	0	0	1	995	0.02	15.7
01/05/2020 14:02	26.8	2.1	3.2	1	0	1	996	0.03	16.7
01/05/2020 15:02	27.1	2.1	2.8	1	0	1	996	0.02	17.4
01/05/2020 16:02	26.3	2.0	3.3	1	0	1	996	0.02	17.4
01/05/2020 17:02	26.7	2.1	3.2	1	0	1	997	0.01	16.1
01/05/2020 18:02	26.9	2.1	3.2	1	0	1	998	0.02	14.4
01/05/2020 19:02	26.1	2.1	3.3	1	0	1	998	0.02	12.6
01/05/2020 20:02	25.3	1.9	4.2	1	0	1	999	0.02	10.0
01/05/2020 21:02	26.2	2.1	3.6	1	0	1	999	0.02	8.3
01/05/2020 22:02	25.1	2.1	3.9	1	0	1	1000	0.03	7.3
01/05/2020 23:02	26.6	2.1	3.4	1	0	1	1000	0.02	6.8
02/05/2020 00:02	25.2	2.0	3.8	1	0	1	1001	0.02	7.0
02/05/2020 01:02	25.4	2.0	3.9	0	0	1	1001	0.03	7.3
02/05/2020 02:02	26.1	2.0	3.7	0	0	1	1002	0.02	7.6
02/05/2020 03:02	24.6	1.9	4.0	0	0	1	1002	0.02	7.9
02/05/2020 04:02	24.0	1.9	4.3	0	0	1	1003	0.03	7.6
02/05/2020 05:02	22.8	1.8	5.3	1	0	1	1003	0.02	7.4
02/05/2020 06:02	22.8	1.9	4.9	1	0	1	1004	0.02	7.6
02/05/2020 07:02	22.7	1.8	5.5	1	0	1	1004	0.03	9.1
02/05/2020 08:02	23.6	2.1	4.5	1	0	1	1005	0.02	12.6
02/05/2020 09:02	23.8	2.1	4.5	1	0	1	1006	0.02	13.5
02/05/2020 10:02	21.5	1.7	5.5	1	0	1	1006	0.02	14.9
02/05/2020 11:02	21.3	1.9	5.8	1	0	1	1007	0.02	16.2
02/05/2020 12:02	23.4	2.0	4.9	1	0	1	1007	0.02	17.7
02/05/2020 13:02	21.9	2.0	5.2	1	0	1	1008	0.02	18.4
02/05/2020 14:02	22.9	1.9	4.7	1	0	1	1009	0.02	17.9
02/05/2020 15:02	27.1	2.2	3.2	1	0	1	1009	0.02	17.4
02/05/2020 16:02	27.6	2.2	2.7	1	0	1	1009	0.03	17.6
02/05/2020 17:02	27.8	2.2	2.8	1	0	1	1009	0.02	18.2
02/05/2020 18:02	26.7	2.2	3.3	1	0	1	1010	0.02	17.1
02/05/2020 19:02	27.2	2.2	3.3	1	0	1	1011	0.03	13.7
02/05/2020 20:02	25.6	2.0	4.0	1	0	1	1011	0.01	11.0
02/05/2020 21:02	28.8	2.3	2.3	1	0	1	1012	0.02	8.9
02/05/2020 22:02	27.5	2.2	2.8	1	0	1	1011	0.02	7.8
02/05/2020 23:02	29.6	2.4	1.8	1	0	1	1012	0.02	6.9
03/05/2020 00:02	27.8	2.1	3.0	1	0	1	1012	0.02	6.6
03/05/2020 01:02	29.1	2.3	2.1	1	0	1	1013	0.02	6.9
03/05/2020 02:02	30.8	2.3	1.5	1	0	1	1013	0.02	6.3
03/05/2020 03:02	31.4	2.4	1.0	1	0	1	1012	0.02	5.4
03/05/2020 04:02	32.2	2.4	0.7	1	0	1	1012	0.02	4.8
03/05/2020 05:02	32.5	2.4	0.6	1	0	1	1012	0.02	4.5
03/05/2020 06:02	32.9	2.4	0.6	1	0	1	1012	0.02	5.7
03/05/2020 07:02	32.9	2.3	0.8	0	0	1	1013	0.03	8.0
03/05/2020 08:02	32.4	2.3	1.3	1	0	1	1013	0.02	11.7
03/05/2020 09:02	32.2	2.2	1.6	1	0	1	1013	0.02	15.4
03/05/2020 10:02	33.5	2.4	1.2	1	0	1	1014	0.02	15.1
03/05/2020 11:02	34.1	2.4	0.7	1	0	1	1014	0.02	15.1
03/05/2020 12:02	34.8	2.5	0.6	1	0	1	1014	0.02	16.9
03/05/2020 13:02	37.7	2.5	0.3	1	0	1	1013	0.02	20.0
03/05/2020 14:02	37.2	2.4	0.4	1	0	1	1013	0.03	19.5
03/05/2020 15:02	37.9	2.4	0.6	1	0	1	1013	0.02	20.0
03/05/2020 16:02	39.0	2.3	0.5	1	0	1	1013	0.02	17.9
03/05/2020 17:02	40.4	2.3	0.4	1	0	1	1013	0.02	16.7
03/05/2020 18:02	41.0	2.4	0.2	1	0	1	1013	0.01	16.5
03/05/2020 19:02	42.2	2.4	0.5	1	0	1	1013	0.01	14.5
03/05/2020 20:02	41.2	2.2	0.9	1	0	1	1013	0.02	12.1
03/05/2020 21:02	40.8	2.2	1.1	1	0	1	1014	0.02	10.2
03/05/2020 22:02	39.9	2.3	0.9	1	0	1	1014	0.02	9.7
03/05/2020 23:02	40.4	2.3	0.8	0	0	1	1015	0.01	9.8
04/05/2020 00:02	41.7	2.3	0.8	1	0	1	1015	0.02	9.3
04/05/2020 01:02	42.2	2.3	0.5	1	0	1	1015	0.02	8.8
04/05/2020 02:02	42.1	2.3	0.4	1	0	1	1015	0.02	7.8
04/05/2020 03:02	43.6	2.3	0.4	1	0	1	1015	0.01	7.7
04/05/2020 04:02	42.8	2.2	0.5	1	0	1	1016	0.02	7.9
04/05/2020 05:02	43.5	2.3	0.6	1	0	1	1016	0.02	7.3
04/05/2020 06:02	43.9	2.2	0.7	1	0	1	1016	0.02	7.8
04/05/2020 07:02	42.3	2.2	1.5	1	0	1	1017	0.02	11.3
04/05/2020 08:02	41.8	2.2	1.5	1	0	1	1018	0.02	13.8
04/05/2020 09:02	42.9	2.3	1.6	1	0	1	1018	0.02	15.8
04/05/2020 10:02	44.1	2.3	1.1	1	0	1	1018	0.02	16.7
04/05/2020 11:02	45.1	2.4	0.8	1	0	1	1018	0.02	17.8
04/05/2020 12:02	48.5	2.2	0.9	1	0	1	1018	0.02	20.4
04/05/2020 13:02	NM	2.3	1.0	1	0	1	1019	0.02	19.9
04/05/2020 14:02	NM	2.4	0.6	1	0	1	1019	0.02	19.6

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
04/05/2020 15:02	NM	2.3	0.9	1	0	1	1019	0.02	18.1
04/05/2020 16:02	NM	2.3	0.6	1	0	1	1019	0.02	17.3
04/05/2020 17:02	NM	2.3	0.6	1	0	1	1019	0.02	16.8
04/05/2020 18:02	NM	2.3	0.8	1	0	1	1019	0.02	14.9
04/05/2020 19:02	NM	2.2	1.0	1	0	1	1019	0.02	12.8
04/05/2020 20:02	NM	2.2	1.3	1	0	1	1019	0.02	11.1
04/05/2020 21:02	NM	2.2	1.9	1	0	1	1020	0.01	9.8
04/05/2020 22:02	NM	2.2	2.2	1	0	1	1021	0.02	8.7
04/05/2020 23:02	NM	2.3	1.4	1	0	1	1021	0.02	8.6
05/05/2020 00:02	NM	2.3	0.6	1	0	1	1021	0.02	8.7
05/05/2020 01:02	NM	2.3	0.4	1	0	1	1020	0.02	8.2
05/05/2020 02:02	NM	2.3	0.5	1	0	1	1020	0.02	8.2
05/05/2020 03:02	NM	2.2	0.2	1	0	1	1020	0.02	8.0
05/05/2020 04:02	NM	2.2	0.2	1	0	1	1019	0.03	7.2
05/05/2020 05:02	NM	2.3	0.4	1	0	1	1019	0.02	6.8
05/05/2020 06:02	NM	2.3	0.2	1	0	1	1020	0.02	7.0
05/05/2020 07:02	NM	2.1	0.3	1	0	1	1020	0.02	8.6
05/05/2020 08:02	NM	2.1	0.6	1	0	1	1020	0.02	11.6
05/05/2020 09:02	NM	2.2	0.6	1	0	1	1020	0.02	13.9
05/05/2020 10:02	NM	2.2	0.7	1	0	1	1020	0.02	15.7
05/05/2020 11:02	NM	2.2	0.6	1	0	1	1020	0.02	17.4
05/05/2020 12:02	NM	2.1	0.6	1	0	1	1020	0.02	18.8
05/05/2020 13:02	NM	2.2	0.5	1	0	1	1020	0.02	19.5
05/05/2020 14:02	NM	2.2	0.5	1	0	1	1020	0.01	19.6
05/05/2020 15:02	NM	2.1	0.6	1	0	1	1019	0.02	19.9
05/05/2020 16:02	NM	2.1	0.5	1	0	1	1020	0.01	19.5
05/05/2020 17:02	NM	2.1	0.6	1	0	1	1019	0.02	18.5
05/05/2020 18:02	NM	2.1	0.8	1	0	1	1020	0.02	16.6
05/05/2020 19:02	NM	2.1	1.0	1	0	1	1020	0.02	13.7
05/05/2020 20:02	NM	2.1	1.5	1	0	1	1021	0.02	11.4
05/05/2020 21:02	NM	2.0	2.4	1	0	1	1022	0.02	9.8
05/05/2020 22:02	NM	2.1	2.2	1	0	1	1022	0.02	8.7
05/05/2020 23:02	NM	2.1	1.5	1	0	1	1023	0.02	7.7
06/05/2020 00:02	NM	2.2	1.0	1	0	1	1023	0.02	6.9
06/05/2020 01:02	NM	2.3	0.6	1	0	1	1023	0.02	6.0
06/05/2020 02:02	NM	2.2	0.4	1	0	1	1023	0.02	5.0
06/05/2020 03:02	NM	2.2	0.4	1	0	1	1023	0.02	4.0
06/05/2020 04:02	NM	2.2	0.3	1	0	1	1023	0.02	3.5
06/05/2020 05:02	NM	2.3	0.2	1	0	1	1023	0.02	3.2
06/05/2020 06:02	NM	2.2	0.4	1	0	1	1024	0.03	4.3
06/05/2020 07:02	NM	2.1	0.3	1	0	1	1024	0.02	10.3
06/05/2020 08:02	NM	2.2	0.3	1	0	1	1024	0.02	14.2
06/05/2020 09:02	NM	2.1	0.2	1	0	1	1024	0.02	16.7
06/05/2020 10:02	NM	2.2	0.2	1	0	1	1024	0.02	18.6
06/05/2020 11:02	NM	2.2	0.2	1	0	1	1024	0.02	20.3
06/05/2020 12:02	NM	2.2	0.1	1	0	1	1023	0.01	21.7
06/05/2020 13:02	NM	2.2	0.1	1	0	1	1023	0.01	22.6
06/05/2020 14:02	NM	2.1	0.1	1	0	1	1023	0.01	23.3
06/05/2020 15:02	NM	2.2	0.1	1	0	1	1022	0.01	24.0
06/05/2020 16:02	NM	2.1	0.0	1	0	1	1022	0.01	24.1
06/05/2020 17:02	NM	2.1	0.1	1	0	1	1022	0.01	23.2
06/05/2020 18:02	NM	2.1	0.1	1	0	1	1022	0.01	20.4
06/05/2020 19:02	NM	2.1	0.1	1	0	1	1022	0.01	16.5
06/05/2020 20:02	NM	2.1	0.1	1	0	1	1022	0.01	13.5
06/05/2020 21:02	NM	2.1	0.1	1	0	1	1022	0.01	10.7
06/05/2020 22:02	NM	2.1	0.1	1	0	1	1022	0.02	9.0
06/05/2020 23:02	NM	2.0	0.0	1	0	1	1022	0.01	7.9
07/05/2020 00:02	NM	2.1	0.0	1	0	1	1022	0.02	7.0
07/05/2020 01:02	NM	2.0	0.0	1	0	1	1022	0.02	6.3
07/05/2020 02:02	NM	2.0	0.0	1	0	1	1021	0.02	5.6
07/05/2020 03:02	NM	2.1	0.0	1	0	1	1021	0.02	4.9
07/05/2020 04:02	NM	2.0	0.0	1	0	1	1021	0.01	4.4
07/05/2020 05:02	NM	2.0	0.0	1	0	1	1021	0.01	4.3
07/05/2020 06:02	NM	2.1	0.0	0	0	1	1021	0.02	5.9
07/05/2020 07:02	NM	2.0	0.0	0	0	1	1020	0.02	12.3
07/05/2020 08:02	NM	2.0	0.0	0	0	1	1020	0.01	17.3
07/05/2020 09:02	NM	2.0	0.0	0	0	1	1020	0.01	19.4
07/05/2020 10:02	NM	2.0	0.0	0	0	1	1020	0.02	20.5
07/05/2020 11:02	NM	2.0	0.0	1	0	1	1019	0.02	22.3
07/05/2020 12:02	NM	2.0	0.0	1	0	1	1019	0.01	23.9
07/05/2020 13:02	NM	1.9	0.0	1	0	1	1018	0.02	25.3
07/05/2020 14:02	NM	1.9	0.0	1	0	1	1018	0.02	24.2
07/05/2020 15:02	NM	2.0	0.0	1	0	1	1017	0.01	22.3
07/05/2020 16:02	NM	1.9	0.0	1	0	1	1016	0.01	22.9
07/05/2020 17:02	NM	1.9	0.0	1	0	1	1016	0.02	24.2
07/05/2020 18:02	NM	1.9	0.0	1	0	1	1016	0.02	22.5
07/05/2020 19:02	NM	2.0	0.0	1	0	1	1016	0.01	19.5
07/05/2020 20:02	NM	1.9	0.1	1	0	1	1016	0.01	17.7
07/05/2020 21:02	NM	1.9	0.1	1	0	1	1016	0.01	15.8
07/05/2020 22:02	NM	1.9	0.0	1	0	1	1016	0.01	13.8
07/05/2020 23:02	NM	2.0	0.0	1	0	1	1016	0.01	13.0
08/05/2020 00:02	NM	1.9	0.0	1	0	1	1016	0.01	12.3
08/05/2020 01:02	NM	1.9	0.0	1	0	1	1016	0.02	12.1
08/05/2020 02:02	NM	1.9	0.0	1	0	1	1016	0.01	10.9
08/05/2020 03:02	NM	1.9	0.0	1	0	1	1016	0.02	9.8
08/05/2020 04:02	NM	1.9	0.0	1	0	1	1016	0.01	9.3
08/05/2020 05:02	NM	1.9	0.0	1	0	1	1016	0.02	9.0
08/05/2020 06:02	NM	1.9	0.0	1	0	1	1016	0.02	10.3
08/05/2020 07:02	NM	1.9	0.0	1	0	1	1016	0.01	12.4
08/05/2020 08:02	NM	1.9	0.0	1	0	1	1016	0.01	14.3
08/05/2020 09:02	NM	1.9	0.0	1	0	1	1016	0.01	16.5
08/05/2020 10:02	NM	1.8	0.0	1	0	1	1016	0.01	18.5
08/05/2020 11:02	NM	1.9	0.0	1	0	1	1016	0.01	20.5
08/05/2020 12:02	NM	1.9	0.0	1	0	1	1015	0.01	23.6
08/05/2020 13:02	NM	1.9	0.0	1	0	1	1015	0.00	25.5
08/05/2020 14:02	NM	1.9	0.0	1	0	1	1015	0.01	26.6
08/05/2020 15:02	NM	1.8	0.0	1	0	1	1014	0.01	26.9
08/05/2020 16:02	NM	1.8	0.0	1	0	1	1014	0.00	27.2
08/05/2020 17:02	NM	1.9	0.0	1	0	1	1013	-0.01	26.6
08/05/2020 18:02	NM	1.9	0.0	1	0	1	1013	0.01	22.8
08/05/2020 19:02	NM	1.8	0.0	1	0	1	1013	0.00	19.0
08/05/2020 20:02	NM	1.9	0.0	1	0	1	1013	0.01	15.8
08/05/2020 21:02	NM	1.8	0.0	1	0	1	1013	-0.01	13.4
08/05/2020 22:02	NM	1.9	0.0	1	0	1	1013	0.01	11.8
08/05/2020 23:02	NM	1.9	0.0	1	0	1	1014	0.00	10.7
09/05/2020 00:02	NM	1.9	0.0	1	0	1	1014	0.01	9.7
09/05/2020 01:02	NM	1.8	0.0	1	0	1	1014	0.01	9.0
09/05/2020 02:02	NM	1.8	0.0	1	0	1	1013	0.01	8.7
09/05/2020 03:02	NM	1.8	0.0	1	0	1	1013	0.01	8.9
09/05/2020 04:02	NM	1.9	0.0	1	0	1	1013	0.01	8.3
09/05/2020 05:02	NM	1.9	0.0	1	0	1	1013	0.01	7.8
09/05/2020 06:02	NM	1.8	0.0	1	0	1	1013	0.01	9.5
09/05/2020 07:02	NM	1.8	0.0	1	0	1	1013	0.01	13.4
09/05/2020 08:02	NM	1.8	0.0	1	0	1	1013	0.02	19.3

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
09/05/2020 09:02	NM	1.8	0.0	1	0	1	1012	0.01	23.0
09/05/2020 10:02	NM	1.8	0.0	1	0	1	1012	0.01	24.9
09/05/2020 11:02	NM	1.8	0.0	1	0	1	1012	0.01	26.5
09/05/2020 12:02	NM	1.8	0.0	1	0	1	1011	0.01	27.6
09/05/2020 13:02	NM	1.8	0.0	1	0	1	1010	0.01	28.5
09/05/2020 14:02	NM	1.8	0.0	1	0	1	1010	0.01	29.3
09/05/2020 15:02	NM	1.7	0.0	1	0	1	1009	0.01	29.9
09/05/2020 16:02	NM	1.8	0.0	1	0	1	1008	0.01	29.2
09/05/2020 17:02	NM	1.8	0.0	1	0	1	1007	0.01	28.2
09/05/2020 18:02	NM	1.8	0.0	1	0	1	1007	0.00	24.8
09/05/2020 19:02	NM	1.8	0.0	1	0	1	1007	0.00	22.1
09/05/2020 20:02	NM	1.8	0.0	1	0	1	1007	0.01	20.1
09/05/2020 21:02	NM	1.8	0.0	1	0	1	1007	0.00	18.6
09/05/2020 22:02	NM	1.8	0.0	1	0	1	1008	0.00	17.9
09/05/2020 23:02	NM	1.8	0.0	1	0	1	1008	0.01	16.9
10/05/2020 00:02	NM	1.8	0.0	1	0	1	1007	0.01	15.7
10/05/2020 01:02	NM	1.8	0.0	1	0	1	1007	0.00	13.6
10/05/2020 02:02	NM	1.8	0.0	1	0	1	1006	0.00	11.8
10/05/2020 03:02	NM	1.7	0.1	1	0	1	1006	0.00	10.7
10/05/2020 04:02	NM	1.7	0.2	1	0	1	1006	0.01	10.2
10/05/2020 05:02	NM	1.6	0.9	1	0	0	1007	0.01	11.4
10/05/2020 06:02	NM	1.7	1.5	1	0	1	1008	0.02	11.9
10/05/2020 07:02	NM	1.7	2.0	1	0	2	1009	0.02	13.1
10/05/2020 08:02	NM	1.8	1.8	1	0	2	1010	0.01	13.3
10/05/2020 09:02	NM	1.8	1.9	1	0	2	1010	0.01	13.5
10/05/2020 10:02	NM	1.7	2.3	1	0	2	1011	0.01	13.4
10/05/2020 11:02	NM	1.8	2.7	1	0	2	1011	0.02	12.3
10/05/2020 12:02	NM	1.8	2.8	1	0	2	1012	0.01	12.0
10/05/2020 13:02	NM	1.7	4.3	1	0	2	1013	0.02	11.7
10/05/2020 14:02	NM	1.8	3.6	1	0	2	1014	0.02	11.7
10/05/2020 15:02	NM	1.7	4.9	1	0	2	1015	0.01	11.7
10/05/2020 16:02	NM	1.9	2.3	1	0	2	1016	0.02	11.4
10/05/2020 17:02	NM	1.9	2.4	1	0	1	1016	0.02	11.4
10/05/2020 18:02	NM	2.0	2.0	1	0	1	1016	0.02	10.6
10/05/2020 19:02	NM	1.9	3.2	1	0	1	1017	0.02	8.8
10/05/2020 20:02	NM	1.9	2.8	1	0	1	1018	0.02	7.6
10/05/2020 21:02	NM	2.0	2.6	1	0	1	1019	0.03	7.0
10/05/2020 22:02	NM	2.1	1.6	1	0	1	1019	0.02	6.2
10/05/2020 23:02	NM	2.1	1.4	1	0	1	1020	0.02	5.2
11/05/2020 00:02	NM	2.2	0.7	1	0	1	1020	0.02	5.2
11/05/2020 01:02	NM	2.2	0.3	1	0	1	1020	0.02	4.9
11/05/2020 02:02	NM	2.2	0.3	1	0	1	1020	0.02	4.4
11/05/2020 03:02	NM	2.1	0.3	1	0	1	1020	0.02	3.6
11/05/2020 04:02	NM	2.1	0.3	1	0	1	1020	0.03	3.9
11/05/2020 05:02	NM	2.1	0.3	1	0	1	1021	0.02	3.6
11/05/2020 06:02	NM	2.1	0.4	1	0	1	1021	0.02	4.7
11/05/2020 07:02	NM	2.1	0.6	1	0	1	1021	0.02	6.0
11/05/2020 08:02	NM	2.0	0.6	1	0	1	1022	0.02	8.6
11/05/2020 09:02	NM	2.0	0.5	1	0	1	1022	0.02	8.9
11/05/2020 10:02	NM	2.0	0.3	1	0	1	1022	0.02	10.5
11/05/2020 11:02	NM	2.0	0.4	1	0	1	1022	0.02	11.2
11/05/2020 12:02	NM	2.0	0.2	1	0	1	1022	0.02	12.5
11/05/2020 13:02	NM	2.0	0.2	1	0	1	1022	0.02	13.7
11/05/2020 14:02	NM	2.0	0.2	1	0	1	1022	0.02	14.4
11/05/2020 15:02	NM	2.0	0.1	1	0	1	1022	0.02	15.1
11/05/2020 16:02	NM	1.9	0.2	1	0	1	1022	0.02	15.2
11/05/2020 17:02	NM	2.0	0.2	1	0	1	1022	0.02	15.4
11/05/2020 18:02	NM	2.0	0.2	1	0	1	1022	0.02	13.7
11/05/2020 19:02	NM	2.0	0.1	1	0	1	1022	0.02	10.6
11/05/2020 20:02	NM	2.0	0.1	1	0	1	1022	0.02	8.4
11/05/2020 21:02	NM	2.0	0.1	1	0	1	1022	0.02	6.0
11/05/2020 22:02	NM	1.9	0.1	1	0	1	1022	0.02	4.6
11/05/2020 23:02	NM	1.9	0.1	0	0	1	1022	0.02	3.7
12/05/2020 00:02	NM	1.9	0.0	0	0	1	1022	0.01	3.1
12/05/2020 01:02	NM	1.9	0.0	0	0	1	1022	0.02	2.7
12/05/2020 02:02	NM	1.9	0.0	0	0	1	1021	0.02	2.2
12/05/2020 03:02	NM	1.9	0.0	0	0	1	1021	0.02	1.8
12/05/2020 04:02	NM	1.9	0.0	0	0	1	1021	0.01	1.4
12/05/2020 05:02	NM	1.8	0.0	0	0	1	1021	0.02	1.3
12/05/2020 06:02	NM	1.9	0.0	0	0	1	1020	0.01	2.8
12/05/2020 07:02	NM	1.8	0.0	0	0	1	1020	0.02	7.8
12/05/2020 08:02	NM	1.8	0.1	0	0	1	1019	0.02	9.1
12/05/2020 09:02	NM	1.8	0.0	0	0	1	1019	0.02	11.7
12/05/2020 10:02	NM	1.9	0.0	0	0	1	1019	0.02	12.6
12/05/2020 11:02	NM	1.8	0.0	0	0	1	1018	0.01	13.5
12/05/2020 12:02	NM	1.8	0.0	0	0	1	1018	0.02	13.3
12/05/2020 13:02	NM	1.8	0.0	0	0	1	1017	0.02	13.2
12/05/2020 14:02	NM	1.8	0.0	0	0	1	1016	0.02	13.3
12/05/2020 15:02	NM	1.7	0.0	0	0	1	1016	0.01	12.7
12/05/2020 16:02	NM	1.7	0.0	0	0	1	1016	0.02	14.0
12/05/2020 17:02	NM	1.7	0.0	0	0	1	1015	0.02	14.3
12/05/2020 18:02	NM	1.8	0.0	0	0	1	1014	0.02	14.1
12/05/2020 19:02	NM	1.7	0.0	0	0	1	1014	0.01	11.6
12/05/2020 20:02	NM	1.7	0.0	0	0	1	1014	0.01	9.8
12/05/2020 21:02	NM	1.7	0.0	0	0	1	1014	0.02	8.0
12/05/2020 22:02	NM	1.8	0.1	0	0	1	1014	0.01	7.0
12/05/2020 23:02	NM	1.8	0.1	0	0	1	1014	0.01	6.7
13/05/2020 00:02	NM	1.7	0.3	0	0	1	1014	0.02	7.3
13/05/2020 01:02	NM	1.7	0.4	0	0	1	1015	0.01	7.3
13/05/2020 02:02	NM	1.7	0.3	0	0	1	1015	0.02	7.2
13/05/2020 03:02	NM	1.8	0.2	0	0	1	1015	0.01	6.9
13/05/2020 04:02	NM	1.7	0.1	0	0	1	1015	0.02	6.6
13/05/2020 05:02	NM	1.7	0.3	0	0	1	1016	0.02	6.1
13/05/2020 06:02	NM	1.7	0.3	1	0	1	1016	0.01	6.6
13/05/2020 07:02	NM	1.7	0.3	1	0	1	1017	0.02	8.1
13/05/2020 08:02	NM	1.8	0.2	1	0	1	1017	0.02	12.5
13/05/2020 09:02	NM	1.7	0.2	1	0	1	1017	0.02	14.4
13/05/2020 10:02	NM	1.8	0.2	1	0	1	1017	0.02	14.2
13/05/2020 11:02	NM	1.8	0.1	1	0	1	1017	0.01	13.4
13/05/2020 12:02	NM	1.8	0.1	1	0	1	1017	0.02	16.1
13/05/2020 13:02	NM	1.8	0.3	1	0	1	1017	0.01	16.7
13/05/2020 14:02	NM	1.8	0.2	1	0	1	1017	0.02	15.8
13/05/2020 15:02	NM	1.7	0.2	1	0	1	1017	0.02	15.4
13/05/2020 16:02	NM	1.7	0.2	1	0	1	1017	0.01	15.2
13/05/2020 17:02	NM	1.7	0.3	1	0	1	1017	0.02	15.1
13/05/2020 18:02	NM	1.7	0.3	1	0	1	1018	0.02	13.8
13/05/2020 19:02	NM	1.7	0.4	1	0	1	1018	0.02	11.3
13/05/2020 20:02	NM	1.7	0.6	1	0	1	1019	0.01	9.2
13/05/2020 21:02	NM	1.8	1.1	1	0	1	1019	0.01	7.6
13/05/2020 22:02	NM	1.9	0.6	1	0	1	1020	0.02	6.7
13/05/2020 23:02	NM	1.9	0.3	1	0	1	1021	0.02	5.5
14/05/2020 00:02	NM	1.9	0.2	1	0	1	1021	0.01	4.3
14/05/2020 01:02	NM	1.9	0.1	1	0	1	1021	0.02	3.3
14/05/2020 02:02	NM	1.9	0.1	1	0	1	1022	0.02	2.8

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
14/05/2020 03:02	NM	1.8	0.1	1	0	1	1022	0.02	1.6
14/05/2020 04:02	NM	1.8	0.1	0	0	1	1022	0.02	0.7
14/05/2020 05:02	NM	1.8	0.1	0	0	1	1022	0.02	0.5
14/05/2020 06:02	NM	1.8	0.1	0	0	1	1022	0.02	2.3
14/05/2020 07:02	NM	1.8	0.1	0	0	1	1022	0.02	8.8
14/05/2020 08:02	NM	1.8	0.0	0	0	1	1022	0.01	13.3
14/05/2020 09:02	NM	1.8	0.0	1	0	1	1022	0.02	16.1
14/05/2020 10:02	NM	1.7	0.0	1	0	1	1022	0.01	18.3
14/05/2020 11:02	NM	1.7	0.0	1	0	1	1022	0.01	19.5
14/05/2020 12:02	NM	1.8	0.0	1	0	1	1022	0.02	20.3
14/05/2020 13:02	NM	1.7	0.0	1	0	1	1021	0.02	21.7
14/05/2020 14:02	NM	1.7	0.0	1	0	1	1021	0.02	22.3
14/05/2020 15:02	NM	1.7	0.0	1	0	1	1020	0.01	22.5
14/05/2020 16:02	NM	1.7	0.0	1	0	1	1020	0.02	22.0
14/05/2020 17:02	NM	1.7	0.0	1	0	1	1020	0.01	21.3
14/05/2020 18:02	NM	1.7	0.0	1	0	1	1020	0.01	18.6
14/05/2020 19:02	NM	1.7	0.0	1	0	1	1020	0.02	14.5
14/05/2020 20:02	NM	1.8	0.0	1	0	1	1020	0.02	12.0
14/05/2020 21:02	NM	1.7	0.0	1	0	1	1021	0.02	9.9
14/05/2020 22:02	NM	1.7	0.0	1	0	1	1021	0.02	8.2
14/05/2020 23:02	NM	1.7	0.0	1	0	1	1021	0.02	6.6
15/05/2020 00:02	NM	1.7	0.0	1	0	1	1021	0.01	5.7
15/05/2020 01:02	NM	1.7	0.0	1	0	1	1021	0.01	5.0
15/05/2020 02:02	NM	1.7	0.0	1	0	1	1021	0.02	4.2
15/05/2020 03:02	NM	1.7	0.0	1	0	1	1021	0.01	3.7
15/05/2020 04:02	NM	1.7	0.0	1	0	1	1021	0.01	3.2
15/05/2020 05:02	NM	1.7	0.0	1	0	1	1021	0.02	3.3
15/05/2020 06:02	NM	1.7	0.0	1	0	1	1022	0.02	5.6
15/05/2020 07:02	NM	1.7	0.0	1	0	1	1022	0.02	8.1
15/05/2020 08:02	NM	1.7	0.0	1	0	1	1022	0.01	11.5
15/05/2020 09:02	NM	1.7	0.0	2	0	1	1022	0.01	13.7
15/05/2020 10:02	NM	1.7	0.0	3	0	1	1022	0.02	15.6
15/05/2020 11:02	NM	1.7	0.0	3	0	1	1022	0.02	17.6
15/05/2020 12:02	NM	1.6	0.1	3	0	1	1022	0.01	18.9
15/05/2020 13:02	NM	1.6	0.1	3	0	1	1022	0.01	20.3
15/05/2020 14:02	NM	1.7	0.0	2	0	1	1022	0.01	20.6
15/05/2020 15:02	NM	1.6	0.0	2	0	1	1022	0.01	20.0
15/05/2020 16:02	NM	1.6	0.1	1	0	1	1022	0.02	18.7
15/05/2020 17:02	NM	1.6	0.0	1	0	1	1022	0.02	16.8
15/05/2020 18:02	NM	1.7	0.0	1	0	1	1022	0.02	15.3
15/05/2020 19:02	NM	1.6	0.0	1	0	1	1022	0.01	14.0
15/05/2020 20:02	NM	1.7	0.0	1	0	1	1022	0.02	12.3
15/05/2020 21:02	NM	1.7	0.0	1	0	1	1022	0.02	9.9
15/05/2020 22:02	NM	1.6	0.0	1	0	1	1022	0.01	7.8
15/05/2020 23:02	NM	1.7	0.0	1	0	1	1022	0.01	6.6
16/05/2020 00:02	NM	1.6	0.0	2	0	1	1022	0.02	5.5
16/05/2020 01:02	NM	1.6	0.0	2	0	1	1022	0.02	5.1
16/05/2020 02:02	NM	1.6	0.0	5	0	1	1021	0.02	5.2
16/05/2020 03:02	NM	1.6	0.0	9	0	1	1021	0.01	6.0
16/05/2020 04:02	NM	1.6	0.0	12	0	1	1021	0.01	6.4
16/05/2020 05:02	NM	1.6	0.0	16	0	1	1021	0.01	6.8
16/05/2020 06:02	NM	1.6	0.0	18	0	1	1021	0.01	7.8
16/05/2020 07:02	NM	1.6	0.0	18	0	1	1021	0.02	9.7
16/05/2020 08:02	NM	1.6	0.0	20	0	1	1021	0.02	13.4
16/05/2020 09:02	NM	1.6	0.0	21	0	1	1021	0.01	13.1
16/05/2020 10:02	NM	1.6	0.0	20	0	1	1021	0.02	13.3
16/05/2020 11:02	NM	1.6	0.0	19	0	1	1021	0.01	15.2
16/05/2020 12:02	NM	1.6	0.1	19	0	1	1021	0.02	17.7
16/05/2020 13:02	NM	1.6	0.0	18	0	1	1021	0.01	19.9
16/05/2020 14:02	NM	1.6	0.0	17	0	1	1021	0.01	19.2
16/05/2020 15:02	NM	1.6	0.0	14	0	1	1021	0.01	18.2
16/05/2020 16:02	NM	1.6	0.1	13	0	1	1020	0.01	19.7
16/05/2020 17:02	NM	1.6	0.0	10	0	1	1020	0.01	20.3
16/05/2020 18:02	NM	1.6	0.0	9	0	1	1020	0.01	18.8
16/05/2020 19:02	NM	1.6	0.0	7	0	1	1020	0.02	16.1
16/05/2020 20:02	NM	1.6	0.0	8	0	1	1020	0.01	14.2
16/05/2020 21:02	NM	1.6	0.0	7	0	1	1020	0.02	13.1
16/05/2020 22:02	NM	1.6	0.0	7	0	1	1021	0.01	12.2
16/05/2020 23:02	NM	1.6	0.0	7	0	1	1021	0.02	10.9
17/05/2020 00:02	NM	1.6	0.0	8	0	1	1020	0.02	10.4
17/05/2020 01:02	NM	1.6	0.0	9	0	1	1020	0.02	10.5
17/05/2020 02:02	NM	1.6	0.0	11	0	1	1020	0.01	10.5
17/05/2020 03:02	NM	1.6	0.0	14	0	1	1020	0.02	10.3
17/05/2020 04:02	NM	1.6	0.0	14	0	1	1020	0.02	9.3
17/05/2020 05:02	NM	1.6	0.0	14	0	1	1020	0.01	9.9
17/05/2020 06:02	NM	1.6	0.0	15	0	1	1020	0.02	10.4
17/05/2020 07:02	NM	1.6	0.0	15	0	1	1020	0.01	11.8
17/05/2020 08:02	NM	1.6	0.0	14	0	1	1020	0.01	15.6
17/05/2020 09:02	NM	1.6	0.0	14	0	1	1020	0.01	19.2
17/05/2020 10:02	NM	1.6	0.0	12	0	1	1019	0.02	19.4
17/05/2020 11:02	NM	1.6	0.0	9	0	1	1019	0.01	19.4
17/05/2020 12:02	NM	1.6	0.0	7	0	1	1020	0.02	19.5
17/05/2020 13:02	NM	1.6	0.0	6	0	1	1019	0.01	18.9
17/05/2020 14:02	NM	1.6	0.0	5	0	1	1019	0.01	19.5
17/05/2020 15:02	NM	1.6	0.0	5	0	1	1019	0.02	20.5
17/05/2020 16:02	NM	1.6	0.0	4	0	1	1019	0.01	21.0
17/05/2020 17:02	NM	1.6	0.0	4	0	1	1019	0.01	20.9
17/05/2020 18:02	NM	1.6	0.0	4	0	1	1018	0.01	19.9
17/05/2020 19:02	NM	1.6	0.0	3	0	1	1018	0.01	18.0
17/05/2020 20:02	NM	1.6	0.0	3	0	1	1018	0.01	16.5
17/05/2020 21:02	NM	1.6	0.1	4	0	1	1019	0.01	15.4
17/05/2020 22:02	NM	1.6	0.0	4	0	1	1019	0.01	14.5
17/05/2020 23:02	NM	1.6	0.1	4	0	1	1019	0.02	13.4
18/05/2020 00:02	NM	1.6	0.0	5	0	1	1019	0.01	12.6
18/05/2020 01:02	NM	1.6	0.0	5	0	1	1018	0.01	11.8
18/05/2020 02:02	NM	1.5	0.2	5	0	1	1018	0.02	11.0
18/05/2020 03:02	NM	1.6	0.1	7	0	1	1018	0.01	10.3
18/05/2020 04:02	NM	1.4	0.4	7	0	0	1018	0.02	10.0
18/05/2020 05:02	NM	1.5	0.2	8	0	1	1018	0.01	9.7
18/05/2020 06:02	NM	1.6	0.3	8	0	1	1018	0.01	10.6
18/05/2020 07:02	NM	1.5	0.4	8	0	1	1019	0.02	13.2
18/05/2020 08:02	NM	1.5	0.2	9	0	1	1019	0.02	13.8
18/05/2020 09:02	NM	1.6	0.2	8	0	1	1019	0.01	16.7
18/05/2020 10:02	NM	1.6	0.1	9	0	1	1019	0.01	17.7
18/05/2020 11:02	NM	1.6	0.0	8	0	1	1019	0.01	17.7
18/05/2020 12:02	NM	1.5	0.0	7	0	1	1019	0.02	16.7
18/05/2020 13:02	NM	1.5	0.1	6	0	1	1019	0.02	16.9
18/05/2020 14:02	NM	1.6	0.0	5	0	1	1019	0.01	17.0
18/05/2020 15:02	NM	1.6	0.0	5	0	1	1019	0.01	16.9
18/05/2020 16:02	NM	1.6	0.0	5	0	1	1019	0.01	16.5
18/05/2020 17:02	NM	1.6	0.0	4	0	1	1019	0.02	16.5
18/05/2020 18:02	NM	1.6	0.0	4	0	1	1019	0.02	15.9
18/05/2020 19:02	NM	1.6	0.0	5	0	1	1019	0.01	15.5
18/05/2020 20:02	NM	1.6	0.1	5	0	1	1019	0.02	15.0

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
18/05/2020 21:02	NM	1.6	0.0	5	0	1	1019	0.01	14.5
18/05/2020 22:02	NM	1.6	0.0	5	0	1	1019	0.01	14.1
18/05/2020 23:02	NM	1.5	0.1	5	0	1	1019	0.01	13.9
19/05/2020 00:02	NM	1.6	0.0	6	0	1	1019	0.01	13.7
19/05/2020 01:02	NM	1.6	0.0	6	0	1	1019	0.01	13.3
19/05/2020 02:02	NM	1.6	0.0	7	0	1	1019	0.02	13.1
19/05/2020 03:02	NM	1.5	0.0	7	0	1	1018	0.01	13.1
19/05/2020 04:02	NM	1.5	0.0	7	0	1	1018	0.01	12.9
19/05/2020 05:02	NM	1.5	0.1	7	0	1	1018	0.01	13.0
19/05/2020 06:02	NM	1.5	0.1	7	0	1	1018	0.01	13.2
19/05/2020 07:02	NM	1.6	0.1	7	0	1	1019	0.01	13.5
19/05/2020 08:02	NM	1.6	0.1	7	0	1	1019	0.01	14.6
19/05/2020 09:02	NM	1.5	0.1	6	0	1	1019	0.01	15.4
19/05/2020 10:02	NM	1.6	0.0	6	0	1	1019	0.02	16.4
19/05/2020 11:02	NM	1.6	0.0	6	0	1	1020	0.02	17.3
19/05/2020 12:02	NM	1.6	0.0	5	0	1	1020	0.01	19.6
19/05/2020 13:02	NM	1.6	0.0	5	0	1	1020	0.02	22.7
19/05/2020 14:02	NM	1.6	0.0	4	0	1	1019	0.01	23.9
19/05/2020 15:02	NM	1.6	0.0	3	0	1	1019	0.02	23.7
19/05/2020 16:02	NM	1.6	0.1	3	0	1	1019	0.01	24.1
19/05/2020 17:02	NM	1.6	0.0	2	0	1	1020	0.02	23.4
19/05/2020 18:02	NM	1.5	0.0	2	0	1	1019	0.01	21.9
19/05/2020 19:02	NM	1.5	0.0	2	0	1	1019	0.00	19.2
19/05/2020 20:02	NM	1.6	0.0	2	0	1	1019	0.00	16.8
19/05/2020 21:02	NM	1.5	0.0	2	0	1	1020	0.01	14.7
19/05/2020 22:02	NM	1.5	0.0	2	0	1	1020	0.01	13.5
19/05/2020 23:02	NM	1.6	0.0	3	0	1	1020	0.01	12.7
20/05/2020 00:02	NM	1.5	0.0	3	0	1	1020	0.01	11.9
20/05/2020 01:02	NM	1.5	0.0	3	0	1	1020	0.01	10.5
20/05/2020 02:02	NM	1.5	0.0	4	0	1	1020	0.02	9.5
20/05/2020 03:02	NM	1.6	0.0	5	0	1	1019	0.01	8.7
20/05/2020 04:02	NM	1.5	0.0	7	0	1	1019	0.01	8.0
20/05/2020 05:02	NM	1.5	0.0	7	0	1	1019	0.02	8.1
20/05/2020 06:02	NM	1.5	0.0	8	0	1	1019	0.01	10.3
20/05/2020 07:02	NM	1.5	0.0	8	0	1	1019	0.02	15.9
20/05/2020 08:02	NM	1.5	0.0	9	0	1	1019	0.01	20.5
20/05/2020 09:02	NM	1.5	0.0	9	0	1	1019	0.02	23.7
20/05/2020 10:02	NM	1.5	0.0	7	0	1	1018	0.01	25.7
20/05/2020 11:02	NM	1.6	0.0	5	0	1	1017	0.01	27.2
20/05/2020 12:02	NM	1.6	0.0	3	0	1	1017	0.02	27.8
20/05/2020 13:02	NM	1.5	0.0	2	0	1	1016	0.01	28.6
20/05/2020 14:02	NM	1.5	0.0	2	0	1	1016	0.01	29.2
20/05/2020 15:02	NM	1.6	0.0	2	0	1	1016	0.01	29.7
20/05/2020 16:02	NM	1.5	0.0	1	0	1	1015	0.00	29.5
20/05/2020 17:02	NM	1.6	0.0	1	0	1	1015	0.00	29.0
20/05/2020 18:02	NM	1.6	0.0	1	0	1	1014	-0.01	27.4
20/05/2020 19:02	NM	1.5	0.0	1	0	1	1014	0.01	23.9
20/05/2020 20:02	NM	1.6	0.0	1	0	1	1014	0.01	20.9
20/05/2020 21:02	NM	1.5	0.0	1	0	1	1015	0.00	17.6
20/05/2020 22:02	NM	1.5	0.0	1	0	1	1015	0.00	15.3
20/05/2020 23:02	NM	1.5	0.0	1	0	1	1015	0.00	13.8
21/05/2020 00:02	NM	1.5	0.0	2	0	1	1015	0.00	12.1
21/05/2020 01:02	NM	1.5	0.0	2	0	1	1015	0.01	11.0
21/05/2020 02:02	NM	1.6	0.0	2	0	1	1015	0.01	10.1
21/05/2020 03:02	NM	1.6	0.0	3	0	1	1015	0.01	9.6
21/05/2020 04:02	NM	1.4	0.4	3	0	0	1015	0.01	9.5
21/05/2020 05:02	NM	1.5	0.3	4	0	1	1015	0.01	10.1
21/05/2020 06:02	NM	1.5	0.6	4	0	1	1015	0.02	11.7
21/05/2020 07:02	NM	1.4	0.7	4	0	1	1016	0.01	12.4

GGS Time Series Data

Experts in Continuous Monitoring

Project Ref:	GGS2230
Location:	Ryebank Fields, Chorlton
Borehole ref:	WS103
Sentinel ID:	#03000046
Start Date:	30/04/2020 15:02
End Date:	21/05/2020 08:02

Days of monitoring:	21
Monitoring Frequency (mins):	60
Total samples taken:	498

Minimum, Maximum and Range Table

	CH_4	CO_2	O_2	TVOC	H_2S	CO	Atmospheric Pressure	Flow	Temperature
Minimum	0.0	0.0	0.0	0	0	0	986	-0.15	-2.6
Maximum	78.3	0.2	17.0	6	1	1	1024	0.31	38.7
Range	78.3	0.2	17.0	6	1	1	38	0.46	41.3

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
30/04/2020 15:02	36.1	0.2	11.6	0	1	1	986	-0.15	17.0
30/04/2020 16:02	39.7	0.2	10.3	0	1	1	987	0.11	15.2
30/04/2020 17:02	44.1	0.2	8.6	0	1	1	987	0.05	17.3
30/04/2020 18:02	45.7	0.2	8.5	0	1	1	987	0.06	15.2
30/04/2020 19:02	46.0	0.2	8.1	0	1	1	988	0.07	13.7
30/04/2020 20:02	46.5	0.2	7.8	0	1	1	988	0.05	11.5
30/04/2020 21:02	44.9	0.2	7.8	0	1	1	989	0.06	10.0
30/04/2020 22:02	44.2	0.2	7.8	0	1	1	989	0.09	9.1
30/04/2020 23:02	44.3	0.2	6.8	0	1	1	989	0.07	8.6
01/05/2020 00:02	45.1	0.2	6.3	0	1	1	990	0.06	8.2
01/05/2020 01:02	44.8	0.2	6.0	0	1	1	990	0.06	8.1
01/05/2020 02:02	46.1	0.2	5.6	0	1	1	990	0.09	7.8
01/05/2020 03:02	46.6	0.2	5.3	0	1	1	990	0.05	7.8
01/05/2020 04:02	46.2	0.2	5.5	0	1	1	991	0.07	7.3
01/05/2020 05:02	44.9	0.2	5.6	0	1	1	991	0.05	7.3
01/05/2020 06:02	43.6	0.2	5.9	0	1	1	991	0.06	7.8
01/05/2020 07:02	40.9	0.2	6.1	0	1	1	992	0.03	8.3
01/05/2020 08:02	38.5	0.2	6.6	0	1	1	993	0.04	9.1
01/05/2020 09:02	36.1	0.2	7.1	0	1	1	993	0.03	10.8
01/05/2020 10:02	33.4	0.2	7.5	0	1	1	994	0.06	13.0
01/05/2020 11:02	30.6	0.2	8.0	0	1	1	994	0.03	17.7
01/05/2020 12:02	28.2	0.2	8.5	0	1	1	995	0.04	19.9
01/05/2020 13:02	26.6	0.2	8.8	0	1	1	995	0.05	19.7
01/05/2020 14:02	24.8	0.2	9.2	0	1	1	996	0.02	20.9
01/05/2020 15:02	22.5	0.2	9.6	0	1	1	996	0.01	22.5
01/05/2020 16:02	21.2	0.2	10.1	0	1	1	996	0.05	23.7
01/05/2020 17:02	19.5	0.2	10.6	0	1	1	997	0.05	23.6
01/05/2020 18:02	18.5	0.2	11.0	0	1	1	998	0.03	19.2
01/05/2020 19:02	16.4	0.2	11.3	0	1	1	998	0.03	15.9
01/05/2020 20:02	15.2	0.2	11.6	1	1	1	999	0.04	13.0
01/05/2020 21:02	13.9	0.2	11.7	1	1	1	999	-0.01	9.3
01/05/2020 22:02	13.0	0.2	12.0	1	1	1	1000	0.05	7.1
01/05/2020 23:02	11.6	0.2	12.2	1	1	1	1000	0.04	5.7
02/05/2020 00:02	11.5	0.2	12.3	1	1	1	1001	0.04	5.4
02/05/2020 01:02	10.5	0.2	12.5	1	1	1	1001	0.01	6.0
02/05/2020 02:02	10.0	0.2	12.8	1	1	1	1002	0.02	6.4
02/05/2020 03:02	9.0	0.2	13.0	1	1	1	1002	0.01	6.9
02/05/2020 04:02	8.4	0.2	13.2	1	1	1	1003	0.01	7.1
02/05/2020 05:02	8.1	0.2	13.5	1	1	1	1003	0.01	6.5
02/05/2020 06:02	7.5	0.2	13.9	1	1	1	1004	0.00	6.0
02/05/2020 07:02	6.8	0.2	14.2	2	1	1	1004	0.02	6.3
02/05/2020 08:02	6.2	0.2	14.6	2	1	1	1005	0.02	9.3
02/05/2020 09:02	5.5	0.2	14.9	2	1	1	1006	0.04	15.2
02/05/2020 10:02	5.0	0.2	15.3	3	1	1	1006	0.03	15.9
02/05/2020 11:02	4.8	0.2	15.6	3	1	1	1007	-0.05	19.2
02/05/2020 12:02	4.3	0.2	16.0	3	1	1	1007	0.03	20.2
02/05/2020 13:02	3.8	0.2	16.3	4	1	1	1008	0.03	25.1
02/05/2020 14:02	3.8	0.2	16.7	4	0	1	1009	0.01	25.1
02/05/2020 15:02	3.1	0.2	17.0	4	0	1	1009	0.03	22.2
02/05/2020 16:02	3.2	0.2	16.8	5	0	1	1009	0.04	21.3
02/05/2020 17:02	3.5	0.2	16.2	4	1	1	1009	0.03	21.5
02/05/2020 18:02	3.5	0.2	16.2	4	1	1	1010	0.03	22.3
02/05/2020 19:02	3.5	0.2	16.3	4	0	1	1011	-0.01	20.1
02/05/2020 20:02	3.2	0.2	16.4	4	1	1	1011	0.01	15.9
02/05/2020 21:02	2.9	0.2	16.5	4	1	1	1012	0.00	10.9
02/05/2020 22:02	3.4	0.2	16.0	4	1	1	1011	0.09	7.4
02/05/2020 23:02	4.1	0.2	15.5	3	1	1	1012	0.07	6.0
03/05/2020 00:02	4.6	0.2	14.8	3	1	1	1012	0.05	4.5
03/05/2020 01:02	5.1	0.2	14.8	2	1	1	1013	0.03	4.8
03/05/2020 02:02	4.8	0.2	14.7	3	1	1	1013	0.04	5.1
03/05/2020 03:02	5.4	0.2	14.6	2	1	1	1012	0.06	4.3
03/05/2020 04:02	6.6	0.2	13.4	1	1	1	1012	0.04	3.1
03/05/2020 05:02	7.7	0.2	13.4	1	1	1	1012	0.04	2.2
03/05/2020 06:02	9.4	0.2	12.8	1	1	1	1012	0.03	2.1
03/05/2020 07:02	9.1	0.2	12.3	1	1	1	1013	0.04	4.4
03/05/2020 08:02	9.0	0.2	12.6	1	1	1	1013	0.02	8.1
03/05/2020 09:02	8.2	0.2	13.0	1	1	1	1013	0.03	13.7
03/05/2020 10:02	7.8	0.2	13.4	1	1	1	1014	0.00	19.3
03/05/2020 11:02	7.7	0.2	13.9	1	1	1	1014	0.03	17.8
03/05/2020 12:02	7.8	0.2	13.5	1	1	1	1014	0.05	17.4
03/05/2020 13:02	8.7	0.2	13.0	1	1	1	1013	0.05	21.7
03/05/2020 14:02	10.8	0.2	12.4	1	1	1	1013	0.07	27.8
03/05/2020 15:02	12.2	0.2	12.1	1	1	1	1013	0.03	24.3
03/05/2020 16:02	12.2	0.2	12.0	1	1	1	1013	0.03	24.7
03/05/2020 17:02	12.4	0.2	12.1	1	1	1	1013	0.04	20.1
03/05/2020 18:02	12.4	0.2	11.9	1	1	1	1013	0.06	18.2
03/05/2020 19:02	14.3	0.2	11.1	1	1	1	1013	0.03	17.8
03/05/2020 20:02	14.6	0.2	11.0	1	1	1	1013	0.04	14.8
03/05/2020 21:02	14.2	0.2	11.3	1	1	1	1014	0.04	11.1
03/05/2020 22:02	13.3	0.2	11.6	1	1	1	1014	0.03	8.6
03/05/2020 23:02	12.6	0.2	11.9	0	1	1	1015	0.04	8.3
04/05/2020 00:02	12.3	0.2	12.0	1	1	1	1015	0.04	8.4
04/05/2020 01:02	11.5	0.2	12.2	1	1	1	1015	0.03	7.7
04/05/2020 02:02	11.8	0.2	12.1	1	1	1	1015	0.04	7.4
04/05/2020 03:02	11.4	0.2	12.0	1	1	1	1015	0.04	5.8
04/05/2020 04:02	11.3	0.2	11.9	1	1	1	1016	0.03	6.3
04/05/2020 05:02	11.6	0.2	12.0	1	1	1	1016	0.03	6.6
04/05/2020 06:02	11.0	0.2	12.2	1	1	1	1016	0.01	5.7
04/05/2020 07:02	10.4	0.2	12.6	1	1	1	1017	0.01	6.2
04/05/2020 08:02	9.5	0.2	13.0	1	1	1	1018	0.00	11.9
04/05/2020 09:02	8.6	0.2	13.6	1	1	1	1018	0.03	16.7
04/05/2020 10:02	8.2	0.2	14.0	1	1	1	1018	0.04	19.7
04/05/2020 11:02	7.4	0.2	14.4	1	1	1	1018	0.04	22.8
04/05/2020 12:02	7.4	0.2	14.6	1	1	1	1018	0.06	23.6
04/05/2020 13:02	8.1	0.2	14.5	1	0	1	1019	0.01	30.2
04/05/2020 14:02	8.0	0.2	14.9	1	1	1	1019	0.04	26.6

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
04/05/2020 15:02	8.6	0.2	14.7	1	0	1	1019	0.08	27.0
04/05/2020 16:02	8.8	0.2	14.6	1	0	1	1019	0.04	22.9
04/05/2020 17:02	9.5	0.2	14.2	1	0	1	1019	0.03	22.7
04/05/2020 18:02	10.8	0.2	13.6	1	1	1	1019	0.05	21.3
04/05/2020 19:02	11.4	0.2	13.3	1	1	1	1019	0.02	17.4
04/05/2020 20:02	11.8	0.2	13.4	1	1	1	1019	0.03	14.2
04/05/2020 21:02	11.1	0.2	13.4	1	1	1	1020	0.04	11.1
04/05/2020 22:02	10.3	0.2	13.7	1	1	1	1021	0.04	9.0
04/05/2020 23:02	9.8	0.2	13.9	1	1	1	1021	0.03	7.8
05/05/2020 00:02	9.6	0.2	13.9	1	0	1	1021	0.09	7.2
05/05/2020 01:02	11.8	0.2	12.5	1	1	1	1020	0.08	7.6
05/05/2020 02:02	15.1	0.2	11.4	1	1	1	1020	0.04	6.8
05/05/2020 03:02	16.0	0.2	10.8	1	1	1	1020	0.05	6.9
05/05/2020 04:02	17.9	0.2	10.1	1	1	1	1019	0.09	6.7
05/05/2020 05:02	19.6	0.2	9.2	1	1	1	1019	0.06	5.3
05/05/2020 06:02	20.5	0.2	9.0	0	1	1	1020	0.06	4.8
05/05/2020 07:02	21.9	0.2	8.5	0	1	1	1020	0.05	5.1
05/05/2020 08:02	22.6	0.2	8.1	0	1	1	1020	0.05	8.7
05/05/2020 09:02	23.0	0.2	8.0	0	1	1	1020	0.06	14.7
05/05/2020 10:02	25.4	0.2	7.3	0	1	1	1020	0.05	20.3
05/05/2020 11:02	25.8	0.2	7.2	0	1	1	1020	0.08	23.9
05/05/2020 12:02	28.0	0.2	6.8	0	1	1	1020	0.10	26.6
05/05/2020 13:02	30.1	0.2	6.4	0	1	1	1020	0.04	28.7
05/05/2020 14:02	31.3	0.2	5.9	0	1	1	1020	0.09	29.2
05/05/2020 15:02	33.9	0.2	5.4	0	0	1	1019	0.08	28.5
05/05/2020 16:02	34.7	0.2	4.9	0	1	1	1020	0.08	28.0
05/05/2020 17:02	36.1	0.2	4.3	0	0	1	1019	0.08	26.4
05/05/2020 18:02	37.9	0.2	3.8	0	0	1	1020	0.05	24.3
05/05/2020 19:02	38.5	0.2	3.8	0	0	1	1020	0.08	19.5
05/05/2020 20:02	38.8	0.2	3.9	0	0	1	1021	0.06	15.7
05/05/2020 21:02	39.0	0.2	4.2	0	1	1	1022	0.02	11.6
05/05/2020 22:02	35.5	0.2	5.0	0	1	1	1022	0.05	9.3
05/05/2020 23:02	34.3	0.2	5.7	0	1	1	1023	0.05	7.7
06/05/2020 00:02	32.2	0.2	6.1	0	1	1	1023	0.09	6.3
06/05/2020 01:02	31.1	0.2	6.3	0	1	1	1023	0.04	5.2
06/05/2020 02:02	32.5	0.2	6.0	0	1	1	1023	0.05	4.1
06/05/2020 03:02	34.0	0.2	5.5	0	1	1	1023	0.08	2.6
06/05/2020 04:02	35.1	0.2	5.3	0	1	1	1023	0.03	1.5
06/05/2020 05:02	36.9	0.2	5.0	0	1	1	1023	0.05	0.7
06/05/2020 06:02	37.8	0.2	4.6	0	1	1	1024	0.06	0.6
06/05/2020 07:02	38.5	0.2	4.5	0	1	1	1024	0.03	1.6
06/05/2020 08:02	38.6	0.2	4.6	0	1	1	1024	0.08	9.5
06/05/2020 09:02	40.7	0.2	4.3	0	1	1	1024	0.08	17.4
06/05/2020 10:02	41.7	0.2	3.8	0	1	1	1024	0.08	22.5
06/05/2020 11:02	44.0	0.2	3.4	0	1	1	1024	0.07	26.3
06/05/2020 12:02	44.4	0.2	3.2	0	1	1	1023	0.11	29.1
06/05/2020 13:02	46.2	0.2	2.8	0	1	1	1023	0.13	30.6
06/05/2020 14:02	48.4	0.2	2.5	0	0	1	1023	0.12	31.5
06/05/2020 15:02	49.0	0.2	2.2	0	0	1	1022	0.07	32.0
06/05/2020 16:02	50.2	0.2	1.9	0	0	1	1022	0.11	31.6
06/05/2020 17:02	50.5	0.2	1.7	0	0	1	1022	0.08	30.6
06/05/2020 18:02	52.7	0.2	1.5	0	0	1	1022	0.09	28.3
06/05/2020 19:02	53.6	0.2	1.4	0	0	1	1022	0.08	23.7
06/05/2020 20:02	55.4	0.2	1.2	0	0	1	1022	0.10	19.4
06/05/2020 21:02	57.0	0.2	1.1	0	0	1	1022	0.09	14.0
06/05/2020 22:02	57.7	0.2	0.9	0	1	1	1022	0.08	9.7
06/05/2020 23:02	60.4	0.2	0.9	0	1	1	1022	0.10	7.4
07/05/2020 00:02	60.4	0.2	0.8	0	1	1	1022	0.10	5.7
07/05/2020 01:02	63.0	0.2	0.6	0	1	1	1022	0.11	4.7
07/05/2020 02:02	63.0	0.2	0.5	0	1	1	1021	0.13	3.8
07/05/2020 03:02	64.9	0.2	0.5	0	1	1	1021	0.09	3.0
07/05/2020 04:02	65.9	0.2	0.4	0	1	1	1021	0.12	2.3
07/05/2020 05:02	66.3	0.2	0.3	0	1	1	1021	0.13	2.0
07/05/2020 06:02	67.5	0.2	0.3	0	1	1	1021	0.09	1.9
07/05/2020 07:02	68.7	0.2	0.3	0	1	1	1020	0.13	3.3
07/05/2020 08:02	69.0	0.2	0.3	0	1	1	1020	0.15	11.8
07/05/2020 09:02	68.9	0.2	0.3	0	1	1	1020	0.13	20.6
07/05/2020 10:02	70.2	0.2	0.4	1	1	1	1020	0.12	23.5
07/05/2020 11:02	69.3	0.2	0.4	1	1	1	1019	0.12	25.2
07/05/2020 12:02	69.8	0.2	0.4	1	1	1	1019	0.14	29.5
07/05/2020 13:02	69.7	0.2	0.4	1	0	1	1018	0.15	32.2
07/05/2020 14:02	69.7	0.2	0.5	1	0	1	1018	0.11	33.3
07/05/2020 15:02	70.3	0.2	0.5	1	0	1	1017	0.13	29.8
07/05/2020 16:02	69.1	0.2	0.5	1	0	1	1016	0.12	25.7
07/05/2020 17:02	70.8	0.2	0.5	1	0	1	1016	0.13	27.7
07/05/2020 18:02	70.8	0.2	0.5	1	0	1	1016	0.16	29.3
07/05/2020 19:02	71.1	0.2	0.5	1	0	1	1016	0.15	26.2
07/05/2020 20:02	72.0	0.2	0.5	1	0	1	1016	0.13	21.3
07/05/2020 21:02	72.0	0.2	0.6	1	0	1	1016	0.13	18.4
07/05/2020 22:02	72.2	0.2	0.6	1	0	1	1016	0.09	15.2
07/05/2020 23:02	72.2	0.2	0.6	1	0	1	1016	0.10	13.0
08/05/2020 00:02	72.5	0.2	0.6	1	0	1	1016	0.12	12.1
08/05/2020 01:02	73.5	0.2	0.5	0	1	1	1016	0.09	11.3
08/05/2020 02:02	72.0	0.2	0.5	0	0	1	1016	0.13	11.2
08/05/2020 03:02	72.5	0.2	0.4	0	1	1	1016	0.13	9.5
08/05/2020 04:02	74.1	0.2	0.4	0	1	1	1016	0.14	8.0
08/05/2020 05:02	74.0	0.2	0.3	0	1	1	1016	0.13	7.5
08/05/2020 06:02	75.5	0.2	0.3	0	1	1	1016	0.10	7.3
08/05/2020 07:02	75.2	0.2	0.4	0	1	1	1016	0.10	9.5
08/05/2020 08:02	75.7	0.2	0.4	0	1	1	1016	0.12	12.8
08/05/2020 09:02	74.5	0.2	0.4	0	1	1	1016	0.12	15.7
08/05/2020 10:02	75.3	0.2	0.4	1	1	1	1016	0.12	18.7
08/05/2020 11:02	74.2	0.2	0.4	1	1	1	1016	0.14	21.5
08/05/2020 12:02	76.3	0.2	0.4	1	0	1	1015	0.13	25.3
08/05/2020 13:02	74.6	0.2	0.4	1	0	1	1015	0.13	31.0
08/05/2020 14:02	74.7	0.2	0.4	1	0	1	1015	0.12	33.5
08/05/2020 15:02	75.2	0.2	0.4	1	0	1	1014	0.15	34.5
08/05/2020 16:02	74.5	0.2	0.4	1	0	1	1014	0.13	34.5
08/05/2020 17:02	74.3	0.2	0.4	1	0	1	1013	0.14	33.8
08/05/2020 18:02	75.4	0.2	0.5	1	0	1	1013	0.13	32.3
08/05/2020 19:02	74.7	0.2	0.5	1	0	1	1013	0.10	26.1
08/05/2020 20:02	75.5	0.2	0.4	1	0	1	1013	0.13	21.2
08/05/2020 21:02	74.0	0.2	0.4	1	0	1	1013	0.09	16.1
08/05/2020 22:02	75.2	0.2	0.4	1	0	1	1013	0.12	12.6
08/05/2020 23:02	75.5	0.2	0.4	1	0	1	1014	0.09	10.4
09/05/2020 00:02	75.0	0.2	0.4	1	0	1	1014	0.11	9.0
09/05/2020 01:02	76.1	0.2	0.3	1	1	1	1014	0.11	7.8
09/05/2020 02:02	76.0	0.2	0.3	1	1	1	1013	0.13	7.1
09/05/2020 03:02	76.1	0.2	0.2	1	1	1	1013	0.13	6.8
09/05/2020 04:02	77.1	0.2	0.2	0	1	1	1013	0.13	7.4
09/05/2020 05:02	76.4	0.2	0.1	0	1	1	1013	0.12	6.5
09/05/2020 06:02	76.8	0.2	0.1	0	1	1	1013	0.11	5.9
09/05/2020 07:02	77.9	0.2	0.2	0	1	1	1013	0.10	8.8
09/05/2020 08:02	77.2	0.2	0.2	0	1	1	1013	0.13	15.2

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
09/05/2020 09:02	77.0	0.2	0.2	0	1	1	1012	0.13	23.9
09/05/2020 10:02	76.1	0.2	0.2	1	0	1	1012	0.14	29.6
09/05/2020 11:02	76.3	0.2	0.2	1	0	1	1012	0.12	32.9
09/05/2020 12:02	75.3	0.2	0.2	1	0	1	1011	0.12	36.1
09/05/2020 13:02	75.6	0.2	0.2	1	0	1	1010	0.12	37.9
09/05/2020 14:02	76.3	0.2	0.2	1	0	1	1010	0.13	37.9
09/05/2020 15:02	75.2	0.2	0.2	1	0	1	1009	0.14	38.7
09/05/2020 16:02	76.1	0.2	0.2	1	0	1	1008	0.14	38.0
09/05/2020 17:02	76.8	0.2	0.2	1	0	1	1007	0.13	36.0
09/05/2020 18:02	76.5	0.2	0.2	1	0	1	1007	0.12	32.7
09/05/2020 19:02	77.4	0.2	0.2	1	0	1	1007	0.13	26.8
09/05/2020 20:02	77.1	0.2	0.2	1	0	1	1007	0.11	23.0
09/05/2020 21:02	78.3	0.2	0.3	1	0	1	1007	0.09	20.4
09/05/2020 22:02	78.0	0.2	0.3	1	0	1	1008	0.07	18.7
09/05/2020 23:02	77.8	0.2	0.4	1	0	1	1008	0.10	17.6
10/05/2020 00:02	77.0	0.2	0.3	1	0	1	1007	0.13	16.4
10/05/2020 01:02	76.9	0.2	0.2	1	0	1	1007	0.13	14.8
10/05/2020 02:02	77.0	0.2	0.1	1	0	1	1006	0.10	12.1
10/05/2020 03:02	77.9	0.2	0.1	1	0	1	1006	0.11	10.4
10/05/2020 04:02	77.3	0.2	0.1	1	0	1	1006	0.10	9.3
10/05/2020 05:02	78.3	0.2	0.3	1	1	1	1007	0.09	8.9
10/05/2020 06:02	76.4	0.2	0.5	1	0	1	1008	0.07	10.3
10/05/2020 07:02	73.8	0.2	0.9	1	1	1	1009	0.08	11.1
10/05/2020 08:02	69.9	0.2	1.5	1	1	1	1010	0.05	13.4
10/05/2020 09:02	68.0	0.2	2.1	1	1	1	1010	0.07	15.2
10/05/2020 10:02	63.9	0.2	2.6	1	1	1	1011	0.10	16.1
10/05/2020 11:02	61.0	0.2	3.1	1	0	1	1011	0.05	15.2
10/05/2020 12:02	57.2	0.2	3.8	1	1	1	1012	0.06	13.3
10/05/2020 13:02	53.9	0.2	4.6	1	0	1	1013	0.06	13.1
10/05/2020 14:02	47.5	0.2	6.0	1	0	1	1014	0.05	13.1
10/05/2020 15:02	43.0	0.2	7.3	1	1	1	1015	0.05	13.4
10/05/2020 16:02	36.8	0.2	8.5	1	1	1	1016	0.07	13.6
10/05/2020 17:02	33.6	0.2	9.2	1	1	1	1016	0.07	13.1
10/05/2020 18:02	30.6	0.2	9.6	1	1	1	1016	0.05	14.3
10/05/2020 19:02	29.0	0.2	10.0	1	1	1	1017	0.04	11.7
10/05/2020 20:02	27.0	0.2	10.4	2	1	1	1018	0.03	9.0
10/05/2020 21:02	23.9	0.2	11.2	2	1	1	1019	0.05	7.1
10/05/2020 22:02	21.4	0.2	11.8	2	1	1	1019	0.05	6.3
10/05/2020 23:02	20.1	0.2	11.8	1	1	1	1020	0.05	5.1
11/05/2020 00:02	19.9	0.2	11.5	1	1	1	1020	0.04	3.8
11/05/2020 01:02	23.2	0.2	10.2	2	1	1	1020	0.04	3.7
11/05/2020 02:02	26.4	0.2	9.0	1	1	1	1020	0.07	3.0
11/05/2020 03:02	28.8	0.2	8.0	1	1	1	1020	0.05	2.3
11/05/2020 04:02	30.9	0.2	7.4	1	1	1	1020	0.05	2.1
11/05/2020 05:02	31.2	0.2	7.2	1	1	1	1021	0.06	2.1
11/05/2020 06:02	32.7	0.2	6.5	1	1	1	1021	0.05	2.4
11/05/2020 07:02	34.2	0.2	6.1	1	1	1	1021	0.06	3.8
11/05/2020 08:02	34.1	0.2	6.2	1	1	1	1022	0.05	6.0
11/05/2020 09:02	33.8	0.2	6.2	1	1	1	1022	0.06	11.7
11/05/2020 10:02	34.0	0.2	6.3	1	1	1	1022	0.05	10.1
11/05/2020 11:02	35.7	0.2	5.7	1	1	1	1022	0.06	14.1
11/05/2020 12:02	37.2	0.2	5.3	1	1	1	1022	0.07	14.8
11/05/2020 13:02	39.0	0.2	4.7	1	1	1	1022	0.06	17.3
11/05/2020 14:02	40.3	0.2	4.2	1	1	1	1022	0.07	19.2
11/05/2020 15:02	42.2	0.2	3.6	1	1	1	1022	0.06	18.8
11/05/2020 16:02	44.5	0.2	2.9	1	1	1	1022	0.07	20.2
11/05/2020 17:02	44.9	0.2	2.5	1	1	1	1022	0.07	19.8
11/05/2020 18:02	46.7	0.2	2.1	1	1	1	1022	0.07	20.1
11/05/2020 19:02	48.9	0.2	1.7	1	1	1	1022	0.07	17.2
11/05/2020 20:02	50.3	0.2	1.3	1	1	1	1022	0.07	12.2
11/05/2020 21:02	50.7	0.2	1.1	1	1	1	1022	0.08	8.1
11/05/2020 22:02	53.6	0.2	0.9	1	1	1	1022	0.07	4.5
11/05/2020 23:02	55.7	0.2	0.7	1	1	1	1022	0.06	2.5
12/05/2020 00:02	56.7	0.2	0.5	1	1	1	1022	0.08	1.2
12/05/2020 01:02	59.3	0.2	0.4	1	1	1	1022	0.07	0.3
12/05/2020 02:02	61.2	0.2	0.3	1	1	1	1021	0.09	-0.3
12/05/2020 03:02	62.5	0.2	0.2	1	1	1	1021	0.08	-0.8
12/05/2020 04:02	64.8	0.2	0.2	1	1	1	1021	0.08	-1.3
12/05/2020 05:02	66.7	0.2	0.2	1	1	1	1021	0.10	-1.9
12/05/2020 06:02	68.5	0.2	0.1	1	1	1	1020	0.10	-1.7
12/05/2020 07:02	68.5	0.2	0.1	1	1	1	1020	0.11	0.4
12/05/2020 08:02	69.5	0.2	0.1	1	1	1	1019	0.07	7.5
12/05/2020 09:02	70.7	0.2	0.2	1	1	1	1019	0.09	10.2
12/05/2020 10:02	70.4	0.2	0.1	1	1	1	1019	0.08	14.8
12/05/2020 11:02	72.0	0.2	0.1	1	1	1	1018	0.11	15.0
12/05/2020 12:02	71.2	0.2	0.1	1	1	1	1018	0.11	15.9
12/05/2020 13:02	72.0	0.2	0.1	1	1	1	1017	0.11	15.7
12/05/2020 14:02	73.0	0.2	0.1	1	1	1	1016	0.12	15.0
12/05/2020 15:02	73.4	0.2	0.1	1	1	1	1016	0.10	14.7
12/05/2020 16:02	72.3	0.2	0.1	1	1	1	1016	0.11	13.5
12/05/2020 17:02	73.4	0.2	0.1	1	1	1	1015	0.13	16.3
12/05/2020 18:02	73.4	0.2	0.1	1	1	1	1014	0.12	16.4
12/05/2020 19:02	73.7	0.2	0.1	1	1	1	1014	0.11	17.2
12/05/2020 20:02	74.8	0.2	0.2	1	1	1	1014	0.10	13.1
12/05/2020 21:02	75.0	0.2	0.2	1	1	1	1014	0.09	9.8
12/05/2020 22:02	75.3	0.2	0.2	1	1	1	1014	0.09	7.3
12/05/2020 23:02	74.1	0.2	0.2	1	1	1	1014	0.07	5.9
13/05/2020 00:02	74.6	0.2	0.3	1	1	1	1014	0.09	4.9
13/05/2020 01:02	73.2	0.2	0.4	1	1	1	1015	0.08	6.0
13/05/2020 02:02	73.6	0.2	0.4	1	1	1	1015	0.08	5.9
13/05/2020 03:02	73.1	0.2	0.4	1	1	1	1015	0.07	6.0
13/05/2020 04:02	72.8	0.2	0.4	1	1	1	1015	0.08	5.3
13/05/2020 05:02	73.9	0.2	0.3	1	1	1	1016	0.09	5.0
13/05/2020 06:02	73.8	0.2	0.4	1	1	1	1016	0.09	4.1
13/05/2020 07:02	71.8	0.2	0.5	1	1	1	1017	0.08	5.5
13/05/2020 08:02	72.2	0.2	0.5	1	1	1	1017	0.08	9.4
13/05/2020 09:02	71.0	0.2	0.4	1	1	1	1017	0.08	17.2
13/05/2020 10:02	71.8	0.2	0.4	1	1	1	1017	0.08	20.4
13/05/2020 11:02	72.6	0.2	0.4	1	1	1	1017	0.08	19.4
13/05/2020 12:02	73.5	0.2	0.3	1	1	1	1017	0.09	18.0
13/05/2020 13:02	72.7	0.2	0.3	1	1	1	1017	0.09	24.2
13/05/2020 14:02	74.1	0.2	0.4	1	0	1	1017	0.07	23.3
13/05/2020 15:02	72.1	0.2	0.4	1	0	1	1017	0.08	20.5
13/05/2020 16:02	72.0	0.2	0.4	1	1	1	1017	0.08	19.6
13/05/2020 17:02	73.6	0.2	0.4	1	1	1	1017	0.08	19.2
13/05/2020 18:02	73.1	0.2	0.4	1	1	1	1018	0.08	19.1
13/05/2020 19:02	73.2	0.2	0.4	1	1	1	1018	0.07	16.9
13/05/2020 20:02	73.5	0.2	0.5	1	1	1	1019	0.06	12.9
13/05/2020 21:02	72.0	0.2	0.7	1	1	1	1019	0.06	9.0
13/05/2020 22:02	70.2	0.2	1.2	1	1	1	1020	0.07	6.5
13/05/2020 23:02	68.2	0.2	1.5	1	1	1	1021	0.08	5.1
14/05/2020 00:02	66.1	0.2	1.8	1	1	1	1021	0.07	2.4
14/05/2020 01:02	65.0	0.2	1.7	1	1	1	1021	0.07	0.5
14/05/2020 02:02	64.0	0.2	1.3	1	1	1	1022	0.07	-0.7

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
14/05/2020 03:02	66.6	0.2	0.8	1	1	1	1022	0.08	-1.5
14/05/2020 04:02	65.7	0.2	0.6	1	1	1	1022	0.07	-2.2
14/05/2020 05:02	67.8	0.2	0.4	1	1	1	1022	0.07	-2.6
14/05/2020 06:02	68.2	0.2	0.4	1	1	1	1022	0.07	-2.6
14/05/2020 07:02	68.5	0.2	0.4	1	1	1	1022	0.08	-1.5
14/05/2020 08:02	68.7	0.2	0.3	1	1	1	1022	0.08	9.3
14/05/2020 09:02	70.1	0.2	0.3	1	1	1	1022	0.10	17.3
14/05/2020 10:02	70.4	0.2	0.2	1	1	1	1022	0.09	22.4
14/05/2020 11:02	71.7	0.2	0.2	1	1	1	1022	0.09	26.1
14/05/2020 12:02	72.0	0.2	0.2	1	1	1	1022	0.09	28.4
14/05/2020 13:02	72.0	0.2	0.2	1	1	1	1021	0.10	28.8
14/05/2020 14:02	73.5	0.2	0.2	1	0	1	1021	0.10	30.8
14/05/2020 15:02	72.5	0.2	0.2	1	0	1	1020	0.09	30.7
14/05/2020 16:02	73.8	0.2	0.2	2	0	1	1020	0.08	29.2
14/05/2020 17:02	73.5	0.2	0.2	2	0	1	1020	0.09	28.4
14/05/2020 18:02	73.5	0.2	0.3	2	0	1	1020	0.09	25.9
14/05/2020 19:02	73.6	0.2	0.3	1	0	1	1020	0.09	22.4
14/05/2020 20:02	73.7	0.2	0.3	1	0	1	1020	0.08	16.1
14/05/2020 21:02	73.2	0.2	0.3	1	0	1	1021	0.08	11.9
14/05/2020 22:02	73.5	0.2	0.3	1	0	1	1021	0.09	8.9
14/05/2020 23:02	73.0	0.2	0.2	1	0	1	1021	0.08	6.3
15/05/2020 00:02	73.5	0.2	0.2	1	1	1	1021	0.09	4.4
15/05/2020 01:02	72.9	0.2	0.2	1	1	1	1021	0.09	3.3
15/05/2020 02:02	73.3	0.2	0.1	1	1	1	1021	0.09	2.4
15/05/2020 03:02	73.5	0.2	0.1	1	1	1	1021	0.08	1.6
15/05/2020 04:02	72.1	0.2	0.1	1	1	1	1021	0.08	1.0
15/05/2020 05:02	71.8	0.2	0.1	1	1	1	1021	0.08	0.4
15/05/2020 06:02	72.8	0.2	0.1	1	1	1	1022	0.08	0.9
15/05/2020 07:02	73.1	0.2	0.2	1	1	1	1022	0.07	4.7
15/05/2020 08:02	71.9	0.2	0.2	1	1	1	1022	0.08	8.9
15/05/2020 09:02	73.0	0.2	0.2	1	1	1	1022	0.09	13.9
15/05/2020 10:02	71.3	0.2	0.2	1	1	1	1022	0.07	15.8
15/05/2020 11:02	73.6	0.2	0.2	1	1	1	1022	0.07	19.3
15/05/2020 12:02	72.7	0.2	0.2	1	1	1	1022	0.05	22.8
15/05/2020 13:02	71.6	0.2	0.3	1	1	1	1022	0.07	24.1
15/05/2020 14:02	72.4	0.2	0.3	1	1	1	1022	0.07	26.1
15/05/2020 15:02	72.8	0.2	0.2	1	1	1	1022	0.06	25.7
15/05/2020 16:02	71.8	0.2	0.2	1	0	1	1022	0.07	24.6
15/05/2020 17:02	71.3	0.2	0.3	1	0	1	1022	0.07	20.5
15/05/2020 18:02	73.7	0.2	0.3	1	0	1	1022	0.08	18.0
15/05/2020 19:02	72.8	0.2	0.2	1	0	1	1022	0.07	15.8
15/05/2020 20:02	72.7	0.2	0.2	1	1	1	1022	0.07	14.1
15/05/2020 21:02	72.0	0.2	0.2	1	1	1	1022	0.07	11.8
15/05/2020 22:02	72.4	0.2	0.2	1	1	1	1022	0.08	8.7
15/05/2020 23:02	72.3	0.2	0.2	1	1	1	1022	0.06	6.1
16/05/2020 00:02	72.5	0.2	0.1	1	1	1	1022	0.07	4.6
16/05/2020 01:02	72.8	0.2	0.1	1	1	1	1022	0.08	3.4
16/05/2020 02:02	71.5	0.2	0.1	1	1	1	1021	0.07	2.9
16/05/2020 03:02	71.7	0.2	0.1	1	1	1	1021	0.08	3.5
16/05/2020 04:02	72.6	0.2	0.1	1	1	1	1021	0.08	4.1
16/05/2020 05:02	71.3	0.2	0.1	1	1	1	1021	0.08	4.6
16/05/2020 06:02	70.7	0.2	0.1	1	1	1	1021	0.09	5.4
16/05/2020 07:02	71.0	0.2	0.1	1	1	1	1021	0.09	7.1
16/05/2020 08:02	70.6	0.2	0.1	1	1	1	1021	0.09	10.4
16/05/2020 09:02	71.9	0.2	0.1	1	1	1	1021	0.08	15.1
16/05/2020 10:02	71.4	0.2	0.1	1	1	1	1021	0.12	14.8
16/05/2020 11:02	72.7	0.2	0.1	1	1	1	1021	0.10	14.8
16/05/2020 12:02	71.2	0.2	0.1	1	1	1	1021	0.09	19.6
16/05/2020 13:02	71.0	0.2	0.2	1	1	1	1021	0.09	23.8
16/05/2020 14:02	70.6	0.2	0.2	1	1	1	1021	0.11	28.3
16/05/2020 15:02	71.4	0.2	0.2	2	0	1	1021	0.10	24.7
16/05/2020 16:02	71.3	0.2	0.2	2	0	1	1020	0.09	22.4
16/05/2020 17:02	70.6	0.2	0.2	2	0	1	1020	0.09	25.6
16/05/2020 18:02	71.2	0.2	0.2	2	0	1	1020	0.09	25.5
16/05/2020 19:02	71.0	0.2	0.2	2	0	1	1020	0.07	21.0
16/05/2020 20:02	70.7	0.2	0.3	2	0	1	1020	0.07	17.0
16/05/2020 21:02	70.7	0.2	0.2	2	0	1	1020	0.06	14.3
16/05/2020 22:02	71.9	0.2	0.2	1	1	1	1021	0.07	12.8
16/05/2020 23:02	69.7	0.2	0.2	1	1	1	1021	0.06	11.6
17/05/2020 00:02	71.4	0.2	0.2	1	1	1	1020	0.08	9.6
17/05/2020 01:02	71.4	0.2	0.1	1	1	1	1020	0.09	9.4
17/05/2020 02:02	70.2	0.2	0.1	1	1	1	1020	0.10	9.9
17/05/2020 03:02	70.8	0.2	0.1	1	1	1	1020	0.10	9.8
17/05/2020 04:02	69.5	0.2	0.1	1	1	1	1020	0.11	9.4
17/05/2020 05:02	71.2	0.2	0.1	1	1	1	1020	0.11	8.3
17/05/2020 06:02	72.0	0.2	0.1	1	1	1	1020	0.12	8.8
17/05/2020 07:02	71.9	0.2	0.1	1	1	1	1020	0.12	10.2
17/05/2020 08:02	71.0	0.2	0.2	1	1	1	1020	0.13	12.3
17/05/2020 09:02	69.7	0.2	0.1	1	1	1	1020	0.12	20.2
17/05/2020 10:02	70.5	0.2	0.1	1	1	1	1019	0.13	24.3
17/05/2020 11:02	70.5	0.2	0.2	1	1	1	1019	0.13	23.7
17/05/2020 12:02	69.7	0.2	0.2	2	1	1	1020	0.13	22.5
17/05/2020 13:02	70.6	0.2	0.2	2	0	1	1019	0.12	23.0
17/05/2020 14:02	69.4	0.2	0.2	2	0	1	1019	0.13	21.9
17/05/2020 15:02	70.0	0.2	0.2	2	0	1	1019	0.13	22.9
17/05/2020 16:02	68.9	0.2	0.1	2	0	1	1019	0.12	24.9
17/05/2020 17:02	70.0	0.2	0.1	2	0	1	1019	0.12	25.0
17/05/2020 18:02	68.2	0.2	0.1	2	0	1	1018	0.12	24.2
17/05/2020 19:02	68.4	0.2	0.2	2	0	1	1018	0.12	22.1
17/05/2020 20:02	69.5	0.2	0.2	2	0	1	1018	0.11	19.0
17/05/2020 21:02	69.7	0.2	0.2	2	0	1	1019	0.11	16.9
17/05/2020 22:02	68.8	0.2	0.2	2	0	1	1019	0.11	15.4
17/05/2020 23:02	68.8	0.2	0.3	2	0	1	1019	0.12	14.1
18/05/2020 00:02	69.2	0.2	0.2	2	1	1	1019	0.11	12.6
18/05/2020 01:02	68.7	0.2	0.2	2	1	1	1018	0.13	11.6
18/05/2020 02:02	70.2	0.2	0.2	1	1	1	1018	0.13	10.6
18/05/2020 03:02	68.9	0.2	0.3	1	1	1	1018	0.14	9.7
18/05/2020 04:02	70.4	0.2	0.2	1	1	1	1018	0.15	9.1
18/05/2020 05:02	69.0	0.2	0.4	1	1	1	1018	0.12	8.7
18/05/2020 06:02	69.3	0.2	0.5	1	1	1	1018	0.15	8.4
18/05/2020 07:02	67.0	0.2	0.5	1	1	1	1019	0.14	9.6
18/05/2020 08:02	67.5	0.2	0.6	1	1	1	1019	0.12	13.8
18/05/2020 09:02	67.2	0.2	0.6	1	1	1	1019	0.16	14.3
18/05/2020 10:02	65.2	0.2	0.6	2	1	1	1019	0.16	19.8
18/05/2020 11:02	66.1	0.2	0.4	2	0	1	1019	0.16	20.5
18/05/2020 12:02	67.0	0.2	0.4	2	0	1	1019	0.16	20.4
18/05/2020 13:02	67.9	0.2	0.3	2	0	1	1019	0.15	18.4
18/05/2020 14:02	67.7	0.2	0.3	2	0	1	1019	0.13	19.0
18/05/2020 15:02	69.5	0.2	0.3	2	0	1	1019	0.13	18.9
18/05/2020 16:02	66.5	0.2	0.2	2	0	1	1019	0.13	18.7
18/05/2020 17:02	67.2	0.2	0.3	2	0	1	1019	0.14	17.8
18/05/2020 18:02	67.4	0.2	0.3	2	0	1	1019	0.14	18.0
18/05/2020 19:02	66.3	0.2	0.2	2	1	1	1019	0.13	16.9
18/05/2020 20:02	68.5	0.2	0.2	2	0	1	1019	0.13	16.2

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Atmospheric Pressure mbar	Flow Ltr/hr	Temperature °C
18/05/2020 21:02	67.0	0.2	0.3	2	0	1	1019	0.14	15.3
18/05/2020 22:02	66.4	0.2	0.3	2	0	1	1019	0.13	14.5
18/05/2020 23:02	66.9	0.2	0.2	2	1	1	1019	0.12	14.0
19/05/2020 00:02	67.2	0.2	0.3	2	1	1	1019	0.14	13.8
19/05/2020 01:02	66.9	0.2	0.2	2	1	1	1019	0.14	13.6
19/05/2020 02:02	67.8	0.2	0.2	2	1	1	1019	0.15	12.9
19/05/2020 03:02	67.5	0.2	0.2	2	1	1	1018	0.15	12.9
19/05/2020 04:02	66.6	0.2	0.1	2	1	1	1018	0.16	12.8
19/05/2020 05:02	68.0	0.2	0.1	2	1	1	1018	0.13	12.7
19/05/2020 06:02	68.1	0.2	0.2	2	1	1	1018	0.13	12.8
19/05/2020 07:02	68.2	0.2	0.3	2	1	1	1019	0.13	13.0
19/05/2020 08:02	68.2	0.2	0.3	2	1	1	1019	0.13	13.6
19/05/2020 09:02	67.5	0.2	0.3	2	1	1	1019	0.13	15.6
19/05/2020 10:02	66.6	0.2	0.4	2	1	1	1019	0.13	16.9
19/05/2020 11:02	66.3	0.2	0.4	2	0	1	1020	0.15	18.5
19/05/2020 12:02	66.4	0.2	0.3	2	1	1	1020	0.14	19.8
19/05/2020 13:02	67.2	0.2	0.3	2	0	1	1020	0.13	24.2
19/05/2020 14:02	66.3	0.2	0.3	2	0	1	1019	0.13	30.6
19/05/2020 15:02	64.2	0.2	0.3	2	0	1	1019	0.14	30.3
19/05/2020 16:02	63.3	0.1	0.3	2	0	1	1019	0.13	29.0
19/05/2020 17:02	62.9	0.1	0.3	2	0	1	1020	0.15	29.9
19/05/2020 18:02	62.7	0.1	0.3	2	0	1	1019	0.16	27.8
19/05/2020 19:02	62.5	0.1	0.3	2	0	1	1019	0.16	26.1
19/05/2020 20:02	62.3	0.1	0.3	2	0	1	1019	0.16	21.5
19/05/2020 21:02	63.4	0.1	0.3	2	0	1	1020	0.16	17.1
19/05/2020 22:02	64.6	0.2	0.3	2	0	1	1020	0.13	13.9
19/05/2020 23:02	65.0	0.2	0.3	2	0	1	1020	0.14	12.4
20/05/2020 00:02	66.7	0.2	0.2	2	0	1	1020	0.15	11.4
20/05/2020 01:02	67.2	0.2	0.2	2	0	1	1020	0.15	10.3
20/05/2020 02:02	67.0	0.2	0.1	2	0	1	1020	0.16	8.6
20/05/2020 03:02	66.5	0.2	0.1	2	1	1	1019	0.18	7.5
20/05/2020 04:02	66.1	0.2	0.1	2	1	1	1019	0.19	6.7
20/05/2020 05:02	67.2	0.2	0.0	3	1	1	1019	0.23	5.9
20/05/2020 06:02	67.5	0.2	0.0	3	1	1	1019	0.24	6.1
20/05/2020 07:02	68.7	0.2	0.0	3	1	1	1019	0.25	7.9
20/05/2020 08:02	67.2	0.2	0.1	3	1	1	1019	0.25	17.0
20/05/2020 09:02	66.5	0.2	0.1	3	1	1	1019	0.26	25.0
20/05/2020 10:02	67.2	0.2	0.1	3	1	1	1018	0.25	30.6
20/05/2020 11:02	66.3	0.2	0.0	3	0	1	1017	0.20	34.2
20/05/2020 12:02	64.4	0.1	0.0	2	0	1	1017	0.16	36.9
20/05/2020 13:02	62.8	0.1	0.1	3	0	1	1016	0.16	38.0
20/05/2020 14:02	59.4	0.1	0.1	3	0	1	1016	0.16	38.5
20/05/2020 15:02	58.8	0.1	0.1	3	0	1	1016	0.16	38.5
20/05/2020 16:02	57.5	0.0	0.1	4	0	1	1015	0.16	38.3
20/05/2020 17:02	54.4	0.0	0.1	4	0	1	1015	0.17	37.2
20/05/2020 18:02	55.1	0.0	0.1	4	0	1	1014	0.17	35.7
20/05/2020 19:02	55.6	0.0	0.1	3	0	1	1014	0.16	33.1
20/05/2020 20:02	58.4	0.0	0.1	4	0	1	1014	0.17	26.7
20/05/2020 21:02	59.7	0.0	0.2	4	0	1	1015	0.16	21.5
20/05/2020 22:02	61.7	0.1	0.2	3	0	1	1015	0.16	16.9
20/05/2020 23:02	63.7	0.1	0.2	4	0	1	1015	0.16	13.9
21/05/2020 00:02	65.7	0.1	0.1	3	0	1	1015	0.18	11.9
21/05/2020 01:02	65.7	0.1	0.0	3	0	1	1015	0.21	10.2
21/05/2020 02:02	67.7	0.1	0.0	4	0	1	1015	0.22	8.8
21/05/2020 03:02	68.8	0.2	0.0	4	0	1	1015	0.23	7.9
21/05/2020 04:02	66.5	0.1	0.0	4	1	1	1015	0.24	7.5
21/05/2020 05:02	67.1	0.2	0.3	3	1	1	1015	0.27	7.6
21/05/2020 06:02	66.3	0.2	0.3	4	1	1	1015	0.27	8.4
21/05/2020 07:02	72.2	0.2	0.8	4	1	1	1016	0.31	11.1
21/05/2020 08:02	0.0	0.0	0.0	6	1	0	1016	0.22	13.4

GGS Time Series Data

Experts in Continuous Monitoring

Project Ref:	GGS2230
Location:	Ryebank Fields, Chorlton
Borehole ref:	WS106
GasClam ID:	22.09.14
Start Date:	30/04/2020 15:22
End Date:	21/05/2020 08:22

Days of monitoring:	21
Monitoring Frequency (mins):	60
Total samples taken:	498

Minimum, Maximum and Range Table

	CH_4	CO_2	O_2	TVOC	H_2S	CO	Borehole Pressure	Atmospheric Pressure	Differential Pressure	Temperature
Minimum	0.0	0.0	18.7	0	0	0	986	986	-1	10.8
Maximum	0.0	0.0	20.6	32	0	0	1024	1024	1	13.7
Range	0.0	0.0	1.9	32	0	0	38	38	N/A	2.9

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
30/04/2020 15:22	0.0	0.0	20.6	0	0	0	986	986	0	
30/04/2020 16:22	0.0	0.0	19.8	0	0	0	987	987	0	
30/04/2020 17:22	0.0	0.0	19.4	0	0	0	987	987	0	12.9
30/04/2020 18:22	0.0	0.0	19.3	0.2	0	0	988	987	1	11.9
30/04/2020 19:22	0.0	0.0	19.2	0.5	0	0	988	988	0	11.5
30/04/2020 20:22	0.0	0.0	19.2	0.4	0	0	989	988	1	11.4
30/04/2020 21:22	0.0	0.0	19.1	0.2	0	0	989	989	0	11.3
30/04/2020 22:22	0.0	0.0	19.1	0.2	0	0	989	989	0	11.3
30/04/2020 23:22	0.0	0.0	19.1	0.2	0	0	989	989	0	11.3
01/05/2020 00:22	0.0	0.0	19.1	0.2	0	0	989	990	-1	11.3
01/05/2020 01:22	0.0	0.0	19.1	0.3	0	0	990	990	0	11.3
01/05/2020 02:22	0.0	0.0	19.1	0.2	0	0	990	990	0	11.2
01/05/2020 03:22	0.0	0.0	19.1	0.3	0	0	990	990	0	11.2
01/05/2020 04:22	0.0	0.0	19.1	0.3	0	0	991	991	0	11.1
01/05/2020 05:22	0.0	0.0	19.1	0.4	0	0	991	991	0	11.1
01/05/2020 06:22	0.0	0.0	19.1	0.4	0	0	992	991	1	11.1
01/05/2020 07:22	0.0	0.0	19.1	0.4	0	0	992	992	0	11.1
01/05/2020 08:22	0.0	0.0	19.1	0.3	0	0	993	993	0	11.1
01/05/2020 09:22	0.0	0.0	19.0	0.5	0	0	994	993	1	11.0
01/05/2020 10:22	0.0	0.0	19.0	0.7	0	0	994	994	0	11.0
01/05/2020 11:22	0.0	0.0	19.0	0.7	0	0	994	994	0	11.0
01/05/2020 12:22	0.0	0.0	19.0	0.7	0	0	995	995	0	11.0
01/05/2020 13:22	0.0	0.0	19.0	0.6	0	0	995	995	0	11.0
01/05/2020 14:22	0.0	0.0	19.0	0.8	0	0	996	996	0	11.1
01/05/2020 15:22	0.0	0.0	19.0	0.6	0	0	996	996	0	11.1
01/05/2020 16:22	0.0	0.0	19.0	0.6	0	0	997	996	1	11.2
01/05/2020 17:22	0.0	0.0	19.0	0.7	0	0	997	997	0	11.3
01/05/2020 18:22	0.0	0.0	19.0	0.8	0	0	998	998	0	11.3
01/05/2020 19:22	0.0	0.0	19.1	0.6	0	0	998	998	0	11.4
01/05/2020 20:22	0.0	0.0	19.1	0.5	0	0	999	999	0	11.4
01/05/2020 21:22	0.0	0.0	19.1	0.5	0	0	999	999	0	11.5
01/05/2020 22:22	0.0	0.0	19.1	0.4	0	0	1000	1000	0	11.5
01/05/2020 23:22	0.0	0.0	19.1	0.5	0	0	1001	1000	1	11.5
02/05/2020 00:22	0.0	0.0	19.1	0.7	0	0	1001	1001	0	11.4
02/05/2020 01:22	0.0	0.0	19.1	0.4	0	0	1001	1001	0	11.4
02/05/2020 02:22	0.0	0.0	19.1	0.5	0	0	1002	1002	0	11.4
02/05/2020 03:22	0.0	0.0	19.1	0.5	0	0	1002	1002	0	11.3
02/05/2020 04:22	0.0	0.0	19.1	0.5	0	0	1003	1003	0	11.3
02/05/2020 05:22	0.0	0.0	19.1	0.7	0	0	1003	1003	0	11.3
02/05/2020 06:22	0.0	0.0	19.1	0.5	0	0	1004	1004	0	11.2
02/05/2020 07:22	0.0	0.0	19.1	0.5	0	0	1004	1004	0	11.1
02/05/2020 08:22	0.0	0.0	19.1	0.6	0	0	1005	1005	0	11.1
02/05/2020 09:22	0.0	0.0	19.0	0.7	0	0	1006	1006	0	11.0
02/05/2020 10:22	0.0	0.0	19.0	0.7	0	0	1006	1006	0	11.0
02/05/2020 11:22	0.0	0.0	19.0	0.8	0	0	1007	1007	0	11.0
02/05/2020 12:22	0.0	0.0	19.0	0.7	0	0	1008	1007	1	11.0
02/05/2020 13:22	0.0	0.0	19.0	0.8	0	0	1008	1008	0	11.0
02/05/2020 14:22	0.0	0.0	19.0	0.7	0	0	1009	1009	0	11.1
02/05/2020 15:22	0.0	0.0	19.0	0.8	0	0	1009	1009	0	11.1
02/05/2020 16:22	0.0	0.0	19.0	0.6	0	0	1009	1009	0	11.2
02/05/2020 17:22	0.0	0.0	19.0	0.7	0	0	1010	1009	1	11.3
02/05/2020 18:22	0.0	0.0	19.0	0.7	0	0	1010	1010	0	11.4
02/05/2020 19:22	0.0	0.0	19.0	0.6	0	0	1011	1011	0	11.4
02/05/2020 20:22	0.0	0.0	19.0	0.5	0	0	1011	1011	0	11.5
02/05/2020 21:22	0.0	0.0	19.0	0.5	0	0	1012	1012	0	11.5
02/05/2020 22:22	0.0	0.0	19.0	0.5	0	0	1011	1011	0	11.6
02/05/2020 23:22	0.0	0.0	19.1	0.5	0	0	1012	1012	0	11.6
03/05/2020 00:22	0.0	0.0	19.1	0.4	0	0	1012	1012	0	11.6
03/05/2020 01:22	0.0	0.0	19.1	0.5	0	0	1013	1013	0	11.5
03/05/2020 02:22	0.0	0.0	19.1	0.5	0	0	1013	1013	0	11.4
03/05/2020 03:22	0.0	0.0	19.0	0.6	0	0	1012	1012	0	11.4
03/05/2020 04:22	0.0	0.0	19.0	0.6	0	0	1012	1012	0	11.4
03/05/2020 05:22	0.0	0.0	19.0	0.7	0	0	1012	1012	0	11.3
03/05/2020 06:22	0.0	0.0	19.0	0.8	0	0	1012	1012	0	11.3
03/05/2020 07:22	0.0	0.0	19.0	0.9	0	0	1012	1013	-1	11.2
03/05/2020 08:22	0.0	0.0	19.0	1	0	0	1013	1013	0	11.1
03/05/2020 09:22	0.0	0.0	19.0	1.3	0	0	1014	1013	1	11.1
03/05/2020 10:22	0.0	0.0	19.0	1.3	0	0	1014	1014	0	11.0
03/05/2020 11:22	0.0	0.0	19.0	1.5	0	0	1014	1014	0	11.0
03/05/2020 12:22	0.0	0.0	18.9	1.5	0	0	1014	1014	0	11.0
03/05/2020 13:22	0.0	0.0	18.9	1.3	0	0	1013	1013	0	11.0
03/05/2020 14:22	0.0	0.0	18.9	1	0	0	1013	1013	0	11.0
03/05/2020 15:22	0.0	0.0	18.9	1.1	0	0	1013	1013	0	11.1
03/05/2020 16:22	0.0	0.0	18.9	1	0	0	1013	1013	0	11.1
03/05/2020 17:22	0.0	0.0	18.9	1.1	0	0	1013	1013	0	11.2
03/05/2020 18:22	0.0	0.0	18.9	1.1	0	0	1013	1013	0	11.3
03/05/2020 19:22	0.0	0.0	18.9	1.4	0	0	1013	1013	0	11.4
03/05/2020 20:22	0.0	0.0	19.0	1.5	0	0	1014	1013	1	11.4
03/05/2020 21:22	0.0	0.0	19.0	1.4	0	0	1014	1014	0	11.4
03/05/2020 22:22	0.0	0.0	19.0	1.4	0	0	1014	1014	0	11.5
03/05/2020 23:22	0.0	0.0	19.0	1.1	0	0	1014	1015	-1	11.5
04/05/2020 00:22	0.0	0.0	19.0	1.1	0	0	1015	1015	0	11.5
04/05/2020 01:22	0.0	0.0	19.0	1.1	0	0	1015	1015	0	11.4
04/05/2020 02:22	0.0	0.0	19.0	1.3	0	0	1015	1015	0	11.4
04/05/2020 03:22	0.0	0.0	19.0	1.3	0	0	1015	1015	0	11.4
04/05/2020 04:22	0.0	0.0	19.0	1.6	0	0	1016	1016	0	11.4
04/05/2020 05:22	0.0	0.0	19.0	1.8	0	0	1016	1016	0	11.3
04/05/2020 06:22	0.0	0.0	19.0	1.7	0	0	1017	1016	1	11.3
04/05/2020 07:22	0.0	0.0	19.0	1.9	0	0	1017	1017	0	11.3
04/05/2020 08:22	0.0	0.0	19.0	1.7	0	0	1018	1018	0	11.2
04/05/2020 09:22	0.0	0.0	18.9	1.7	0	0	1018	1018	0	11.2
04/05/2020 10:22	0.0	0.0	18.9	2.2	0	0	1018	1018	0	11.1
04/05/2020 11:22	0.0	0.0	18.9	2	0	0	1018	1018	0	11.1
04/05/2020 12:22	0.0	0.0	18.9	2	0	0	1018	1018	0	11.1
04/05/2020 13:22	0.0	0.0	18.9	2	0	0	1019	1019	0	11.2
04/05/2020 14:22	0.0	0.0	18.8	2.2	0	0	1019	1019	0	11.3

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
04/05/2020 15:22	0.0	0.0	18.8	2.4	0	0	1019	1019	0	11.3
04/05/2020 16:22	0.0	0.0	18.8	2.1	0	0	1019	1019	0	11.4
04/05/2020 17:22	0.0	0.0	18.8	1.7	0	0	1019	1019	0	11.5
04/05/2020 18:22	0.0	0.0	18.8	1.7	0	0	1019	1019	0	11.6
04/05/2020 19:22	0.0	0.0	18.8	1.6	0	0	1019	1019	0	11.6
04/05/2020 20:22	0.0	0.0	18.9	1.5	0	0	1020	1019	1	11.7
04/05/2020 21:22	0.0	0.0	18.9	1.5	0	0	1020	1020	0	11.8
04/05/2020 22:22	0.0	0.0	18.9	1.5	0	0	1021	1021	0	11.8
04/05/2020 23:22	0.0	0.0	18.9	1.6	0	0	1021	1021	0	11.8
05/05/2020 00:22	0.0	0.0	18.9	1.4	0	0	1021	1021	0	11.8
05/05/2020 01:22	0.0	0.0	18.9	1.6	0	0	1020	1020	0	11.7
05/05/2020 02:22	0.0	0.0	18.8	1.8	0	0	1020	1020	0	11.6
05/05/2020 03:22	0.0	0.0	18.8	1.9	0	0	1020	1020	0	11.6
05/05/2020 04:22	0.0	0.0	18.8	2.1	0	0	1020	1019	1	11.6
05/05/2020 05:22	0.0	0.0	18.8	2	0	0	1020	1019	1	11.6
05/05/2020 06:22	0.0	0.0	18.8	2.2	0	0	1020	1020	0	11.5
05/05/2020 07:22	0.0	0.0	18.8	2.2	0	0	1020	1020	0	11.4
05/05/2020 08:22	0.0	0.0	18.8	2.1	0	0	1020	1020	0	11.4
05/05/2020 09:22	0.0	0.0	18.8	2.1	0	0	1020	1020	0	11.3
05/05/2020 10:22	0.0	0.0	18.8	2.7	0	0	1020	1020	0	11.3
05/05/2020 11:22	0.0	0.0	18.8	3	0	0	1020	1020	0	11.3
05/05/2020 12:22	0.0	0.0	18.8	3	0	0	1020	1020	0	11.3
05/05/2020 13:22	0.0	0.0	18.8	3.2	0	0	1020	1020	0	11.3
05/05/2020 14:22	0.0	0.0	18.8	2.7	0	0	1020	1020	0	11.4
05/05/2020 15:22	0.0	0.0	18.8	2.7	0	0	1020	1019	1	11.4
05/05/2020 16:22	0.0	0.0	18.8	2.5	0	0	1020	1020	0	11.5
05/05/2020 17:22	0.0	0.0	18.8	2.2	0	0	1020	1019	1	11.6
05/05/2020 18:22	0.0	0.0	18.8	2.3	0	0	1020	1020	0	11.8
05/05/2020 19:22	0.0	0.0	18.9	2.3	0	0	1020	1020	0	11.8
05/05/2020 20:22	0.0	0.0	18.9	2.4	0	0	1021	1021	0	11.9
05/05/2020 21:22	0.0	0.0	18.9	2.3	0	0	1022	1022	0	11.9
05/05/2020 22:22	0.0	0.0	18.9	2.2	0	0	1022	1022	0	11.9
05/05/2020 23:22	0.0	0.0	18.9	2.3	0	0	1023	1023	0	11.9
06/05/2020 00:22	0.0	0.0	18.9	2.3	0	0	1023	1023	0	11.9
06/05/2020 01:22	0.0	0.0	18.8	2.3	0	0	1023	1023	0	11.9
06/05/2020 02:22	0.0	0.0	18.8	2.2	0	0	1023	1023	0	11.9
06/05/2020 03:22	0.0	0.0	18.8	2.2	0	0	1023	1023	0	11.8
06/05/2020 04:22	0.0	0.0	18.8	2.4	0	0	1023	1023	0	11.8
06/05/2020 05:22	0.0	0.0	18.8	2.4	0	0	1024	1023	1	11.7
06/05/2020 06:22	0.0	0.0	18.8	2.9	0	0	1024	1024	0	11.6
06/05/2020 07:22	0.0	0.0	18.8	2.9	0	0	1024	1024	0	11.5
06/05/2020 08:22	0.0	0.0	18.8	2.9	0	0	1024	1024	0	11.4
06/05/2020 09:22	0.0	0.0	18.8	3.2	0	0	1024	1024	0	11.4
06/05/2020 10:22	0.0	0.0	18.8	3.4	0	0	1024	1024	0	11.3
06/05/2020 11:22	0.0	0.0	18.8	4	0	0	1024	1024	0	11.3
06/05/2020 12:22	0.0	0.0	18.8	4	0	0	1024	1023	1	11.3
06/05/2020 13:22	0.0	0.0	18.8	4.3	0	0	1023	1023	0	11.3
06/05/2020 14:22	0.0	0.0	18.7	4.2	0	0	1023	1023	0	11.4
06/05/2020 15:22	0.0	0.0	18.7	4.1	0	0	1023	1022	1	11.4
06/05/2020 16:22	0.0	0.0	18.7	3.9	0	0	1022	1022	0	11.6
06/05/2020 17:22	0.0	0.0	18.7	3.7	0	0	1022	1022	0	11.7
06/05/2020 18:22	0.0	0.0	18.7	3.6	0	0	1022	1022	0	11.8
06/05/2020 19:22	0.0	0.0	18.8	3.2	0	0	1022	1022	0	11.9
06/05/2020 20:22	0.0	0.0	18.8	3.1	0	0	1022	1022	0	12.0
06/05/2020 21:22	0.0	0.0	18.8	2.5	0	0	1022	1022	0	12.1
06/05/2020 22:22	0.0	0.0	18.8	2.5	0	0	1022	1022	0	12.1
06/05/2020 23:22	0.0	0.0	18.8	2.4	0	0	1022	1022	0	12.1
07/05/2020 00:22	0.0	0.0	18.8	2.4	0	0	1022	1022	0	12.1
07/05/2020 01:22	0.0	0.0	18.8	2.4	0	0	1022	1022	0	12.1
07/05/2020 02:22	0.0	0.0	18.8	2.3	0	0	1021	1021	0	12.0
07/05/2020 03:22	0.0	0.0	18.8	2.7	0	0	1021	1021	0	12.0
07/05/2020 04:22	0.0	0.0	18.7	2.9	0	0	1021	1021	0	11.9
07/05/2020 05:22	0.0	0.0	18.7	3.2	0	0	1021	1021	0	11.9
07/05/2020 06:22	0.0	0.0	18.7	3.2	0	0	1021	1021	0	11.8
07/05/2020 07:22	0.0	0.0	18.7	3.1	0	0	1020	1020	0	11.7
07/05/2020 08:22	0.0	0.0	18.7	3.6	0	0	1020	1020	0	11.6
07/05/2020 09:22	0.0	0.0	18.7	4	0	0	1020	1020	0	11.6
07/05/2020 10:22	0.0	0.0	18.8	4.1	0	0	1020	1020	0	11.5
07/05/2020 11:22	0.0	0.0	18.8	5.4	0	0	1020	1019	1	11.5
07/05/2020 12:22	0.0	0.0	18.8	6.8	0	0	1019	1019	0	11.5
07/05/2020 13:22	0.0	0.0	18.8	6.5	0	0	1018	1018	0	11.5
07/05/2020 14:22	0.0	0.0	18.8	4.8	0	0	1018	1018	0	11.6
07/05/2020 15:22	0.0	0.0	18.8	6.1	0	0	1017	1017	0	11.6
07/05/2020 16:22	0.0	0.0	18.8	5	0	0	1017	1016	1	11.8
07/05/2020 17:22	0.0	0.0	18.8	4.6	0	0	1016	1016	0	11.9
07/05/2020 18:22	0.0	0.0	18.8	6.4	0	0	1016	1016	0	11.9
07/05/2020 19:22	0.0	0.0	18.8	4.4	0	0	1016	1016	0	12.1
07/05/2020 20:22	0.0	0.0	18.9	4.4	0	0	1016	1016	0	12.1
07/05/2020 21:22	0.0	0.0	18.9	4.7	0	0	1016	1016	0	12.2
07/05/2020 22:22	0.0	0.0	18.9	3.1	0	0	1016	1016	0	12.3
07/05/2020 23:22	0.0	0.0	18.9	3	0	0	1016	1016	0	12.3
08/05/2020 00:22	0.0	0.0	18.9	2.9	0	0	1016	1016	0	12.3
08/05/2020 01:22	0.0	0.0	18.9	3.2	0	0	1016	1016	0	12.3
08/05/2020 02:22	0.0	0.0	18.9	2.7	0	0	1016	1016	0	12.3
08/05/2020 03:22	0.0	0.0	18.9	4.2	0	0	1016	1016	0	12.3
08/05/2020 04:22	0.0	0.0	18.9	4	0	0	1016	1016	0	12.3
08/05/2020 05:22	0.0	0.0	18.9	3.4	0	0	1016	1016	0	12.2
08/05/2020 06:22	0.0	0.0	18.9	3	0	0	1016	1016	0	12.1
08/05/2020 07:22	0.0	0.0	18.9	3.4	0	0	1016	1016	0	12.1
08/05/2020 08:22	0.0	0.0	18.9	3.6	0	0	1016	1016	0	12.1
08/05/2020 09:22	0.0	0.0	18.9	3.6	0	0	1016	1016	0	12.0
08/05/2020 10:22	0.0	0.0	18.8	3.2	0	0	1016	1016	0	12.0
08/05/2020 11:22	0.0	0.0	18.8	3.2	0	0	1016	1016	0	12.0
08/05/2020 12:22	0.0	0.0	18.8	3.3	0	0	1015	1015	0	12.0
08/05/2020 13:22	0.0	0.0	18.8	4.3	0	0	1015	1015	0	12.0
08/05/2020 14:22	0.0	0.0	18.8	4.2	0	0	1015	1015	0	12.1
08/05/2020 15:22	0.0	0.0	18.8	3.6	0	0	1014	1014	0	12.1
08/05/2020 16:22	0.0	0.0	18.8	4.2	0	0	1014	1014	0	12.2
08/05/2020 17:22	0.0	0.0	18.8	3.8	0	0	1014	1013	1	12.3
08/05/2020 18:22	0.0	0.0	18.9	3.2	0	0	1013	1013	0	12.4
08/05/2020 19:22	0.0	0.0	18.9	3	0	0	1014	1013	1	12.6
08/05/2020 20:22	0.0	0.0	18.9	2.7	0	0	1014	1013	1	12.7
08/05/2020 21:22	0.0	0.0	19.0	2.6	0	0	1014	1013	1	12.8
08/05/2020 22:22	0.0	0.0	19.0	2.2	0	0	1014	1013	1	12.8
08/05/2020 23:22	0.0	0.0	19.0	2.1	0	0	1014	1014	0	12.8
09/05/2020 00:22	0.0	0.0	19.0	2.3	0	0	1014	1014	0	12.8
09/05/2020 01:22	0.0	0.0	19.0	2.2	0	0	1014	1014	0	12.8
09/05/2020 02:22	0.0	0.0	19.0	2.4	0	0	1013	1013	0	12.8
09/05/2020 03:22	0.0	0.0	19.0	2.4	0	0	1013	1013	0	12.7
09/05/2020 04:22	0.0	0.0	19.0	2.4	0	0	1013	1013	0	12.6
09/05/2020 05:22	0.0	0.0	19.0	2.7	0	0	1013	1013	0	12.6
09/05/2020 06:22	0.0	0.0	19.0	3	0	0	1013	1013	0	12.5
09/05/2020 07:22	0.0	0.0	19.0	2.9	0	0	1013	1013	0	12.4
09/05/2020 08:22	0.0	0.0	19.0	2.9	0	0	1012	1013	-1	12.4

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
09/05/2020 09:22	0.0	0.0	19.0	3.3	0	0	1012	1012	0	12.3
09/05/2020 10:22	0.0	0.0	18.9	3.4	0	0	1012	1012	0	12.3
09/05/2020 11:22	0.0	0.0	18.9	3.7	0	0	1011	1012	-1	12.3
09/05/2020 12:22	0.0	0.0	18.9	3.9	0	0	1011	1011	0	12.3
09/05/2020 13:22	0.0	0.0	18.8	3.9	0	0	1010	1010	0	12.3
09/05/2020 14:22	0.0	0.0	18.8	4	0	0	1010	1010	0	12.4
09/05/2020 15:22	0.0	0.0	18.8	3.8	0	0	1009	1009	0	12.6
09/05/2020 16:22	0.0	0.0	18.8	3.5	0	0	1008	1008	0	12.7
09/05/2020 17:22	0.0	0.0	18.9	3.2	0	0	1008	1007	1	12.8
09/05/2020 18:22	0.0	0.0	18.9	3.3	0	0	1007	1007	0	12.9
09/05/2020 19:22	0.0	0.0	18.9	3.2	0	0	1007	1007	0	13.1
09/05/2020 20:22	0.0	0.0	19.0	2.9	0	0	1007	1007	0	13.2
09/05/2020 21:22	0.0	0.0	19.0	2.9	0	0	1007	1007	0	13.3
09/05/2020 22:22	0.0	0.0	19.0	2.9	0	0	1008	1008	0	13.3
09/05/2020 23:22	0.0	0.0	19.1	2.6	0	0	1008	1008	0	13.3
10/05/2020 00:22	0.0	0.0	19.1	2.4	0	0	1008	1007	1	13.4
10/05/2020 01:22	0.0	0.0	19.1	2.5	0	0	1007	1007	0	13.4
10/05/2020 02:22	0.0	0.0	19.1	2.3	0	0	1007	1006	1	13.4
10/05/2020 03:22	0.0	0.0	19.1	2.2	0	0	1006	1006	0	13.3
10/05/2020 04:22	0.0	0.0	19.1	2.3	0	0	1006	1006	0	13.3
10/05/2020 05:22	0.0	0.0	19.1	2.4	0	0	1007	1007	0	13.3
10/05/2020 06:22	0.0	0.0	19.1	2.5	0	0	1008	1008	0	13.2
10/05/2020 07:22	0.0	0.0	19.1	2.9	0	0	1009	1009	0	13.1
10/05/2020 08:22	0.0	0.0	19.0	2.6	0	0	1010	1010	0	13.1
10/05/2020 09:22	0.0	0.0	19.0	3.1	0	0	1010	1010	0	13.1
10/05/2020 10:22	0.0	0.0	19.0	3	0	0	1011	1011	0	13.0
10/05/2020 11:22	0.0	0.0	19.0	3.1	0	0	1011	1011	0	13.0
10/05/2020 12:22	0.0	0.0	18.9	3.6	0	0	1012	1012	0	12.9
10/05/2020 13:22	0.0	0.0	18.9	4	0	0	1014	1013	1	12.9
10/05/2020 14:22	0.0	0.0	18.9	3.7	0	0	1014	1014	0	12.9
10/05/2020 15:22	0.0	0.0	18.9	4.1	0	0	1015	1015	0	12.9
10/05/2020 16:22	0.0	0.0	18.9	4.9	0	0	1016	1016	0	12.9
10/05/2020 17:22	0.0	0.0	18.9	6.8	0	0	1016	1016	0	12.9
10/05/2020 18:22	0.0	0.0	18.9	5.3	0	0	1017	1016	1	12.9
10/05/2020 19:22	0.0	0.0	18.9	4.7	0	0	1017	1017	0	12.8
10/05/2020 20:22	0.0	0.0	18.9	5	0	0	1018	1018	0	12.8
10/05/2020 21:22	0.0	0.0	18.9	4.9	0	0	1019	1019	0	12.8
10/05/2020 22:22	0.0	0.0	19.0	4.6	0	0	1019	1019	0	12.8
10/05/2020 23:22	0.0	0.0	19.0	5.7	0	0	1020	1020	0	12.8
11/05/2020 00:22	0.0	0.0	19.0	5.5	0	0	1020	1020	0	12.7
11/05/2020 01:22	0.0	0.0	19.0	6.1	0	0	1020	1020	0	12.6
11/05/2020 02:22	0.0	0.0	19.0	6.1	0	0	1020	1020	0	12.5
11/05/2020 03:22	0.0	0.0	19.0	6	0	0	1020	1020	0	12.4
11/05/2020 04:22	0.0	0.0	19.0	7.2	0	0	1020	1020	0	12.4
11/05/2020 05:22	0.0	0.0	19.0	7.3	0	0	1021	1021	0	12.3
11/05/2020 06:22	0.0	0.0	19.0	7.3	0	0	1021	1021	0	12.2
11/05/2020 07:22	0.0	0.0	19.0	7	0	0	1021	1021	0	12.1
11/05/2020 08:22	0.0	0.0	19.0	7.6	0	0	1022	1022	0	12.0
11/05/2020 09:22	0.0	0.0	19.0	10.5	0	0	1022	1022	0	11.9
11/05/2020 10:22	0.0	0.0	19.0	16.7	0	0	1022	1022	0	11.9
11/05/2020 11:22	0.0	0.0	19.0	20.3	0	0	1022	1022	0	11.8
11/05/2020 12:22	0.0	0.0	19.0	16.8	0	0	1023	1022	1	11.8
11/05/2020 13:22	0.0	0.0	19.0	17.6	0	0	1022	1022	0	11.8
11/05/2020 14:22	0.0	0.0	19.0	16.6	0	0	1022	1022	0	11.8
11/05/2020 15:22	0.0	0.0	19.0	15.5	0	0	1022	1022	0	11.8
11/05/2020 16:22	0.0	0.0	19.0	15.2	0	0	1022	1022	0	11.8
11/05/2020 17:22	0.0	0.0	19.0	14.8	0	0	1022	1022	0	11.9
11/05/2020 18:22	0.0	0.0	19.0	15.2	0	0	1022	1022	0	11.9
11/05/2020 19:22	0.0	0.0	19.0	13	0	0	1022	1022	0	12.0
11/05/2020 20:22	0.0	0.0	19.0	11.7	0	0	1022	1022	0	12.0
11/05/2020 21:22	0.0	0.0	19.1	10.1	0	0	1022	1022	0	12.1
11/05/2020 22:22	0.0	0.0	19.1	9.8	0	0	1022	1022	0	12.1
11/05/2020 23:22	0.0	0.0	19.1	10.3	0	0	1022	1022	0	12.1
12/05/2020 00:22	0.0	0.0	19.1	10.8	0	0	1022	1022	0	12.1
12/05/2020 01:22	0.0	0.0	19.1	9.9	0	0	1022	1022	0	12.0
12/05/2020 02:22	0.0	0.0	19.1	11.7	0	0	1021	1021	0	11.9
12/05/2020 03:22	0.0	0.0	19.1	11.5	0	0	1021	1021	0	11.9
12/05/2020 04:22	0.0	0.0	19.1	11.6	0	0	1021	1021	0	11.8
12/05/2020 05:22	0.0	0.0	19.0	12.2	0	0	1021	1021	0	11.7
12/05/2020 06:22	0.0	0.0	19.0	12.1	0	0	1020	1020	0	11.6
12/05/2020 07:22	0.0	0.0	19.0	13	0	0	1020	1020	0	11.5
12/05/2020 08:22	0.0	0.0	19.0	15.1	0	0	1020	1019	1	11.4
12/05/2020 09:22	0.0	0.0	18.9	19.3	0	0	1019	1019	0	11.4
12/05/2020 10:22	0.0	0.0	18.9	15.9	0	0	1019	1019	0	11.3
12/05/2020 11:22	0.0	0.0	18.9	16.4	0	0	1018	1018	0	11.3
12/05/2020 12:22	0.0	0.0	18.9	18.1	0	0	1018	1018	0	11.3
12/05/2020 13:22	0.0	0.0	18.9	15.9	0	0	1017	1017	0	11.3
12/05/2020 14:22	0.0	0.0	18.9	15.1	0	0	1016	1016	0	11.3
12/05/2020 15:22	0.0	0.0	18.9	15.3	0	0	1016	1016	0	11.3
12/05/2020 16:22	0.0	0.0	18.9	17	0	0	1016	1016	0	11.3
12/05/2020 17:22	0.0	0.0	18.9	16.3	0	0	1015	1015	0	11.3
12/05/2020 18:22	0.0	0.0	18.9	15.7	0	0	1014	1014	0	11.3
12/05/2020 19:22	0.0	0.0	18.9	16.1	0	0	1014	1014	0	11.3
12/05/2020 20:22	0.0	0.0	18.9	14.8	0	0	1014	1014	0	11.4
12/05/2020 21:22	0.0	0.0	18.9	17.5	0	0	1014	1014	0	11.4
12/05/2020 22:22	0.0	0.0	18.9	13.4	0	0	1014	1014	0	11.4
12/05/2020 23:22	0.0	0.0	18.9	13.4	0	0	1014	1014	0	11.4
13/05/2020 00:22	0.0	0.0	19.0	14.2	0	0	1014	1014	0	11.4
13/05/2020 01:22	0.0	0.0	19.0	18.3	0	0	1015	1015	0	11.3
13/05/2020 02:22	0.0	0.0	19.0	15.6	0	0	1015	1015	0	11.3
13/05/2020 03:22	0.0	0.0	19.0	19.2	0	0	1015	1015	0	11.3
13/05/2020 04:22	0.0	0.0	19.0	15.7	0	0	1015	1015	0	11.3
13/05/2020 05:22	0.0	0.0	19.0	17.1	0	0	1016	1016	0	11.2
13/05/2020 06:22	0.0	0.0	19.0	21.5	0	0	1016	1016	0	11.1
13/05/2020 07:22	0.0	0.0	19.0	25.4	0	0	1017	1017	0	11.1
13/05/2020 08:22	0.0	0.0	19.0	23.6	0	0	1017	1017	0	11.1
13/05/2020 09:22	0.0	0.0	18.9	19.5	0	0	1017	1017	0	11.0
13/05/2020 10:22	0.0	0.0	18.9	20.4	0	0	1017	1017	0	11.0
13/05/2020 11:22	0.0	0.0	18.9	20.6	0	0	1017	1017	0	11.0
13/05/2020 12:22	0.0	0.0	18.9	19.2	0	0	1017	1017	0	11.0
13/05/2020 13:22	0.0	0.0	18.9	21.4	0	0	1017	1017	0	11.1
13/05/2020 14:22	0.0	0.0	18.9	20.4	0	0	1017	1017	0	11.1
13/05/2020 15:22	0.0	0.0	18.9	20.9	0	0	1017	1017	0	11.2
13/05/2020 16:22	0.0	0.0	18.9	23.3	0	0	1017	1017	0	11.3
13/05/2020 17:22	0.0	0.0	18.9	21.2	0	0	1017	1017	0	11.3
13/05/2020 18:22	0.0	0.0	18.9	20.3	0	0	1018	1018	0	11.4
13/05/2020 19:22	0.0	0.0	18.9	20.9	0	0	1018	1018	0	11.4
13/05/2020 20:22	0.0	0.0	19.0	18.1	0	0	1019	1019	0	11.5
13/05/2020 21:22	0.0	0.0	19.0	19.2	0	0	1020	1019	1	11.6
13/05/2020 22:22	0.0	0.0	19.0	15.8	0	0	1020	1020	0	11.6
13/05/2020 23:22	0.0	0.0	19.0	16.4	0	0	1021	1021	0	11.6
14/05/2020 00:22	0.0	0.0	19.0	16.3	0	0	1021	1021	0	11.6
14/05/2020 01:22	0.0	0.0	19.0	15.8	0	0	1021	1021	0	11.5
14/05/2020 02:22	0.0	0.0	19.0	17.3	0	0	1021	1022	-1	11.4

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
14/05/2020 03:22	0.0	0.0	19.0	17.6	0	0	1022	1022	0	11.4
14/05/2020 04:22	0.0	0.0	19.0	18.2	0	0	1022	1022	0	11.3
14/05/2020 05:22	0.0	0.0	19.0	21.5	0	0	1022	1022	0	11.3
14/05/2020 06:22	0.0	0.0	19.0	18	0	0	1022	1022	0	11.2
14/05/2020 07:22	0.0	0.0	19.0	22.4	0	0	1022	1022	0	11.1
14/05/2020 08:22	0.0	0.0	18.9	22.2	0	0	1023	1022	1	11.0
14/05/2020 09:22	0.0	0.0	18.9	25.5	0	0	1022	1022	0	10.9
14/05/2020 10:22	0.0	0.0	18.9	29.8	0	0	1022	1022	0	10.8
14/05/2020 11:22	0.0	0.0	18.9	30.7	0	0	1022	1022	0	10.8
14/05/2020 12:22	0.0	0.0	18.8	27.2	0	0	1022	1022	0	10.8
14/05/2020 13:22	0.0	0.0	18.8	29.8	0	0	1021	1021	0	10.9
14/05/2020 14:22	0.0	0.0	18.8	29.7	0	0	1021	1021	0	10.9
14/05/2020 15:22	0.0	0.0	18.8	31.5	0	0	1020	1020	0	11.1
14/05/2020 16:22	0.0	0.0	18.8	27.1	0	0	1020	1020	0	11.2
14/05/2020 17:22	0.0	0.0	18.8	25.8	0	0	1020	1020	0	11.3
14/05/2020 18:22	0.0	0.0	18.9	24.7	0	0	1020	1020	0	11.4
14/05/2020 19:22	0.0	0.0	18.9	24.2	0	0	1020	1020	0	11.6
14/05/2020 20:22	0.0	0.0	19.0	20.1	0	0	1020	1020	0	11.7
14/05/2020 21:22	0.0	0.0	19.0	18.2	0	0	1021	1021	0	11.8
14/05/2020 22:22	0.0	0.0	19.0	16.7	0	0	1021	1021	0	11.8
14/05/2020 23:22	0.0	0.0	19.1	15.6	0	0	1021	1021	0	11.8
15/05/2020 00:22	0.0	0.0	19.1	15.1	0	0	1021	1021	0	11.8
15/05/2020 01:22	0.0	0.0	19.1	13.8	0	0	1021	1021	0	11.8
15/05/2020 02:22	0.0	0.0	19.1	13.7	0	0	1021	1021	0	11.7
15/05/2020 03:22	0.0	0.0	19.1	14.8	0	0	1021	1021	0	11.6
15/05/2020 04:22	0.0	0.0	19.0	14.2	0	0	1021	1021	0	11.6
15/05/2020 05:22	0.0	0.0	19.0	15.1	0	0	1021	1021	0	11.5
15/05/2020 06:22	0.0	0.0	19.0	15	0	0	1022	1022	0	11.4
15/05/2020 07:22	0.0	0.0	19.0	14.3	0	0	1022	1022	0	11.4
15/05/2020 08:22	0.0	0.0	19.0	15.2	0	0	1022	1022	0	11.3
15/05/2020 09:22	0.0	0.0	19.0	15.7	0	0	1022	1022	0	11.2
15/05/2020 10:22	0.0	0.0	18.9	27.2	0	0	1022	1022	0	11.1
15/05/2020 11:22	0.0	0.0	18.9	15.7	0	0	1022	1022	0	11.1
15/05/2020 12:22	0.0	0.0	18.9	22.8	0	0	1022	1022	0	11.1
15/05/2020 13:22	0.0	0.0	18.9	17	0	0	1022	1022	0	11.1
15/05/2020 14:22	0.0	0.0	18.9	16.7	0	0	1022	1022	0	11.2
15/05/2020 15:22	0.0	0.0	18.9	17.7	0	0	1022	1022	0	11.3
15/05/2020 16:22	0.0	0.0	18.9	16.7	0	0	1022	1022	0	11.3
15/05/2020 17:22	0.0	0.0	18.9	16.2	0	0	1022	1022	0	11.4
15/05/2020 18:22	0.0	0.0	18.9	16.7	0	0	1022	1022	0	11.4
15/05/2020 19:22	0.0	0.0	18.9	18.1	0	0	1022	1022	0	11.6
15/05/2020 20:22	0.0	0.0	18.9	16.3	0	0	1022	1022	0	11.6
15/05/2020 21:22	0.0	0.0	18.9	17	0	0	1022	1022	0	11.6
15/05/2020 22:22	0.0	0.0	18.9	17	0	0	1022	1022	0	11.6
15/05/2020 23:22	0.0	0.0	19.0	16.6	0	0	1022	1022	0	11.6
16/05/2020 00:22	0.0	0.0	19.0	16.3	0	0	1022	1022	0	11.6
16/05/2020 01:22	0.0	0.0	19.0	17	0	0	1022	1022	0	11.6
16/05/2020 02:22	0.0	0.0	19.0	17	0	0	1021	1021	0	11.5
16/05/2020 03:22	0.0	0.0	19.0	17.3	0	0	1021	1021	0	11.4
16/05/2020 04:22	0.0	0.0	18.9	18.1	0	0	1021	1021	0	11.4
16/05/2020 05:22	0.0	0.0	18.9	18.5	0	0	1021	1021	0	11.4
16/05/2020 06:22	0.0	0.0	18.9	18.1	0	0	1021	1021	0	11.3
16/05/2020 07:22	0.0	0.0	18.9	19.5	0	0	1021	1021	0	11.3
16/05/2020 08:22	0.0	0.0	18.9	19.3	0	0	1021	1021	0	11.2
16/05/2020 09:22	0.0	0.0	18.9	19.8	0	0	1021	1021	0	11.1
16/05/2020 10:22	0.0	0.0	18.8	19.9	0	0	1021	1021	0	11.1
16/05/2020 11:22	0.0	0.0	18.8	20.1	0	0	1021	1021	0	11.1
16/05/2020 12:22	0.0	0.0	18.8	20.9	0	0	1021	1021	0	11.1
16/05/2020 13:22	0.0	0.0	18.8	20.3	0	0	1021	1021	0	11.1
16/05/2020 14:22	0.0	0.0	18.8	20.9	0	0	1020	1021	-1	11.1
16/05/2020 15:22	0.0	0.0	18.8	20.7	0	0	1020	1021	-1	11.1
16/05/2020 16:22	0.0	0.0	18.8	18.7	0	0	1020	1020	0	11.3
16/05/2020 17:22	0.0	0.0	18.8	18.5	0	0	1020	1020	0	11.3
16/05/2020 18:22	0.0	0.0	18.8	16.2	0	0	1020	1020	0	11.4
16/05/2020 19:22	0.0	0.0	18.8	15.7	0	0	1020	1020	0	11.5
16/05/2020 20:22	0.0	0.0	18.8	14.3	0	0	1020	1020	0	11.6
16/05/2020 21:22	0.0	0.0	18.9	13	0	0	1020	1020	0	11.6
16/05/2020 22:22	0.0	0.0	18.9	12.4	0	0	1021	1021	0	11.6
16/05/2020 23:22	0.0	0.0	18.9	10.9	0	0	1021	1021	0	11.7
17/05/2020 00:22	0.0	0.0	18.9	10	0	0	1020	1020	0	11.7
17/05/2020 01:22	0.0	0.0	18.9	9.6	0	0	1020	1020	0	11.7
17/05/2020 02:22	0.0	0.0	18.9	9.3	0	0	1020	1020	0	11.6
17/05/2020 03:22	0.0	0.0	18.9	8.8	0	0	1020	1020	0	11.6
17/05/2020 04:22	0.0	0.0	18.9	9.1	0	0	1020	1020	0	11.6
17/05/2020 05:22	0.0	0.0	18.9	9.3	0	0	1020	1020	0	11.6
17/05/2020 06:22	0.0	0.0	18.9	9.2	0	0	1020	1020	0	11.6
17/05/2020 07:22	0.0	0.0	18.9	10	0	0	1020	1020	0	11.5
17/05/2020 08:22	0.0	0.0	19.0	9.8	0	0	1020	1020	0	11.5
17/05/2020 09:22	0.0	0.0	18.9	12.1	0	0	1020	1020	0	11.4
17/05/2020 10:22	0.0	0.0	18.9	15	0	0	1020	1019	1	11.4
17/05/2020 11:22	0.0	0.0	18.8	18.5	0	0	1020	1019	1	11.4
17/05/2020 12:22	0.0	0.0	18.8	11.3	0	0	1020	1020	0	11.5
17/05/2020 13:22	0.0	0.0	18.9	10.7	0	0	1020	1019	1	11.6
17/05/2020 14:22	0.0	0.0	18.9	10.5	0	0	1019	1019	0	11.6
17/05/2020 15:22	0.0	0.0	18.9	10.1	0	0	1019	1019	0	11.7
17/05/2020 16:22	0.0	0.0	18.9	10.9	0	0	1019	1019	0	11.8
17/05/2020 17:22	0.0	0.0	18.9	10	0	0	1019	1019	0	11.8
17/05/2020 18:22	0.0	0.0	18.9	9.7	0	0	1018	1018	0	11.9
17/05/2020 19:22	0.0	0.0	19.0	9.6	0	0	1018	1018	0	11.9
17/05/2020 20:22	0.0	0.0	19.0	8.3	0	0	1018	1018	0	12.0
17/05/2020 21:22	0.0	0.0	19.0	8.3	0	0	1019	1019	0	12.1
17/05/2020 22:22	0.0	0.0	19.0	7.6	0	0	1019	1019	0	12.1
17/05/2020 23:22	0.0	0.0	19.1	7.5	0	0	1019	1019	0	12.1
18/05/2020 00:22	0.0	0.0	19.1	7.6	0	0	1019	1019	0	12.1
18/05/2020 01:22	0.0	0.0	19.1	7.5	0	0	1018	1018	0	12.1
18/05/2020 02:22	0.0	0.0	19.1	7.5	0	0	1018	1018	0	12.1
18/05/2020 03:22	0.0	0.0	19.1	7.3	0	0	1018	1018	0	12.1
18/05/2020 04:22	0.0	0.0	19.1	7	0	0	1018	1018	0	12.1
18/05/2020 05:22	0.0	0.0	19.1	7.2	0	0	1018	1018	0	12.0
18/05/2020 06:22	0.0	0.0	19.1	7.2	0	0	1018	1018	0	12.0
18/05/2020 07:22	0.0	0.0	19.1	7.2	0	0	1019	1019	0	11.9
18/05/2020 08:22	0.0	0.0	19.2	7.6	0	0	1019	1019	0	11.9
18/05/2020 09:22	0.0	0.0	19.1	7.6	0	0	1019	1019	0	11.9
18/05/2020 10:22	0.0	0.0	19.1	7.9	0	0	1019	1019	0	11.9
18/05/2020 11:22	0.0	0.0	19.1	8.3	0	0	1019	1019	0	11.8
18/05/2020 12:22	0.0	0.0	19.1	8.4	0	0	1019	1019	0	11.8
18/05/2020 13:22	0.0	0.0	19.0	9.1	0	0	1019	1019	0	11.9
18/05/2020 14:22	0.0	0.0	19.0	8.7	0	0	1019	1019	0	11.9
18/05/2020 15:22	0.0	0.0	19.1	8.7	0	0	1019	1019	0	11.9
18/05/2020 16:22	0.0	0.0	19.1	8.2	0	0	1019	1019	0	11.9
18/05/2020 17:22	0.0	0.0	19.1	8	0	0	1019	1019	0	12.0
18/05/2020 18:22	0.0	0.0	19.1	8	0	0	1019	1019	0	12.0
18/05/2020 19:22	0.0	0.0	19.1	7.3	0	0	1019	1019	0	12.1
18/05/2020 20:22	0.0	0.0	19.1	7.9	0	0	1019	1019	0	12.1

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
18/05/2020 21:22	0.0	0.0	19.1	7.6	0	0	1019	1019	0	12.1
18/05/2020 22:22	0.0	0.0	19.1	7.7	0	0	1019	1019	0	12.1
18/05/2020 23:22	0.0	0.0	19.2	7.9	0	0	1019	1019	0	12.1
19/05/2020 00:22	0.0	0.0	19.2	7.9	0	0	1019	1019	0	12.1
19/05/2020 01:22	0.0	0.0	19.2	7.9	0	0	1019	1019	0	12.1
19/05/2020 02:22	0.0	0.0	19.2	8.2	0	0	1019	1019	0	12.1
19/05/2020 03:22	0.0	0.0	19.2	8.9	0	0	1018	1018	0	12.1
19/05/2020 04:22	0.0	0.0	19.2	9	0	0	1018	1018	0	12.1
19/05/2020 05:22	0.0	0.0	19.2	9.3	0	0	1018	1018	0	12.1
19/05/2020 06:22	0.0	0.0	19.2	9	0	0	1018	1018	0	12.1
19/05/2020 07:22	0.0	0.0	19.2	9.3	0	0	1019	1019	0	12.1
19/05/2020 08:22	0.0	0.0	19.2	9.3	0	0	1019	1019	0	12.1
19/05/2020 09:22	0.0	0.0	19.2	10	0	0	1019	1019	0	12.0
19/05/2020 10:22	0.0	0.0	19.1	10.3	0	0	1020	1019	1	12.0
19/05/2020 11:22	0.0	0.0	19.1	10.6	0	0	1020	1020	0	12.0
19/05/2020 12:22	0.0	0.0	19.1	10.7	0	0	1020	1020	0	12.0
19/05/2020 13:22	0.0	0.0	19.1	10.1	0	0	1020	1020	0	12.1
19/05/2020 14:22	0.0	0.0	19.1	10.3	0	0	1020	1019	1	12.1
19/05/2020 15:22	0.0	0.0	19.1	9.8	0	0	1019	1019	0	12.1
19/05/2020 16:22	0.0	0.0	19.1	10.5	0	0	1020	1019	1	12.2
19/05/2020 17:22	0.0	0.0	19.1	9.7	0	0	1020	1020	0	12.3
19/05/2020 18:22	0.0	0.0	19.1	9	0	0	1020	1019	1	12.4
19/05/2020 19:22	0.0	0.0	19.1	8.8	0	0	1020	1019	1	12.5
19/05/2020 20:22	0.0	0.0	19.2	8.1	0	0	1020	1019	1	12.6
19/05/2020 21:22	0.0	0.0	19.2	9	0	0	1020	1020	0	12.7
19/05/2020 22:22	0.0	0.0	19.2	7.9	0	0	1020	1020	0	12.7
19/05/2020 23:22	0.0	0.0	19.2	7.4	0	0	1020	1020	0	12.8
20/05/2020 00:22	0.0	0.0	19.2	7.2	0	0	1020	1020	0	12.8
20/05/2020 01:22	0.0	0.0	19.2	7.2	0	0	1020	1020	0	12.7
20/05/2020 02:22	0.0	0.0	19.2	7.2	0	0	1020	1020	0	12.7
20/05/2020 03:22	0.0	0.0	19.2	7.2	0	0	1019	1019	0	12.7
20/05/2020 04:22	0.0	0.0	19.2	7.2	0	0	1019	1019	0	12.6
20/05/2020 05:22	0.0	0.0	19.2	7.7	0	0	1019	1019	0	12.6
20/05/2020 06:22	0.0	0.0	19.2	7.7	0	0	1019	1019	0	12.5
20/05/2020 07:22	0.0	0.0	19.2	8	0	0	1019	1019	0	12.4
20/05/2020 08:22	0.0	0.0	19.2	7.7	0	0	1019	1019	0	12.4
20/05/2020 09:22	0.0	0.0	19.1	8.2	0	0	1019	1019	0	12.4
20/05/2020 10:22	0.0	0.0	19.1	8.1	0	0	1018	1018	0	12.3
20/05/2020 11:22	0.0	0.0	19.1	8.8	0	0	1017	1017	0	12.3
20/05/2020 12:22	0.0	0.0	19.2	9	0	0	1017	1017	0	12.4
20/05/2020 13:22	0.0	0.0	19.2	8.5	0	0	1017	1016	1	12.4
20/05/2020 14:22	0.0	0.0	19.2	8.3	0	0	1016	1016	0	12.5
20/05/2020 15:22	0.0	0.0	19.2	7.9	0	0	1016	1016	0	12.7
20/05/2020 16:22	0.0	0.0	19.2	7.2	0	0	1015	1015	0	12.9
20/05/2020 17:22	0.0	0.0	19.2	6.7	0	0	1015	1015	0	13.1
20/05/2020 18:22	0.0	0.0	19.2	6.3	0	0	1014	1014	0	13.2
20/05/2020 19:22	0.0	0.0	19.3	5.6	0	0	1014	1014	0	13.4
20/05/2020 20:22	0.0	0.0	19.3	5.4	0	0	1014	1014	0	13.5
20/05/2020 21:22	0.0	0.0	19.3	5	0	0	1015	1015	0	13.6
20/05/2020 22:22	0.0	0.0	19.3	4.8	0	0	1015	1015	0	13.6
20/05/2020 23:22	0.0	0.0	19.3	4.7	0	0	1015	1015	0	13.7
21/05/2020 00:22	0.0	0.0	19.3	4.4	0	0	1015	1015	0	13.7
21/05/2020 01:22	0.0	0.0	19.3	4.3	0	0	1015	1015	0	13.6
21/05/2020 02:22	0.0	0.0	19.3	4.3	0	0	1015	1015	0	13.6
21/05/2020 03:22	0.0	0.0	19.3	4.3	0	0	1015	1015	0	13.6
21/05/2020 04:22	0.0	0.0	19.3	4.6	0	0	1015	1015	0	13.5
21/05/2020 05:22	0.0	0.0	19.3	4.7	0	0	1015	1015	0	13.4
21/05/2020 06:22	0.0	0.0	19.3	5	0	0	1015	1015	0	13.4
21/05/2020 07:22	0.0	0.0	19.3	5.2	0	0	1016	1016	0	13.3
21/05/2020 08:22	0.0	0.0	20.4	2	0	0	1016	1016	0	13.6

GGS Time Series Data

Experts in Continuous Monitoring

Project Ref:	GGS 2230
Location:	Ryebank Fields, Chorlton
Borehole ref:	WS108
GasClam ID:	340.06.12
Start Date:	30/04/2020 16:20
End Date:	21/05/2020 08:20

Days of monitoring:	21
Monitoring Frequency (mins):	90
Total samples taken:	497

Minimum, Maximum and Range Table

	CH_4	CO_2	O_2	TVOC	H_2S	CO	Borehole Pressure	Atmospheric Pressure	Differential Pressure	Temperature
Minimum	0.0	2.8	14.2	0	0	0	986	985	0	9.9
Maximum	0.0	4.4	17.1	0	0	0	1023	1023	1	13.6
Range	0.0	1.6	2.9	0	0	0	37	38	N/A	3.7

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
30/04/2020 16:20	0.0	2.8	16.3	0	0	0	986	985	1	13.6
30/04/2020 17:20	0.0	3.3	15.2	0	0	0	986	985	1	11.4
30/04/2020 18:20	0.0	3.3	15.0	0	0	0	986	986	0	10.6
30/04/2020 19:20	0.0	3.9	14.7	0	0	0	987	986	1	10.3
30/04/2020 20:20	0.0	3.3	15.0	0	0	0	987	987	0	10.2
30/04/2020 21:20	0.0	3.9	14.8	0	0	0	988	987	1	10.1
30/04/2020 22:20	0.0	3.3	14.9	0	0	0	988	987	1	10.1
30/04/2020 23:20	0.0	3.9	14.8	0	0	0	988	988	0	10.1
01/05/2020 00:20	0.0	3.9	14.6	0	0	0	988	988	0	10.1
01/05/2020 01:20	0.0	3.9	14.7	0	0	0	988	988	0	10.1
01/05/2020 02:20	0.0	3.9	14.7	0	0	0	988	988	0	10.1
01/05/2020 03:20	0.0	3.9	15.1	0	0	0	989	988	1	10.1
01/05/2020 04:20	0.0	3.3	15.3	0	0	0	989	989	0	10.1
01/05/2020 05:20	0.0	3.3	15.4	0	0	0	990	989	1	10.1
01/05/2020 06:20	0.0	3.3	15.4	0	0	0	990	990	0	10.0
01/05/2020 07:20	0.0	3.3	15.4	0	0	0	991	990	1	10.0
01/05/2020 08:20	0.0	3.3	15.3	0	0	0	991	991	0	10.0
01/05/2020 09:20	0.0	3.9	15.1	0	0	0	992	992	0	10.0
01/05/2020 10:20	0.0	3.9	14.8	0	0	0	992	992	0	9.9
01/05/2020 11:20	0.0	3.9	14.6	0	0	0	993	992	1	9.9
01/05/2020 12:20	0.0	3.9	14.5	0	0	0	993	993	0	9.9
01/05/2020 13:20	0.0	3.9	14.4	0	0	0	994	993	1	9.9
01/05/2020 14:20	0.0	3.9	14.5	0	0	0	994	994	0	9.9
01/05/2020 15:20	0.0	3.9	14.4	0	0	0	995	995	0	10.0
01/05/2020 16:20	0.0	3.9	14.5	0	0	0	995	995	0	10.0
01/05/2020 17:20	0.0	3.9	14.4	0	0	0	996	995	1	10.1
01/05/2020 18:20	0.0	3.9	14.5	0	0	0	996	996	0	10.1
01/05/2020 19:20	0.0	3.9	14.6	0	0	0	997	997	0	10.1
01/05/2020 20:20	0.0	3.9	15.0	0	0	0	998	997	1	10.1
01/05/2020 21:20	0.0	3.3	15.5	0	0	0	998	998	0	10.2
01/05/2020 22:20	0.0	3.3	15.7	0	0	0	998	998	0	10.2
01/05/2020 23:20	0.0	3.3	15.8	0	0	0	999	999	0	10.2
02/05/2020 00:20	0.0	3.3	15.8	0	0	0	999	999	0	10.2
02/05/2020 01:20	0.0	3.3	15.8	0	0	0	1000	999	1	10.2
02/05/2020 02:20	0.0	3.3	16.0	0	0	0	1000	1000	0	10.1
02/05/2020 03:20	0.0	3.3	16.0	0	0	0	1001	1000	1	10.1
02/05/2020 04:20	0.0	3.3	16.0	0	0	0	1002	1001	1	10.1
02/05/2020 05:20	0.0	3.3	16.0	0	0	0	1002	1002	0	10.1
02/05/2020 06:20	0.0	3.3	16.1	0	0	0	1003	1002	1	10.1
02/05/2020 07:20	0.0	3.3	16.1	0	0	0	1003	1003	0	10.1
02/05/2020 08:20	0.0	3.3	15.9	0	0	0	1004	1003	1	10.0
02/05/2020 09:20	0.0	3.3	15.6	0	0	0	1005	1004	1	10.0
02/05/2020 10:20	0.0	3.3	15.7	0	0	0	1005	1005	0	10.0
02/05/2020 11:20	0.0	3.3	15.6	0	0	0	1006	1005	1	9.9
02/05/2020 12:20	0.0	3.9	15.0	0	0	0	1006	1006	0	9.9
02/05/2020 13:20	0.0	3.9	14.8	0	0	0	1007	1006	1	9.9
02/05/2020 14:20	0.0	3.9	14.8	0	0	0	1008	1007	1	10.0
02/05/2020 15:20	0.0	3.9	14.6	0	0	0	1008	1008	0	10.0
02/05/2020 16:20	0.0	3.9	15.1	0	0	0	1008	1008	0	10.0
02/05/2020 17:20	0.0	3.9	15.0	0	0	0	1008	1008	0	10.1
02/05/2020 18:20	0.0	3.9	14.9	0	0	0	1009	1008	1	10.1
02/05/2020 19:20	0.0	3.9	15.0	0	0	0	1009	1009	0	10.1
02/05/2020 20:20	0.0	3.9	15.1	0	0	0	1010	1010	0	10.1
02/05/2020 21:20	0.0	3.3	15.7	0	0	0	1010	1010	0	10.2
02/05/2020 22:20	0.0	3.3	16.0	0	0	0	1010	1010	0	10.2
02/05/2020 23:20	0.0	3.3	16.1	0	0	0	1011	1010	1	10.2
03/05/2020 00:20	0.0	3.3	16.2	0	0	0	1010	1010	0	10.2
03/05/2020 01:20	0.0	3.3	16.3	0	0	0	1011	1011	0	10.2
03/05/2020 02:20	0.0	3.3	16.3	0	0	0	1011	1011	0	10.2
03/05/2020 03:20	0.0	3.3	16.3	0	0	0	1011	1011	0	10.2
03/05/2020 04:20	0.0	3.3	16.3	0	0	0	1011	1011	0	10.1
03/05/2020 05:20	0.0	3.3	16.3	0	0	0	1011	1010	1	10.1
03/05/2020 06:20	0.0	3.3	16.3	0	0	0	1011	1011	0	10.1
03/05/2020 07:20	0.0	3.3	16.3	0	0	0	1011	1011	0	10.1
03/05/2020 08:20	0.0	3.3	16.4	0	0	0	1012	1011	1	10.1
03/05/2020 09:20	0.0	3.3	16.3	0	0	0	1012	1012	0	10.0
03/05/2020 10:20	0.0	3.3	16.1	0	0	0	1013	1012	1	10.0
03/05/2020 11:20	0.0	3.3	15.8	0	0	0	1013	1012	1	10.0
03/05/2020 12:20	0.0	3.3	16.1	0	0	0	1013	1012	1	9.9
03/05/2020 13:20	0.0	3.3	16.4	0	0	0	1012	1012	0	9.9
03/05/2020 14:20	0.0	3.3	16.3	0	0	0	1012	1011	1	9.9
03/05/2020 15:20	0.0	3.3	16.2	0	0	0	1012	1011	1	10.0
03/05/2020 16:20	0.0	3.3	16.2	0	0	0	1012	1011	1	10.0
03/05/2020 17:20	0.0	3.3	16.2	0	0	0	1012	1012	0	10.0
03/05/2020 18:20	0.0	3.3	16.2	0	0	0	1012	1011	1	10.1
03/05/2020 19:20	0.0	3.3	16.1	0	0	0	1012	1011	1	10.1
03/05/2020 20:20	0.0	3.3	16.3	0	0	0	1012	1012	0	10.1
03/05/2020 21:20	0.0	3.3	16.4	0	0	0	1013	1012	1	10.1
03/05/2020 22:20	0.0	3.3	16.4	0	0	0	1013	1013	0	10.2
03/05/2020 23:20	0.0	3.3	16.4	0	0	0	1013	1013	0	10.2
04/05/2020 00:20	0.0	3.3	16.4	0	0	0	1014	1013	1	10.2
04/05/2020 01:20	0.0	3.3	16.4	0	0	0	1014	1014	0	10.2
04/05/2020 02:20	0.0	3.3	16.4	0	0	0	1014	1014	0	10.2
04/05/2020 03:20	0.0	3.3	16.5	0	0	0	1014	1014	0	10.2
04/05/2020 04:20	0.0	3.3	16.5	0	0	0	1014	1014	0	10.2
04/05/2020 05:20	0.0	3.3	16.5	0	0	0	1015	1014	1	10.1
04/05/2020 06:20	0.0	3.3	16.5	0	0	0	1015	1015	0	10.1
04/05/2020 07:20	0.0	2.8	16.6	0	0	0	1016	1015	1	10.1
04/05/2020 08:20	0.0	2.8	16.7	0	0	0	1016	1016	0	10.1
04/05/2020 09:20	0.0	2.8	16.7	0	0	0	1017	1016	1	10.1
04/05/2020 10:20	0.0	2.8	16.7	0	0	0	1017	1017	0	10.1
04/05/2020 11:20	0.0	2.8	16.6	0	0	0	1017	1017	0	10.1
04/05/2020 12:20	0.0	2.8	16.6	0	0	0	1017	1017	0	10.1
04/05/2020 13:20	0.0	2.8	16.6	0	0	0	1018	1017	1	10.1
04/05/2020 14:20	0.0	2.8	16.6	0	0	0	1018	1017	1	10.1
04/05/2020 15:20	0.0	2.8	16.6	0	0	0	1018	1017	1	10.1

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
04/05/2020 16:20	0.0	3.3	16.5	0	0	0	1018	1018	0	10.2
04/05/2020 17:20	0.0	3.3	16.5	0	0	0	1018	1017	1	10.2
04/05/2020 18:20	0.0	3.3	16.5	0	0	0	1018	1017	1	10.3
04/05/2020 19:20	0.0	3.3	16.5	0	0	0	1018	1018	0	10.3
04/05/2020 20:20	0.0	3.3	16.5	0	0	0	1018	1018	0	10.3
04/05/2020 21:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.3
04/05/2020 22:20	0.0	3.3	16.6	0	0	0	1020	1019	1	10.4
04/05/2020 23:20	0.0	3.3	16.6	0	0	0	1020	1020	0	10.4
05/05/2020 00:20	0.0	3.3	16.6	0	0	0	1020	1019	1	10.4
05/05/2020 01:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.4
05/05/2020 02:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.4
05/05/2020 03:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.4
05/05/2020 04:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.3
05/05/2020 05:20	0.0	3.3	16.6	0	0	0	1019	1018	1	10.3
05/05/2020 06:20	0.0	3.3	16.6	0	0	0	1019	1018	1	10.3
05/05/2020 07:20	0.0	3.3	16.6	0	0	0	1019	1018	1	10.3
05/05/2020 08:20	0.0	3.3	16.6	0	0	0	1019	1018	1	10.3
05/05/2020 09:20	0.0	3.3	16.5	0	0	0	1019	1019	0	10.3
05/05/2020 10:20	0.0	3.3	16.5	0	0	0	1019	1019	0	10.2
05/05/2020 11:20	0.0	3.3	16.5	0	0	0	1019	1019	0	10.2
05/05/2020 12:20	0.0	3.3	16.5	0	0	0	1019	1019	0	10.2
05/05/2020 13:20	0.0	3.3	16.4	0	0	0	1019	1019	0	10.2
05/05/2020 14:20	0.0	3.3	16.4	0	0	0	1019	1018	1	10.3
05/05/2020 15:20	0.0	3.3	16.4	0	0	0	1019	1018	1	10.3
05/05/2020 16:20	0.0	3.3	16.4	0	0	0	1019	1018	1	10.3
05/05/2020 17:20	0.0	3.3	16.4	0	0	0	1018	1018	0	10.4
05/05/2020 18:20	0.0	3.3	16.4	0	0	0	1019	1018	1	10.4
05/05/2020 19:20	0.0	3.3	16.4	0	0	0	1019	1019	0	10.4
05/05/2020 20:20	0.0	3.3	16.5	0	0	0	1020	1019	1	10.5
05/05/2020 21:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.6
05/05/2020 22:20	0.0	3.3	16.6	0	0	0	1021	1021	0	10.6
05/05/2020 23:20	0.0	3.3	16.6	0	0	0	1022	1021	1	10.6
06/05/2020 00:20	0.0	3.3	16.6	0	0	0	1022	1021	1	10.6
06/05/2020 01:20	0.0	3.3	16.5	0	0	0	1022	1021	1	10.6
06/05/2020 02:20	0.0	3.3	16.5	0	0	0	1022	1021	1	10.6
06/05/2020 03:20	0.0	3.3	16.5	0	0	0	1022	1022	0	10.6
06/05/2020 04:20	0.0	3.3	16.5	0	0	0	1022	1022	0	10.6
06/05/2020 05:20	0.0	3.3	16.5	0	0	0	1022	1022	0	10.5
06/05/2020 06:20	0.0	3.3	16.5	0	0	0	1023	1022	1	10.5
06/05/2020 07:20	0.0	3.3	16.5	0	0	0	1023	1023	0	10.4
06/05/2020 08:20	0.0	3.3	16.4	0	0	0	1023	1023	0	10.4
06/05/2020 09:20	0.0	3.3	16.6	0	0	0	1023	1023	0	10.4
06/05/2020 10:20	0.0	3.3	16.6	0	0	0	1023	1022	1	10.4
06/05/2020 11:20	0.0	3.3	16.5	0	0	0	1023	1022	1	10.4
06/05/2020 12:20	0.0	3.3	16.4	0	0	0	1023	1022	1	10.3
06/05/2020 13:20	0.0	3.3	16.4	0	0	0	1022	1022	0	10.3
06/05/2020 14:20	0.0	3.3	16.5	0	0	0	1022	1021	1	10.4
06/05/2020 15:20	0.0	3.3	16.3	0	0	0	1022	1021	1	10.4
06/05/2020 16:20	0.0	3.3	16.4	0	0	0	1021	1021	0	10.4
06/05/2020 17:20	0.0	3.3	16.1	0	0	0	1021	1020	1	10.5
06/05/2020 18:20	0.0	3.3	16.1	0	0	0	1021	1020	1	10.6
06/05/2020 19:20	0.0	3.3	16.0	0	0	0	1021	1020	1	10.6
06/05/2020 20:20	0.0	3.3	16.3	0	0	0	1021	1021	0	10.7
06/05/2020 21:20	0.0	3.3	16.4	0	0	0	1021	1021	0	10.7
06/05/2020 22:20	0.0	3.3	16.5	0	0	0	1021	1021	0	10.8
06/05/2020 23:20	0.0	3.3	16.5	0	0	0	1021	1021	0	10.8
07/05/2020 00:20	0.0	3.3	16.5	0	0	0	1021	1021	0	10.8
07/05/2020 01:20	0.0	3.3	16.5	0	0	0	1021	1021	0	10.8
07/05/2020 02:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.8
07/05/2020 03:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.8
07/05/2020 04:20	0.0	3.3	16.5	0	0	0	1020	1019	1	10.8
07/05/2020 05:20	0.0	3.3	16.5	0	0	0	1020	1019	1	10.7
07/05/2020 06:20	0.0	3.3	16.6	0	0	0	1020	1019	1	10.7
07/05/2020 07:20	0.0	3.3	16.5	0	0	0	1019	1019	0	10.7
07/05/2020 08:20	0.0	3.3	16.4	0	0	0	1019	1019	0	10.6
07/05/2020 09:20	0.0	3.3	16.2	0	0	0	1019	1018	1	10.6
07/05/2020 10:20	0.0	3.3	16.0	0	0	0	1019	1018	1	10.6
07/05/2020 11:20	0.0	3.9	15.8	0	0	0	1018	1018	0	10.6
07/05/2020 12:20	0.0	3.9	15.5	0	0	0	1018	1018	0	10.6
07/05/2020 13:20	0.0	3.9	15.3	0	0	0	1017	1017	0	10.6
07/05/2020 14:20	0.0	3.9	15.2	0	0	0	1017	1016	1	10.6
07/05/2020 15:20	0.0	3.9	15.2	0	0	0	1016	1016	0	10.6
07/05/2020 16:20	0.0	3.9	15.5	0	0	0	1016	1015	1	10.6
07/05/2020 17:20	0.0	3.9	15.4	0	0	0	1015	1015	0	10.7
07/05/2020 18:20	0.0	3.9	15.6	0	0	0	1015	1014	1	10.8
07/05/2020 19:20	0.0	3.9	15.7	0	0	0	1015	1014	1	10.8
07/05/2020 20:20	0.0	3.3	15.9	0	0	0	1015	1014	1	10.8
07/05/2020 21:20	0.0	3.3	15.8	0	0	0	1015	1014	1	10.9
07/05/2020 22:20	0.0	3.3	16.1	0	0	0	1015	1015	0	10.9
07/05/2020 23:20	0.0	3.3	16.2	0	0	0	1015	1015	0	10.9
08/05/2020 00:20	0.0	3.3	16.3	0	0	0	1015	1015	0	10.9
08/05/2020 01:20	0.0	3.3	16.3	0	0	0	1015	1015	0	11.0
08/05/2020 02:20	0.0	3.3	16.4	0	0	0	1015	1015	0	11.0
08/05/2020 03:20	0.0	3.3	16.4	0	0	0	1015	1014	1	11.0
08/05/2020 04:20	0.0	3.3	16.4	0	0	0	1015	1014	1	11.0
08/05/2020 05:20	0.0	3.3	16.5	0	0	0	1015	1014	1	11.0
08/05/2020 06:20	0.0	3.3	16.5	0	0	0	1015	1014	1	10.9
08/05/2020 07:20	0.0	3.3	16.5	0	0	0	1015	1014	1	10.9
08/05/2020 08:20	0.0	3.3	16.5	0	0	0	1015	1014	1	10.9
08/05/2020 09:20	0.0	3.3	16.4	0	0	0	1015	1014	1	10.9
08/05/2020 10:20	0.0	3.3	16.3	0	0	0	1015	1014	1	10.9
08/05/2020 11:20	0.0	3.3	16.2	0	0	0	1015	1014	1	10.9
08/05/2020 12:20	0.0	3.3	16.0	0	0	0	1014	1014	0	10.9
08/05/2020 13:20	0.0	3.3	15.9	0	0	0	1014	1014	0	10.9
08/05/2020 14:20	0.0	3.9	15.7	0	0	0	1014	1013	1	10.9
08/05/2020 15:20	0.0	3.9	15.8	0	0	0	1013	1013	0	11.0
08/05/2020 16:20	0.0	3.3	15.9	0	0	0	1013	1013	0	11.0
08/05/2020 17:20	0.0	3.3	15.8	0	0	0	1013	1012	1	11.1
08/05/2020 18:20	0.0	3.3	15.9	0	0	0	1012	1012	0	11.1
08/05/2020 19:20	0.0	3.3	16.1	0	0	0	1012	1012	0	11.2
08/05/2020 20:20	0.0	3.3	16.3	0	0	0	1012	1012	0	11.3
08/05/2020 21:20	0.0	3.3	16.4	0	0	0	1013	1012	1	11.3
08/05/2020 22:20	0.0	3.3	16.5	0	0	0	1013	1012	1	11.3
08/05/2020 23:20	0.0	3.3	16.6	0	0	0	1013	1012	1	11.4
09/05/2020 00:20	0.0	3.3	16.6	0	0	0	1013	1013	0	11.4
09/05/2020 01:20	0.0	3.3	16.6	0	0	0	1013	1012	1	11.4
09/05/2020 02:20	0.0	3.3	16.6	0	0	0	1012	1012	0	11.4
09/05/2020 03:20	0.0	3.3	16.6	0	0	0	1012	1012	0	11.4
09/05/2020 04:20	0.0	3.3	16.6	0	0	0	1012	1011	1	11.4
09/05/2020 05:20	0.0	3.3	16.6	0	0	0	1012	1011	1	11.4
09/05/2020 06:20	0.0	3.3	16.7	0	0	0	1012	1011	1	11.3
09/05/2020 07:20	0.0	3.3	16.6	0	0	0	1012	1011	1	11.3
09/05/2020 08:20	0.0	3.3	16.5	0	0	0	1011	1011	0	11.3
09/05/2020 09:20	0.0	3.3	16.7	0	0	0	1011	1010	1	11.3

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
09/05/2020 10:20	0.0	3.3	16.4	0	0	0	1011	1010	1	11.3
09/05/2020 11:20	0.0	3.3	16.3	0	0	0	1010	1010	0	11.3
09/05/2020 12:20	0.0	3.3	16.3	0	0	0	1010	1009	1	11.3
09/05/2020 13:20	0.0	3.3	16.5	0	0	0	1009	1009	0	11.3
09/05/2020 14:20	0.0	3.3	16.2	0	0	0	1009	1008	1	11.3
09/05/2020 15:20	0.0	3.3	16.3	0	0	0	1008	1007	1	11.3
09/05/2020 16:20	0.0	3.3	16.1	0	0	0	1007	1007	0	11.4
09/05/2020 17:20	0.0	3.3	16.3	0	0	0	1006	1006	0	11.5
09/05/2020 18:20	0.0	3.3	16.0	0	0	0	1006	1006	0	11.6
09/05/2020 19:20	0.0	3.3	16.0	0	0	0	1006	1006	0	11.6
09/05/2020 20:20	0.0	3.3	16.2	0	0	0	1006	1006	0	11.7
09/05/2020 21:20	0.0	3.3	16.5	0	0	0	1006	1006	0	11.8
09/05/2020 22:20	0.0	3.3	16.4	0	0	0	1007	1006	1	11.8
09/05/2020 23:20	0.0	3.3	15.9	0	0	0	1007	1006	1	11.8
10/05/2020 00:20	0.0	3.3	16.2	0	0	0	1006	1006	0	11.8
10/05/2020 01:20	0.0	3.3	16.4	0	0	0	1006	1006	0	11.8
10/05/2020 02:20	0.0	3.3	16.5	0	0	0	1005	1005	0	11.9
10/05/2020 03:20	0.0	3.3	16.6	0	0	0	1005	1005	0	11.9
10/05/2020 04:20	0.0	3.3	16.6	0	0	0	1005	1005	0	11.9
10/05/2020 05:20	0.0	2.8	16.9	0	0	0	1006	1006	0	11.9
10/05/2020 06:20	0.0	3.3	16.9	0	0	0	1007	1006	1	11.9
10/05/2020 07:20	0.0	3.3	16.8	0	0	0	1008	1007	1	11.8
10/05/2020 08:20	0.0	3.3	16.8	0	0	0	1009	1008	1	11.8
10/05/2020 09:20	0.0	3.3	16.7	0	0	0	1009	1009	0	11.8
10/05/2020 10:20	0.0	3.3	16.6	0	0	0	1010	1009	1	11.8
10/05/2020 11:20	0.0	3.3	16.6	0	0	0	1010	1010	0	11.8
10/05/2020 12:20	0.0	3.3	16.6	0	0	0	1011	1011	0	11.8
10/05/2020 13:20	0.0	3.3	16.6	0	0	0	1013	1012	1	11.8
10/05/2020 14:20	0.0	3.3	16.6	0	0	0	1013	1013	0	11.8
10/05/2020 15:20	0.0	3.3	16.6	0	0	0	1014	1014	0	11.8
10/05/2020 16:20	0.0	3.3	16.5	0	0	0	1015	1014	1	11.8
10/05/2020 17:20	0.0	3.3	16.4	0	0	0	1015	1015	0	11.8
10/05/2020 18:20	0.0	3.3	16.4	0	0	0	1016	1015	1	11.7
10/05/2020 19:20	0.0	3.3	16.4	0	0	0	1016	1016	0	11.7
10/05/2020 20:20	0.0	3.3	16.4	0	0	0	1017	1017	0	11.7
10/05/2020 21:20	0.0	3.3	16.5	0	0	0	1018	1018	0	11.7
10/05/2020 22:20	0.0	3.3	16.4	0	0	0	1019	1018	1	11.7
10/05/2020 23:20	0.0	3.3	16.4	0	0	0	1019	1018	1	11.6
11/05/2020 00:20	0.0	3.3	16.5	0	0	0	1019	1019	0	11.6
11/05/2020 01:20	0.0	3.3	16.5	0	0	0	1019	1019	0	11.6
11/05/2020 02:20	0.0	3.3	16.5	0	0	0	1019	1019	0	11.5
11/05/2020 03:20	0.0	3.3	16.5	0	0	0	1019	1019	0	11.5
11/05/2020 04:20	0.0	3.3	16.6	0	0	0	1019	1019	0	11.4
11/05/2020 05:20	0.0	3.3	16.6	0	0	0	1020	1019	1	11.4
11/05/2020 06:20	0.0	3.3	16.6	0	0	0	1020	1019	1	11.3
11/05/2020 07:20	0.0	3.3	16.7	0	0	0	1020	1020	0	11.3
11/05/2020 08:20	0.0	3.3	16.6	0	0	0	1021	1020	1	11.3
11/05/2020 09:20	0.0	3.3	16.6	0	0	0	1021	1021	0	11.2
11/05/2020 10:20	0.0	3.3	16.6	0	0	0	1021	1021	0	11.1
11/05/2020 11:20	0.0	3.3	16.6	0	0	0	1021	1021	0	11.1
11/05/2020 12:20	0.0	3.3	16.6	0	0	0	1022	1021	1	11.1
11/05/2020 13:20	0.0	3.3	16.5	0	0	0	1021	1021	0	11.1
11/05/2020 14:20	0.0	3.3	16.5	0	0	0	1021	1021	0	11.0
11/05/2020 15:20	0.0	3.3	16.5	0	0	0	1021	1021	0	11.0
11/05/2020 16:20	0.0	3.3	16.5	0	0	0	1021	1021	0	11.0
11/05/2020 17:20	0.0	3.3	16.5	0	0	0	1021	1021	0	11.0
11/05/2020 18:20	0.0	3.3	16.4	0	0	0	1021	1021	0	11.0
11/05/2020 19:20	0.0	3.3	16.5	0	0	0	1021	1021	0	11.0
11/05/2020 20:20	0.0	3.3	16.5	0	0	0	1021	1021	0	11.0
11/05/2020 21:20	0.0	3.3	16.4	0	0	0	1021	1021	0	11.1
11/05/2020 22:20	0.0	3.3	16.4	0	0	0	1021	1021	0	11.1
11/05/2020 23:20	0.0	3.3	16.4	0	0	0	1021	1021	0	11.0
12/05/2020 00:20	0.0	3.3	16.4	0	0	0	1021	1021	0	11.0
12/05/2020 01:20	0.0	3.3	16.3	0	0	0	1021	1020	1	11.0
12/05/2020 02:20	0.0	3.3	16.3	0	0	0	1020	1020	0	10.9
12/05/2020 03:20	0.0	3.3	16.3	0	0	0	1020	1020	0	10.9
12/05/2020 04:20	0.0	3.3	16.3	0	0	0	1020	1020	0	10.9
12/05/2020 05:20	0.0	3.3	16.3	0	0	0	1020	1019	1	10.8
12/05/2020 06:20	0.0	3.3	16.2	0	0	0	1019	1019	0	10.8
12/05/2020 07:20	0.0	3.3	16.1	0	0	0	1019	1018	1	10.8
12/05/2020 08:20	0.0	3.3	16.0	0	0	0	1019	1018	1	10.7
12/05/2020 09:20	0.0	3.3	16.0	0	0	0	1018	1018	0	10.6
12/05/2020 10:20	0.0	3.9	15.4	0	0	0	1018	1017	1	10.6
12/05/2020 11:20	0.0	3.9	15.1	0	0	0	1017	1017	0	10.6
12/05/2020 12:20	0.0	3.9	14.7	0	0	0	1016	1016	0	10.5
12/05/2020 13:20	0.0	3.9	14.6	0	0	0	1016	1016	0	10.5
12/05/2020 14:20	0.0	3.9	14.5	0	0	0	1015	1015	0	10.5
12/05/2020 15:20	0.0	4.4	14.3	0	0	0	1015	1014	1	10.5
12/05/2020 16:20	0.0	4.4	14.2	0	0	0	1014	1014	0	10.5
12/05/2020 17:20	0.0	4.4	14.3	0	0	0	1014	1014	0	10.5
12/05/2020 18:20	0.0	4.4	14.3	0	0	0	1013	1013	0	10.4
12/05/2020 19:20	0.0	4.4	14.3	0	0	0	1013	1013	0	10.4
12/05/2020 20:20	0.0	4.4	14.2	0	0	0	1013	1013	0	10.4
12/05/2020 21:20	0.0	4.4	14.5	0	0	0	1013	1013	0	10.4
12/05/2020 22:20	0.0	3.9	15.2	0	0	0	1013	1012	1	10.4
12/05/2020 23:20	0.0	3.9	15.6	0	0	0	1013	1013	0	10.4
13/05/2020 00:20	0.0	3.3	15.8	0	0	0	1013	1013	0	10.4
13/05/2020 01:20	0.0	3.3	16.3	0	0	0	1014	1013	1	10.4
13/05/2020 02:20	0.0	3.3	16.4	0	0	0	1014	1014	0	10.4
13/05/2020 03:20	0.0	3.3	16.5	0	0	0	1014	1014	0	10.4
13/05/2020 04:20	0.0	3.3	16.5	0	0	0	1014	1014	0	10.3
13/05/2020 05:20	0.0	3.3	16.5	0	0	0	1014	1014	0	10.3
13/05/2020 06:20	0.0	3.3	16.5	0	0	0	1015	1014	1	10.3
13/05/2020 07:20	0.0	3.3	16.6	0	0	0	1016	1015	1	10.3
13/05/2020 08:20	0.0	2.8	16.6	0	0	0	1016	1015	1	10.3
13/05/2020 09:20	0.0	2.8	16.6	0	0	0	1016	1015	1	10.2
13/05/2020 10:20	0.0	2.8	16.6	0	0	0	1016	1016	0	10.2
13/05/2020 11:20	0.0	2.8	16.6	0	0	0	1016	1016	0	10.2
13/05/2020 12:20	0.0	3.3	16.6	0	0	0	1016	1016	0	10.2
13/05/2020 13:20	0.0	2.8	16.6	0	0	0	1016	1016	0	10.2
13/05/2020 14:20	0.0	3.3	16.6	0	0	0	1016	1016	0	10.2
13/05/2020 15:20	0.0	3.3	16.6	0	0	0	1016	1016	0	10.2
13/05/2020 16:20	0.0	3.3	16.6	0	0	0	1016	1016	0	10.3
13/05/2020 17:20	0.0	3.3	16.6	0	0	0	1016	1016	0	10.3
13/05/2020 18:20	0.0	3.3	16.5	0	0	0	1016	1016	0	10.3
13/05/2020 19:20	0.0	3.3	16.6	0	0	0	1017	1017	0	10.3
13/05/2020 20:20	0.0	3.3	16.6	0	0	0	1018	1017	1	10.3
13/05/2020 21:20	0.0	2.8	16.6	0	0	0	1019	1018	1	10.4
13/05/2020 22:20	0.0	3.3	16.6	0	0	0	1019	1019	0	10.4
13/05/2020 23:20	0.0	3.3	16.6	0	0	0	1020	1019	1	10.4
14/05/2020 00:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.4
14/05/2020 01:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.4
14/05/2020 02:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.4
14/05/2020 03:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.3

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
14/05/2020 04:20	0.0	3.3	16.4	0	0	0	1021	1020	1	10.3
14/05/2020 05:20	0.0	3.3	16.5	0	0	0	1021	1020	1	10.3
14/05/2020 06:20	0.0	3.3	16.5	0	0	0	1021	1021	0	10.2
14/05/2020 07:20	0.0	3.3	16.3	0	0	0	1021	1021	0	10.2
14/05/2020 08:20	0.0	3.3	16.0	0	0	0	1021	1021	0	10.1
14/05/2020 09:20	0.0	3.3	15.7	0	0	0	1021	1021	0	10.1
14/05/2020 10:20	0.0	3.9	15.5	0	0	0	1021	1021	0	10.1
14/05/2020 11:20	0.0	3.3	16.0	0	0	0	1021	1021	0	10.0
14/05/2020 12:20	0.0	3.3	15.9	0	0	0	1021	1020	1	10.0
14/05/2020 13:20	0.0	3.3	15.7	0	0	0	1020	1020	0	10.0
14/05/2020 14:20	0.0	3.3	15.8	0	0	0	1020	1019	1	10.1
14/05/2020 15:20	0.0	3.9	15.3	0	0	0	1020	1019	1	10.1
14/05/2020 16:20	0.0	3.9	15.1	0	0	0	1019	1019	0	10.1
14/05/2020 17:20	0.0	3.9	14.9	0	0	0	1019	1019	0	10.2
14/05/2020 18:20	0.0	3.9	14.8	0	0	0	1019	1019	0	10.3
14/05/2020 19:20	0.0	3.9	15.2	0	0	0	1019	1019	0	10.3
14/05/2020 20:20	0.0	3.9	15.3	0	0	0	1020	1019	1	10.4
14/05/2020 21:20	0.0	3.9	15.6	0	0	0	1020	1019	1	10.4
14/05/2020 22:20	0.0	3.3	16.1	0	0	0	1020	1019	1	10.4
14/05/2020 23:20	0.0	3.3	16.3	0	0	0	1020	1020	0	10.4
15/05/2020 00:20	0.0	3.3	16.4	0	0	0	1020	1020	0	10.4
15/05/2020 01:20	0.0	3.3	16.4	0	0	0	1020	1020	0	10.4
15/05/2020 02:20	0.0	3.3	16.4	0	0	0	1020	1020	0	10.4
15/05/2020 03:20	0.0	3.3	16.4	0	0	0	1020	1020	0	10.4
15/05/2020 04:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.4
15/05/2020 05:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.4
15/05/2020 06:20	0.0	3.3	16.5	0	0	0	1021	1020	1	10.3
15/05/2020 07:20	0.0	3.3	16.5	0	0	0	1021	1020	1	10.3
15/05/2020 08:20	0.0	3.3	16.4	0	0	0	1021	1020	1	10.3
15/05/2020 09:20	0.0	3.3	16.4	0	0	0	1021	1020	1	10.3
15/05/2020 10:20	0.0	3.3	15.7	0	0	0	1021	1020	1	10.2
15/05/2020 11:20	0.0	3.9	15.4	0	0	0	1021	1020	1	10.2
15/05/2020 12:20	0.0	3.9	14.8	0	0	0	1021	1021	0	10.2
15/05/2020 13:20	0.0	4.4	14.7	0	0	0	1021	1021	0	10.2
15/05/2020 14:20	0.0	4.4	14.5	0	0	0	1021	1021	0	10.2
15/05/2020 15:20	0.0	4.4	14.3	0	0	0	1021	1021	0	10.2
15/05/2020 16:20	0.0	4.4	14.6	0	0	0	1021	1020	1	10.3
15/05/2020 17:20	0.0	4.4	14.3	0	0	0	1021	1021	0	10.3
15/05/2020 18:20	0.0	4.4	14.7	0	0	0	1021	1020	1	10.3
15/05/2020 19:20	0.0	4.4	14.6	0	0	0	1021	1020	1	10.4
15/05/2020 20:20	0.0	4.4	14.5	0	0	0	1021	1021	0	10.4
15/05/2020 21:20	0.0	3.9	15.1	0	0	0	1021	1021	0	10.4
15/05/2020 22:20	0.0	3.9	15.8	0	0	0	1021	1020	1	10.4
15/05/2020 23:20	0.0	3.3	16.2	0	0	0	1021	1021	0	10.4
16/05/2020 00:20	0.0	3.3	16.3	0	0	0	1021	1020	1	10.4
16/05/2020 01:20	0.0	3.3	16.4	0	0	0	1021	1020	1	10.4
16/05/2020 02:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.4
16/05/2020 03:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.3
16/05/2020 04:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.3
16/05/2020 05:20	0.0	3.3	16.5	0	0	0	1020	1019	1	10.3
16/05/2020 06:20	0.0	3.3	16.5	0	0	0	1020	1019	1	10.3
16/05/2020 07:20	0.0	3.3	16.5	0	0	0	1020	1020	0	10.3
16/05/2020 08:20	0.0	3.3	16.2	0	0	0	1020	1020	0	10.2
16/05/2020 09:20	0.0	3.3	16.1	0	0	0	1020	1020	0	10.2
16/05/2020 10:20	0.0	3.9	15.7	0	0	0	1020	1019	1	10.2
16/05/2020 11:20	0.0	3.9	15.4	0	0	0	1020	1020	0	10.2
16/05/2020 12:20	0.0	4.4	15.0	0	0	0	1020	1019	1	10.1
16/05/2020 13:20	0.0	4.4	14.9	0	0	0	1020	1020	0	10.1
16/05/2020 14:20	0.0	4.4	14.6	0	0	0	1020	1019	1	10.1
16/05/2020 15:20	0.0	4.4	14.7	0	0	0	1020	1019	1	10.1
16/05/2020 16:20	0.0	4.4	14.6	0	0	0	1020	1019	1	10.2
16/05/2020 17:20	0.0	4.4	14.5	0	0	0	1019	1019	0	10.2
16/05/2020 18:20	0.0	4.4	14.6	0	0	0	1019	1019	0	10.3
16/05/2020 19:20	0.0	4.4	14.9	0	0	0	1020	1019	1	10.3
16/05/2020 20:20	0.0	3.9	15.5	0	0	0	1020	1019	1	10.3
16/05/2020 21:20	0.0	3.9	16.0	0	0	0	1020	1019	1	10.4
16/05/2020 22:20	0.0	3.3	16.2	0	0	0	1020	1019	1	10.4
16/05/2020 23:20	0.0	3.3	16.4	0	0	0	1020	1019	1	10.4
17/05/2020 00:20	0.0	3.3	16.5	0	0	0	1020	1019	1	10.4
17/05/2020 01:20	0.0	3.3	16.5	0	0	0	1019	1019	0	10.4
17/05/2020 02:20	0.0	3.3	16.5	0	0	0	1019	1019	0	10.4
17/05/2020 03:20	0.0	3.3	16.4	0	0	0	1019	1018	1	10.4
17/05/2020 04:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.4
17/05/2020 05:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.4
17/05/2020 06:20	0.0	3.3	16.5	0	0	0	1019	1018	1	10.4
17/05/2020 07:20	0.0	3.3	16.4	0	0	0	1019	1018	1	10.4
17/05/2020 08:20	0.0	3.3	16.1	0	0	0	1019	1018	1	10.4
17/05/2020 09:20	0.0	3.9	15.5	0	0	0	1019	1018	1	10.4
17/05/2020 10:20	0.0	3.9	15.6	0	0	0	1018	1018	0	10.3
17/05/2020 11:20	0.0	4.4	15.1	0	0	0	1019	1018	1	10.4
17/05/2020 12:20	0.0	3.9	15.6	0	0	0	1019	1018	1	10.4
17/05/2020 13:20	0.0	3.9	15.4	0	0	0	1018	1018	0	10.4
17/05/2020 14:20	0.0	4.4	15.1	0	0	0	1018	1018	0	10.4
17/05/2020 15:20	0.0	3.9	15.5	0	0	0	1018	1018	0	10.4
17/05/2020 16:20	0.0	3.9	15.2	0	0	0	1018	1017	1	10.4
17/05/2020 17:20	0.0	3.9	15.3	0	0	0	1018	1017	1	10.5
17/05/2020 18:20	0.0	3.9	15.3	0	0	0	1017	1017	0	10.6
17/05/2020 19:20	0.0	3.9	15.4	0	0	0	1017	1017	0	10.6
17/05/2020 20:20	0.0	3.9	15.4	0	0	0	1017	1017	0	10.6
17/05/2020 21:20	0.0	3.9	15.6	0	0	0	1017	1017	0	10.6
17/05/2020 22:20	0.0	3.9	15.4	0	0	0	1018	1017	1	10.7
17/05/2020 23:20	0.0	4.4	15.0	0	0	0	1018	1018	0	10.7
18/05/2020 00:20	0.0	3.9	15.4	0	0	0	1018	1018	0	10.7
18/05/2020 01:20	0.0	3.9	15.7	0	0	0	1017	1017	0	10.7
18/05/2020 02:20	0.0	3.3	16.1	0	0	0	1017	1017	0	10.7
18/05/2020 03:20	0.0	3.3	16.4	0	0	0	1017	1017	0	10.7
18/05/2020 04:20	0.0	3.3	16.5	0	0	0	1017	1017	0	10.7
18/05/2020 05:20	0.0	3.3	16.6	0	0	0	1017	1017	0	10.7
18/05/2020 06:20	0.0	3.3	16.6	0	0	0	1017	1017	0	10.7
18/05/2020 07:20	0.0	3.3	16.1	0	0	0	1017	1017	0	10.7
18/05/2020 08:20	0.0	3.9	16.0	0	0	0	1018	1017	1	10.7
18/05/2020 09:20	0.0	3.9	16.0	0	0	0	1018	1018	0	10.6
18/05/2020 10:20	0.0	3.9	15.6	0	0	0	1018	1018	0	10.6
18/05/2020 11:20	0.0	3.9	15.4	0	0	0	1018	1017	1	10.6
18/05/2020 12:20	0.0	3.9	15.5	0	0	0	1018	1017	1	10.6
18/05/2020 13:20	0.0	3.9	15.7	0	0	0	1018	1018	0	10.6
18/05/2020 14:20	0.0	4.4	15.3	0	0	0	1018	1018	0	10.7
18/05/2020 15:20	0.0	3.9	15.3	0	0	0	1018	1018	0	10.7
18/05/2020 16:20	0.0	4.4	15.2	0	0	0	1018	1017	1	10.7
18/05/2020 17:20	0.0	4.4	15.2	0	0	0	1018	1017	1	10.7
18/05/2020 18:20	0.0	4.4	15.1	0	0	0	1018	1018	0	10.8
18/05/2020 19:20	0.0	4.4	15.1	0	0	0	1018	1017	1	10.8
18/05/2020 20:20	0.0	4.4	15.2	0	0	0	1018	1017	1	10.8
18/05/2020 21:20	0.0	4.4	15.3	0	0	0	1018	1018	0	10.8

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
18/05/2020 22:20	0.0	4.4	15.2	0	0	0	1018	1018	0	10.8
18/05/2020 23:20	0.0	3.9	15.5	0	0	0	1018	1018	0	10.8
19/05/2020 00:20	0.0	3.9	15.6	0	0	0	1018	1018	0	10.8
19/05/2020 01:20	0.0	3.9	15.6	0	0	0	1018	1018	0	10.8
19/05/2020 02:20	0.0	3.9	15.6	0	0	0	1018	1017	1	10.8
19/05/2020 03:20	0.0	3.9	15.9	0	0	0	1017	1017	0	10.8
19/05/2020 04:20	0.0	3.3	16.2	0	0	0	1017	1017	0	10.8
19/05/2020 05:20	0.0	3.3	16.4	0	0	0	1017	1017	0	10.8
19/05/2020 06:20	0.0	3.3	16.5	0	0	0	1017	1017	0	10.8
19/05/2020 07:20	0.0	3.3	16.6	0	0	0	1018	1017	1	10.8
19/05/2020 08:20	0.0	3.3	16.5	0	0	0	1018	1018	0	10.8
19/05/2020 09:20	0.0	3.3	16.3	0	0	0	1018	1018	0	10.8
19/05/2020 10:20	0.0	3.9	16.2	0	0	0	1018	1018	0	10.8
19/05/2020 11:20	0.0	3.9	16.1	0	0	0	1019	1018	1	10.8
19/05/2020 12:20	0.0	3.3	16.3	0	0	0	1019	1018	1	10.8
19/05/2020 13:20	0.0	3.9	15.9	0	0	0	1019	1018	1	10.8
19/05/2020 14:20	0.0	3.9	15.9	0	0	0	1019	1018	1	10.8
19/05/2020 15:20	0.0	3.9	16.1	0	0	0	1019	1018	1	10.8
19/05/2020 16:20	0.0	3.9	15.9	0	0	0	1019	1018	1	10.9
19/05/2020 17:20	0.0	3.3	16.3	0	0	0	1019	1018	1	10.9
19/05/2020 18:20	0.0	3.9	16.0	0	0	0	1019	1018	1	10.9
19/05/2020 19:20	0.0	3.3	16.3	0	0	0	1019	1018	1	11.0
19/05/2020 20:20	0.0	3.3	16.7	0	0	0	1019	1018	1	11.1
19/05/2020 21:20	0.0	3.3	16.8	0	0	0	1019	1018	1	11.1
19/05/2020 22:20	0.0	3.3	16.9	0	0	0	1019	1019	0	11.1
19/05/2020 23:20	0.0	3.3	17.0	0	0	0	1019	1019	0	11.2
20/05/2020 00:20	0.0	3.3	17.0	0	0	0	1019	1019	0	11.2
20/05/2020 01:20	0.0	2.8	17.0	0	0	0	1019	1018	1	11.2
20/05/2020 02:20	0.0	2.8	17.0	0	0	0	1019	1018	1	11.2
20/05/2020 03:20	0.0	3.3	17.0	0	0	0	1018	1018	0	11.2
20/05/2020 04:20	0.0	2.8	17.1	0	0	0	1018	1018	0	11.2
20/05/2020 05:20	0.0	2.8	17.0	0	0	0	1018	1018	0	11.1
20/05/2020 06:20	0.0	2.8	17.1	0	0	0	1018	1018	0	11.1
20/05/2020 07:20	0.0	3.3	16.9	0	0	0	1018	1018	0	11.1
20/05/2020 08:20	0.0	3.3	17.0	0	0	0	1018	1018	0	11.1
20/05/2020 09:20	0.0	3.3	16.8	0	0	0	1018	1017	1	11.1
20/05/2020 10:20	0.0	3.3	16.7	0	0	0	1017	1017	0	11.1
20/05/2020 11:20	0.0	3.3	16.3	0	0	0	1016	1016	0	11.1
20/05/2020 12:20	0.0	3.9	15.6	0	0	0	1016	1016	0	11.1
20/05/2020 13:20	0.0	3.9	15.6	0	0	0	1016	1015	1	11.1
20/05/2020 14:20	0.0	3.9	15.4	0	0	0	1015	1015	0	11.2
20/05/2020 15:20	0.0	3.9	15.5	0	0	0	1015	1014	1	11.3
20/05/2020 16:20	0.0	3.9	15.4	0	0	0	1014	1014	0	11.3
20/05/2020 17:20	0.0	4.4	15.4	0	0	0	1014	1014	0	11.4
20/05/2020 18:20	0.0	3.9	15.5	0	0	0	1013	1013	0	11.5
20/05/2020 19:20	0.0	3.9	15.7	0	0	0	1013	1013	0	11.6
20/05/2020 20:20	0.0	3.3	16.3	0	0	0	1013	1013	0	11.7
20/05/2020 21:20	0.0	3.3	16.6	0	0	0	1014	1014	0	11.8
20/05/2020 22:20	0.0	3.3	16.8	0	0	0	1014	1014	0	11.8
20/05/2020 23:20	0.0	3.3	16.9	0	0	0	1014	1014	0	11.8
21/05/2020 00:20	0.0	3.3	16.9	0	0	0	1014	1014	0	11.9
21/05/2020 01:20	0.0	3.3	17.0	0	0	0	1014	1014	0	11.9
21/05/2020 02:20	0.0	2.8	17.0	0	0	0	1014	1014	0	11.9
21/05/2020 03:20	0.0	3.3	17.0	0	0	0	1014	1013	1	11.9
21/05/2020 04:20	0.0	3.3	17.1	0	0	0	1014	1013	1	11.9
21/05/2020 05:20	0.0	3.3	17.1	0	0	0	1014	1014	0	11.9
21/05/2020 06:20	0.0	3.3	17.1	0	0	0	1014	1014	0	11.9
21/05/2020 07:20	0.0	3.3	17.1	0	0	0	1015	1014	1	11.8
21/05/2020 08:20	0.0	3.3	17.0	0	0	0	1015	1015	0	11.8

GGS Time Series Data

ggs
Experts in Continuous Monitoring

Project Ref:	GGS2230
Location:	Ryebank Fields, Chorlton
Borehole ref:	WS110
GasClam ID:	26.09.14
Start Date:	30/04/2020 16:17
End Date:	21/05/2020 08:17

Days of monitoring:	21
Monitoring Frequency (mins):	60
Total samples taken:	497

Minimum, Maximum and Range Table

	CH_4	CO_2	O_2	TVOC	H_2S	CO	Borehole Pressure	Atmospheric Pressure	Differential Pressure	Temperature
Minimum	0.0	0.0	17.7	0	0	0	987	987	-2	11.3
Maximum	0.0	0.0	20.5	20	0	0	1024	1024	0	14.3
Range	0.0	0.0	2.8	20	0	0	37	37	N/A	3.0

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
30/04/2020 16:17	0	0	19.4	0	0	0	987	987	-1	14.2
30/04/2020 17:17	0	0	18.8	0	0	0	988	988	-1	12.6
30/04/2020 18:17	0	0	18.5	0	0	0	988	988	-1	12
30/04/2020 19:17	0	0	18.4	0	0	0	988	988	-1	11.8
30/04/2020 20:17	0	0	18.4	0	0	0	989	989	-1	11.7
30/04/2020 21:17	0	0	18.4	0	0	0	989	989	-1	11.6
30/04/2020 22:17	0	0	18.4	0	0	0	989	989	-1	11.6
30/04/2020 23:17	0	0	18.4	0	0	0	989	989	-1	11.6
01/05/2020 00:17	0	0	18.4	0	0	0	990	989	0	11.6
01/05/2020 01:17	0	0	18.4	0	0	0	990	990	-1	11.6
01/05/2020 02:17	0	0	18.3	0	0	0	990	990	-1	11.6
01/05/2020 03:17	0	0	18.3	0	0	0	990	990	-1	11.6
01/05/2020 04:17	0	0	18.3	0	0	0	991	991	-1	11.6
01/05/2020 05:17	0	0	18.2	0	0	0	991	991	-1	11.6
01/05/2020 06:17	0	0	18.2	0	0	0	992	992	-1	11.5
01/05/2020 07:17	0	0	18.2	0	0	0	992	992	-1	11.5
01/05/2020 08:17	0	0	18.2	0	0	0	993	993	-1	11.4
01/05/2020 09:17	0	0	18.1	0	0	0	993	993	-1	11.4
01/05/2020 10:17	0	0	18.1	0	0	0	994	994	-1	11.4
01/05/2020 11:17	0	0	18.1	0	0	0	994	994	-1	11.4
01/05/2020 12:17	0	0	18.1	0	0	0	995	995	-1	11.4
01/05/2020 13:17	0	0	18.1	0	0	0	995	995	-1	11.4
01/05/2020 14:17	0	0	18.2	0	0	0	996	996	-1	11.4
01/05/2020 15:17	0	0	18.3	0	0	0	996	996	-1	11.4
01/05/2020 16:17	0	0	18.3	0	0	0	997	997	-1	11.4
01/05/2020 17:17	0	0	18.4	0	0	0	997	997	-1	11.5
01/05/2020 18:17	0	0	18.4	0	0	0	998	998	-1	11.6
01/05/2020 19:17	0	0	18.4	0	0	0	999	999	-1	11.6
01/05/2020 20:17	0	0	18.4	0	0	0	999	999	-1	11.7
01/05/2020 21:17	0	0	18.4	0	0	0	999	999	-1	11.8
01/05/2020 22:17	0	0	18.4	0	0	0	1000	1000	-1	11.8
01/05/2020 23:17	0	0	18.4	0	0	0	1000	1000	-1	11.8
02/05/2020 00:17	0	0	18.4	0	0	0	1001	1001	-1	11.8
02/05/2020 01:17	0	0	18.4	0	0	0	1001	1001	-1	11.7
02/05/2020 02:17	0	0	18.4	0	0	0	1002	1002	-1	11.7
02/05/2020 03:17	0	0	18.4	0	0	0	1002	1002	-1	11.6
02/05/2020 04:17	0	0	18.4	0	0	0	1003	1003	-1	11.6
02/05/2020 05:17	0	0	18.4	0	0	0	1003	1003	-1	11.6
02/05/2020 06:17	0	0	18.3	0	0	0	1004	1004	-1	11.5
02/05/2020 07:17	0	0	18.3	0	0	0	1005	1005	-1	11.5
02/05/2020 08:17	0	0	18.3	0	0	0	1006	1006	-1	11.4
02/05/2020 09:17	0	0	18.2	0	0	0	1006	1006	-1	11.4
02/05/2020 10:17	0	0	18.2	0	0	0	1006	1006	-1	11.4
02/05/2020 11:17	0	0	18.2	0	0	0	1007	1007	-1	11.3
02/05/2020 12:17	0	0	18.2	0	0	0	1008	1008	-1	11.3
02/05/2020 13:17	0	0	18.2	0	0	0	1008	1009	-2	11.3
02/05/2020 14:17	0	0	18.2	0	0	0	1009	1009	-1	11.3
02/05/2020 15:17	0	0	18.2	0	0	0	1009	1009	-1	11.4
02/05/2020 16:17	0	0	18.2	0	0	0	1009	1009	-1	11.4
02/05/2020 17:17	0	0	18.2	0	0	0	1010	1010	-1	11.5
02/05/2020 18:17	0	0	18.3	0	0	0	1010	1010	-1	11.6
02/05/2020 19:17	0	0	18.3	0	0	0	1011	1011	-1	11.6
02/05/2020 20:17	0	0	18.3	0	0	0	1011	1011	-1	11.7
02/05/2020 21:17	0	0	18.3	0	0	0	1012	1012	-1	11.7
02/05/2020 22:17	0	0	18.3	0	0	0	1012	1012	-1	11.8
02/05/2020 23:17	0	0	18.4	0	0	0	1012	1012	-1	11.8
03/05/2020 00:17	0	0	18.3	0	0	0	1012	1012	-1	11.8
03/05/2020 01:17	0	0	18.4	0	0	0	1013	1013	-1	11.7
03/05/2020 02:17	0	0	18.3	0	0	0	1013	1013	-1	11.7
03/05/2020 03:17	0	0	18.3	0	0	0	1012	1013	-2	11.6
03/05/2020 04:17	0	0	18.3	0	0	0	1012	1013	-2	11.6
03/05/2020 05:17	0	0	18.3	0	0	0	1012	1012	-1	11.6
03/05/2020 06:17	0	0	18.3	0	0	0	1012	1013	-2	11.6
03/05/2020 07:17	0	0	18.3	0	0	0	1012	1013	-2	11.5
03/05/2020 08:17	0	0	18.3	0	0	0	1013	1013	-1	11.4
03/05/2020 09:17	0	0	18.3	0	0	0	1013	1013	-1	11.4
03/05/2020 10:17	0	0	18.4	0	0	0	1014	1014	-1	11.3
03/05/2020 11:17	0	0	18.4	0	0	0	1014	1014	-1	11.3
03/05/2020 12:17	0	0	18.3	0	0	0	1014	1014	-1	11.3
03/05/2020 13:17	0	0	18.3	0	0	0	1013	1013	-1	11.3
03/05/2020 14:17	0	0	18.3	0	0	0	1013	1013	-1	11.3
03/05/2020 15:17	0	0	18.3	0	0	0	1013	1013	-1	11.3
03/05/2020 16:17	0	0	18.3	0	0	0	1013	1013	-1	11.4
03/05/2020 17:17	0	0	18.3	0	0	0	1013	1013	-1	11.4
03/05/2020 18:17	0	0	18.3	0	0	0	1013	1013	-1	11.4
03/05/2020 19:17	0	0	18.3	0	0	0	1013	1013	-1	11.5
03/05/2020 20:17	0	0	18.3	0	0	0	1014	1014	-1	11.6
03/05/2020 21:17	0	0	18.3	0	0	0	1014	1014	-1	11.6
03/05/2020 22:17	0	0	18.3	0	0	0	1015	1015	-1	11.7
03/05/2020 23:17	0	0	18.3	0	0	0	1015	1015	-1	11.7
04/05/2020 00:17	0	0	18.3	0	0	0	1015	1015	-1	11.7
04/05/2020 01:17	0	0	18.3	0	0	0	1015	1015	-1	11.7
04/05/2020 02:17	0	0	18.3	0	0	0	1016	1015	0	11.7
04/05/2020 03:17	0	0	18.3	0	0	0	1016	1016	-1	11.7
04/05/2020 04:17	0	0	18.3	0	0	0	1016	1016	-1	11.6
04/05/2020 05:17	0	0	18.3	0	0	0	1016	1016	-1	11.6
04/05/2020 06:17	0	0	18.3	0	0	0	1016	1017	-2	11.6
04/05/2020 07:17	0	0	18.3	0	0	0	1017	1017	-1	11.6
04/05/2020 08:17	0	0	18.2	0	0	0	1018	1018	-1	11.5
04/05/2020 09:17	0	0	18.2	0	0	0	1018	1018	-1	11.5
04/05/2020 10:17	0	0	18.1	0	0	0	1019	1019	-1	11.4
04/05/2020 11:17	0	0	18.1	0	0	0	1019	1019	-1	11.4
04/05/2020 12:17	0	0	18.1	0	0	0	1019	1019	-1	11.4
04/05/2020 13:17	0	0	18.1	0	0	0	1019	1019	-1	11.4
04/05/2020 14:17	0	0	18.1	0	0	0	1019	1019	-1	11.5
04/05/2020 15:17	0	0	18.1	0	0	0	1019	1019	-1	11.6

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
04/05/2020 16:17	0	0	18.1	0	0	0	1019	1019	-1	11.6
04/05/2020 17:17	0	0	18	0	0	0	1019	1019	-1	11.7
04/05/2020 18:17	0	0	18.1	0	0	0	1019	1019	-1	11.8
04/05/2020 19:17	0	0	18.1	0	0	0	1019	1019	-1	11.9
04/05/2020 20:17	0	0	18.1	0	0	0	1020	1020	-1	11.9
04/05/2020 21:17	0	0	18.1	0	0	0	1020	1020	-1	12
04/05/2020 22:17	0	0	18.1	0	0	0	1021	1021	-1	12
04/05/2020 23:17	0	0	18.2	0	0	0	1021	1022	-2	12.1
05/05/2020 00:17	0	0	18.1	0	0	0	1021	1021	-1	12
05/05/2020 01:17	0	0	18.1	0	0	0	1020	1020	-1	12
05/05/2020 02:17	0	0	18.1	0	0	0	1020	1020	-1	12
05/05/2020 03:17	0	0	18.2	0	0	0	1020	1020	-1	12
05/05/2020 04:17	0	0	18.1	0	0	0	1020	1020	-1	11.9
05/05/2020 05:17	0	0	18.1	0	0	0	1020	1020	-1	11.9
05/05/2020 06:17	0	0	18.1	0	0	0	1020	1020	-1	11.9
05/05/2020 07:17	0	0	18.1	0	0	0	1020	1020	-1	11.8
05/05/2020 08:17	0	0	18.1	0	0	0	1020	1020	-1	11.8
05/05/2020 09:17	0	0	18.1	0	0	0	1020	1020	-1	11.8
05/05/2020 10:17	0	0	18.1	0	0	0	1020	1020	-1	11.7
05/05/2020 11:17	0	0	18.2	0	0	0	1021	1021	-1	11.7
05/05/2020 12:17	0	0	18.1	0	0	0	1020	1020	-1	11.6
05/05/2020 13:17	0	0	18.2	0	0	0	1020	1020	-1	11.7
05/05/2020 14:17	0	0	18.2	0	0	0	1020	1020	-1	11.7
05/05/2020 15:17	0	0	18.2	0	0	0	1020	1020	-1	11.8
05/05/2020 16:17	0	0	18.3	0	0	0	1020	1020	-1	11.8
05/05/2020 17:17	0	0	18.3	0	0	0	1020	1020	-1	11.9
05/05/2020 18:17	0	0	18.4	0	0	0	1020	1020	-1	12.1
05/05/2020 19:17	0	0	18.4	0	0	0	1020	1020	-1	12.1
05/05/2020 20:17	0	0	18.4	0	0	0	1021	1021	-1	12.3
05/05/2020 21:17	0	0	18.3	0	0	0	1022	1022	-1	12.3
05/05/2020 22:17	0	0	18.3	0	0	0	1023	1023	-1	12.3
05/05/2020 23:17	0	0	18.3	0	0	0	1023	1023	-1	12.4
06/05/2020 00:17	0	0	18.2	0	0	0	1023	1023	-1	12.4
06/05/2020 01:17	0	0	18.2	0	0	0	1023	1023	-1	12.4
06/05/2020 02:17	0	0	18.2	0	0	0	1023	1023	-1	12.3
06/05/2020 03:17	0	0	18.2	0	0	0	1023	1023	-1	12.3
06/05/2020 04:17	0	0	18.2	0	0	0	1024	1023	0	12.3
06/05/2020 05:17	0	0	18.2	0	0	0	1024	1024	-1	12.3
06/05/2020 06:17	0	0	18.2	0	0	0	1024	1024	-1	12.2
06/05/2020 07:17	0	0	18.2	0	0	0	1024	1024	-1	12.1
06/05/2020 08:17	0	0	18.2	0	0	0	1024	1024	-1	12.1
06/05/2020 09:17	0	0	18.2	0	0	0	1024	1024	-1	12
06/05/2020 10:17	0	0	18.2	0	0	0	1024	1024	-1	11.9
06/05/2020 11:17	0	0	18.3	0	0	0	1024	1024	-1	11.9
06/05/2020 12:17	0	0	18.3	0	0	0	1024	1024	-1	11.9
06/05/2020 13:17	0	0	18.2	0	0	0	1023	1023	-1	11.9
06/05/2020 14:17	0	0	18.2	0	0	0	1023	1023	-1	11.9
06/05/2020 15:17	0	0	18.3	0	0	0	1023	1023	-1	11.9
06/05/2020 16:17	0	0	18.3	0	0	0	1022	1023	-2	12
06/05/2020 17:17	0	0	18.4	0	0	0	1022	1022	-1	12.1
06/05/2020 18:17	0	0	18.5	0	0	0	1022	1022	-1	12.3
06/05/2020 19:17	0	0	18.5	0	0	0	1022	1022	-1	12.4
06/05/2020 20:17	0	0	18.5	0	0	0	1022	1022	-1	12.5
06/05/2020 21:17	0	0	18.4	0	0	0	1022	1022	-1	12.6
06/05/2020 22:17	0	0	18.4	0	0	0	1023	1023	-1	12.6
06/05/2020 23:17	0	0	18.3	0	0	0	1023	1023	-1	12.6
07/05/2020 00:17	0	0	18.3	0	0	0	1022	1022	-1	12.6
07/05/2020 01:17	0	0	18.3	0	0	0	1022	1022	-1	12.6
07/05/2020 02:17	0	0	18.3	0	0	0	1022	1022	-1	12.6
07/05/2020 03:17	0	0	18.3	0	0	0	1022	1022	-1	12.6
07/05/2020 04:17	0	0	18.3	0	0	0	1021	1021	-1	12.6
07/05/2020 05:17	0	0	18.3	0	0	0	1021	1021	-1	12.5
07/05/2020 06:17	0	0	18.3	0	0	0	1021	1021	-1	12.4
07/05/2020 07:17	0	0	18.2	0	0	0	1021	1021	-1	12.4
07/05/2020 08:17	0	0	18.2	0	0	0	1020	1020	-1	12.3
07/05/2020 09:17	0	0	18.3	0	0	0	1020	1020	-1	12.3
07/05/2020 10:17	0	0	18.4	0	0	0	1020	1020	-1	12.2
07/05/2020 11:17	0	0	18.4	0	0	0	1020	1020	-1	12.2
07/05/2020 12:17	0	0	18.5	0	0	0	1019	1019	-1	12.1
07/05/2020 13:17	0	0	18.6	0	0	0	1019	1019	-1	12.1
07/05/2020 14:17	0	0	18.6	0	0	0	1018	1018	-1	12.2
07/05/2020 15:17	0	0	18.6	0	0	0	1018	1018	-1	12.2
07/05/2020 16:17	0	0	18.5	0	0	0	1017	1017	-1	12.3
07/05/2020 17:17	0	0	18.6	0	0	0	1016	1016	-1	12.4
07/05/2020 18:17	0	0	18.6	0	0	0	1016	1016	-1	12.5
07/05/2020 19:17	0	0	18.5	0	0	0	1016	1016	-1	12.6
07/05/2020 20:17	0	0	18.5	0	0	0	1016	1016	-1	12.6
07/05/2020 21:17	0	0	18.5	0	0	0	1016	1016	-1	12.7
07/05/2020 22:17	0	0	18.4	0	0	0	1016	1016	-1	12.8
07/05/2020 23:17	0	0	18.4	0	0	0	1016	1016	-1	12.8
08/05/2020 00:17	0	0	18.4	0	0	0	1016	1016	-1	12.8
08/05/2020 01:17	0	0	18.4	0	0	0	1017	1017	-1	12.8
08/05/2020 02:17	0	0	18.4	0	0	0	1016	1016	-1	12.8
08/05/2020 03:17	0	0	18.4	0	0	0	1016	1016	-1	12.8
08/05/2020 04:17	0	0	18.3	0	0	0	1016	1016	-1	12.8
08/05/2020 05:17	0	0	18.3	0	0	0	1016	1016	-1	12.8
08/05/2020 06:17	0	0	18.3	0	0	0	1016	1016	-1	12.8
08/05/2020 07:17	0	0	18.3	0	0	0	1016	1016	-1	12.7
08/05/2020 08:17	0	0	18.3	0	0	0	1016	1016	-1	12.7
08/05/2020 09:17	0	0	18.3	0	0	0	1016	1016	-1	12.6
08/05/2020 10:17	0	0	18.2	0	0	0	1016	1016	-1	12.6
08/05/2020 11:17	0	0	18.3	0	0	0	1016	1016	-1	12.6
08/05/2020 12:17	0	0	18.2	0	0	0	1016	1016	-1	12.6
08/05/2020 13:17	0	0	18.2	0	0	0	1015	1015	-1	12.6
08/05/2020 14:17	0	0	18.2	0	0	0	1015	1015	-1	12.6
08/05/2020 15:17	0	0	18.2	0	0	0	1015	1015	-1	12.6
08/05/2020 16:17	0	0	18.2	0	0	0	1014	1014	-1	12.7
08/05/2020 17:17	0	0	18.1	0	0	0	1014	1014	-1	12.8
08/05/2020 18:17	0	0	18.1	0	0	0	1014	1014	-1	12.9
08/05/2020 19:17	0	0	18.2	0	0	0	1014	1014	-1	13
08/05/2020 20:17	0	0	18.2	0	0	0	1014	1014	-1	13.1
08/05/2020 21:17	0	0	18.3	0	0	0	1014	1014	-1	13.2
08/05/2020 22:17	0	0	18.3	0	0	0	1014	1014	-1	13.2
08/05/2020 23:17	0	0	18.3	0	0	0	1014	1014	-1	13.3
09/05/2020 00:17	0	0	18.3	0	0	0	1014	1014	-1	13.3
09/05/2020 01:17	0	0	18.3	0	0	0	1014	1014	-1	13.3
09/05/2020 02:17	0	0	18.3	0	0	0	1013	1013	-1	13.3
09/05/2020 03:17	0	0	18.3	0	0	0	1013	1013	-1	13.3
09/05/2020 04:17	0	0	18.3	0	0	0	1013	1013	-1	13.2
09/05/2020 05:17	0	0	18.3	0	0	0	1013	1013	-1	13.1
09/05/2020 06:17	0	0	18.3	0	0	0	1013	1013	-1	13.1
09/05/2020 07:17	0	0	18.3	0	0	0	1013	1013	-1	13.1
09/05/2020 08:17	0	0	18.3	0	0	0	1013	1013	-1	13
09/05/2020 09:17	0	0	18.3	0	0	0	1012	1013	-2	12.9

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
09/05/2020 10:17	0	0	18.3	0	0	0	1012	1012	-1	12.9
09/05/2020 11:17	0	0	18.3	0	0	0	1012	1012	-1	12.9
09/05/2020 12:17	0	0	18.3	0	0	0	1011	1011	-1	12.9
09/05/2020 13:17	0	0	18.3	0	0	0	1010	1010	-1	12.9
09/05/2020 14:17	0	0	18.2	0	0	0	1010	1010	-1	12.9
09/05/2020 15:17	0	0	18.1	0	0	0	1009	1009	-1	13.1
09/05/2020 16:17	0	0	18.2	0	0	0	1009	1009	-1	13.2
09/05/2020 17:17	0	0	18.2	0	0	0	1008	1008	-1	13.3
09/05/2020 18:17	0	0	18.2	0	0	0	1008	1007	0	13.4
09/05/2020 19:17	0	0	18.1	0	0	0	1007	1007	-1	13.6
09/05/2020 20:17	0	0	18.2	0	0	0	1007	1007	-1	13.6
09/05/2020 21:17	0	0	18.2	0	0	0	1008	1008	-1	13.8
09/05/2020 22:17	0	0	18.3	0	0	0	1008	1008	-1	13.8
09/05/2020 23:17	0	0	18.4	0	0	0	1008	1008	-1	13.9
10/05/2020 00:17	0	0	18.4	0	0	0	1008	1008	-1	13.9
10/05/2020 01:17	0	0	18.4	0	0	0	1007	1007	-1	13.9
10/05/2020 02:17	0	0	18.3	0	0	0	1007	1007	-1	13.9
10/05/2020 03:17	0	0	18.4	0	0	0	1007	1006	0	13.9
10/05/2020 04:17	0	0	18.4	0	0	0	1007	1007	-1	13.9
10/05/2020 05:17	0	0	18.3	0	0	0	1007	1007	-1	13.9
10/05/2020 06:17	0	0	18.2	0	0	0	1008	1008	-1	13.9
10/05/2020 07:17	0	0	18.1	0	0	0	1009	1009	-1	13.8
10/05/2020 08:17	0	0	18.1	0	0	0	1010	1010	-1	13.8
10/05/2020 09:17	0	0	18	0	0	0	1010	1010	-1	13.8
10/05/2020 10:17	0	0	18	0	0	0	1011	1011	-1	13.7
10/05/2020 11:17	0	0	18	0	0	0	1012	1012	-1	13.6
10/05/2020 12:17	0	0	18	0	0	0	1012	1013	-2	13.6
10/05/2020 13:17	0	0	18	0	0	0	1014	1013	0	13.6
10/05/2020 14:17	0	0	17.9	0	0	0	1015	1015	-1	13.6
10/05/2020 15:17	0	0	17.9	0	0	0	1016	1016	-1	13.6
10/05/2020 16:17	0	0	17.9	0	0	0	1016	1016	-1	13.6
10/05/2020 17:17	0	0	17.9	0	0	0	1016	1016	-1	13.6
10/05/2020 18:17	0	0	17.9	0	0	0	1017	1017	-1	13.5
10/05/2020 19:17	0	0	17.9	0	0	0	1017	1017	-1	13.5
10/05/2020 20:17	0	0	17.9	0	0	0	1018	1018	-1	13.5
10/05/2020 21:17	0	0	17.9	0	0	0	1019	1019	-1	13.5
10/05/2020 22:17	0	0	17.9	0	0	0	1020	1020	-1	13.4
10/05/2020 23:17	0	0	17.9	0	0	0	1020	1020	-1	13.4
11/05/2020 00:17	0	0	18	0	0	0	1020	1020	-1	13.4
11/05/2020 01:17	0	0	17.9	0	0	0	1020	1020	-1	13.3
11/05/2020 02:17	0	0	17.9	0	0	0	1020	1020	-1	13.3
11/05/2020 03:17	0	0	17.9	0	0	0	1020	1020	-1	13.2
11/05/2020 04:17	0	0	17.9	0	0	0	1020	1020	-1	13.1
11/05/2020 05:17	0	0	17.9	0	0	0	1021	1021	-1	13.1
11/05/2020 06:17	0	0	17.9	0	0	0	1021	1021	-1	12.9
11/05/2020 07:17	0	0	17.9	0	0	0	1022	1022	-1	12.9
11/05/2020 08:17	0	0	17.9	0	0	0	1022	1022	-1	12.8
11/05/2020 09:17	0	0	17.9	0	0	0	1022	1022	-1	12.7
11/05/2020 10:17	0	0	17.9	0	0	0	1023	1023	-1	12.6
11/05/2020 11:17	0	0	17.8	0	0	0	1023	1023	-1	12.6
11/05/2020 12:17	0	0	17.8	0	0	0	1023	1023	-1	12.5
11/05/2020 13:17	0	0	17.7	0	0	0	1023	1023	-1	12.4
11/05/2020 14:17	0	0	17.7	0	0	0	1023	1023	-1	12.4
11/05/2020 15:17	0	0	17.7	0	0	0	1022	1022	-1	12.4
11/05/2020 16:17	0	0	17.7	0	0	0	1022	1022	-1	12.4
11/05/2020 17:17	0	0	17.7	0	0	0	1022	1022	-1	12.4
11/05/2020 18:17	0	0	17.7	0	0	0	1022	1022	-1	12.5
11/05/2020 19:17	0	0	17.7	0	0	0	1022	1022	-1	12.5
11/05/2020 20:17	0	0	17.7	0	0	0	1022	1022	-1	12.6
11/05/2020 21:17	0	0	17.8	0	0	0	1023	1022	0	12.6
11/05/2020 22:17	0	0	17.9	0	0	0	1023	1023	-1	12.6
11/05/2020 23:17	0	0	17.9	0	0	0	1023	1023	-1	12.6
12/05/2020 00:17	0	0	17.9	0	0	0	1023	1023	-1	12.6
12/05/2020 01:17	0	0	17.9	0	0	0	1022	1022	-1	12.6
12/05/2020 02:17	0	0	17.9	0	0	0	1022	1022	-1	12.5
12/05/2020 03:17	0	0	17.9	0	0	0	1022	1022	-1	12.5
12/05/2020 04:17	0	0	17.9	0	0	0	1021	1021	-1	12.4
12/05/2020 05:17	0	0	17.9	0	0	0	1021	1021	-1	12.4
12/05/2020 06:17	0	0	17.9	0	0	0	1021	1020	0	12.3
12/05/2020 07:17	0	0	17.9	0	0	0	1020	1020	-1	12.2
12/05/2020 08:17	0	0	17.9	0	0	0	1020	1020	-1	12.1
12/05/2020 09:17	0	0	17.8	0	0	0	1019	1020	-2	12.1
12/05/2020 10:17	0	0	17.8	0	0	0	1019	1019	-1	11.9
12/05/2020 11:17	0	0	17.7	0	0	0	1018	1018	-1	11.9
12/05/2020 12:17	0	0	17.7	0	0	0	1018	1018	-1	11.9
12/05/2020 13:17	0	0	17.7	0	0	0	1017	1017	-1	11.9
12/05/2020 14:17	0	0	17.7	0	0	0	1017	1016	0	11.8
12/05/2020 15:17	0	0	17.8	0	0	0	1016	1016	-1	11.8
12/05/2020 16:17	0	0	17.8	0	0	0	1016	1016	-1	11.8
12/05/2020 17:17	0	0	17.9	0	0	0	1015	1015	-1	11.8
12/05/2020 18:17	0	0	17.9	0	0	0	1015	1015	-1	11.8
12/05/2020 19:17	0	0	18	0	0	0	1014	1014	-1	11.8
12/05/2020 20:17	0	0	18	0	0	0	1014	1014	-1	11.8
12/05/2020 21:17	0	0	18.1	0	0	0	1014	1014	-1	11.8
12/05/2020 22:17	0	0	18.1	0	0	0	1014	1014	-1	11.8
12/05/2020 23:17	0	0	18.1	0	0	0	1015	1015	-1	11.8
13/05/2020 00:17	0	0	18.1	0	0	0	1015	1015	-1	11.8
13/05/2020 01:17	0	0	18	0	0	0	1015	1015	-1	11.8
13/05/2020 02:17	0	0	18	0	0	0	1016	1016	-1	11.8
13/05/2020 03:17	0	0	18	0	0	0	1016	1016	-1	11.7
13/05/2020 04:17	0	0	17.9	0	0	0	1016	1016	-1	11.7
13/05/2020 05:17	0	0	17.9	0	0	0	1016	1016	-1	11.6
13/05/2020 06:17	0	0	18	0	0	0	1016	1016	-1	11.6
13/05/2020 07:17	0	0	17.9	0	0	0	1017	1017	-1	11.6
13/05/2020 08:17	0	0	17.9	0	0	0	1017	1017	-1	11.5
13/05/2020 09:17	0	0	17.9	0	0	0	1017	1017	-1	11.5
13/05/2020 10:17	0	0	17.8	0	0	0	1017	1017	-1	11.4
13/05/2020 11:17	0	0	17.8	0	0	0	1017	1017	-1	11.4
13/05/2020 12:17	0	0	17.8	0	0	0	1017	1017	-1	11.4
13/05/2020 13:17	0	0	17.8	0	0	0	1017	1017	-1	11.4
13/05/2020 14:17	0	0	17.7	0	0	0	1017	1017	-1	11.4
13/05/2020 15:17	0	0	17.7	0	0	0	1018	1018	-1	11.5
13/05/2020 16:17	0	0	17.7	0	0	0	1018	1018	-1	11.6
13/05/2020 17:17	0	0	17.7	0	0	0	1018	1018	-1	11.6
13/05/2020 18:17	0	0	17.7	0	0	0	1018	1018	-1	11.7
13/05/2020 19:17	0	0	17.8	0	0	0	1018	1018	-1	11.8
13/05/2020 20:17	0	0	17.8	20	0	0	1019	1019	-1	11.8
13/05/2020 21:17	0	0	17.8	14	0	0	1020	1020	-1	11.9
13/05/2020 22:17	0	0	17.8	11	0	0	1021	1021	-1	11.9
13/05/2020 23:17	0	0	17.8	11	0	0	1021	1021	-1	11.9
14/05/2020 00:17	0	0	17.9	10	0	0	1021	1021	-1	11.9
14/05/2020 01:17	0	0	17.9	10	0	0	1022	1022	-1	11.9
14/05/2020 02:17	0	0	17.9	10	0	0	1022	1022	-1	11.9
14/05/2020 03:17	0	0	17.9	10	0	0	1022	1022	-1	11.9

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
14/05/2020 04:17	0	0	17.9	10	0	0	1022	1022	-1	11.8
14/05/2020 05:17	0	0	17.9	10	0	0	1022	1022	-1	11.8
14/05/2020 06:17	0	0	18	10	0	0	1023	1023	-1	11.7
14/05/2020 07:17	0	0	18	11	0	0	1023	1023	-1	11.6
14/05/2020 08:17	0	0	17.9	11	0	0	1023	1023	-1	11.5
14/05/2020 09:17	0	0	17.9	11	0	0	1023	1023	-1	11.4
14/05/2020 10:17	0	0	17.9	13	0	0	1023	1023	-1	11.4
14/05/2020 11:17	0	0	17.8	11	0	0	1022	1022	-1	11.3
14/05/2020 12:17	0	0	17.7	13	0	0	1022	1022	-1	11.3
14/05/2020 13:17	0	0	17.7	14	0	0	1022	1022	-1	11.3
14/05/2020 14:17	0	0	17.7	14	0	0	1021	1021	-1	11.4
14/05/2020 15:17	0	0	17.7	14	0	0	1021	1021	-1	11.4
14/05/2020 16:17	0	0	17.7	15	0	0	1021	1021	-1	11.5
14/05/2020 17:17	0	0	17.8	13	0	0	1020	1020	-1	11.6
14/05/2020 18:17	0	0	17.9	13	0	0	1021	1021	-1	11.8
14/05/2020 19:17	0	0	18	13	0	0	1021	1020	0	11.9
14/05/2020 20:17	0	0	18	11	0	0	1021	1021	-1	12
14/05/2020 21:17	0	0	18	10	0	0	1021	1021	-1	12.1
14/05/2020 22:17	0	0	18.1	10	0	0	1021	1021	-1	12.1
14/05/2020 23:17	0	0	18.1	10	0	0	1021	1021	-1	12.2
15/05/2020 00:17	0	0	18.1	10	0	0	1021	1022	-2	12.2
15/05/2020 01:17	0	0	18.1	10	0	0	1021	1021	-1	12.2
15/05/2020 02:17	0	0	18.1	10	0	0	1021	1021	-1	12.1
15/05/2020 03:17	0	0	18.1	9	0	0	1021	1021	-1	12.1
15/05/2020 04:17	0	0	18.1	9	0	0	1021	1021	-1	12.1
15/05/2020 05:17	0	0	18.1	10	0	0	1022	1022	-1	12
15/05/2020 06:17	0	0	18.1	10	0	0	1022	1022	-1	11.9
15/05/2020 07:17	0	0	18.2	10	0	0	1022	1022	-1	11.9
15/05/2020 08:17	0	0	18.1	10	0	0	1022	1022	-1	11.8
15/05/2020 09:17	0	0	18.1	11	0	0	1022	1022	-1	11.8
15/05/2020 10:17	0	0	17.9	11	0	0	1022	1022	-1	11.7
15/05/2020 11:17	0	0	17.9	13	0	0	1022	1022	-1	11.7
15/05/2020 12:17	0	0	17.9	13	0	0	1022	1022	-1	11.6
15/05/2020 13:17	0	0	17.9	13	0	0	1022	1022	-1	11.6
15/05/2020 14:17	0	0	18	14	0	0	1022	1022	-1	11.7
15/05/2020 15:17	0	0	18	14	0	0	1022	1022	-1	11.7
15/05/2020 16:17	0	0	18.1	13	0	0	1022	1022	-1	11.7
15/05/2020 17:17	0	0	18.2	13	0	0	1022	1022	-1	11.8
15/05/2020 18:17	0	0	18.2	13	0	0	1022	1022	-1	11.9
15/05/2020 19:17	0	0	18.2	13	0	0	1022	1022	-1	11.9
15/05/2020 20:17	0	0	18.3	11	0	0	1022	1023	-2	11.9
15/05/2020 21:17	0	0	18.3	13	0	0	1023	1023	-1	12
15/05/2020 22:17	0	0	18.3	11	0	0	1022	1022	-1	12
15/05/2020 23:17	0	0	18.3	10	0	0	1022	1022	-1	12.1
16/05/2020 00:17	0	0	18.3	11	0	0	1022	1022	-1	12.1
16/05/2020 01:17	0	0	18.3	11	0	0	1022	1022	-1	12
16/05/2020 02:17	0	0	18.3	11	0	0	1022	1022	-1	12
16/05/2020 03:17	0	0	18.3	11	0	0	1022	1022	-1	11.9
16/05/2020 04:17	0	0	18.3	11	0	0	1021	1021	-1	11.9
16/05/2020 05:17	0	0	18.3	10	0	0	1021	1021	-1	11.9
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16/05/2020 07:17	0	0	18.3	11	0	0	1021	1021	-1	11.8
16/05/2020 08:17	0	0	18.3	13	0	0	1021	1021	-1	11.7
16/05/2020 09:17	0	0	18.2	13	0	0	1021	1021	-1	11.7
16/05/2020 10:17	0	0	18.1	13	0	0	1021	1021	-1	11.6
16/05/2020 11:17	0	0	18.1	14	0	0	1021	1021	-1	11.6
16/05/2020 12:17	0	0	18.1	13	0	0	1021	1021	-1	11.6
16/05/2020 13:17	0	0	18.1	13	0	0	1021	1021	-1	11.6
16/05/2020 14:17	0	0	18.1	14	0	0	1021	1021	-1	11.6
16/05/2020 15:17	0	0	18.1	14	0	0	1021	1021	-1	11.6
16/05/2020 16:17	0	0	18.2	14	0	0	1021	1021	-1	11.6
16/05/2020 17:17	0	0	18.2	14	0	0	1021	1021	-1	11.7
16/05/2020 18:17	0	0	18.3	13	0	0	1020	1020	-1	11.8
16/05/2020 19:17	0	0	18.3	13	0	0	1021	1021	-1	11.8
16/05/2020 20:17	0	0	18.3	11	0	0	1021	1021	-1	11.9
16/05/2020 21:17	0	0	18.4	11	0	0	1021	1021	-1	11.9
16/05/2020 22:17	0	0	18.4	11	0	0	1021	1021	-1	12
16/05/2020 23:17	0	0	18.4	11	0	0	1021	1021	-1	12
17/05/2020 00:17	0	0	18.4	11	0	0	1021	1021	-1	12.1
17/05/2020 01:17	0	0	18.4	11	0	0	1021	1021	-1	12.1
17/05/2020 02:17	0	0	18.4	11	0	0	1021	1021	-1	12
17/05/2020 03:17	0	0	18.5	10	0	0	1020	1020	-1	12
17/05/2020 04:17	0	0	18.5	11	0	0	1020	1020	-1	12
17/05/2020 05:17	0	0	18.5	11	0	0	1020	1020	-1	12
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17/05/2020 07:17	0	0	18.5	11	0	0	1020	1020	-1	11.9
17/05/2020 08:17	0	0	18.5	11	0	0	1020	1020	-1	11.9
17/05/2020 09:17	0	0	18.5	11	0	0	1020	1020	-1	11.9
17/05/2020 10:17	0	0	19.3	11	0	0	1020	1020	-1	11.9
17/05/2020 11:17	0	0	18.7	11	0	0	1020	1020	-1	11.9
17/05/2020 12:17	0	0	18.4	11	0	0	1020	1020	-1	11.9
17/05/2020 13:17	0	0	18.3	11	0	0	1020	1020	-1	11.9
17/05/2020 14:17	0	0	18.3	10	0	0	1019	1019	-1	11.9
17/05/2020 15:17	0	0	18.3	10	0	0	1019	1019	-1	12
17/05/2020 16:17	0	0	18.3	11	0	0	1019	1019	-1	12.1
17/05/2020 17:17	0	0	18.3	10	0	0	1019	1019	-1	12.1
17/05/2020 18:17	0	0	18.2	10	0	0	1019	1019	-1	12.1
17/05/2020 19:17	0	0	18.4	9	0	0	1019	1019	-1	12.2
17/05/2020 20:17	0	0	18.5	9	0	0	1019	1019	-1	12.3
17/05/2020 21:17	0	0	18.5	9	0	0	1019	1019	-1	12.3
17/05/2020 22:17	0	0	18.6	10	0	0	1019	1019	-1	12.4
17/05/2020 23:17	0	0	18.7	9	0	0	1019	1019	-1	12.4
18/05/2020 00:17	0	0	18.7	9	0	0	1019	1019	-1	12.4
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18/05/2020 02:17	0	0	18.7	9	0	0	1019	1019	-1	12.4
18/05/2020 03:17	0	0	18.6	9	0	0	1019	1019	-1	12.4
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18/05/2020 06:17	0	0	18.6	10	0	0	1019	1019	-1	12.3
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18/05/2020 08:17	0	0	18.8	9	0	0	1019	1019	-1	12.3
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18/05/2020 10:17	0	0	18.9	9	0	0	1019	1019	-1	12.2
18/05/2020 11:17	0	0	18.7	10	0	0	1019	1019	-1	12.2
18/05/2020 12:17	0	0	18.8	10	0	0	1019	1019	-1	12.2
18/05/2020 13:17	0	0	18.7	11	0	0	1019	1019	-1	12.2
18/05/2020 14:17	0	0	18.6	10	0	0	1019	1019	-1	12.2
18/05/2020 15:17	0	0	18.7	10	0	0	1019	1019	-1	12.3
18/05/2020 16:17	0	0	18.7	10	0	0	1019	1019	-1	12.3
18/05/2020 17:17	0	0	18.7	10	0	0	1019	1019	-1	12.3
18/05/2020 18:17	0	0	18.8	10	0	0	1019	1019	-1	12.3
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18/05/2020 20:17	0	0	18.8	9	0	0	1019	1019	-1	12.3
18/05/2020 21:17	0	0	18.8	10	0	0	1019	1019	-1	12.4

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	TVOC ppm/v	H_2S ppm/v	CO ppm/v	Borehole Pressure mbar	Atmospheric Pressure mbar	Differential Pressure mbar	Temperature °C
18/05/2020 22:17	0	0	18.9	10	0	0	1019	1019	-1	12.4
18/05/2020 23:17	0	0	18.8	9	0	0	1019	1019	-1	12.4
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19/05/2020 02:17	0	0	18.8	9	0	0	1019	1019	-1	12.4
19/05/2020 03:17	0	0	18.8	9	0	0	1019	1019	-1	12.4
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19/05/2020 19:17	0	0	18.3	10	0	0	1020	1020	-1	12.7
19/05/2020 20:17	0	0	18.4	9	0	0	1020	1020	-1	12.8
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19/05/2020 22:17	0	0	18.5	9	0	0	1020	1020	-1	12.9
19/05/2020 23:17	0	0	18.5	9	0	0	1020	1020	-1	12.9
20/05/2020 00:17	0	0	18.5	9	0	0	1020	1020	-1	12.9
20/05/2020 01:17	0	0	18.5	9	0	0	1020	1020	-1	12.9
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20/05/2020 05:17	0	0	18.5	9	0	0	1019	1019	-1	12.8
20/05/2020 06:17	0	0	18.5	9	0	0	1019	1019	-1	12.8
20/05/2020 07:17	0	0	18.5	9	0	0	1019	1019	-1	12.8
20/05/2020 08:17	0	0	18.5	9	0	0	1019	1019	-1	12.7
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20/05/2020 10:17	0	0	18.5	10	0	0	1019	1018	0	12.6
20/05/2020 11:17	0	0	18.6	10	0	0	1018	1018	-1	12.6
20/05/2020 12:17	0	0	18.9	11	0	0	1017	1017	-1	12.6
20/05/2020 13:17	0	0	18.8	9	0	0	1017	1017	-1	12.7
20/05/2020 14:17	0	0	18.9	10	0	0	1016	1016	-1	12.8
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20/05/2020 16:17	0	0	18.9	9	0	0	1016	1016	-1	13.1
20/05/2020 17:17	0	0	19	8	0	0	1015	1015	-1	13.2
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20/05/2020 20:17	0	0	18.8	5	0	0	1015	1015	-1	13.7
20/05/2020 21:17	0	0	18.8	5	0	0	1015	1015	-1	13.8
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21/05/2020 03:17	0	0	18.7	4	0	0	1015	1015	-1	13.9
21/05/2020 04:17	0	0	18.7	4	0	0	1015	1015	-1	13.9
21/05/2020 05:17	0	0	18.7	4	0	0	1015	1015	-1	13.9
21/05/2020 06:17	0	0	18.7	4	0	0	1016	1016	-1	13.8
21/05/2020 07:17	0	0	18.7	4	0	0	1016	1016	-1	13.8
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ggs
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DataPack®Plus

Understanding the hazards and risks at your site

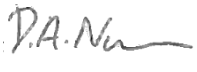
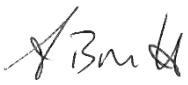
GGS3078 Ryebank Road, Chorlton

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FOREWORD

This report has been prepared based on information made available to Ground-Gas Solutions, trading as GGS, at the time of the reporting using all reasonable skill, care and diligence and within the limitations of the scope of works agreed with, and resources provided by, the client.

GGS has relied on information provided by others and has prepared this report on the basis of this information being accurate.

The report and recommendations therein are provided based on information available to GGS at the time of preparing the report and completed to recognised UK guidance and legislation. GGS will not accept any liability for inaccurate or incomplete information provided to GGS or any liability arising from the future change of any such guidance or legislation.

GGS is not obliged and disclaims any obligation to carry out further works or update the report for events occurring after such works have been carried out, and / or report issued in final form. This also applies to transfer of the report to other parties.

This report must be issued as final and be signed by the author and approved by a company director or senior management before the report may be relied upon by the client and subject to full payment for our services being made.

Any third parties using or relying on the information, comments, conclusions and recommendations do so at their own risk. Should any third party wish to use or rely upon the content of the report, written approval must be sought from a GGS Director; a charge may be levied against such approval.

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For: E3P Ltd.
Ref No.: GGS3078DPP01
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Appendices

Appendix A

Site & Monitoring Location Plan

Appendix B

Site Photographs

Appendix C

Periodic Monitoring Data

Appendix D

Time Series Data

Appendix E

Calibration Certificates

Appendix F

Gas Sentinel® Overview & Deployment information

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1 Introduction

GGS Limited has been commissioned by E3P Ltd. to undertake continuous ground gas monitoring at Ryebank Road, Chorlton (subsequently referred to as 'the site' throughout this report), and provide a GGS DataPack®Plus report containing the following information:

- Periodic monitoring records.
- Continuous monitoring data and graphs.
- Atmospheric pressure trend analysis.
- Short technical commentary
- Instrument calibration certificates.

1.1 Scope of works

The scope of works is set out below:

- A site visit by GGS specialists on the 6th August 2024 to; periodically monitor 4 No. monitoring well locations and deploy continuous ground gas monitoring instruments at 4 No. monitoring well locations.
- A site visit by GGS specialists on 28th August 2024 to collect continuous ground gas monitoring instruments from 3 No. monitoring well locations.
- A final visit by GGS specialists on 13th September 2024 to collect 1 No. monitoring instrument from 1 No. monitoring well location.
- Provision of a GGS DataPack®Plus report.

2 Site Characteristics

2.1 Site Description

Table 2.1 below details the site description. A site and monitoring location plan is presented in Appendix A, whilst selected site photographs are presented in Appendix B.

Table 2.1 Site description

Description	Details
Address	Ryebank Fields, Ryebank Road, Chorlton M21 9SN
National grid Reference (approximate centre of site)	SJ 81052 94551
Overview	The site comprises a currently vacant plot of land, which is currently under consideration for development. It is underlain by historic landfill. Previous ground gas monitoring has been undertaken at the site, including continuous ground gas monitoring of 6 No. monitoring well locations undertaken by GGS in 2020. A supplementary monitoring assessment has been proposed to target a smaller area of the site, which has previously been considered as commensurate to CS4 owing to elevated methane concentrations. GGS has been requested to provide continuous ground gas monitoring at 4No. monitoring locations, to provide a robust data set within relatively short timescales, which will be used to inform an accurate update of the gas Conceptual site Model (gCSM) and risk assessment.
North of the site	The site is bound to the north by residential housing centred on Ryebank Road. Residential housing extends further to the north.
South of the site	The site is bound to the south by residential housing centred on Ryebank Road and Longford Road. Residential housing extends further to the south.
East of the site	Immediately east of the site, there is residential housing centred on Copley Road and Peveril Crescent. St. Johns RC Primary School is also located to the immediate east of the site.
West of the site	Open greenspace and Longford Park are located to the west of the site.

Figure 1 below presents selected GGS site photographs. Additional site photographs are presented in Appendix B.



Figure 1 Selected GGS site photographs showing the site conditions before deployment (August 2024).

3 Methodology

3.1 Periodic monitoring of well locations

GGS undertook periodic ground gas monitoring of 4 No. monitoring well locations, prior to the deployment of the continuous monitoring instruments. Concentrations of standard ground gases (methane, carbon dioxide, oxygen, carbon monoxide, and hydrogen sulphide), and flow, were recorded until steady state conditions were observed, or up to a maximum of 10 minutes.

GGS also recorded depth to groundwater and depth to base of the monitoring well using a geotechnical dip meter. Monitoring data was recorded on individual proforma records, along with all pertinent observations.

A summary of the periodic monitoring records is presented in Section 4.1, whilst the full periodic monitoring records are presented in Appendix C.

3.2 Continuous ground gas monitoring

3.2.1 Definition

When the frequency of sampling matches, or is greater than, the frequency of a parameter change, the data collected can be termed ‘continuous’. A continuous data set will therefore capture the full range of variation in the parameter being recorded.

3.2.2 Benefits of continuous data

The collection of time series data of permanent gases and other environmental parameters provides a wealth of information significantly assisting the assessor to identify the dominant processes of gas generation and migration. This leads to a more detailed understanding of the ground-gas regime and allows for an accurate and truly site-specific risk assessment to be completed.

3.2.3 Methodology

GGS deployed continuous ground gas monitoring instruments within 4 No. monitoring well locations for a 3-week period during August 2024. The instruments were configured to

record standard ground gases (methane, carbon dioxide, oxygen, carbon monoxide and hydrogen sulphide), along with atmospheric pressure, atmospheric temperature, and borehole flow, at a 60-minute monitoring frequency.

Figure 2 below presents selected site photographs of the continuous monitoring instruments deployed and secured on site, whilst Table 3.1 details the continuous monitoring schedule.



Figure 2 Selected GGS site photograph of a Gas Sentinel® continuous ground gas monitoring instrument deployed and secured on site.

Table 3.1 Continuous monitoring schedule

Location ID	Instrument Serial No.	Dates monitored
WS201	Gas Sentinel® 03000033	06/08/2024 – 28/08/2024
WS202	Gas Sentinel® 03000041	06/08/2024 – 28/08/2024
WS205	Gas Sentinel® 03000042	06/08/2024 – 28/08/2024
CP202*	Gas Sentinel® 03000036 Gas Sentinel® 03000042	06/08/2024 – 28/08/2024 (03000036) 28/08/2024 – 13/09/2024 (03000042)

*The continuous monitoring period was extended with Gas Sentinel® 03000042 due to a technical issue with the methane sensor of Gas Sentinel® 03000036, available methane data for 6th to 28th August was intermittent and an alternative instrument was deployed at this location 28th August to 13th September to confirm methane behaviour through time.

Continuous monitoring graphs are presented in Section 4.2 and the raw data is presented in Appendix D. Calibration certificates for the instruments used are presented in Appendix E, whilst Gas Sentinel® overview & deployment information is presented in Appendix F.

4 Results

4.1 Summary of periodic monitoring of well locations

Table 4.1 below presents a summary of the periodic monitoring completed by GGS upon deployment. The full periodic monitoring records are presented in Appendix C.

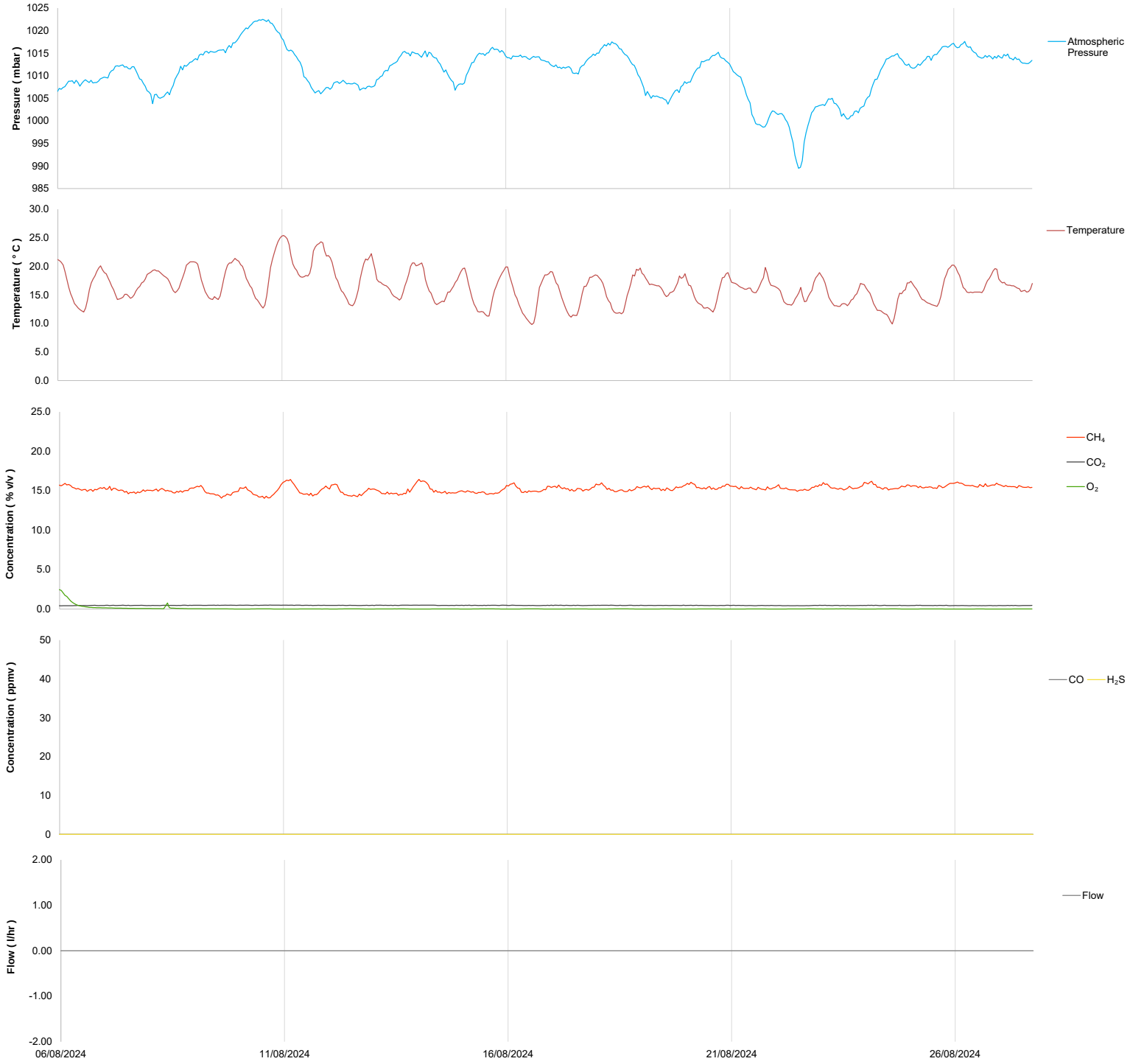
Table 4.1 Periodic gas monitoring results and comment summary

Monitoring Location	Date	Max. Steady Positive Flow Rate (l/hr)	Max. CH_4 (% v/v)	Max. CO_2 (% v/v)	Min O_2 (% v/v)	Max. CO (ppmv)	Max. H_2S (ppmv)	Standing water level (m bgl)	Comments
WS201	06/08/2024	<0.1	16.2	0.6	0.3	<1	<1	2.12	Methane concentrations decreasing and oxygen concentrations increasing with increasing monitoring duration. Response zone sits at 2 – 3 mbgl. Response zone flooded during periodic monitoring
WS202	06/08/2024	<0.1	5.0	0.7	13.7	1	<1	2.25	Response zone sits at 2.5 – 4.5 mbgl. Response zone flooded during periodic monitoring
WS205	06/08/2024	<0.1	<0.1	0.4	20.5	1	<1	2.38	Response zone sits at 2.5 – 4.5mbgl. Response zone flooded during periodic monitoring
CP202	06/08/2024	<0.1	8.9	0.1	18.7	16	<1	1.86	Methane concentrations decreasing over course of monitoring duration. Response zone sits at 4mbgl – 13mbgl and is flooded.

4.2 Continuous monitoring results

GGS DataPack® analysis involves converting raw data files from instruments into spread sheets. The data is then plotted as time series data graphs, showing ground-gas concentrations, gas flow, atmospheric pressure and atmospheric temperature against time. The graphs also contain a minimum and maximum values table.

The time series graphs are presented on the following pages, whilst the raw time series data is presented in Appendix D.



Experts in Continuous Monitoring

Title:

WS201 - Time Series Graphs

Project:

GGS3078 Ryebank Road, Chorlton

Client:

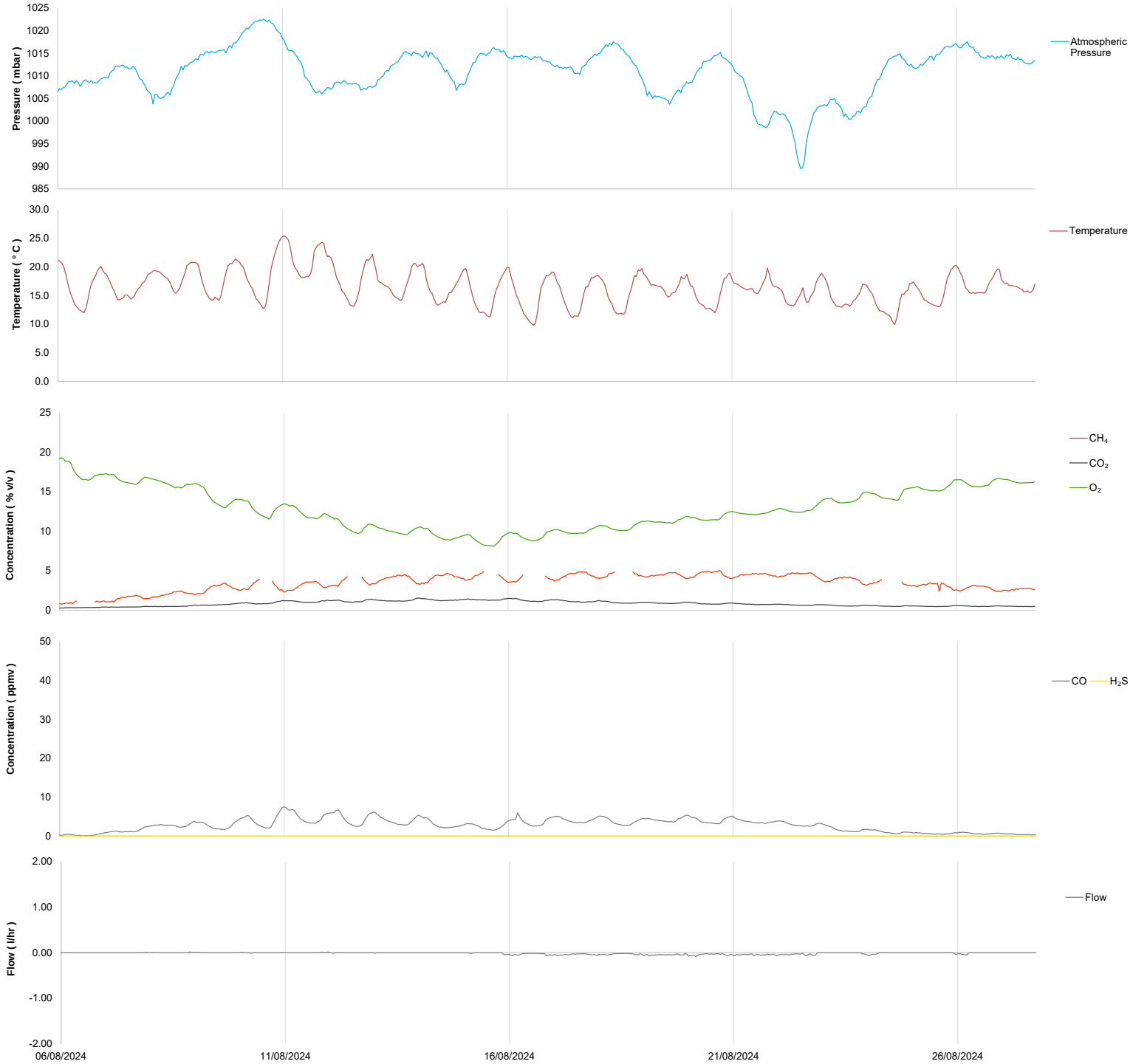
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	14.0	16.4
CO_2 (% v/v)	0.4	0.5
O_2 (% v/v)	0.0	2.5
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	0
Atmospheric Pressure (mbar)	989.5	1022.5
Temperature (° C)	9.8	25.4
Flow (l/hr)	0.00	0.00

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Title:

WS202 - Time Series Graphs

Project:

GGS3078 Ryebank Road, Chorlton

Client:

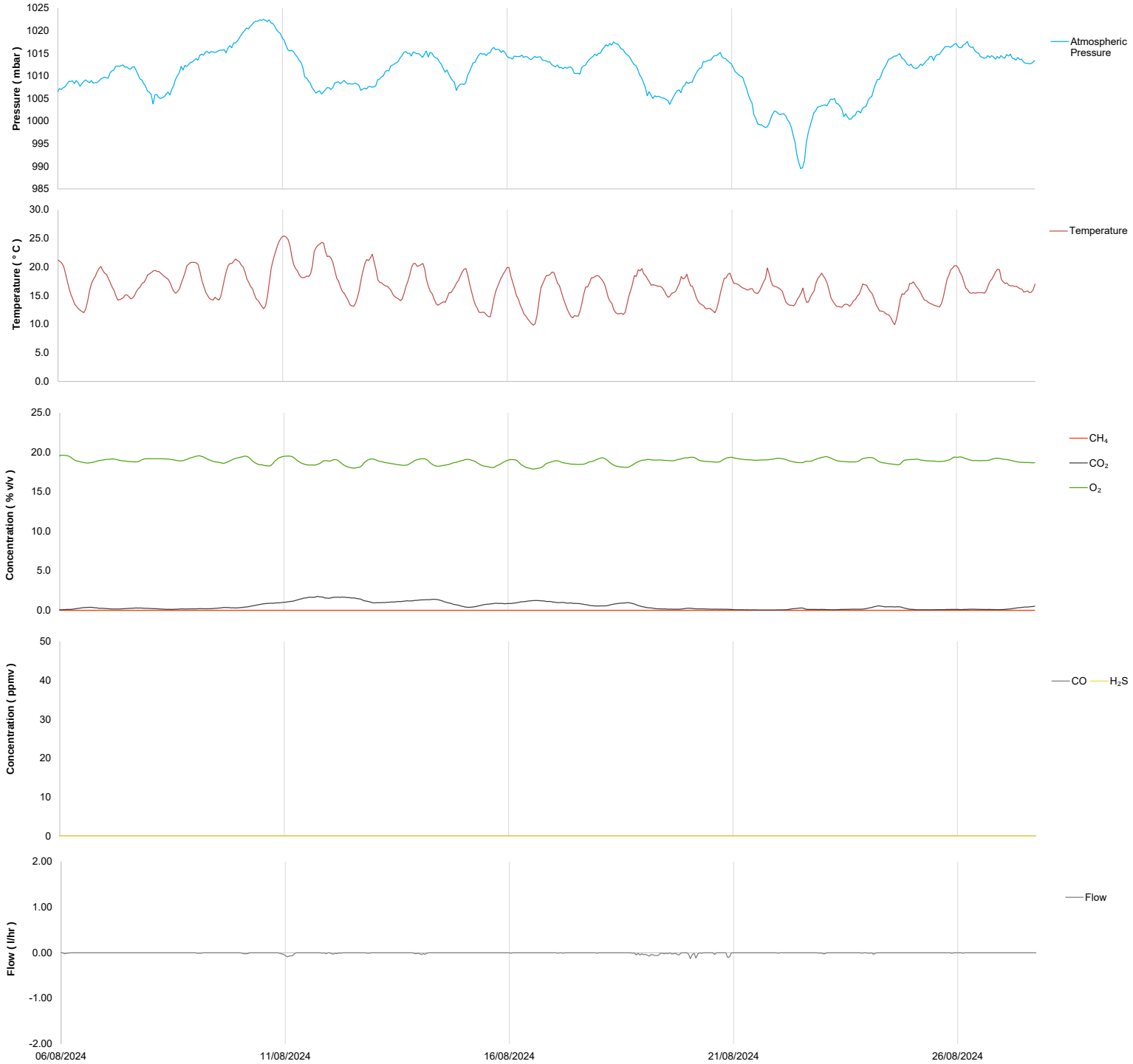
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	0.8	5.0
CO_2 (% v/v)	0.3	1.5
O_2 (% v/v)	8.1	19.3
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	7
Atmospheric Pressure (mbar)	989.5	1022.5
Temperature (° C)	9.8	25.4
Flow (l/hr)	-0.08	0.02

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Experts in Continuous Monitoring

Title:

WS205 - Time Series Graphs

Project:

GGS3078 Ryebank Road, Chorlton

Client:

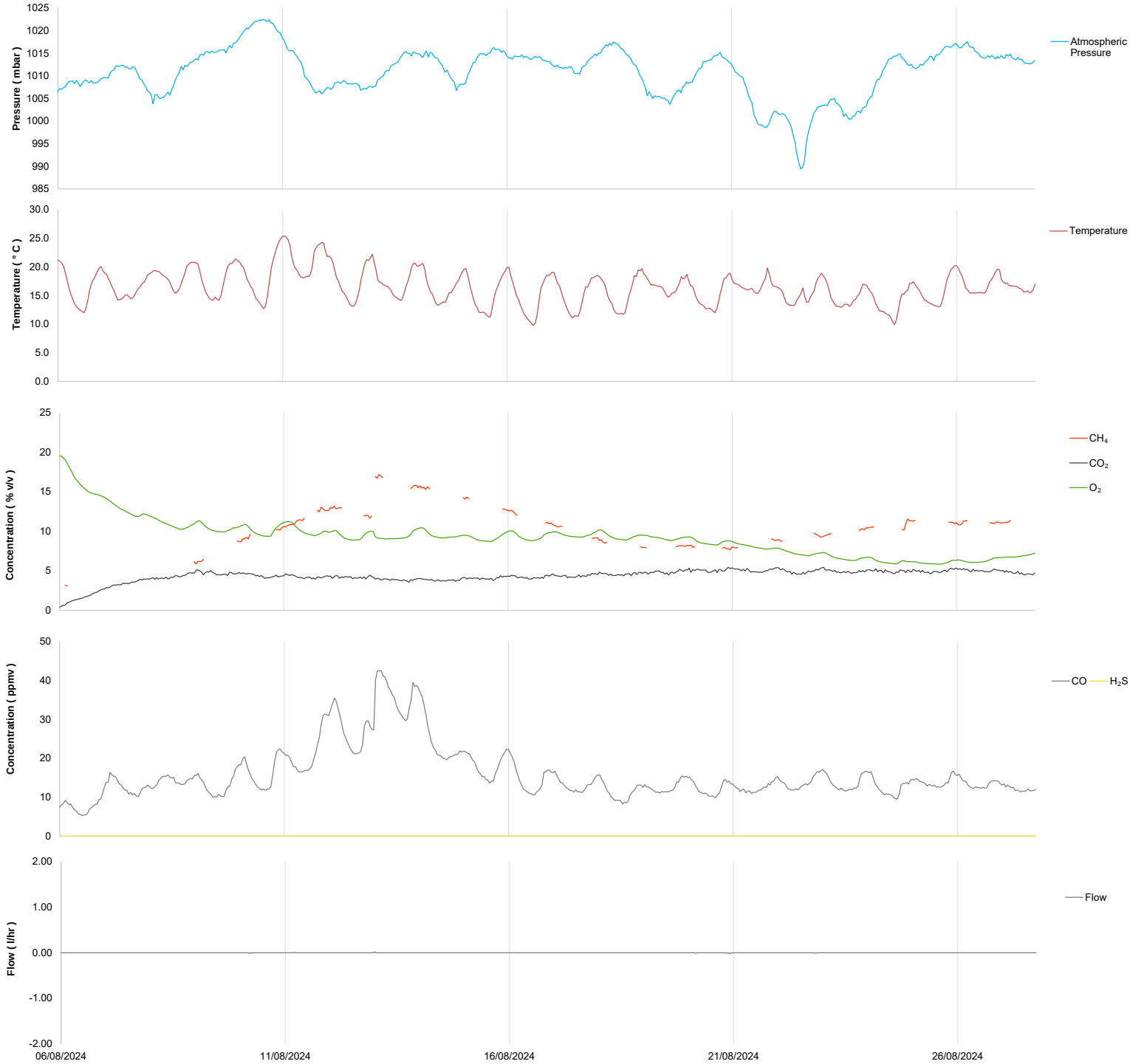
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	0.0	0.0
CO_2 (% v/v)	0.0	1.8
O_2 (% v/v)	17.9	19.6
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	0
Atmospheric Pressure (mbar)	989.5	1022.5
Temperature (° C)	9.8	25.4
Flow (l/hr)	-0.13	0.00

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Title:

CP202 - Time Series Graphs

Project:

GGS3078 Ryebank Road, Chorlton

Client:

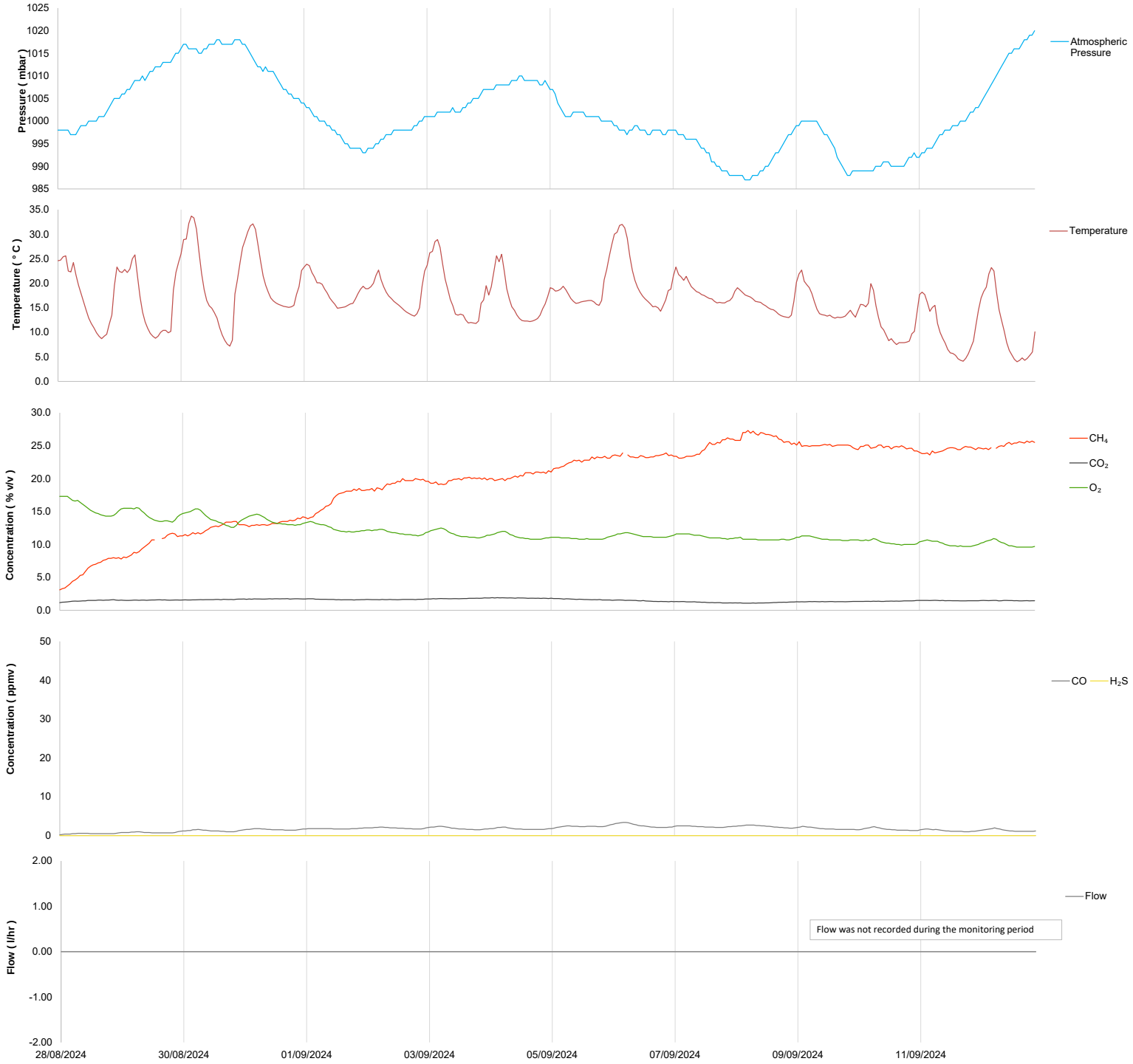
E3P

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	3.1	17.2
CO_2 (% v/v)	0.4	5.5
O_2 (% v/v)	5.9	19.5
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	5	43
Atmospheric Pressure (mbar)	989.5	1022.5
Temperature (° C)	9.8	25.4
Flow (l/hr)	-0.02	0.02

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Experts in Continuous Monitoring

Title:

CP202 (monitoring extension) - Time Series Graphs

Project:

GGS3078 Ryebank Road, Chorlton

Client:

e3p Ltd.

Minimum / Maximum Table		
Parameter	**Minimum**	**Maximum**
CH_4 (% v/v)	3.1	27.3
CO_2 (% v/v)	1.1	1.9
O_2 (% v/v)	9.6	17.3
Hydrogen Sulphide (ppmv)	0	0
Carbon Monoxide (ppmv)	0	3
Atmospheric Pressure (mbar)	987	1020
Temperature (° C)	4.0	33.7
Flow (l/hr)	NM	NM

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4.3 Atmospheric Pressure Analysis

Atmospheric pressure is often a dominant ground-gas driver and as such, monitoring should include sampling during falling and rising pressure events. Specifically, it is the rate of a pressure fall and the duration of the fall that are the two factors considered most important.

To capture potential 'worst case' conditions with respect to falling atmospheric pressure, monitoring should include both short and longer duration falling pressure events at a rate of 1.15 millibars per hour and above[1]. This is calculated as an average fall over an 8-hour reference period. The rate of change in atmospheric pressure over an 8-hour reference period is presented in Figure 3 on the following page/s.

For weather forecasting in the UK, The Meteorological Office[2] records falling pressure tendency over a 3-hour period, whereby every hour the change in atmospheric pressure over the proceeding 3 hours is noted as being:

- Stable <0.1 millibars
- Falling (or rising) slowly >0.1 millibars
- Falling (or rising) >1.6 millibars
- Falling (or rising) rapidly >3.6 millibars
- Falling (or rising) very rapidly >6 millibars

Similarly, The British Coal Technical Department[3] considered a sharp fall in pressure to be between 4 and 8 millibars over a 3-hour period. GGS has used the time series data to reference a 3-hour tendency throughout the continuous monitoring period using the Met Office criteria listed above. A time series graph of the 3-hour pressure tendency is also presented in Figure 4 on the following page/s, which provides time reference/occurrences to atmospheric pressure falling, falling rapidly and/or falling very rapidly.

[1] CL:AIRE Technical Bulletin 17, August 2018. Ground Gas Monitoring and 'Worst-Case' Conditions
[2] https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/library-and-archive/library/publications/factsheets/factsheet_8-shipping-forecast.pdf
[3] British Coal Technical Department. 1990. Hazardous Gases Underground: Notes for Guidance NG/9. British Coal Technical Department.

The standard mean sea level pressure (MSLP) in the UK is defined as 1013.25 millibars[4], which provides a common value to compare atmospheric pressure across different locations and elevations. Atmospheric pressure above or below MSLP can therefore be considered either higher or lower than the average pressure for that geographical location. Typical meteorological convention is to segment atmospheric pressure into five distinct categories as follows:

- Very high >1035 millibars
- High >1020 <1035 millibars
- Normal >1005 <1020 millibars
- Low >990 <1005 millibars
- Very low <990 millibars

Table 4.2 below provides a summary of the atmospheric pressure regime, including the percentage time in which pressure was below average and below average and falling.

With consideration to The Met Office pressure change criteria, the percentage distribution of the 3-hour atmospheric pressure tendency during the continuous monitoring period is presented in Figure 3 below. Although rising pressure will have a similar distribution to falling pressure, this is listed together. The percentage distribution of atmospheric pressure in terms of very low to very high pressure, is presented in Figure 4, also below.

Table 4.2 Atmospheric pressure regime

Atmospheric Pressure Analysis 06/08/24 – 28/08/24	
Range in atmospheric pressure (mbar)	987.2 – 1022.4 (35.2 millibars)
Maximum average rate of fall over an 8-hour reference period	1.65 mbar/hour (22/08/2024 20:00 1000.9mb to 23/08/2024 04:00 987.7mb)
Maximum change in pressure over a 3-hour period (pressure tendency)	7.3 millibars (23/08/2024 01:00 995.0mb to 23/08/2024 04:00 987.7mb)
Most significant atmospheric pressure fall over 8 hours	16.0 millibars over 22 hours (0.73 mbar/hour) (1014.6 21/08/2024 10:00 – 998.6 22/08/2024 08:00).
% time low or very low pressure (<1005 and falling)	36.6% (14.7%)

[4] https://www.metoffice.gov.uk/weather/learn-about/weather/how-weather-works/high-and-low-pressure

For the purpose of atmospheric pressure analysis, GGS has obtained historical weather data which is based on reanalysis datasets. A combination of weather station, aircraft, buoy, radar and satellite observations are used to create a comprehensive record of past weather conditions. These datasets are able to provide detailed historical weather data for locations which may not have a local weather station and for locations that may have gaps in observational weather data. All the assessed pressured data has been adjusted relative to MSLP.

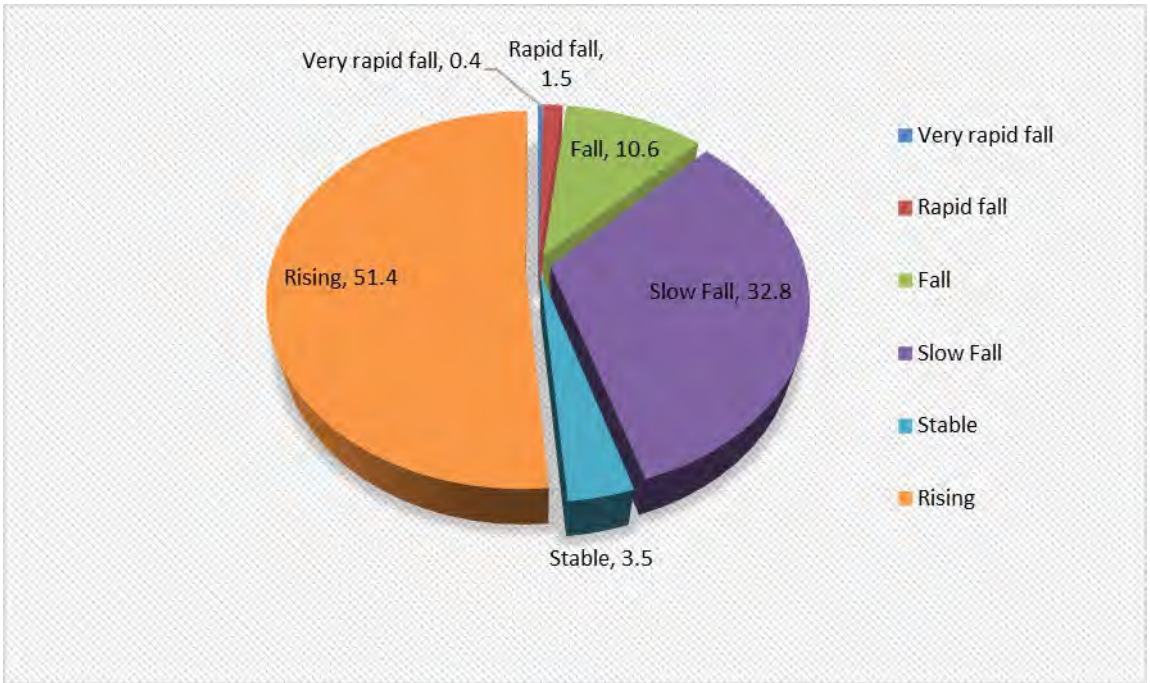


Figure 3 % distribution of 3-hour pressure tendency.

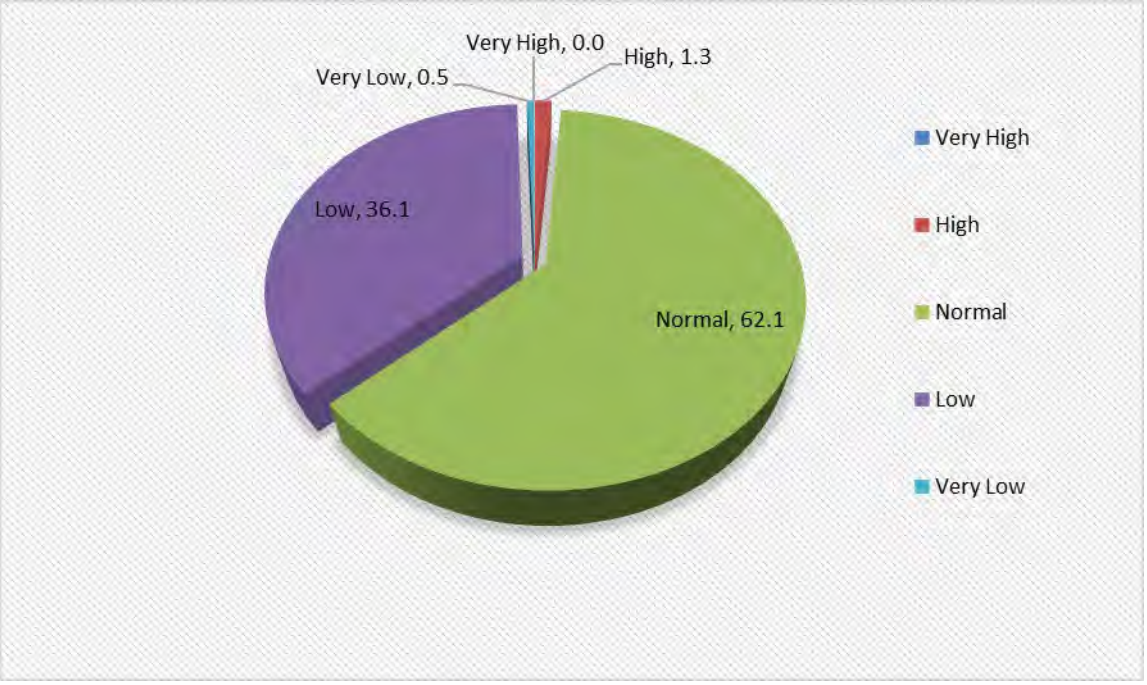


Figure 4 Percentage distribution of the atmospheric pressure regime in terms of very low to very high pressure.

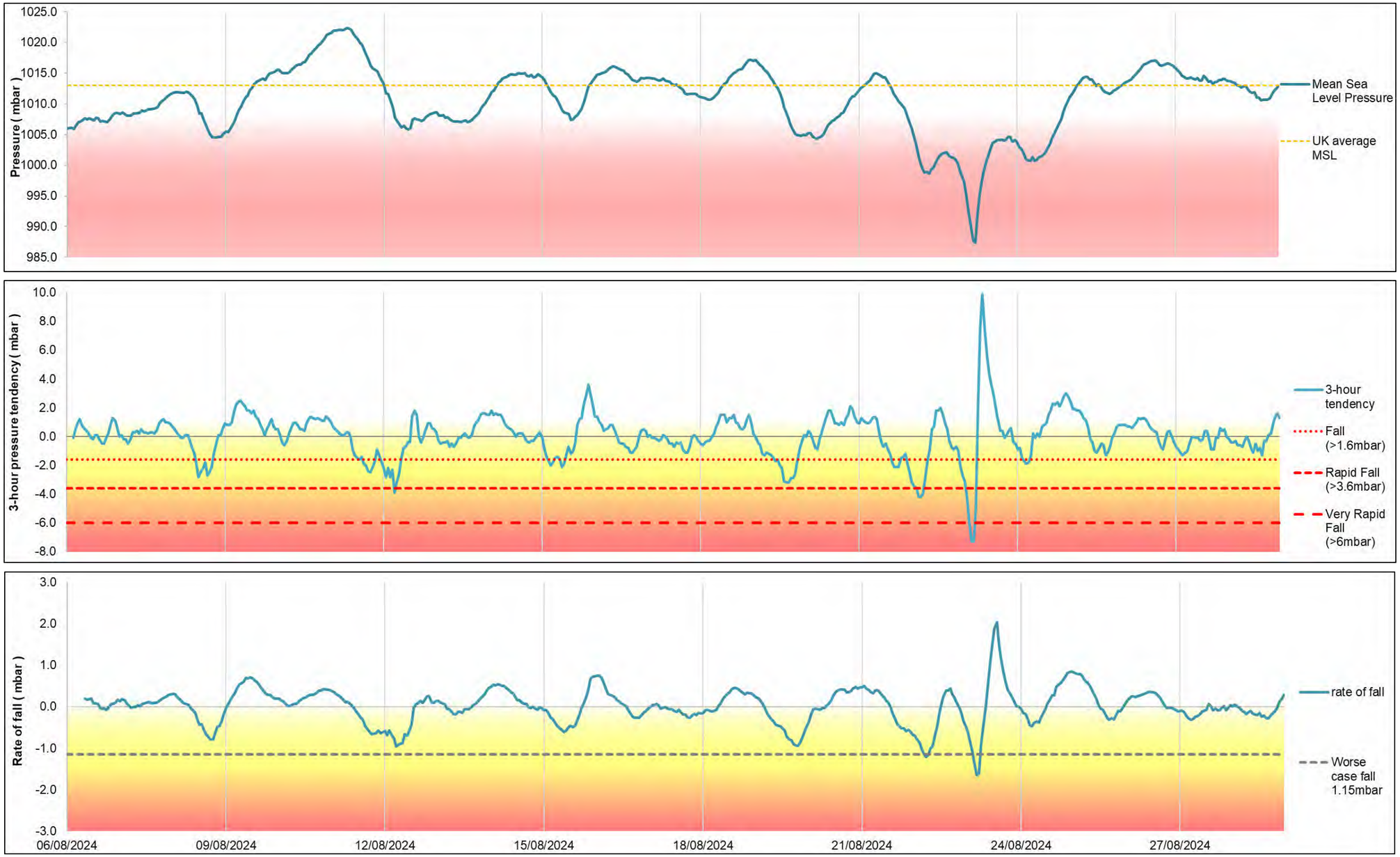


Figure 5 Time series atmospheric pressure presented with reference to standard UK mean sea level pressure (top), 3-hour pressure tendency (middle) and a maximum rate of fall averaged over an 8-hour reference period (bottom) over the period of 6th August – 28th August 2024

5 Short technical commentary

The Site is underlain by former landfill and is under consideration for potential development. The monitoring period was undertaken over a period of 3no. weeks to further understand a more localised area of the Site that is currently considered as Characteristic Situation 4.

Gas behaviour at WS201 is considered typical of an in-source location. This is noted due to an absence of any gas response to atmospheric pressure and presence of elevated and stable methane concentrations throughout. There may be some dissolved gas interactions occurring due to low concentrations of carbon dioxide (as carbon dioxide is much more readily soluble than methane and is remaining in dissolved in the groundwater).

In other monitoring locations there is also a lack of notable interaction between the gas regime and atmospheric pressure. With consideration to screening sections in each monitoring well, it is evident that during deployment all of the response zones were completely or very nearly completely flooded. As such, the time series data is unlikely to represent an accurate characterisation to the gas regime in the unsaturated soils closer to the surface. For example, elevated concentrations of methane are potentially higher volumetrically in comparison to unsaturated zone due to the relative solubilities and methane trapped in a sealed well headspace. This is evidenced in the periodic monitoring data of lower gas volumes present, noting initial peak in methane, followed by declining concentrations with monitoring duration, showing that the methane is not replenished at the rate it is exhausted from the well during monitoring.

An extension to the monitoring period in CP202 has confirmed methane behaviour. When the monitoring well is sealed, methane concentrations increase and oxygen is reduced, whilst carbon dioxide remains low and likely remaining in solution. Carbon monoxide is noted in this monitoring location, however, it is considered that there is a potential cross sensitivity occurring. Carbon monoxide is typically a marker for this and may also be slightly exaggerating methane concentrations also. Hydrocarbon odours were noted upon collection when the dip tape was removed, hydrocarbons being a potential cause of cross-sensitivity.

Both rising and falling atmospheric pressure were captured during the continuous monitoring period, with low and sustained falling atmospheric pressure evident in the time series data,

which also included a period of very rapid falling pressure on 23rd August 2024. Although a large portion of the monitoring period captured slow falling pressure, there was a sustained period where pressure was lower than the geographical average as well as a rate of fall exceeding worst-case conditions and rapid falling pressure. Therefore, the atmospheric pressure analysis confirms that worst case conditions, in terms of the rate of falling pressure and low pressure, have likely been captured during the monitoring period.

In summary, elevated methane concentrations have been recorded and there is little evidence that they're driven by atmospheric pressure changes. Response zones in all locations were flooded during deployment and have likely remained so throughout the monitoring period. The gas concentrations measured indicate dissolved gas interactions and amplified concentrations that are likely artificially exaggerated due to collecting in a sealed head space, with carbon dioxide likely remaining in solution.

6 Instrument specifications

GGS instrumentation is maintained in accordance with the manufacturer recommendations and is serviced and calibrated annually. Note that for some instrumentation, cross sensitivity to other gases and significant environmental changes, such as temperature, pressure and humidity, should be taken into consideration when considering all site monitoring data.

The current calibration certificates for all equipment used on site are included in Appendix E.

6.1 GasData GFM400 series

The GasData GFM 400 series gas analyser with flow meter measures borehole flow rates, bulk gas concentrations (methane, carbon dioxide and oxygen), trace gas concentrations (carbon monoxide and hydrogen sulphide) barometric and differential pressure.

The specification range of the GFM 400 series is as follows:

Table 6.1 GFM 400 series specification

Feature	Method / Type	Range	Resolution
Methane	Infrared	0 - 100%v/v	0.1%
Lower Detection Limit (LEL)	Infrared	0 - 100%v/v	0.1%
Carbon Dioxide	Infrared	0 - 100%v/v	0.1%
Oxygen	Electrochemical	0 - 25%v/v	0.1%
Hydrogen Sulphide	Electrochemical	0 - 5000ppm	1ppm
Carbon Monoxide	Electrochemical	0 - 2000ppm	1ppm
Atmospheric Pressure	Absolute Pressure Sensor	800 - 1200mb	1mb
Differential Pressure	Thermal Dissipation	±1250Pa	0.1Pa
Temperature	Bi-metal	-10°C to +100°C	1°C
Flow	Thermal Dissipation	-60 – 100 l/hr	0.1l/hr

6.2 Gas Sentinel® instrumentation

Instrument specification and overview information sheets are presented in Appendix F.

7 ISO Accreditation and Professional Insurances

GGS are accredited to the following international standards:

- ISO 9001:2015 (Quality Management System);
- ISO 14001:2015 (Environmental Management System), and;
- ISO 45001: 2018 (Occupational Health and Safety Management System).

8 Limitations

GGS has prepared this factual report for the use of the Client and those parties whom a warranty agreement has been executed, or with whom an assignment has been agreed.

GGS accepts no responsibility for the consequences of this document being used for any purpose or project other than for which it was commissioned or for the consequences arising from this document's use by any third party with whom an agreement has not been executed.

GGS accept no responsibility for the interpretation of this factual data. A reviewer of the data provided must take into account other available information and the context in which this data was collected. For example, site setting, conceptual site model, environmental conditions, gases present (that are not monitored as part of this contract, but may interfere with the sensors used), building design and construction practices during the monitoring period.

GGS accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

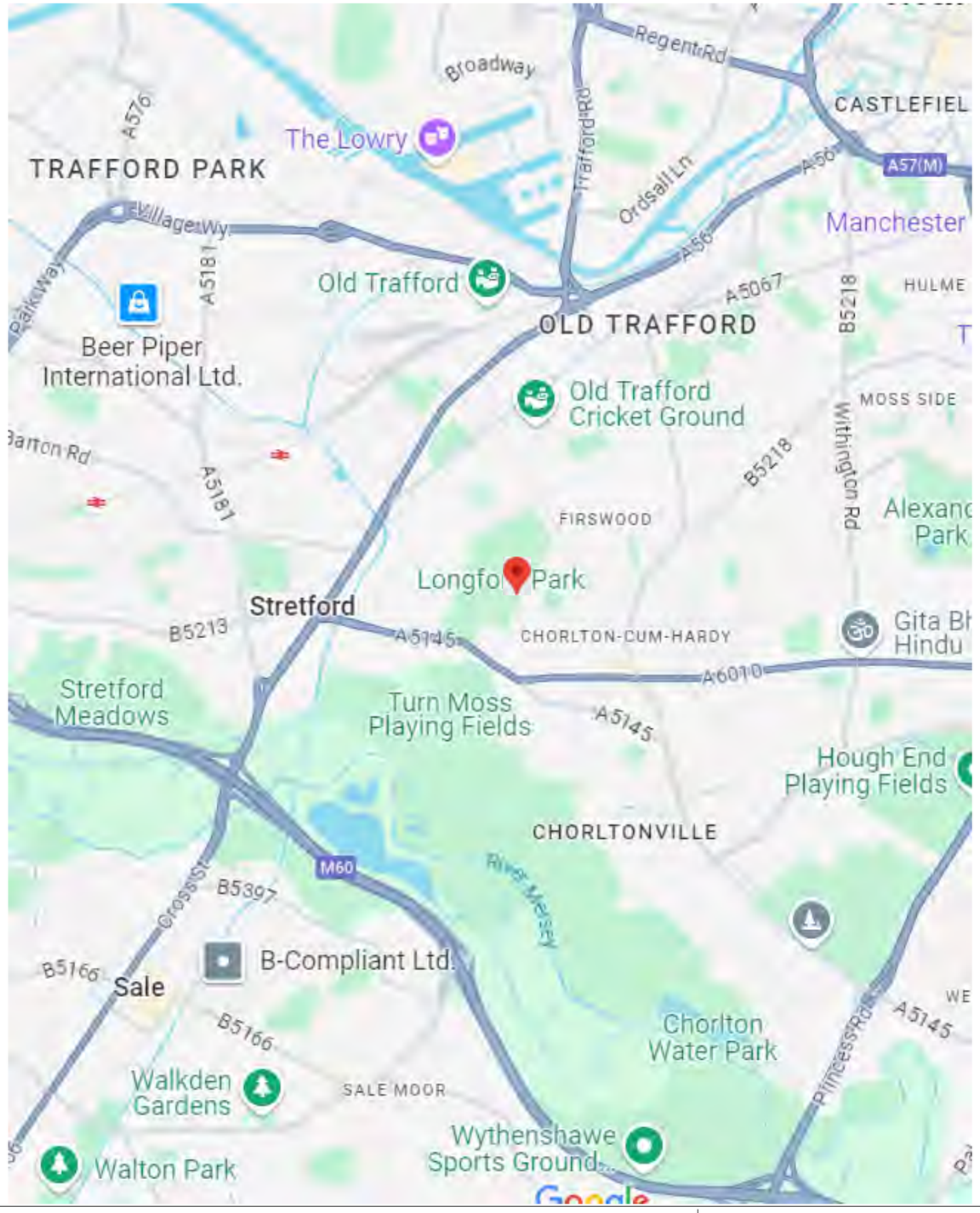
GGS DataPack® Plus
GGS3078 Ryebank Road, Chorlton

Appendix A

Site & Monitoring Location Plan

For: E3P Ltd.
Ref No.: GGS3078DPP01
Date: 17/09/2024

Experts in Continuous Monitoring





N

TITLE: Site Location

PROJECT: GGS3078 Ryebank Road, Chorlton

DRAWING REF: GGS3078_SP01

Key:

Approximate Site Boundary

Site Location

Rev.	Date	Dwn.	Description	App'd
0	09/09/2024	DC	FINAL	HR

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ggs
Experts in
Continuous Monitoring
Ground Gas Solutions (GGS) Ltd.
Pythia House (Unit 10), Bamford Business Park
Hibbert Street, Stockport, SK4 1PL



TITLE: Monitoring Location Plan

PROJECT: GGS3078 Ryebank Road, Chorlton

DRAWING REF: GGS3078_MLP01

Key:

Approximate Site Boundary

Continuous Monitoring Location

Rev.	Date	Dwn.	Description	App'd
0	09/09/2024	DC	FINAL	HR

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Ground Gas Solutions (GGS) Ltd.
Pythia House (Unit 10), Bamford Business Park
Hibbert Street, Stockport, SK4 1PL

GGS DataPack® Plus
GGS3078 Ryebank Road, Chorlton

Appendix B

Site Photographs

For: E3P Ltd.
Ref No.: GGS3078DPP01
Date: 17/09/2024

Experts in Continuous Monitoring

GGS DataPack® Plus
GGS3078 Ryebank Road, Chorlton



GGS periodic ground gas monitoring.



Continuous monitoring instrument deployed and secured.



Heras type panel fencing used to secure the monitoring locations.



Gas Sentinel® continuous ground gas monitoring instrument installed in situ.



Gas Sentinel® continuous ground gas monitoring instrument installed in situ.



Site overview photograph.

For: E3P Ltd.
Ref No.: GGS3078DPP01
Date: 17/09/2024

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Experts in Continuous Monitoring

GGS DataPack® Plus
GGS3078 Ryebank Road, Chorlton

Appendix C

Periodic Monitoring Data

For: E3P Ltd.
Ref No.: GGS3078DPP01
Date: 17/09/2024

ggs
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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	MT
Monitoring Date	06/08/2024
Monitoring Start Time	09:58

Borehole Details	
Borehole ID	WS201
W3W	rested.hurry.chef
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	20.8	79.2	<1	<1
Initial	<0.1	14.7	0.6	1.7	83.0	<1	<1
30	<0.1	15.6	0.6	0.4	83.4	<1	<1
60	<0.1	16.0	0.6	0.3	83.1	<1	<1
120		16.2	0.6	0.4	82.8	<1	<1
180		15.8	0.6	1.4	82.2	<1	<1
240		14.9	0.6	2.1	82.4	<1	<1
300		14.7	0.6	2.3	82.4	<1	<1
360							
420							
480							
540							
600							
Fresh Air	<0.1	<0.1	<0.1	20.3	100.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	2.12
Depth to base (mbgl)	2.97

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1007	1007

EQUIPMENT	
Model	Serial Number
GFM 430	10356
Dip Meter	-

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	N/A	30	N/A	N/A	30	30
Steady state value	<0.1	N/A	0.6	N/A	N/A	<1	<1
Peak Value (O_2 Low)	<0.1	16.2	0.6	0.3	83.4	<1	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	MT
Monitoring Date	06/08/2024
Monitoring Start Time	10:10

Borehole Details	
Borehole ID	WS202
W3W	cats.barn.priced
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	20.3	79.7	<1	<1
Initial	<0.1	4.4	0.6	14.9	80.1	<1	<1
30	<0.1	4.6	0.7	14.4	80.3	<1	<1
60	<0.1	4.7	0.7	14.3	80.3	1	<1
120		4.8	0.7	14.3	80.2	1	<1
180		4.9	0.7	14.2	80.2	1	<1
240		4.9	0.7	13.9	80.5	1	<1
300		5.0	0.7	13.7	80.6	1	<1
360							
420							
480							
540							
600							
Fresh Air	<0.1	<0.1	<0.1	20.7	100.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	2.25
Depth to base (mbgl)	4.19

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1007	1007

EQUIPMENT	
Model	Serial Number
GFM 430	10356
Dip Meter	-

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	N/A	30	N/A	N/A	30	30
Steady state value	<0.1	N/A	0.7	N/A	N/A	<1	<1
Peak Value (O_2 Low)	<0.1	5.0	0.7	0.3	80.6	<1	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	MT
Monitoring Date	06/08/2024
Monitoring Start Time	11:10

Borehole Details	
Borehole ID	WS205
W3W	ever.coffee.solve
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	20.9	79.1	<1	<1
Initial	<0.1	<0.1	0.3	20.7	79.0	1	<1
30	<0.1	<0.1	0.3	20.6	79.1	<1	<1
60	<0.1	<0.1	0.3	20.6	79.1	1	<1
120		<0.1	0.3	20.6	79.1	1	<1
180		<0.1	0.4	20.5	79.1	<1	<1
240		<0.1	0.4	20.9	78.7	<1	<1
300		<0.1	0.4	20.5	79.1	<1	<1
360							
420							
480							
540							
600							
Fresh Air	<0.1	<0.1	<0.1	20.7	100.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	2.38
Depth to base (mbgl)	4.12

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1007	1007

EQUIPMENT	
Model	Serial Number
GFM 430	10356
Dip Meter	-

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	30	30	30	30	180	30
Steady state value	<0.1	<0.1	0.3	20.6	99.7	<1	<1
Peak Value (O_2 Low)	<0.1	<0.1	0.4	20.5	79.1	1	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	MT
Monitoring Date	06/08/2024
Monitoring Start Time	10:27

Borehole Details	
Borehole ID	CP202
W3W	hatch.news.wished
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	20.7	79.3	<1	<1
Initial	<0.1	7.7	0.1	19.0	73.2	3	<1
30	<0.1	8.9	0.1	18.7	72.3	11	<1
60	<0.1	8.5	0.1	18.8	72.6	16	<1
120		7.9	0.1	19.0	73.0	14	<1
180		7.1	0.1	19.1	73.7	13	<1
240		6.7	0.1	19.3	73.9	14	<1
300		6.2	0.1	19.4	74.3	12	<1
360							
420							
480							
540							
600							
Fresh Air	<0.1	<0.1	<0.1	20.7	100.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	1.86
Depth to base (mbgl)	13.11

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1007	1007

EQUIPMENT	
Model	Serial Number
GFM 430	10356
Dip Meter	-

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	N/A	30	N/A	N/A	N/A	30
Steady state value	<0.1	N/A	0.1	N/A	N/A	N/A	<1
Peak Value (O_2 Low)	<0.1	8.9	0.1	18.7	74.3	16	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	DC/CF
Monitoring Date	28/08/2024
Monitoring Start Time	11:25

Borehole Details	
Borehole ID	WS201
W3W	rested.hurry.chef
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes
Soft base, no silt. Hydrocarbon smell when dip meter removed. Continuous monitoring instrument removed at 10:11.

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	21.0	79.0	<1	<1
Initial	<0.1	<0.1	<0.1	21.0	79.0	<1	<1
30	<0.1	15.0	0.5	0.8	83.7	<1	<1
60	<0.1	15.4	0.5	0.6	83.5	<1	<1
120		15.5	0.5	0.4	83.6	<1	<1
180		15.5	0.5	0.3	83.7	<1	<1
240		15.5	0.5	0.2	83.8	<1	<1
300		15.5	0.5	0.2	83.8	<1	<1
360							
420							
480							
540							
600							
Fresh Air	<0.1	<0.1	<0.1	21.0	79.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	2.23
Depth to base (mbgl)	2.93

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1011	1011

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	120	30	240	240	30	30
Steady state value	<0.1	15.5	0.5	0.2	83.8	<1	<1
Peak Value (O_2 Low)	<0.1	15.5	0.5	0.2	83.8	<1	<1

EQUIPMENT	
Model	Serial Number
GFM 435	10028
Dip Meter	-

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	DC/CF
Monitoring Date	28/08/2024
Monitoring Start Time	11:37

Borehole Details	
Borehole ID	WS202
W3W	cats.barn.priced
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes
Continuous monitoring instrument removed at 10:16.

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	21.0	79.0	<1	<1
Initial	<0.1	<0.1	0.1	21.0	78.9	<1	<1
30	<0.1	2.9	0.5	18.3	78.3	<1	<1
60	<0.1	3.0	0.5	18.2	78.3	<1	<1
120		3.3	0.5	18.1	78.1	<1	<1
180		3.7	0.5	17.9	77.9	<1	<1
240		4.2	0.5	17.7	77.6	<1	<1
300		4.5	0.6	17.4	77.5	<1	<1
360		4.9	0.6	17.2	77.3	<1	<1
420		5.1	0.7	16.4	77.8	<1	<1
480		5.3	1.0	14.4	79.3	<1	<1
540		5.4	1.6	11.6	81.4	<1	<1
600		5.5	1.9	9.8	82.8	<1	<1
Fresh Air	<0.1	<0.1	<0.1	21.0	79.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	2.38
Depth to base (mbgl)	4.26

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1011	1011

EQUIPMENT	
Model	Serial Number
GFM 435	10028
Dip Meter	-

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	N/A	N/A	N/A	N/A	30	30
Steady state value	<0.1	N/A	N/A	N/A	N/A	<1	<1
Peak Value (O_2 Low)	<0.1	5.5	1.9	9.8	82.8	<1	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	DC/CF
Monitoring Date	28/08/2024
Monitoring Start Time	10:45

Borehole Details	
Borehole ID	WS205
W3W	ever.coffee.solve
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes
CO fluctuating between -1 and 0 ppm. Continuous monitoring instrument removed at 10:00. Firm base, no silt.

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	21.0	79.0	<1	<1
Initial	<0.1	<0.1	0.1	20.8	79.1	<1	<1
30	<0.1	<0.1	0.8	20.0	79.2	<1	<1
60	<0.1	<0.1	0.8	19.9	79.3	<1	<1
120		<0.1	0.9	19.9	79.2	<1	<1
180		<0.1	0.9	19.8	79.3	<1	<1
240		<0.1	1.0	19.7	79.3	<1	<1
300		<0.1	1.1	19.6	79.3	<1	<1
360		<0.1	1.2	19.5	79.3	<1	<1
420		<0.1	1.3	19.5	79.2	<1	<1
480		<0.1	1.3	19.4	79.3	<1	<1
540		<0.1	1.4	19.3	79.3	<1	<1
600		<0.1	1.4	19.2	79.4	<1	<1
Fresh Air	<0.1	<0.1	<0.1	21.0	100.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	2.47
Depth to base (mbgl)	4.1

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1007	1007

EQUIPMENT	
Model	Serial Number
GFM 435	10028
Dip Meter	-

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	30	540	N/A	N/A	30	30
Steady state value	<0.1	<0.1	1.4	N/A	N/A	<1	<1
Peak Value (O_2 Low)	<0.1	<0.1	1.4	19.2	79.4	<1	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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Experts in Continuous Monitoring

Site Name	Ryebank Road
Project ID	GGS3078
GGS Staff	DC/CF
Monitoring Date	28/08/2024
Monitoring Start Time	11:07

Borehole Details	
Borehole ID	CP202
W3W	hatch.news.wished
Area surrounding borehole	Damp
Headworks Type	Raised
Rubber bung and valve in place?	Yes
Valve is clear and clean?	Yes
Standpipe Condition	Correct

Notes
Continuous monitoring instrument removed at 10:07. Noise when bung and valve removed. Hydrocarbon smell when diptape was pulled up.

BS8576 Visual Checks	
Concrete Cover	Present
Bentonite Seal	Not Visible
Gravel Fill	Not Visible

Time	Gas Flow	Gas Readings					
(seconds)	Litres/hour	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Fresh Air	<0.1	<0.1	<0.1	21.0	79.0	<1	<1
Initial	<0.1	<0.1	<0.1	20.9	79.1	<1	<1
30	<0.1	8.1	3.4	12.8	75.7	<1	<1
60	<0.1	7.1	3.8	14.1	75.0	1	<1
120		6.5	2.3	15.3	75.9	1	<1
180		6.6	2.4	15.0	76.0	1	<1
240		6.4	2.2	15.5	75.9	1	<1
300		6.1	2.1	16.0	75.8	1	<1
360		5.7	1.8	16.7	75.8	<1	<1
420		5.7	1.7	16.9	75.7	<1	<1
480		5.5	1.6	17.1	75.8	<1	<1
540		5.3	1.5	17.6	75.6	<1	<1
600		5.2	1.4	17.7	75.7	<1	<1
Fresh Air	<0.1	<0.1	<0.1	20.7	100.0	<1	<1

Borehole Measurements	
Groundwater Level (mbgl)	1.96
Depth to base (mbgl)	12.92

Pressure Readings	Start	End
Atmospheric Pressure (mb)	1011	1011

EQUIPMENT	
Model	Serial Number
GFM 435	11028
Dip Meter	-

STEADY STATE FINAL RESULTS							
Reult	Flow (l/hr)	CH_4 (% v/v)	CO_2 (% v/v)	O_2 (% v/v)	BAL	CO (ppmv)	H_2S (ppmv)
Steady state time (s)	30	N/A	N/A	N/A	N/A	360	30
Steady state value	<0.1	N/A	N/A	N/A	N/A	<1	<1
Peak Value (O_2 Low)	<0.1	8.1	3.8	12.8	79.1	1	<1

KEY: <0.1= Below instrument limit of detection, NM = Not Measured, N/A = Not Applicable, %v/v = Percentage volume by volume, ppmv = parts per million by volume, mb = milibar, ltr/hr = litres per hour, mbgl = metres below ground level, OS = off scale of instrument

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GGS DataPack® Plus
GGS3078 Ryebank Road, Chorlton

Appendix D

Time Series Data

For: E3P Ltd.
Ref No.: GGS3078DPP01
Date: 17/09/2024

Experts in Continuous Monitoring

Time Series Data

Project Ref:	GGS3078
Project Name:	Ryebank Road, Chorlton
Borehole ref:	WS201
Instrument Name and ID:	Gas Sentinel® 03000033
Start Date:	06/08/2024 15:00
End Date:	28/08/2024 09:00
Days of monitoring:	22
Monitoring Frequency (mins):	60
Total samples taken:	523

Experts in Continuous Monitoring

Summary Table

	CH₄	CO₂	O₂	CO	H₂S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
Minimum	14.0	0.4	0.0	0	0	989.5	-1.45	0.00	9.8
Maximum	16.4	0.5	2.5	0	0	1022.5	1.68	0.00	25.4
Range	2.4	0.1	2.5	0	0	33.0	3.13	0.00	15.6

Date and Time	CH₄ % v/v	CO₂ % v/v	O₂ % v/v	CO ppm/v	H₂S ppm/v	Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Flow Ltr/hr	Temperature °C
06/08/2024 15:00	15.7	0.4	2.5	0	0	1006.5	N/A	0.00	21.2
06/08/2024 16:00	15.6	0.4	2.4	0	0	1007.2	N/A	0.00	21.0
06/08/2024 17:00	15.8	0.4	2.1	0	0	1007.0	N/A	0.00	20.7
06/08/2024 18:00	15.9	0.4	1.7	0	0	1007.4	N/A	0.00	20.2
06/08/2024 19:00	15.7	0.4	1.6	0	0	1007.6	N/A	0.00	19.0
06/08/2024 20:00	15.8	0.4	1.3	0	0	1008.2	N/A	0.00	17.6
06/08/2024 21:00	15.7	0.4	1.1	0	0	1008.8	N/A	0.00	16.3
06/08/2024 22:00	15.4	0.4	0.9	0	0	1008.8	N/A	0.00	15.2
06/08/2024 23:00	15.4	0.4	0.7	0	0	1008.9	0.30	0.00	14.4
07/08/2024 00:00	15.2	0.4	0.6	0	0	1008.3	0.14	0.00	13.5
07/08/2024 01:00	15.3	0.5	0.5	0	0	1009.0	0.25	0.00	13.1
07/08/2024 02:00	15.2	0.5	0.4	0	0	1008.5	0.14	0.00	12.7
07/08/2024 03:00	15.1	0.4	0.4	0	0	1007.7	0.01	0.00	12.4
07/08/2024 04:00	15.2	0.5	0.3	0	0	1008.3	0.01	0.00	12.2
07/08/2024 05:00	15.2	0.5	0.3	0	0	1008.8	0.00	0.00	12.0
07/08/2024 06:00	14.9	0.4	0.3	0	0	1009.1	0.04	0.00	12.7
07/08/2024 07:00	15.1	0.5	0.2	0	0	1008.8	-0.01	0.00	14.1
07/08/2024 08:00	15.2	0.5	0.2	0	0	1008.5	0.03	0.00	15.9
07/08/2024 09:00	14.9	0.5	0.2	0	0	1009.0	0.00	0.00	17.1
07/08/2024 10:00	15.2	0.5	0.2	0	0	1008.4	-0.01	0.00	17.8
07/08/2024 11:00	15.1	0.5	0.2	0	0	1008.5	0.10	0.00	18.3
07/08/2024 12:00	15.3	0.4	0.2	0	0	1008.5	0.03	0.00	19.1
07/08/2024 13:00	15.4	0.5	0.2	0	0	1008.8	0.00	0.00	19.7
07/08/2024 14:00	15.3	0.5	0.2	0	0	1009.3	0.02	0.00	20.1
07/08/2024 15:00	15.4	0.5	0.2	0	0	1009.5	0.09	0.00	19.4
07/08/2024 16:00	15.2	0.5	0.2	0	0	1009.7	0.15	0.00	18.9
07/08/2024 17:00	15.2	0.5	0.2	0	0	1009.6	0.08	0.00	18.7
07/08/2024 18:00	15.6	0.4	0.1	0	0	1009.5	0.14	0.00	18.0
07/08/2024 19:00	15.1	0.5	0.1	0	0	1010.6	0.26	0.00	17.3
07/08/2024 20:00	15.3	0.5	0.1	0	0	1011.1	0.33	0.00	16.5
07/08/2024 21:00	15.3	0.5	0.1	0	0	1011.3	0.31	0.00	15.9
07/08/2024 22:00	15.1	0.5	0.1	0	0	1012.1	0.35	0.00	15.0
07/08/2024 23:00	15.0	0.5	0.1	0	0	1012.2	0.34	0.00	14.2
08/08/2024 00:00	15.1	0.5	0.1	0	0	1012.1	0.30	0.00	14.3
08/08/2024 01:00	15.1	0.5	0.1	0	0	1012.3	0.34	0.00	14.4
08/08/2024 02:00	14.8	0.5	0.1	0	0	1012.4	0.36	0.00	14.6
08/08/2024 03:00	14.9	0.5	0.1	0	0	1011.9	0.16	0.00	15.1
08/08/2024 04:00	14.6	0.5	0.1	0	0	1012.0	0.11	0.00	15.1
08/08/2024 05:00	14.8	0.4	0.1	0	0	1011.6	0.04	0.00	14.8
08/08/2024 06:00	14.8	0.5	0.1	0	0	1011.5	-0.08	0.00	14.4
08/08/2024 07:00	14.9	0.5	0.1	0	0	1012.0	-0.03	0.00	14.6
08/08/2024 08:00	14.7	0.5	0.1	0	0	1012.0	-0.01	0.00	15.0
08/08/2024 09:00	14.9	0.5	0.1	0	0	1011.2	-0.14	0.00	15.7
08/08/2024 10:00	14.8	0.5	0.1	0	0	1010.3	-0.26	0.00	16.2
08/08/2024 11:00	14.9	0.5	0.1	0	0	1009.3	-0.33	0.00	16.5
08/08/2024 12:00	15.1	0.5	0.1	0	0	1009.1	-0.36	0.00	17.1
08/08/2024 13:00	14.9	0.5	0.1	0	0	1008.3	-0.41	0.00	17.3
08/08/2024 14:00	15.1	0.4	0.1	0	0	1007.7	-0.47	0.00	17.8
08/08/2024 15:00	15.1	0.5	0.1	0	0	1006.7	-0.66	0.00	18.6
08/08/2024 16:00	15.1	0.4	0.1	0	0	1006.4	-0.70	0.00	18.8
08/08/2024 17:00	15.0	0.5	0.1	0	0	1005.9	-0.66	0.00	19.0
08/08/2024 18:00	15.1	0.5	0.1	0	0	1003.8	-0.81	0.00	19.3
08/08/2024 19:00	15.2	0.5	0.1	0	0	1005.8	-0.44	0.00	19.4
08/08/2024 20:00	14.9	0.5	0.1	0	0	1005.9	-0.40	0.00	19.2
08/08/2024 21:00	15.2	0.4	0.1	0	0	1005.2	-0.39	0.00	19.2
08/08/2024 22:00	15.3	0.5	0.1	0	0	1005.0	-0.34	0.00	18.9
08/08/2024 23:00	15.2	0.5	0.1	0	0	1005.2	-0.19	0.00	18.6
09/08/2024 00:00	15.0	0.5	0.4	0	0	1005.4	-0.13	0.00	18.3
09/08/2024 01:00	15.1	0.5	0.8	0	0	1006.0	0.01	0.00	18.1
09/08/2024 02:00	15.0	0.5	0.2	0	0	1006.4	0.33	0.00	17.8
09/08/2024 03:00	15.0	0.5	0.1	0	0	1005.8	0.00	0.00	17.2
09/08/2024 04:00	14.8	0.5	0.1	0	0	1007.0	0.14	0.00	16.4
09/08/2024 05:00	14.7	0.5	0.1	0	0	1007.8	0.32	0.00	15.7
09/08/2024 06:00	14.9	0.5	0.1	0	0	1009.2	0.53	0.00	15.4
09/08/2024 07:00	14.8	0.5	0.1	0	0	1010.0	0.60	0.00	15.7
09/08/2024 08:00	15.0	0.5	0.1	0	0	1010.7	0.66	0.00	16.2
09/08/2024 09:00	14.8	0.5	0.1	0	0	1012.1	0.76	0.00	17.2
09/08/2024 10:00	15.0	0.5	0.1	0	0	1011.3	0.61	0.00	18.1
09/08/2024 11:00	15.0	0.5	0.1	0	0	1012.3	0.81	0.00	19.0
09/08/2024 12:00	15.0	0.5	0.1	0	0	1012.1	0.64	0.00	20.2
09/08/2024 13:00	15.3	0.5	0.1	0	0	1012.5	0.59	0.00	20.5
09/08/2024 14:00	15.3	0.5	0.1	0	0	1013.0	0.47	0.00	20.8
09/08/2024 15:00	15.3	0.5	0.1	0	0	1013.1	0.39	0.00	20.8
09/08/2024 16:00	15.5	0.5	0.1	0	0	1013.5	0.35	0.00	20.8
09/08/2024 17:00	15.6	0.5	0.0	0	0	1013.8	0.21	0.00	20.7
09/08/2024 18:00	15.5	0.5	0.0	0	0	1013.5	0.28	0.00	20.4
09/08/2024 19:00	15.7	0.5	0.0	0	0	1014.6	0.29	0.00	19.1
09/08/2024 20:00	15.4	0.5	0.0	0	0	1014.8	0.34	0.00	17.6
09/08/2024 21:00	14.9	0.5	0.0	0	0	1014.6	0.26	0.00	16.6
09/08/2024 22:00	14.7	0.5	0.0	0	0	1015.3	0.29	0.00	15.6

ggs Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
09/08/2024 23:00	14.7	0.5	0.0	0	0	1015.4	0.29	0.00	15.0
10/08/2024 00:00	14.6	0.5	0.0	0	0	1015.0	0.19	0.00	14.5
10/08/2024 01:00	14.6	0.5	0.0	0	0	1015.4	0.20	0.00	14.3
10/08/2024 02:00	14.6	0.5	0.0	0	0	1015.3	0.22	0.00	14.2
10/08/2024 03:00	14.4	0.5	0.0	0	0	1015.2	0.08	0.00	14.7
10/08/2024 04:00	14.5	0.5	0.0	0	0	1015.3	0.06	0.00	14.4
10/08/2024 05:00	14.3	0.5	0.0	0	0	1015.6	0.13	0.00	14.2
10/08/2024 06:00	14.1	0.5	0.0	0	0	1015.7	0.05	0.00	14.8
10/08/2024 07:00	14.3	0.5	0.0	0	0	1015.7	0.04	0.00	16.2
10/08/2024 08:00	14.3	0.5	0.0	0	0	1015.8	0.10	0.00	17.8
10/08/2024 09:00	14.6	0.5	0.0	0	0	1015.1	-0.04	0.00	19.2
10/08/2024 10:00	14.5	0.5	0.0	0	0	1016.1	0.10	0.00	20.2
10/08/2024 11:00	14.4	0.5	0.0	0	0	1016.7	0.19	0.00	20.6
10/08/2024 12:00	14.8	0.5	0.0	0	0	1016.2	0.11	0.00	20.6
10/08/2024 13:00	14.9	0.5	0.0	0	0	1017.3	0.21	0.00	21.0
10/08/2024 14:00	14.9	0.5	0.0	0	0	1017.3	0.20	0.00	21.4
10/08/2024 15:00	14.9	0.5	0.0	0	0	1017.7	0.25	0.00	21.1
10/08/2024 16:00	15.4	0.5	0.0	0	0	1018.3	0.31	0.00	20.9
10/08/2024 17:00	15.3	0.5	0.0	0	0	1019.0	0.49	0.00	20.3
10/08/2024 18:00	15.3	0.5	0.0	0	0	1019.6	0.44	0.00	20.0
10/08/2024 19:00	15.5	0.5	0.0	0	0	1020.1	0.42	0.00	19.1
10/08/2024 20:00	15.1	0.5	0.0	0	0	1020.6	0.55	0.00	17.9
10/08/2024 21:00	15.0	0.5	0.0	0	0	1020.4	0.39	0.00	17.3
10/08/2024 22:00	14.9	0.5	0.0	0	0	1021.0	0.46	0.00	16.6
10/08/2024 23:00	14.6	0.5	0.0	0	0	1021.4	0.46	0.00	16.2
11/08/2024 00:00	14.5	0.5	0.0	0	0	1021.9	0.45	0.00	15.2
11/08/2024 01:00	14.4	0.5	0.0	0	0	1022.1	0.39	0.00	14.4
11/08/2024 02:00	14.2	0.5	0.0	0	0	1022.1	0.31	0.00	14.1
11/08/2024 03:00	14.2	0.5	0.0	0	0	1022.4	0.29	0.00	13.6
11/08/2024 04:00	14.3	0.5	0.0	0	0	1022.3	0.21	0.00	13.1
11/08/2024 05:00	14.0	0.5	0.0	0	0	1022.5	0.26	0.00	12.7
11/08/2024 06:00	14.3	0.5	0.0	0	0	1022.3	0.16	0.00	13.2
11/08/2024 07:00	14.1	0.5	0.0	0	0	1022.0	0.08	0.00	14.9
11/08/2024 08:00	14.1	0.5	0.0	0	0	1022.4	0.06	0.00	17.4
11/08/2024 09:00	14.3	0.5	0.0	0	0	1021.7	-0.05	0.00	19.8
11/08/2024 10:00	14.6	0.5	0.0	0	0	1021.6	-0.06	0.00	21.2
11/08/2024 11:00	14.8	0.5	0.0	0	0	1021.0	-0.17	0.00	22.3
11/08/2024 12:00	15.1	0.5	0.0	0	0	1020.2	-0.26	0.00	23.4
11/08/2024 13:00	15.4	0.5	0.0	0	0	1019.7	-0.35	0.00	24.3
11/08/2024 14:00	15.8	0.5	0.0	0	0	1019.4	-0.36	0.00	24.9
11/08/2024 15:00	16.0	0.5	0.0	0	0	1018.4	-0.45	0.00	25.3
11/08/2024 16:00	16.2	0.5	0.0	0	0	1017.9	-0.56	0.00	25.4
11/08/2024 17:00	16.3	0.5	0.0	0	0	1016.8	-0.61	0.00	25.2
11/08/2024 18:00	16.3	0.5	0.0	0	0	1015.8	-0.73	0.00	24.8
11/08/2024 19:00	16.4	0.5	0.0	0	0	1015.5	-0.69	0.00	23.8
11/08/2024 20:00	16.1	0.5	0.0	0	0	1015.7	-0.56	0.00	21.8
11/08/2024 21:00	15.8	0.5	0.0	0	0	1015.4	-0.54	0.00	20.4
11/08/2024 22:00	15.4	0.5	0.0	0	0	1014.7	-0.59	0.00	19.7
11/08/2024 23:00	15.1	0.5	0.0	0	0	1014.2	-0.52	0.00	19.3
12/08/2024 00:00	14.7	0.5	0.0	0	0	1013.5	-0.55	0.00	18.6
12/08/2024 01:00	14.7	0.5	0.0	0	0	1013.0	-0.47	0.00	18.2
12/08/2024 02:00	14.6	0.5	0.0	0	0	1011.9	-0.49	0.00	18.1
12/08/2024 03:00	14.6	0.5	0.0	0	0	1009.8	-0.71	0.00	18.2
12/08/2024 04:00	14.6	0.5	0.0	0	0	1009.5	-0.78	0.00	18.4
12/08/2024 05:00	14.4	0.5	0.0	0	0	1008.9	-0.81	0.00	18.3
12/08/2024 06:00	14.7	0.5	0.0	0	0	1008.4	-0.79	0.00	18.8
12/08/2024 07:00	14.3	0.5	0.0	0	0	1007.4	-0.85	0.00	20.1
12/08/2024 08:00	14.5	0.5	0.0	0	0	1006.8	-0.84	0.00	22.7
12/08/2024 09:00	14.5	0.5	0.0	0	0	1006.2	-0.85	0.00	23.4
12/08/2024 10:00	14.7	0.5	0.0	0	0	1006.5	-0.67	0.00	23.8
12/08/2024 11:00	15.0	0.5	0.0	0	0	1006.7	-0.39	0.00	24.0
12/08/2024 12:00	15.2	0.5	0.0	0	0	1006.0	-0.44	0.00	24.3
12/08/2024 13:00	15.4	0.5	0.0	0	0	1006.4	-0.31	0.00	24.1
12/08/2024 14:00	15.6	0.5	0.0	0	0	1006.9	-0.19	0.00	22.7
12/08/2024 15:00	15.4	0.5	0.0	0	0	1007.4	0.00	0.00	21.8
12/08/2024 16:00	15.2	0.5	0.0	0	0	1007.4	0.08	0.00	21.9
12/08/2024 17:00	15.7	0.5	0.0	0	0	1007.0	0.10	0.00	21.5
12/08/2024 18:00	15.8	0.5	0.0	0	0	1007.4	0.11	0.00	20.7
12/08/2024 19:00	15.8	0.5	0.0	0	0	1008.4	0.21	0.00	19.3
12/08/2024 20:00	15.8	0.5	0.0	0	0	1008.6	0.33	0.00	18.0
12/08/2024 21:00	15.2	0.5	0.0	0	0	1008.7	0.29	0.00	17.5
12/08/2024 22:00	14.8	0.5	0.0	0	0	1008.3	0.17	0.00	16.5
12/08/2024 23:00	14.8	0.5	0.0	0	0	1008.6	0.15	0.00	15.7
13/08/2024 00:00	14.5	0.5	0.0	0	0	1009.0	0.20	0.00	15.4
13/08/2024 01:00	14.5	0.5	0.0	0	0	1008.6	0.20	0.00	14.8
13/08/2024 02:00	14.4	0.5	0.0	0	0	1008.2	0.10	0.00	14.2
13/08/2024 03:00	14.4	0.5	0.0	0	0	1008.3	-0.01	0.00	13.4
13/08/2024 04:00	14.3	0.5	0.0	0	0	1008.2	-0.05	0.00	13.2
13/08/2024 05:00	14.4	0.5	0.0	0	0	1008.2	-0.06	0.00	13.1
13/08/2024 06:00	14.3	0.5	0.0	0	0	1008.4	0.01	0.00	13.6
13/08/2024 07:00	14.2	0.5	0.0	0	0	1008.2	-0.05	0.00	14.6
13/08/2024 08:00	14.6	0.5	0.0	0	0	1007.9	-0.14	0.00	15.9
13/08/2024 09:00	14.4	0.5	0.0	0	0	1006.8	-0.23	0.00	17.8
13/08/2024 10:00	14.6	0.5	0.0	0	0	1007.1	-0.14	0.00	19.2
13/08/2024 11:00	14.9	0.5	0.0	0	0	1007.3	-0.13	0.00	20.5
13/08/2024 12:00	15.0	0.5	0.0	0	0	1007.1	-0.14	0.00	21.3
13/08/2024 13:00	15.3	0.5	0.0	0	0	1007.6	-0.08	0.00	21.1
13/08/2024 14:00	15.2	0.5	0.0	0	0	1007.7	-0.09	0.00	21.6
13/08/2024 15:00	15.2	0.5	0.0	0	0	1007.5	-0.09	0.00	22.2
13/08/2024 16:00	15.2	0.5	0.0	0	0	1007.6	-0.04	0.00	20.8
13/08/2024 17:00	15.1	0.5	0.0	0	0	1007.8	0.13	0.00	19.5
13/08/2024 18:00	15.0	0.5	0.0	0	0	1009.1	0.25	0.00	17.7
13/08/2024 19:00	14.9	0.5	0.0	0	0	1009.3	0.25	0.00	17.3
13/08/2024 20:00	14.7	0.5	0.0	0	0	1009.8	0.34	0.00	17.2
13/08/2024 21:00	14.7	0.5	0.0	0	0	1010.0	0.30	0.00	16.9
13/08/2024 22:00	14.6	0.5	0.0	0	0	1010.9	0.40	0.00	16.7
13/08/2024 23:00	14.8	0.5	0.0	0	0	1011.2	0.46	0.00	16.6
14/08/2024 00:00	14.6	0.5	0.0	0	0	1011.1	0.44	0.00	16.3
14/08/2024 01:00	14.7	0.5	0.0	0	0	1012.2	0.55	0.00	15.9
14/08/2024 02:00	14.6	0.5	0.0	0	0	1012.4	0.41	0.00	15.2
14/08/2024 03:00	14.7	0.5	0.0	0	0	1012.7	0.43	0.00	14.8
14/08/2024 04:00	14.7	0.5	0.0	0	0	1012.9	0.39	0.00	14.6
14/08/2024 05:00	14.4	0.5	0.0	0	0	1013.2	0.40	0.00	14.4
14/08/2024 06:00	14.6	0.5	0.0	0	0	1014.0	0.39	0.00	14.1

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
14/08/2024 07:00	14.5	0.5	0.0	0	0	1014.5	0.41	0.00	14.4
14/08/2024 08:00	14.7	0.5	0.0	0	0	1015.2	0.51	0.00	15.4
14/08/2024 09:00	14.6	0.5	0.0	0	0	1015.4	0.40	0.00	16.6
14/08/2024 10:00	15.2	0.5	0.0	0	0	1015.0	0.33	0.00	17.5
14/08/2024 11:00	14.8	0.5	0.0	0	0	1015.0	0.29	0.00	18.6
14/08/2024 12:00	15.2	0.5	0.0	0	0	1014.4	0.19	0.00	20.0
14/08/2024 13:00	15.5	0.5	0.0	0	0	1015.3	0.26	0.00	20.6
14/08/2024 14:00	15.8	0.5	0.0	0	0	1015.1	0.14	0.00	20.6
14/08/2024 15:00	16.2	0.5	0.0	0	0	1014.9	0.05	0.00	20.1
14/08/2024 16:00	16.4	0.5	0.0	0	0	1014.9	-0.04	0.00	20.2
14/08/2024 17:00	16.2	0.5	0.0	0	0	1014.5	-0.11	0.00	20.4
14/08/2024 18:00	16.2	0.5	0.0	0	0	1014.1	-0.11	0.00	20.6
14/08/2024 19:00	16.2	0.5	0.0	0	0	1014.8	-0.03	0.00	19.6
14/08/2024 20:00	16.0	0.5	0.0	0	0	1015.5	0.14	0.00	17.7
14/08/2024 21:00	15.8	0.5	0.0	0	0	1014.2	-0.14	0.00	16.6
14/08/2024 22:00	15.2	0.5	0.0	0	0	1015.2	0.01	0.00	15.7
14/08/2024 23:00	15.2	0.5	0.0	0	0	1015.0	0.01	0.00	15.3
15/08/2024 00:00	14.8	0.5	0.0	0	0	1014.3	-0.08	0.00	14.4
15/08/2024 01:00	15.1	0.5	0.0	0	0	1014.0	-0.06	0.00	13.6
15/08/2024 02:00	14.8	0.5	0.0	0	0	1013.9	-0.03	0.00	13.3
15/08/2024 03:00	14.9	0.5	0.0	0	0	1013.1	-0.21	0.00	13.5
15/08/2024 04:00	14.7	0.5	0.0	0	0	1012.6	-0.36	0.00	13.7
15/08/2024 05:00	14.8	0.5	0.0	0	0	1011.7	-0.31	0.00	13.9
15/08/2024 06:00	14.9	0.5	0.0	0	0	1010.8	-0.55	0.00	13.8
15/08/2024 07:00	14.6	0.5	0.0	0	0	1011.3	-0.46	0.00	14.6
15/08/2024 08:00	14.8	0.5	0.0	0	0	1010.4	-0.49	0.00	15.5
15/08/2024 09:00	14.7	0.5	0.0	0	0	1009.6	-0.55	0.00	15.5
15/08/2024 10:00	14.7	0.5	0.0	0	0	1009.0	-0.61	0.00	16.0
15/08/2024 11:00	14.7	0.5	0.0	0	0	1008.6	-0.56	0.00	16.5
15/08/2024 12:00	14.7	0.5	0.0	0	0	1006.8	-0.73	0.00	17.2
15/08/2024 13:00	14.9	0.5	0.0	0	0	1007.7	-0.50	0.00	17.6
15/08/2024 14:00	15.0	0.5	0.0	0	0	1008.1	-0.34	0.00	18.4
15/08/2024 15:00	15.0	0.5	0.0	0	0	1008.2	-0.39	0.00	19.1
15/08/2024 16:00	14.9	0.5	0.0	0	0	1008.1	-0.29	0.00	19.6
15/08/2024 17:00	14.8	0.5	0.0	0	0	1008.4	-0.15	0.00	19.7
15/08/2024 18:00	15.0	0.5	0.0	0	0	1010.1	0.14	0.00	18.6
15/08/2024 19:00	14.9	0.5	0.0	0	0	1010.9	0.29	0.00	17.0
15/08/2024 20:00	14.8	0.5	0.0	0	0	1011.9	0.64	0.00	15.7
15/08/2024 21:00	14.9	0.5	0.0	0	0	1012.9	0.65	0.00	14.4
15/08/2024 22:00	14.7	0.5	0.0	0	0	1013.0	0.61	0.00	13.4
15/08/2024 23:00	14.7	0.5	0.0	0	0	1013.9	0.71	0.00	12.8
16/08/2024 00:00	14.8	0.5	0.0	0	0	1014.6	0.81	0.00	12.1
16/08/2024 01:00	14.8	0.5	0.0	0	0	1015.0	0.83	0.00	12.0
16/08/2024 02:00	14.9	0.5	0.0	0	0	1014.8	0.59	0.00	12.1
16/08/2024 03:00	14.8	0.5	0.0	0	0	1014.9	0.50	0.00	12.0
16/08/2024 04:00	14.6	0.5	0.0	0	0	1014.5	0.33	0.00	11.6
16/08/2024 05:00	14.6	0.5	0.0	0	0	1015.0	0.26	0.00	11.3
16/08/2024 06:00	14.6	0.5	0.0	0	0	1015.1	0.26	0.00	11.3
16/08/2024 07:00	14.7	0.5	0.0	0	0	1015.9	0.25	0.00	12.7
16/08/2024 08:00	14.6	0.5	0.0	0	0	1016.3	0.21	0.00	14.5
16/08/2024 09:00	14.7	0.5	0.0	0	0	1015.8	0.10	0.00	15.8
16/08/2024 10:00	14.7	0.5	0.0	0	0	1015.9	0.14	0.00	16.6
16/08/2024 11:00	14.8	0.5	0.0	0	0	1015.8	0.11	0.00	17.5
16/08/2024 12:00	15.0	0.5	0.0	0	0	1015.2	0.09	0.00	18.2
16/08/2024 13:00	15.2	0.5	0.0	0	0	1015.6	0.08	0.00	18.8
16/08/2024 14:00	15.3	0.5	0.0	0	0	1015.2	0.01	0.00	19.3
16/08/2024 15:00	15.7	0.5	0.0	0	0	1014.4	-0.19	0.00	19.9
16/08/2024 16:00	15.6	0.5	0.0	0	0	1014.0	-0.29	0.00	19.9
16/08/2024 17:00	15.8	0.5	0.0	0	0	1014.0	-0.22	0.00	18.4
16/08/2024 18:00	15.9	0.5	0.0	0	0	1013.7	-0.27	0.00	17.3
16/08/2024 19:00	16.0	0.5	0.0	0	0	1014.4	-0.17	0.00	16.2
16/08/2024 20:00	15.6	0.5	0.0	0	0	1014.3	-0.11	0.00	15.0
16/08/2024 21:00	15.3	0.5	0.0	0	0	1014.3	-0.16	0.00	14.4
16/08/2024 22:00	15.3	0.5	0.0	0	0	1014.3	-0.11	0.00	13.4
16/08/2024 23:00	14.8	0.5	0.0	0	0	1014.6	0.03	0.00	12.6
17/08/2024 00:00	14.8	0.5	0.0	0	0	1014.1	0.01	0.00	11.8
17/08/2024 01:00	14.9	0.5	0.0	0	0	1014.3	0.04	0.00	11.4
17/08/2024 02:00	14.8	0.5	0.0	0	0	1014.2	0.06	0.00	10.9
17/08/2024 03:00	15.0	0.5	0.0	0	0	1013.8	-0.08	0.00	10.5
17/08/2024 04:00	14.9	0.5	0.0	0	0	1013.6	-0.09	0.00	10.1
17/08/2024 05:00	14.9	0.5	0.0	0	0	1014.0	-0.04	0.00	9.8
17/08/2024 06:00	15.0	0.5	0.0	0	0	1014.3	0.00	0.00	10.1
17/08/2024 07:00	14.9	0.4	0.0	0	0	1014.1	-0.06	0.00	11.6
17/08/2024 08:00	14.9	0.4	0.0	0	0	1014.2	0.01	0.00	14.0
17/08/2024 09:00	14.9	0.4	0.0	0	0	1014.2	-0.01	0.00	16.3
17/08/2024 10:00	15.0	0.5	0.0	0	0	1013.5	-0.09	0.00	17.0
17/08/2024 11:00	15.2	0.5	0.0	0	0	1013.4	-0.05	0.00	17.8
17/08/2024 12:00	15.1	0.5	0.0	0	0	1013.3	-0.04	0.00	18.5
17/08/2024 13:00	15.6	0.5	0.0	0	0	1013.1	-0.11	0.00	18.5
17/08/2024 14:00	15.6	0.5	0.0	0	0	1013.1	-0.15	0.00	18.7
17/08/2024 15:00	15.4	0.5	0.0	0	0	1012.5	-0.20	0.00	19.1
17/08/2024 16:00	15.5	0.5	0.0	0	0	1012.2	-0.25	0.00	19.0
17/08/2024 17:00	15.6	0.5	0.0	0	0	1012.0	-0.28	0.00	18.1
17/08/2024 18:00	15.4	0.5	0.0	0	0	1012.4	-0.14	0.00	17.1
17/08/2024 19:00	15.7	0.5	0.0	0	0	1011.8	-0.20	0.00	16.7
17/08/2024 20:00	15.4	0.5	0.0	0	0	1011.9	-0.17	0.00	15.6
17/08/2024 21:00	15.3	0.5	0.0	0	0	1011.6	-0.19	0.00	14.5
17/08/2024 22:00	15.4	0.5	0.0	0	0	1011.9	-0.15	0.00	13.6
17/08/2024 23:00	15.2	0.5	0.0	0	0	1011.7	-0.10	0.00	12.7
18/08/2024 00:00	15.3	0.5	0.0	0	0	1011.9	-0.04	0.00	12.0
18/08/2024 01:00	15.0	0.5	0.0	0	0	1012.0	0.00	0.00	11.4
18/08/2024 02:00	15.2	0.5	0.0	0	0	1011.6	-0.10	0.00	11.1
18/08/2024 03:00	15.0	0.5	0.0	0	0	1010.6	-0.15	0.00	11.5
18/08/2024 04:00	15.0	0.5	0.0	0	0	1010.5	-0.17	0.00	11.4
18/08/2024 05:00	15.3	0.5	0.0	0	0	1010.6	-0.13	0.00	11.4
18/08/2024 06:00	15.3	0.5	0.0	0	0	1010.4	-0.19	0.00	12.3
18/08/2024 07:00	15.2	0.5	0.0	0	0	1011.8	0.01	0.00	13.7
18/08/2024 08:00	15.0	0.4	0.0	0	0	1012.2	0.04	0.00	15.3
18/08/2024 09:00	15.1	0.5	0.0	0	0	1012.4	0.05	0.00	16.5
18/08/2024 10:00	15.2	0.5	0.0	0	0	1013.1	0.19	0.00	16.5
18/08/2024 11:00	15.1	0.5	0.0	0	0	1013.6	0.38	0.00	17.2
18/08/2024 12:00	15.2	0.5	0.0	0	0	1014.0	0.44	0.00	18.1
18/08/2024 13:00	15.4	0.5	0.0	0	0	1014.3	0.46	0.00	18.1
18/08/2024 14:00	15.5	0.5	0.0	0	0	1014.8	0.55	0.00	18.3

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
18/08/2024 15:00	15.9	0.5	0.0	0	0	1014.5	0.34	0.00	18.5
18/08/2024 16:00	15.8	0.5	0.0	0	0	1015.0	0.35	0.00	18.4
18/08/2024 17:00	15.8	0.5	0.0	0	0	1015.0	0.33	0.00	18.0
18/08/2024 18:00	16.0	0.5	0.0	0	0	1015.9	0.35	0.00	17.6
18/08/2024 19:00	15.7	0.5	0.0	0	0	1016.3	0.34	0.00	17.0
18/08/2024 20:00	15.5	0.5	0.0	0	0	1016.9	0.36	0.00	16.0
18/08/2024 21:00	15.2	0.5	0.0	0	0	1016.6	0.29	0.00	14.7
18/08/2024 22:00	15.3	0.5	0.0	0	0	1017.2	0.30	0.00	14.0
18/08/2024 23:00	15.1	0.5	0.0	0	0	1016.8	0.29	0.00	13.6
19/08/2024 00:00	15.1	0.5	0.0	0	0	1017.5	0.31	0.00	12.5
19/08/2024 01:00	14.9	0.5	0.0	0	0	1017.2	0.28	0.00	12.0
19/08/2024 02:00	14.9	0.5	0.0	0	0	1017.1	0.15	0.00	11.8
19/08/2024 03:00	15.0	0.5	0.0	0	0	1016.7	0.05	0.00	11.8
19/08/2024 04:00	15.1	0.5	0.0	0	0	1016.0	-0.11	0.00	11.9
19/08/2024 05:00	15.1	0.5	0.0	0	0	1015.9	-0.09	0.00	11.7
19/08/2024 06:00	14.9	0.5	0.0	0	0	1015.2	-0.25	0.00	12.0
19/08/2024 07:00	14.9	0.5	0.0	0	0	1014.7	-0.26	0.00	13.4
19/08/2024 08:00	14.9	0.5	0.0	0	0	1014.5	-0.38	0.00	14.9
19/08/2024 09:00	15.2	0.5	0.0	0	0	1013.9	-0.41	0.00	15.9
19/08/2024 10:00	15.0	0.5	0.0	0	0	1013.1	-0.50	0.00	17.0
19/08/2024 11:00	15.1	0.5	0.0	0	0	1012.5	-0.53	0.00	18.5
19/08/2024 12:00	15.2	0.5	0.0	0	0	1012.3	-0.46	0.00	18.3
19/08/2024 13:00	15.5	0.5	0.0	0	0	1011.4	-0.56	0.00	19.5
19/08/2024 14:00	15.4	0.5	0.0	0	0	1010.2	-0.63	0.00	19.3
19/08/2024 15:00	15.4	0.5	0.0	0	0	1009.6	-0.64	0.00	19.7
19/08/2024 16:00	15.5	0.5	0.0	0	0	1008.5	-0.75	0.00	18.8
19/08/2024 17:00	15.6	0.5	0.0	0	0	1007.4	-0.81	0.00	18.5
19/08/2024 18:00	15.5	0.5	0.0	0	0	1005.6	-0.94	0.00	17.9
19/08/2024 19:00	15.6	0.5	0.0	0	0	1006.5	-0.75	0.00	17.4
19/08/2024 20:00	15.3	0.5	0.0	0	0	1005.8	-0.81	0.00	16.8
19/08/2024 21:00	15.1	0.5	0.0	0	0	1005.0	-0.80	0.00	16.9
19/08/2024 22:00	15.3	0.5	0.0	0	0	1005.6	-0.58	0.00	16.8
19/08/2024 23:00	15.3	0.5	0.0	0	0	1005.4	-0.53	0.00	16.7
20/08/2024 00:00	15.3	0.5	0.0	0	0	1005.5	-0.38	0.00	16.6
20/08/2024 01:00	15.3	0.5	0.0	0	0	1005.3	-0.26	0.00	16.6
20/08/2024 02:00	15.0	0.5	0.0	0	0	1005.1	-0.06	0.00	16.3
20/08/2024 03:00	15.2	0.5	0.0	0	0	1005.1	-0.17	0.00	15.8
20/08/2024 04:00	15.0	0.5	0.0	0	0	1004.8	-0.13	0.00	15.1
20/08/2024 05:00	15.4	0.5	0.0	0	0	1004.6	-0.05	0.00	14.7
20/08/2024 06:00	15.2	0.5	0.0	0	0	1003.7	-0.24	0.00	14.9
20/08/2024 07:00	15.1	0.5	0.0	0	0	1004.6	-0.10	0.00	15.4
20/08/2024 08:00	15.0	0.5	0.0	0	0	1005.4	-0.01	0.00	15.5
20/08/2024 09:00	15.2	0.5	0.0	0	0	1006.1	0.10	0.00	15.7
20/08/2024 10:00	15.5	0.5	0.0	0	0	1006.7	0.20	0.00	16.4
20/08/2024 11:00	15.4	0.5	0.0	0	0	1006.9	0.22	0.00	17.1
20/08/2024 12:00	15.5	0.5	0.0	0	0	1006.3	0.19	0.00	18.3
20/08/2024 13:00	15.5	0.5	0.0	0	0	1007.6	0.38	0.00	17.9
20/08/2024 14:00	15.6	0.5	0.0	0	0	1007.9	0.52	0.00	18.1
20/08/2024 15:00	15.7	0.5	0.0	0	0	1008.7	0.51	0.00	18.7
20/08/2024 16:00	15.9	0.5	0.0	0	0	1008.3	0.36	0.00	17.6
20/08/2024 17:00	15.8	0.5	0.0	0	0	1008.6	0.31	0.00	16.7
20/08/2024 18:00	16.1	0.5	0.0	0	0	1008.6	0.24	0.00	16.6
20/08/2024 19:00	15.9	0.5	0.0	0	0	1009.6	0.34	0.00	15.7
20/08/2024 20:00	15.8	0.5	0.0	0	0	1010.5	0.53	0.00	14.7
20/08/2024 21:00	15.4	0.5	0.0	0	0	1011.2	0.45	0.00	14.0
20/08/2024 22:00	15.4	0.5	0.0	0	0	1011.7	0.48	0.00	13.6
20/08/2024 23:00	15.3	0.5	0.0	0	0	1011.8	0.39	0.00	13.4
21/08/2024 00:00	15.3	0.5	0.0	0	0	1013.2	0.61	0.00	13.2
21/08/2024 01:00	15.4	0.5	0.0	0	0	1013.1	0.56	0.00	12.7
21/08/2024 02:00	15.2	0.5	0.0	0	0	1013.3	0.59	0.00	12.7
21/08/2024 03:00	15.5	0.5	0.0	0	0	1013.5	0.49	0.00	12.8
21/08/2024 04:00	15.5	0.4	0.0	0	0	1013.5	0.38	0.00	12.6
21/08/2024 05:00	15.2	0.5	0.0	0	0	1014.1	0.36	0.00	12.3
21/08/2024 06:00	15.4	0.5	0.0	0	0	1014.5	0.35	0.00	12.0
21/08/2024 07:00	15.2	0.5	0.0	0	0	1014.5	0.34	0.00	12.7
21/08/2024 08:00	15.2	0.4	0.0	0	0	1014.8	0.20	0.00	14.0
21/08/2024 09:00	15.4	0.5	0.0	0	0	1015.2	0.26	0.00	15.5
21/08/2024 10:00	15.4	0.5	0.0	0	0	1014.2	0.11	0.00	16.8
21/08/2024 11:00	15.6	0.5	0.0	0	0	1013.9	0.05	0.00	18.0
21/08/2024 12:00	15.6	0.5	0.0	0	0	1013.8	0.04	0.00	18.1
21/08/2024 13:00	15.8	0.5	0.0	0	0	1013.3	-0.10	0.00	18.7
21/08/2024 14:00	15.8	0.5	0.0	0	0	1013.0	-0.19	0.00	18.9
21/08/2024 15:00	15.6	0.5	0.0	0	0	1012.6	-0.24	0.00	18.0
21/08/2024 16:00	15.6	0.5	0.0	0	0	1011.8	-0.38	0.00	17.2
21/08/2024 17:00	15.5	0.5	0.0	0	0	1010.9	-0.54	0.00	17.1
21/08/2024 18:00	15.6	0.5	0.0	0	0	1010.6	-0.45	0.00	17.0
21/08/2024 19:00	15.4	0.5	0.0	0	0	1010.2	-0.46	0.00	16.8
21/08/2024 20:00	15.2	0.5	0.0	0	0	1009.9	-0.49	0.00	16.5
21/08/2024 21:00	15.5	0.5	0.0	0	0	1009.7	-0.45	0.00	16.3
21/08/2024 22:00	15.3	0.5	0.0	0	0	1008.4	-0.58	0.00	16.2
21/08/2024 23:00	15.3	0.4	0.0	0	0	1007.3	-0.66	0.00	16.0
22/08/2024 00:00	15.3	0.4	0.0	0	0	1005.8	-0.75	0.00	16.0
22/08/2024 01:00	15.3	0.5	0.0	0	0	1004.8	-0.76	0.00	16.2
22/08/2024 02:00	15.5	0.5	0.0	0	0	1004.0	-0.83	0.00	16.2
22/08/2024 03:00	15.3	0.4	0.0	0	0	1001.4	-1.10	0.00	15.6
22/08/2024 04:00	15.2	0.4	0.0	0	0	1000.6	-1.16	0.00	15.4
22/08/2024 05:00	15.1	0.4	0.0	0	0	999.4	-1.29	0.00	15.4
22/08/2024 06:00	15.5	0.5	0.0	0	0	999.2	-1.15	0.00	15.9
22/08/2024 07:00	15.3	0.5	0.0	0	0	999.2	-1.01	0.00	16.6
22/08/2024 08:00	15.2	0.5	0.0	0	0	998.9	-0.86	0.00	17.4
22/08/2024 09:00	15.2	0.5	0.0	0	0	998.6	-0.77	0.00	18.0
22/08/2024 10:00	15.1	0.4	0.0	0	0	998.7	-0.66	0.00	19.8
22/08/2024 11:00	15.5	0.5	0.0	0	0	999.4	-0.25	0.00	18.8
22/08/2024 12:00	15.3	0.4	0.0	0	0	1000.6	0.00	0.00	17.4
22/08/2024 13:00	15.2	0.5	0.0	0	0	1001.6	0.28	0.00	16.7
22/08/2024 14:00	15.4	0.5	0.0	0	0	1002.2	0.38	0.00	16.6
22/08/2024 15:00	15.4	0.4	0.0	0	0	1002.1	0.36	0.00	16.5
22/08/2024 16:00	15.6	0.4	0.0	0	0	1001.7	0.35	0.00	16.3
22/08/2024 17:00	15.8	0.5	0.0	0	0	1001.4	0.35	0.00	16.1
22/08/2024 18:00	15.3	0.5	0.0	0	0	1001.6	0.36	0.00	15.7
22/08/2024 19:00	15.3	0.4	0.0	0	0	1001.6	0.28	0.00	14.7
22/08/2024 20:00	15.3	0.4	0.0	0	0	1001.1	0.06	0.00	13.8
22/08/2024 21:00	15.4	0.4	0.0	0	0	1000.3	-0.16	0.00	13.5
22/08/2024 22:00	15.2	0.4	0.0	0	0	999.7	-0.31	0.00	13.3

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
22/08/2024 23:00	15.1	0.4	0.0	0	0	998.6	-0.44	0.00	13.3
23/08/2024 00:00	15.1	0.4	0.0	0	0	996.8	-0.61	0.00	13.2
23/08/2024 01:00	15.1	0.4	0.0	0	0	995.2	-0.77	0.00	13.6
23/08/2024 02:00	15.1	0.4	0.0	0	0	992.4	-1.15	0.00	14.3
23/08/2024 03:00	14.9	0.4	0.0	0	0	990.8	-1.35	0.00	14.8
23/08/2024 04:00	15.1	0.4	0.0	0	0	989.5	-1.45	0.00	15.4
23/08/2024 05:00	15.1	0.4	0.0	0	0	989.7	-1.32	0.00	16.3
23/08/2024 06:00	15.1	0.4	0.0	0	0	991.2	-1.06	0.00	14.8
23/08/2024 07:00	15.2	0.4	0.0	0	0	995.3	-0.41	0.00	13.8
23/08/2024 08:00	15.1	0.4	0.0	0	0	997.4	0.08	0.00	13.9
23/08/2024 09:00	15.1	0.4	0.0	0	0	999.0	0.47	0.00	14.7
23/08/2024 10:00	15.2	0.4	0.0	0	0	1000.3	0.99	0.00	15.3
23/08/2024 11:00	15.4	0.5	0.0	0	0	1001.8	1.38	0.00	15.8
23/08/2024 12:00	15.4	0.5	0.0	0	0	1002.3	1.60	0.00	17.2
23/08/2024 13:00	15.6	0.5	0.0	0	0	1003.1	1.68	0.00	18.0
23/08/2024 14:00	15.5	0.5	0.0	0	0	1003.2	1.50	0.00	18.4
23/08/2024 15:00	15.8	0.5	0.0	0	0	1003.4	1.01	0.00	18.9
23/08/2024 16:00	15.7	0.5	0.0	0	0	1003.5	0.76	0.00	18.4
23/08/2024 17:00	16.0	0.5	0.0	0	0	1003.6	0.58	0.00	17.9
23/08/2024 18:00	15.8	0.5	0.0	0	0	1003.4	0.39	0.00	17.1
23/08/2024 19:00	15.9	0.5	0.0	0	0	1004.1	0.29	0.00	15.9
23/08/2024 20:00	15.6	0.5	0.0	0	0	1004.9	0.33	0.00	14.6
23/08/2024 21:00	15.4	0.5	0.0	0	0	1004.8	0.21	0.00	14.0
23/08/2024 22:00	15.3	0.4	0.0	0	0	1005.0	0.22	0.00	13.5
23/08/2024 23:00	15.4	0.5	0.0	0	0	1003.9	0.06	0.00	13.1
24/08/2024 00:00	15.3	0.5	0.0	0	0	1003.8	0.04	0.00	13.1
24/08/2024 01:00	15.2	0.5	0.0	0	0	1003.3	-0.04	0.00	13.0
24/08/2024 02:00	15.3	0.4	0.0	0	0	1002.6	-0.10	0.00	13.0
24/08/2024 03:00	15.3	0.5	0.0	0	0	1001.0	-0.39	0.00	13.4
24/08/2024 04:00	15.1	0.5	0.0	0	0	1001.6	-0.41	0.00	13.5
24/08/2024 05:00	15.2	0.4	0.0	0	0	1000.9	-0.49	0.00	13.4
24/08/2024 06:00	15.3	0.5	0.0	0	0	1000.4	-0.58	0.00	13.1
24/08/2024 07:00	15.6	0.4	0.0	0	0	1000.5	-0.42	0.00	13.5
24/08/2024 08:00	15.4	0.4	0.0	0	0	1001.1	-0.34	0.00	14.1
24/08/2024 09:00	15.3	0.4	0.0	0	0	1001.2	-0.26	0.00	14.3
24/08/2024 10:00	15.3	0.4	0.0	0	0	1002.1	-0.06	0.00	14.9
24/08/2024 11:00	15.3	0.5	0.0	0	0	1002.2	0.15	0.00	15.2
24/08/2024 12:00	15.4	0.5	0.0	0	0	1001.8	0.02	0.00	16.0
24/08/2024 13:00	15.5	0.5	0.0	0	0	1002.8	0.24	0.00	17.0
24/08/2024 14:00	15.6	0.5	0.0	0	0	1003.1	0.34	0.00	16.9
24/08/2024 15:00	16.1	0.5	0.0	0	0	1003.3	0.35	0.00	16.8
24/08/2024 16:00	16.0	0.5	0.0	0	0	1004.6	0.44	0.00	16.2
24/08/2024 17:00	15.9	0.5	0.0	0	0	1005.2	0.50	0.00	15.7
24/08/2024 18:00	16.1	0.5	0.0	0	0	1005.5	0.42	0.00	15.3
24/08/2024 19:00	16.2	0.5	0.0	0	0	1007.1	0.61	0.00	14.5
24/08/2024 20:00	15.8	0.5	0.0	0	0	1008.2	0.80	0.00	13.5
24/08/2024 21:00	15.8	0.5	0.0	0	0	1009.2	0.80	0.00	12.9
24/08/2024 22:00	15.4	0.5	0.0	0	0	1009.2	0.76	0.00	12.3
24/08/2024 23:00	15.5	0.4	0.0	0	0	1010.2	0.86	0.00	12.3
25/08/2024 00:00	15.3	0.4	0.0	0	0	1011.3	0.84	0.00	12.2
25/08/2024 01:00	15.2	0.5	0.0	0	0	1012.0	0.85	0.00	11.9
25/08/2024 02:00	15.4	0.5	0.0	0	0	1012.8	0.91	0.00	11.7
25/08/2024 03:00	15.4	0.5	0.0	0	0	1013.7	0.83	0.00	11.6
25/08/2024 04:00	15.1	0.5	0.0	0	0	1013.8	0.70	0.00	11.1
25/08/2024 05:00	15.2	0.5	0.0	0	0	1014.1	0.61	0.00	10.4
25/08/2024 06:00	15.2	0.5	0.0	0	0	1014.4	0.65	0.00	9.9
25/08/2024 07:00	15.3	0.5	0.0	0	0	1014.4	0.52	0.00	10.9
25/08/2024 08:00	15.3	0.5	0.0	0	0	1014.7	0.43	0.00	12.5
25/08/2024 09:00	15.3	0.5	0.0	0	0	1014.9	0.36	0.00	14.3
25/08/2024 10:00	15.4	0.5	0.0	0	0	1014.0	0.15	0.00	15.3
25/08/2024 11:00	15.6	0.4	0.0	0	0	1013.7	0.00	0.00	15.2
25/08/2024 12:00	15.5	0.5	0.0	0	0	1013.2	-0.07	0.00	15.7
25/08/2024 13:00	15.5	0.5	0.0	0	0	1012.5	-0.20	0.00	15.9
25/08/2024 14:00	15.7	0.4	0.0	0	0	1012.3	-0.26	0.00	17.1
25/08/2024 15:00	15.7	0.4	0.0	0	0	1012.6	-0.22	0.00	17.1
25/08/2024 16:00	15.5	0.5	0.0	0	0	1011.9	-0.35	0.00	17.4
25/08/2024 17:00	15.6	0.5	0.0	0	0	1011.7	-0.40	0.00	16.9
25/08/2024 18:00	15.6	0.5	0.0	0	0	1011.7	-0.29	0.00	16.4
25/08/2024 19:00	15.6	0.5	0.0	0	0	1012.0	-0.21	0.00	16.0
25/08/2024 20:00	15.4	0.5	0.0	0	0	1012.6	-0.08	0.00	15.4
25/08/2024 21:00	15.6	0.5	0.0	0	0	1012.3	-0.03	0.00	14.7
25/08/2024 22:00	15.4	0.5	0.0	0	0	1012.8	0.06	0.00	14.2
25/08/2024 23:00	15.4	0.5	0.0	0	0	1013.3	0.09	0.00	14.1
26/08/2024 00:00	15.5	0.5	0.0	0	0	1013.6	0.21	0.00	13.8
26/08/2024 01:00	15.4	0.5	0.0	0	0	1014.3	0.32	0.00	13.6
26/08/2024 02:00	15.5	0.5	0.0	0	0	1014.3	0.32	0.00	13.5
26/08/2024 03:00	15.5	0.5	0.0	0	0	1013.4	0.17	0.00	13.3
26/08/2024 04:00	15.3	0.4	0.0	0	0	1014.4	0.22	0.00	13.2
26/08/2024 05:00	15.4	0.5	0.0	0	0	1014.7	0.30	0.00	13.1
26/08/2024 06:00	15.3	0.4	0.0	0	0	1014.7	0.24	0.00	13.0
26/08/2024 07:00	15.7	0.5	0.0	0	0	1015.3	0.25	0.00	13.6
26/08/2024 08:00	15.6	0.5	0.0	0	0	1015.8	0.27	0.00	14.7
26/08/2024 09:00	15.4	0.5	0.0	0	0	1016.4	0.26	0.00	16.3
26/08/2024 10:00	15.5	0.5	0.0	0	0	1016.5	0.28	0.00	17.8
26/08/2024 11:00	15.6	0.5	0.0	0	0	1016.5	0.39	0.00	18.6
26/08/2024 12:00	15.8	0.4	0.0	0	0	1016.3	0.24	0.00	19.5
26/08/2024 13:00	15.9	0.4	0.0	0	0	1016.6	0.24	0.00	19.8
26/08/2024 14:00	15.9	0.4	0.0	0	0	1017.0	0.29	0.00	20.2
26/08/2024 15:00	15.9	0.4	0.0	0	0	1017.2	0.24	0.00	20.2
26/08/2024 16:00	16.0	0.5	0.0	0	0	1016.5	0.09	0.00	19.8
26/08/2024 17:00	16.1	0.4	0.0	0	0	1016.2	-0.02	0.00	19.0
26/08/2024 18:00	16.0	0.4	0.0	0	0	1016.3	-0.03	0.00	18.4
26/08/2024 19:00	16.0	0.5	0.0	0	0	1016.9	0.05	0.00	17.4
26/08/2024 20:00	15.9	0.5	0.0	0	0	1017.1	0.10	0.00	16.3
26/08/2024 21:00	15.7	0.4	0.0	0	0	1017.6	0.13	0.00	16.0
26/08/2024 22:00	15.7	0.4	0.0	0	0	1016.6	-0.05	0.00	15.5
26/08/2024 23:00	15.7	0.4	0.0	0	0	1016.3	-0.11	0.00	15.4
27/08/2024 00:00	15.6	0.4	0.0	0	0	1016.4	-0.01	0.00	15.5
27/08/2024 01:00	15.7	0.5	0.0	0	0	1015.6	-0.08	0.00	15.4
27/08/2024 02:00	15.6	0.4	0.0	0	0	1015.2	-0.14	0.00	15.5
27/08/2024 03:00	15.5	0.4	0.0	0	0	1015.0	-0.24	0.00	15.5
27/08/2024 04:00	15.5	0.4	0.0	0	0	1014.3	-0.35	0.00	15.5
27/08/2024 05:00	15.8	0.4	0.0	0	0	1014.1	-0.44	0.00	15.5
27/08/2024 06:00	15.6	0.4	0.0	0	0	1013.9	-0.34	0.00	15.4

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
27/08/2024 07:00	15.5	0.4	0.0	0	0	1014.0	-0.29	0.00	15.9
27/08/2024 08:00	15.9	0.4	0.0	0	0	1014.5	-0.24	0.00	16.8
27/08/2024 09:00	15.6	0.4	0.0	0	0	1014.1	-0.19	0.00	17.5
27/08/2024 10:00	15.6	0.5	0.0	0	0	1014.5	-0.09	0.00	17.9
27/08/2024 11:00	15.7	0.5	0.0	0	0	1014.2	-0.10	0.00	18.5
27/08/2024 12:00	15.7	0.4	0.0	0	0	1013.7	-0.07	0.00	19.2
27/08/2024 13:00	15.7	0.4	0.0	0	0	1014.3	0.02	0.00	19.6
27/08/2024 14:00	16.0	0.4	0.0	0	0	1013.9	0.00	0.00	19.5
27/08/2024 15:00	15.8	0.5	0.0	0	0	1014.5	0.06	0.00	17.8
27/08/2024 16:00	15.7	0.5	0.0	0	0	1014.1	-0.05	0.00	17.4
27/08/2024 17:00	15.6	0.4	0.0	0	0	1013.9	-0.03	0.00	17.1
27/08/2024 18:00	15.5	0.4	0.0	0	0	1014.7	0.03	0.00	17.2
27/08/2024 19:00	15.7	0.4	0.0	0	0	1014.4	0.02	0.00	16.8
27/08/2024 20:00	15.5	0.5	0.0	0	0	1014.8	0.14	0.00	16.7
27/08/2024 21:00	15.5	0.4	0.0	0	0	1013.9	-0.05	0.00	16.7
27/08/2024 22:00	15.5	0.5	0.0	0	0	1013.8	-0.01	0.00	16.6
27/08/2024 23:00	15.5	0.4	0.0	0	0	1013.5	-0.13	0.00	16.6
28/08/2024 00:00	15.5	0.5	0.0	0	0	1014.1	0.00	0.00	16.4
28/08/2024 01:00	15.4	0.4	0.0	0	0	1013.6	-0.04	0.00	16.2
28/08/2024 02:00	15.7	0.4	0.0	0	0	1013.7	-0.13	0.00	16.1
28/08/2024 03:00	15.6	0.4	0.0	0	0	1013.1	-0.16	0.00	15.6
28/08/2024 04:00	15.5	0.5	0.0	0	0	1012.8	-0.25	0.00	15.7
28/08/2024 05:00	15.4	0.5	0.0	0	0	1012.8	-0.14	0.00	15.8
28/08/2024 06:00	15.4	0.5	0.0	0	0	1012.7	-0.14	0.00	15.5
28/08/2024 07:00	15.5	0.5	0.0	0	0	1012.7	-0.10	0.00	15.6
28/08/2024 08:00	15.4	0.5	0.0	0	0	1013.0	-0.14	0.00	16.0
28/08/2024 09:00	15.4	0.5	0.0	0	0	1013.4	-0.03	0.00	17.0

ggs
Experts in Continuous Monitoring

Time Series Data

Project Ref:	GGS3078
Project Name:	Ryebank Road, Chorlton
Borehole ref:	WS202
Instrument Name and ID:	Gas Sentinel® 03000041
Start Date:	06/08/2024 15:00
End Date:	28/08/2024 09:00
Days of monitoring:	22
Monitoring Frequency (mins):	60
Total samples taken:	523

Experts in Continuous Monitoring

Summary Table

	CH_4	CO_2	O_2	CO	H_2S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
Minimum	0.8	0.3	8.1	0	0	989.5	-1.45	-0.08	9.8
Maximum	5.0	1.5	19.3	7	0	1022.5	1.68	0.02	25.4
Range	4.2	1.2	11.2	7	0	33.0	3.13	0.10	15.6

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	CO ppm/v	H_2S ppm/v	Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Flow Ltr/hr	Temperature °C
06/08/2024 15:00	0.8	0.3	19.2	0	0	1006.5	N/A	0.00	21.2
06/08/2024 16:00	0.8	0.3	19.3	0	0	1007.2	N/A	0.00	21.0
06/08/2024 17:00	0.8	0.3	19.2	0	0	1007.0	N/A	0.00	20.7
06/08/2024 18:00	0.9	0.3	18.9	0	0	1007.4	N/A	0.00	20.2
06/08/2024 19:00	0.9	0.3	18.9	0	0	1007.6	N/A	0.00	19.0
06/08/2024 20:00	0.9	0.3	18.9	0	0	1008.2	N/A	0.00	17.6
06/08/2024 21:00	1.0	0.3	18.7	0	0	1008.8	N/A	0.00	16.3
06/08/2024 22:00	0.9	0.3	18.0	0	0	1008.8	N/A	0.00	15.2
06/08/2024 23:00	1.1	0.3	17.6	0	0	1008.9	0.30	0.00	14.4
07/08/2024 00:00	1.2	0.3	17.2	0	0	1008.3	0.14	0.00	13.5
07/08/2024 01:00	NM	0.3	17.0	0	0	1009.0	0.25	0.00	13.1
07/08/2024 02:00	NM	0.3	16.8	0	0	1008.5	0.14	0.00	12.7
07/08/2024 03:00	NM	0.3	16.6	0	0	1007.7	0.01	0.00	12.4
07/08/2024 04:00	NM	0.4	16.5	0	0	1008.3	0.01	0.00	12.2
07/08/2024 05:00	NM	0.4	16.6	0	0	1008.8	0.00	0.00	12.0
07/08/2024 06:00	NM	0.4	16.5	0	0	1009.1	0.04	0.00	12.7
07/08/2024 07:00	NM	0.4	16.5	0	0	1008.8	-0.01	0.00	14.1
07/08/2024 08:00	NM	0.4	16.6	0	0	1008.5	0.03	0.00	15.9
07/08/2024 09:00	NM	0.4	16.8	0	0	1009.0	0.00	0.00	17.1
07/08/2024 10:00	1.1	0.4	17.1	0	0	1008.4	-0.01	0.00	17.8
07/08/2024 11:00	1.2	0.4	17.1	0	0	1008.5	0.10	0.00	18.3
07/08/2024 12:00	1.1	0.4	17.2	0	0	1008.5	0.03	0.00	19.1
07/08/2024 13:00	1.1	0.4	17.2	1	0	1008.8	0.00	0.00	19.7
07/08/2024 14:00	1.2	0.4	17.2	1	0	1009.3	0.02	0.00	20.1
07/08/2024 15:00	1.2	0.4	17.3	1	0	1009.5	0.09	0.00	19.4
07/08/2024 16:00	1.1	0.4	17.3	1	0	1009.7	0.15	0.00	18.9
07/08/2024 17:00	1.1	0.4	17.2	1	0	1009.6	0.08	0.00	18.7
07/08/2024 18:00	1.1	0.4	17.2	1	0	1009.5	0.14	0.00	18.0
07/08/2024 19:00	1.2	0.4	17.2	1	0	1010.6	0.26	0.00	17.3
07/08/2024 20:00	1.1	0.4	17.2	1	0	1011.1	0.33	0.00	16.5
07/08/2024 21:00	1.3	0.4	16.9	1	0	1011.3	0.31	0.00	15.9
07/08/2024 22:00	1.5	0.4	16.7	1	0	1012.1	0.35	0.00	15.0
07/08/2024 23:00	1.5	0.4	16.5	1	0	1012.2	0.34	0.00	14.2
08/08/2024 00:00	1.6	0.4	16.4	1	0	1012.1	0.30	0.00	14.3
08/08/2024 01:00	1.7	0.4	16.3	1	0	1012.3	0.34	0.00	14.4
08/08/2024 02:00	1.6	0.4	16.2	1	0	1012.4	0.36	0.00	14.6
08/08/2024 03:00	1.7	0.4	16.2	1	0	1011.9	0.16	0.00	15.1
08/08/2024 04:00	1.8	0.4	16.1	1	0	1012.0	0.11	0.00	15.1
08/08/2024 05:00	1.8	0.4	16.1	1	0	1011.6	0.04	0.00	14.8
08/08/2024 06:00	1.8	0.4	16.0	1	0	1011.5	-0.08	0.00	14.4
08/08/2024 07:00	1.8	0.4	16.0	1	0	1012.0	-0.03	0.00	14.6
08/08/2024 08:00	1.9	0.4	16.0	1	0	1012.0	-0.01	0.00	15.0
08/08/2024 09:00	1.8	0.4	16.1	1	0	1011.2	-0.14	0.00	15.7
08/08/2024 10:00	1.8	0.4	16.3	2	0	1010.3	-0.26	0.00	16.2
08/08/2024 11:00	1.6	0.5	16.6	2	0	1009.3	-0.33	0.00	16.5
08/08/2024 12:00	1.5	0.5	16.8	2	0	1009.1	-0.36	0.01	17.1
08/08/2024 13:00	1.5	0.5	16.9	2	0	1008.3	-0.41	0.01	17.3
08/08/2024 14:00	1.5	0.5	16.8	2	0	1007.7	-0.47	0.00	17.8
08/08/2024 15:00	1.5	0.5	16.7	3	0	1006.7	-0.66	0.00	18.6
08/08/2024 16:00	1.6	0.5	16.7	3	0	1006.4	-0.70	0.01	18.8
08/08/2024 17:00	1.7	0.5	16.6	3	0	1005.9	-0.66	0.00	19.0
08/08/2024 18:00	1.7	0.5	16.6	3	0	1003.8	-0.81	0.00	19.3

ggs Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
08/08/2024 19:00	1.7	0.5	16.5	3	0	1005.8	-0.44	0.00	19.4
08/08/2024 20:00	1.7	0.5	16.4	3	0	1005.9	-0.40	0.00	19.2
08/08/2024 21:00	1.8	0.5	16.3	3	0	1005.2	-0.39	0.00	19.2
08/08/2024 22:00	1.9	0.5	16.2	3	0	1005.0	-0.34	0.00	18.9
08/08/2024 23:00	1.9	0.5	16.2	3	0	1005.2	-0.19	0.00	18.6
09/08/2024 00:00	2.0	0.5	16.1	3	0	1005.4	-0.13	0.00	18.3
09/08/2024 01:00	2.0	0.5	16.0	3	0	1006.0	0.01	0.00	18.1
09/08/2024 02:00	2.1	0.5	15.9	3	0	1006.4	0.33	0.00	17.8
09/08/2024 03:00	2.2	0.5	15.8	3	0	1005.8	0.00	0.00	17.2
09/08/2024 04:00	2.3	0.5	15.6	3	0	1007.0	0.14	0.00	16.4
09/08/2024 05:00	2.3	0.5	15.5	3	0	1007.8	0.32	0.00	15.7
09/08/2024 06:00	2.3	0.5	15.6	2	0	1009.2	0.53	0.00	15.4
09/08/2024 07:00	2.4	0.5	15.6	2	0	1010.0	0.60	0.00	15.7
09/08/2024 08:00	2.4	0.5	15.5	2	0	1010.7	0.66	0.00	16.2
09/08/2024 09:00	2.3	0.5	15.6	2	0	1012.1	0.76	0.00	17.2
09/08/2024 10:00	2.2	0.5	15.8	2	0	1011.3	0.61	0.00	18.1
09/08/2024 11:00	2.2	0.5	16.0	3	0	1012.3	0.81	0.00	19.0
09/08/2024 12:00	2.1	0.6	15.9	3	0	1012.1	0.64	0.02	20.2
09/08/2024 13:00	2.1	0.6	15.9	3	0	1012.5	0.59	0.00	20.5
09/08/2024 14:00	2.1	0.6	16.0	4	0	1013.0	0.47	0.01	20.8
09/08/2024 15:00	2.0	0.7	16.0	4	0	1013.1	0.39	0.01	20.8
09/08/2024 16:00	2.0	0.7	16.0	4	0	1013.5	0.35	0.00	20.8
09/08/2024 17:00	2.1	0.6	16.0	3	0	1013.8	0.21	0.01	20.7
09/08/2024 18:00	2.1	0.6	15.9	4	0	1013.5	0.28	0.00	20.4
09/08/2024 19:00	2.1	0.7	15.7	3	0	1014.6	0.29	0.00	19.1
09/08/2024 20:00	2.1	0.7	15.6	3	0	1014.8	0.34	0.00	17.6
09/08/2024 21:00	2.3	0.7	15.3	3	0	1014.6	0.26	0.00	16.6
09/08/2024 22:00	2.7	0.7	14.8	3	0	1015.3	0.29	0.00	15.6
09/08/2024 23:00	2.8	0.7	14.5	3	0	1015.4	0.29	0.00	15.0
10/08/2024 00:00	3.0	0.7	14.2	2	0	1015.0	0.19	0.00	14.5
10/08/2024 01:00	3.1	0.7	13.9	2	0	1015.4	0.20	0.00	14.3
10/08/2024 02:00	3.2	0.7	13.7	2	0	1015.3	0.22	0.00	14.2
10/08/2024 03:00	3.1	0.7	13.5	2	0	1015.2	0.08	0.00	14.7
10/08/2024 04:00	3.2	0.7	13.4	2	0	1015.3	0.06	0.00	14.4
10/08/2024 05:00	3.2	0.7	13.3	2	0	1015.6	0.13	0.00	14.2
10/08/2024 06:00	3.3	0.7	13.1	2	0	1015.7	0.05	0.00	14.8
10/08/2024 07:00	3.5	0.7	13.0	2	0	1015.7	0.04	0.00	16.2
10/08/2024 08:00	3.4	0.7	13.0	2	0	1015.8	0.10	0.00	17.8
10/08/2024 09:00	3.2	0.8	13.3	2	0	1015.1	-0.04	0.00	19.2
10/08/2024 10:00	3.1	0.8	13.5	2	0	1016.1	0.10	0.00	20.2
10/08/2024 11:00	3.0	0.8	13.6	3	0	1016.7	0.19	0.00	20.6
10/08/2024 12:00	2.8	0.8	13.9	3	0	1016.2	0.11	0.00	20.6
10/08/2024 13:00	2.8	0.9	14.0	4	0	1017.3	0.21	0.00	21.0
10/08/2024 14:00	2.7	0.9	14.1	4	0	1017.3	0.20	0.00	21.4
10/08/2024 15:00	2.6	0.9	14.0	4	0	1017.7	0.25	0.00	21.1
10/08/2024 16:00	2.5	0.9	14.1	5	0	1018.3	0.31	0.01	20.9
10/08/2024 17:00	2.7	0.9	14.0	5	0	1019.0	0.49	0.00	20.3
10/08/2024 18:00	2.8	0.9	13.8	5	0	1019.6	0.44	0.00	20.0
10/08/2024 19:00	2.7	1.0	13.9	5	0	1020.1	0.42	0.00	19.1
10/08/2024 20:00	2.7	0.9	13.8	5	0	1020.6	0.55	0.00	17.9
10/08/2024 21:00	3.0	0.9	13.4	5	0	1020.4	0.39	-0.01	17.3
10/08/2024 22:00	3.2	0.9	13.0	4	0	1021.0	0.46	0.00	16.6
10/08/2024 23:00	3.5	0.9	12.7	4	0	1021.4	0.46	0.00	16.2
11/08/2024 00:00	3.6	0.8	12.5	3	0	1021.9	0.45	0.00	15.2
11/08/2024 01:00	3.8	0.8	12.3	3	0	1022.1	0.39	0.00	14.4
11/08/2024 02:00	3.9	0.8	12.2	3	0	1022.1	0.31	0.00	14.1
11/08/2024 03:00	NM	0.8	12.0	3	0	1022.4	0.29	0.00	13.6
11/08/2024 04:00	NM	0.8	11.9	2	0	1022.3	0.21	0.00	13.1
11/08/2024 05:00	NM	0.8	11.8	2	0	1022.5	0.26	0.00	12.7
11/08/2024 06:00	NM	0.8	11.7	2	0	1022.3	0.16	0.00	13.2
11/08/2024 07:00	NM	0.9	11.5	2	0	1022.0	0.08	0.00	14.9
11/08/2024 08:00	NM	0.9	11.8	2	0	1022.4	0.06	0.00	17.4
11/08/2024 09:00	3.7	0.9	12.2	3	0	1021.7	-0.05	0.00	19.8
11/08/2024 10:00	3.3	1.0	12.6	4	0	1021.6	-0.06	0.00	21.2
11/08/2024 11:00	3.1	1.1	12.9	5	0	1021.0	-0.17	0.00	22.3
11/08/2024 12:00	2.8	1.1	13.1	6	0	1020.2	-0.26	0.00	23.4
11/08/2024 13:00	2.5	1.2	13.2	7	0	1019.7	-0.35	0.00	24.3
11/08/2024 14:00	2.7	1.2	13.4	7	0	1019.4	-0.36	0.00	24.9
11/08/2024 15:00	2.3	1.2	13.5	7	0	1018.4	-0.45	0.00	25.3
11/08/2024 16:00	2.3	1.2	13.5	7	0	1017.9	-0.56	0.00	25.4
11/08/2024 17:00	2.5	1.2	13.4	7	0	1016.8	-0.61	0.00	25.2
11/08/2024 18:00	2.5	1.2	13.2	7	0	1015.8	-0.73	0.00	24.8
11/08/2024 19:00	2.5	1.2	13.3	7	0	1015.5	-0.69	0.00	23.8
11/08/2024 20:00	2.5	1.2	13.3	7	0	1015.7	-0.56	0.00	21.8
11/08/2024 21:00	2.8	1.2	13.2	6	0	1015.4	-0.54	0.00	20.4
11/08/2024 22:00	2.9	1.1	12.9	5	0	1014.7	-0.59	0.00	19.7

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
11/08/2024 23:00	3.1	1.1	12.6	5	0	1014.2	-0.52	0.00	19.3
12/08/2024 00:00	3.2	1.0	12.4	4	0	1013.5	-0.55	0.00	18.6
12/08/2024 01:00	3.4	1.0	12.2	4	0	1013.0	-0.47	0.00	18.2
12/08/2024 02:00	3.4	1.0	12.0	4	0	1011.9	-0.49	0.00	18.1
12/08/2024 03:00	3.6	1.0	11.8	4	0	1009.8	-0.71	0.00	18.2
12/08/2024 04:00	3.6	1.0	11.7	3	0	1009.5	-0.78	0.00	18.4
12/08/2024 05:00	3.6	1.0	11.7	3	0	1008.9	-0.81	0.00	18.3
12/08/2024 06:00	3.6	1.0	11.7	3	0	1008.4	-0.79	0.00	18.8
12/08/2024 07:00	3.6	1.0	11.7	3	0	1007.4	-0.85	0.00	20.1
12/08/2024 08:00	3.7	1.0	11.6	3	0	1006.8	-0.84	0.00	22.7
12/08/2024 09:00	3.6	1.0	11.6	4	0	1006.2	-0.85	0.00	23.4
12/08/2024 10:00	3.4	1.1	11.8	4	0	1006.5	-0.67	0.00	23.8
12/08/2024 11:00	3.2	1.2	11.9	4	0	1006.7	-0.39	0.02	24.0
12/08/2024 12:00	2.9	1.2	12.2	5	0	1006.0	-0.44	0.00	24.3
12/08/2024 13:00	2.9	1.2	12.2	6	0	1006.4	-0.31	0.00	24.1
12/08/2024 14:00	2.9	1.3	12.2	6	0	1006.9	-0.19	0.02	22.7
12/08/2024 15:00	3.1	1.3	12.0	6	0	1007.4	0.00	0.00	21.8
12/08/2024 16:00	3.1	1.2	11.8	6	0	1007.4	0.08	0.00	21.9
12/08/2024 17:00	3.2	1.2	11.8	6	0	1007.0	0.10	-0.01	21.5
12/08/2024 18:00	3.2	1.3	11.5	6	0	1007.4	0.11	0.00	20.7
12/08/2024 19:00	3.2	1.3	11.6	7	0	1008.4	0.21	0.00	19.3
12/08/2024 20:00	3.0	1.3	11.6	7	0	1008.6	0.33	0.00	18.0
12/08/2024 21:00	3.4	1.3	11.3	6	0	1008.7	0.29	0.00	17.5
12/08/2024 22:00	3.7	1.2	11.0	5	0	1008.3	0.17	0.00	16.5
12/08/2024 23:00	3.9	1.1	10.7	5	0	1008.6	0.15	0.00	15.7
13/08/2024 00:00	4.0	1.1	10.5	4	0	1009.0	0.20	0.00	15.4
13/08/2024 01:00	4.2	1.1	10.3	3	0	1008.6	0.20	0.00	14.8
13/08/2024 02:00	NM	1.0	10.2	3	0	1008.2	0.10	0.00	14.2
13/08/2024 03:00	NM	1.1	10.1	3	0	1008.3	-0.01	0.00	13.4
13/08/2024 04:00	NM	1.0	10.0	3	0	1008.2	-0.05	0.00	13.2
13/08/2024 05:00	NM	1.1	9.9	3	0	1008.2	-0.06	0.00	13.1
13/08/2024 06:00	NM	1.1	9.8	3	0	1008.4	0.01	0.00	13.6
13/08/2024 07:00	NM	1.1	9.7	3	0	1008.2	-0.05	0.00	14.6
13/08/2024 08:00	NM	1.1	9.8	3	0	1007.9	-0.14	0.00	15.9
13/08/2024 09:00	4.2	1.1	10.1	3	0	1006.8	-0.23	0.00	17.8
13/08/2024 10:00	3.8	1.2	10.4	4	0	1007.1	-0.14	0.00	19.2
13/08/2024 11:00	3.6	1.3	10.6	5	0	1007.3	-0.13	0.00	20.5
13/08/2024 12:00	3.4	1.4	10.8	5	0	1007.1	-0.14	0.00	21.3
13/08/2024 13:00	3.2	1.4	10.9	6	0	1007.6	-0.08	0.00	21.1
13/08/2024 14:00	3.4	1.4	10.9	6	0	1007.7	-0.09	0.00	21.6
13/08/2024 15:00	3.4	1.3	10.8	6	0	1007.5	-0.09	-0.01	22.2
13/08/2024 16:00	3.4	1.3	10.7	6	0	1007.6	-0.04	0.00	20.8
13/08/2024 17:00	3.5	1.3	10.5	6	0	1007.8	0.13	0.00	19.5
13/08/2024 18:00	3.7	1.3	10.4	5	0	1009.1	0.25	0.00	17.7
13/08/2024 19:00	3.8	1.3	10.4	5	0	1009.3	0.25	0.00	17.3
13/08/2024 20:00	3.9	1.2	10.3	5	0	1009.8	0.34	0.00	17.2
13/08/2024 21:00	4.0	1.2	10.2	4	0	1010.0	0.30	0.00	16.9
13/08/2024 22:00	4.1	1.2	10.1	4	0	1010.9	0.40	0.00	16.7
13/08/2024 23:00	4.1	1.2	10.1	4	0	1011.2	0.46	0.00	16.6
14/08/2024 00:00	4.2	1.2	10.0	4	0	1011.1	0.44	0.00	16.3
14/08/2024 01:00	4.2	1.2	10.0	3	0	1012.2	0.55	0.00	15.9
14/08/2024 02:00	4.3	1.2	9.9	3	0	1012.4	0.41	0.00	15.2
14/08/2024 03:00	4.3	1.2	9.9	3	0	1012.7	0.43	0.00	14.8
14/08/2024 04:00	4.4	1.2	9.8	3	0	1012.9	0.39	0.00	14.6
14/08/2024 05:00	4.4	1.2	9.7	3	0	1013.2	0.40	0.00	14.4
14/08/2024 06:00	4.3	1.2	9.7	3	0	1014.0	0.39	0.00	14.1
14/08/2024 07:00	4.4	1.2	9.6	3	0	1014.5	0.41	0.00	14.4
14/08/2024 08:00	4.5	1.2	9.6	3	0	1015.2	0.51	0.00	15.4
14/08/2024 09:00	4.3	1.2	9.6	3	0	1015.4	0.40	0.00	16.6
14/08/2024 10:00	4.3	1.2	9.8	3	0	1015.0	0.33	0.00	17.5
14/08/2024 11:00	4.1	1.3	10.0	4	0	1015.0	0.29	0.00	18.6
14/08/2024 12:00	3.8	1.3	10.1	4	0	1014.4	0.19	0.00	20.0
14/08/2024 13:00	3.7	1.4	10.3	5	0	1015.3	0.26	0.00	20.6
14/08/2024 14:00	3.4	1.5	10.4	5	0	1015.1	0.14	0.00	20.6
14/08/2024 15:00	3.4	1.5	10.5	5	0	1014.9	0.05	0.00	20.1
14/08/2024 16:00	3.3	1.5	10.6	5	0	1014.9	-0.04	0.00	20.2
14/08/2024 17:00	3.5	1.5	10.5	5	0	1014.5	-0.11	0.00	20.4
14/08/2024 18:00	3.4	1.5	10.3	5	0	1014.1	-0.11	0.00	20.6
14/08/2024 19:00	3.6	1.5	10.4	5	0	1014.8	-0.03	0.00	19.6
14/08/2024 20:00	3.5	1.4	10.4	5	0	1015.5	0.14	0.00	17.7
14/08/2024 21:00	3.8	1.4	10.2	4	0	1014.2	-0.14	0.00	16.6
14/08/2024 22:00	4.0	1.4	9.8	4	0	1015.2	0.01	0.00	15.7
14/08/2024 23:00	4.1	1.4	9.6	3	0	1015.0	0.01	0.00	15.3
15/08/2024 00:00	4.4	1.3	9.5	3	0	1014.3	-0.08	0.00	14.4
15/08/2024 01:00	4.4	1.3	9.4	3	0	1014.0	-0.06	0.00	13.6
15/08/2024 02:00	4.4	1.3	9.2	2	0	1013.9	-0.03	0.00	13.3

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
15/08/2024 03:00	4.4	1.2	9.1	2	0	1013.1	-0.21	0.00	13.5
15/08/2024 04:00	4.4	1.2	9.1	2	0	1012.6	-0.36	0.00	13.7
15/08/2024 05:00	4.5	1.2	9.0	2	0	1011.7	-0.31	0.00	13.9
15/08/2024 06:00	4.7	1.3	8.9	2	0	1010.8	-0.55	0.00	13.8
15/08/2024 07:00	4.7	1.2	8.9	2	0	1011.3	-0.46	0.00	14.6
15/08/2024 08:00	4.5	1.3	8.9	2	0	1010.4	-0.49	0.00	15.5
15/08/2024 09:00	4.5	1.3	9.0	2	0	1009.6	-0.55	0.00	15.5
15/08/2024 10:00	4.3	1.3	9.1	2	0	1009.0	-0.61	0.00	16.0
15/08/2024 11:00	4.2	1.3	9.1	2	0	1008.6	-0.56	0.00	16.5
15/08/2024 12:00	4.2	1.3	9.2	2	0	1006.8	-0.73	0.00	17.2
15/08/2024 13:00	4.2	1.3	9.3	3	0	1007.7	-0.50	0.00	17.6
15/08/2024 14:00	4.0	1.4	9.4	3	0	1008.1	-0.34	0.00	18.4
15/08/2024 15:00	4.1	1.4	9.4	3	0	1008.2	-0.39	0.00	19.1
15/08/2024 16:00	3.8	1.4	9.5	3	0	1008.1	-0.29	0.00	19.6
15/08/2024 17:00	3.8	1.4	9.6	3	0	1008.4	-0.15	0.00	19.7
15/08/2024 18:00	3.9	1.5	9.6	3	0	1010.1	0.14	-0.01	18.6
15/08/2024 19:00	3.9	1.4	9.5	3	0	1010.9	0.29	-0.01	17.0
15/08/2024 20:00	4.0	1.4	9.2	3	0	1011.9	0.64	0.00	15.7
15/08/2024 21:00	4.3	1.4	9.0	3	0	1012.9	0.65	0.00	14.4
15/08/2024 22:00	4.4	1.3	8.8	3	0	1013.0	0.61	0.00	13.4
15/08/2024 23:00	4.4	1.3	8.7	3	0	1013.9	0.71	0.00	12.8
16/08/2024 00:00	4.6	1.3	8.5	2	0	1014.6	0.81	0.00	12.1
16/08/2024 01:00	4.7	1.3	8.4	2	0	1015.0	0.83	0.00	12.0
16/08/2024 02:00	4.9	1.3	8.3	2	0	1014.8	0.59	0.00	12.1
16/08/2024 03:00	NM	1.3	8.2	2	0	1014.9	0.50	0.00	12.0
16/08/2024 04:00	NM	1.3	8.2	2	0	1014.5	0.33	0.00	11.6
16/08/2024 05:00	NM	1.3	8.2	2	0	1015.0	0.26	0.00	11.3
16/08/2024 06:00	NM	1.3	8.2	2	0	1015.1	0.26	0.00	11.3
16/08/2024 07:00	NM	1.3	8.1	1	0	1015.9	0.25	0.00	12.7
16/08/2024 08:00	NM	1.3	8.2	2	0	1016.3	0.21	0.00	14.5
16/08/2024 09:00	NM	1.3	8.4	2	0	1015.8	0.10	0.00	15.8
16/08/2024 10:00	4.5	1.3	8.7	2	0	1015.9	0.14	0.00	16.6
16/08/2024 11:00	4.3	1.3	9.0	2	0	1015.8	0.11	0.00	17.5
16/08/2024 12:00	4.1	1.4	9.3	3	0	1015.2	0.09	-0.03	18.2
16/08/2024 13:00	3.9	1.5	9.5	3	0	1015.6	0.08	-0.04	18.8
16/08/2024 14:00	3.7	1.5	9.6	4	0	1015.2	0.01	-0.04	19.3
16/08/2024 15:00	3.5	1.5	9.7	4	0	1014.4	-0.19	-0.03	19.9
16/08/2024 16:00	3.6	1.5	9.9	4	0	1014.0	-0.29	-0.05	19.9
16/08/2024 17:00	3.6	1.5	9.8	4	0	1014.0	-0.22	-0.06	18.4
16/08/2024 18:00	3.7	1.5	9.7	4	0	1013.7	-0.27	-0.03	17.3
16/08/2024 19:00	3.6	1.5	9.8	4	0	1014.4	-0.17	-0.05	16.2
16/08/2024 20:00	3.7	1.5	9.8	6	0	1014.3	-0.11	-0.05	15.0
16/08/2024 21:00	3.9	1.4	9.5	5	0	1014.3	-0.16	-0.04	14.4
16/08/2024 22:00	4.2	1.3	9.3	4	0	1014.3	-0.11	-0.02	13.4
16/08/2024 23:00	4.4	1.3	9.2	4	0	1014.6	0.03	-0.02	12.6
17/08/2024 00:00	NM	1.2	9.1	3	0	1014.1	0.01	-0.02	11.8
17/08/2024 01:00	NM	1.2	9.0	3	0	1014.3	0.04	-0.01	11.4
17/08/2024 02:00	NM	1.2	8.9	3	0	1014.2	0.06	-0.01	10.9
17/08/2024 03:00	NM	1.1	8.9	3	0	1013.8	-0.08	-0.01	10.5
17/08/2024 04:00	NM	1.2	8.8	3	0	1013.6	-0.09	-0.01	10.1
17/08/2024 05:00	NM	1.2	8.8	3	0	1014.0	-0.04	-0.01	9.8
17/08/2024 06:00	NM	1.1	8.9	3	0	1014.3	0.00	-0.01	10.1
17/08/2024 07:00	NM	1.1	8.9	3	0	1014.1	-0.06	-0.01	11.6
17/08/2024 08:00	NM	1.1	9.0	3	0	1014.2	0.01	-0.02	14.0
17/08/2024 09:00	NM	1.1	9.1	3	0	1014.2	-0.01	-0.02	16.3
17/08/2024 10:00	NM	1.2	9.3	3	0	1013.5	-0.09	-0.02	17.0
17/08/2024 11:00	4.3	1.3	9.7	4	0	1013.4	-0.05	-0.06	17.8
17/08/2024 12:00	4.1	1.3	9.9	4	0	1013.3	-0.04	-0.05	18.5
17/08/2024 13:00	4.0	1.3	10.0	5	0	1013.1	-0.11	-0.04	18.5
17/08/2024 14:00	3.9	1.3	10.1	5	0	1013.1	-0.15	-0.06	18.7
17/08/2024 15:00	3.9	1.3	10.1	5	0	1012.5	-0.20	-0.04	19.1
17/08/2024 16:00	3.7	1.3	10.2	5	0	1012.2	-0.25	-0.05	19.0
17/08/2024 17:00	3.8	1.4	10.2	5	0	1012.0	-0.28	-0.06	18.1
17/08/2024 18:00	3.8	1.3	10.2	5	0	1012.4	-0.14	-0.05	17.1
17/08/2024 19:00	4.0	1.3	10.1	5	0	1011.8	-0.20	-0.05	16.7
17/08/2024 20:00	4.1	1.3	10.0	4	0	1011.9	-0.17	-0.05	15.6
17/08/2024 21:00	4.3	1.2	9.9	4	0	1011.6	-0.19	-0.03	14.5
17/08/2024 22:00	4.3	1.2	9.9	4	0	1011.9	-0.15	-0.04	13.6
17/08/2024 23:00	4.5	1.2	9.8	4	0	1011.7	-0.10	-0.05	12.7
18/08/2024 00:00	4.7	1.1	9.8	4	0	1011.9	-0.04	-0.03	12.0
18/08/2024 01:00	4.7	1.1	9.7	4	0	1012.0	0.00	-0.02	11.4
18/08/2024 02:00	4.7	1.1	9.7	4	0	1011.6	-0.10	-0.03	11.1
18/08/2024 03:00	4.7	1.1	9.8	3	0	1010.6	-0.15	-0.02	11.5
18/08/2024 04:00	4.8	1.1	9.7	3	0	1010.5	-0.17	-0.02	11.4
18/08/2024 05:00	4.9	1.1	9.8	4	0	1010.6	-0.13	-0.02	11.4
18/08/2024 06:00	4.9	1.0	9.8	3	0	1010.4	-0.19	-0.02	12.3

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
18/08/2024 07:00	4.9	1.0	9.8	3	0	1011.8	0.01	-0.02	13.7
18/08/2024 08:00	4.8	1.1	9.8	3	0	1012.2	0.04	-0.02	15.3
18/08/2024 09:00	4.8	1.1	9.9	4	0	1012.4	0.05	-0.03	16.5
18/08/2024 10:00	4.5	1.1	10.1	4	0	1013.1	0.19	-0.03	16.5
18/08/2024 11:00	4.5	1.1	10.2	4	0	1013.6	0.38	-0.05	17.2
18/08/2024 12:00	4.3	1.1	10.3	4	0	1014.0	0.44	-0.04	18.1
18/08/2024 13:00	4.3	1.1	10.4	4	0	1014.3	0.46	-0.04	18.1
18/08/2024 14:00	4.1	1.1	10.6	5	0	1014.8	0.55	-0.06	18.3
18/08/2024 15:00	4.1	1.2	10.6	5	0	1014.5	0.34	-0.03	18.5
18/08/2024 16:00	4.0	1.2	10.7	5	0	1015.0	0.35	-0.05	18.4
18/08/2024 17:00	4.1	1.2	10.7	5	0	1015.0	0.33	-0.03	18.0
18/08/2024 18:00	4.1	1.1	10.7	5	0	1015.9	0.35	-0.03	17.6
18/08/2024 19:00	4.2	1.2	10.7	5	0	1016.3	0.34	-0.05	17.0
18/08/2024 20:00	4.2	1.1	10.6	5	0	1016.9	0.36	-0.05	16.0
18/08/2024 21:00	4.7	1.1	10.5	4	0	1016.6	0.29	-0.03	14.7
18/08/2024 22:00	4.7	1.1	10.4	4	0	1017.2	0.30	-0.03	14.0
18/08/2024 23:00	4.7	1.0	10.3	3	0	1016.8	0.29	-0.02	13.6
19/08/2024 00:00	4.9	1.0	10.2	3	0	1017.5	0.31	-0.02	12.5
19/08/2024 01:00	NM	1.0	10.2	3	0	1017.2	0.28	-0.02	12.0
19/08/2024 02:00	NM	0.9	10.1	3	0	1017.1	0.15	-0.02	11.8
19/08/2024 03:00	NM	0.9	10.1	3	0	1016.7	0.05	-0.02	11.8
19/08/2024 04:00	NM	0.9	10.1	3	0	1016.0	-0.11	-0.01	11.9
19/08/2024 05:00	NM	0.9	10.1	3	0	1015.9	-0.09	-0.01	11.7
19/08/2024 06:00	NM	0.9	10.1	3	0	1015.2	-0.25	-0.01	12.0
19/08/2024 07:00	NM	0.9	10.1	3	0	1014.7	-0.26	-0.01	13.4
19/08/2024 08:00	NM	0.9	10.2	3	0	1014.5	-0.38	-0.02	14.9
19/08/2024 09:00	NM	0.9	10.4	3	0	1013.9	-0.41	-0.02	15.9
19/08/2024 10:00	4.9	0.9	10.6	3	0	1013.1	-0.50	-0.03	17.0
19/08/2024 11:00	4.6	0.9	10.8	4	0	1012.5	-0.53	-0.04	18.5
19/08/2024 12:00	4.6	1.0	11.0	4	0	1012.3	-0.46	-0.04	18.3
19/08/2024 13:00	4.3	1.0	11.1	4	0	1011.4	-0.56	-0.02	19.5
19/08/2024 14:00	4.4	1.0	11.2	4	0	1010.2	-0.63	-0.04	19.3
19/08/2024 15:00	4.3	1.0	11.3	5	0	1009.6	-0.64	-0.06	19.7
19/08/2024 16:00	4.2	1.0	11.2	4	0	1008.5	-0.75	-0.05	18.8
19/08/2024 17:00	4.2	1.0	11.3	5	0	1007.4	-0.81	-0.04	18.5
19/08/2024 18:00	4.2	1.0	11.3	5	0	1005.6	-0.94	-0.07	17.9
19/08/2024 19:00	4.3	1.0	11.3	4	0	1006.5	-0.75	-0.05	17.4
19/08/2024 20:00	4.4	1.0	11.2	4	0	1005.8	-0.81	-0.06	16.8
19/08/2024 21:00	4.3	1.0	11.2	4	0	1005.0	-0.80	-0.05	16.9
19/08/2024 22:00	4.4	0.9	11.2	4	0	1005.6	-0.58	-0.05	16.8
19/08/2024 23:00	4.5	0.9	11.2	4	0	1005.4	-0.53	-0.04	16.7
20/08/2024 00:00	4.4	0.9	11.2	4	0	1005.5	-0.38	-0.04	16.6
20/08/2024 01:00	4.5	0.9	11.2	4	0	1005.3	-0.26	-0.04	16.6
20/08/2024 02:00	4.4	0.9	11.2	4	0	1005.1	-0.06	-0.04	16.3
20/08/2024 03:00	4.5	0.9	11.1	4	0	1005.1	-0.17	-0.04	15.8
20/08/2024 04:00	4.7	0.9	11.1	4	0	1004.8	-0.13	-0.04	15.1
20/08/2024 05:00	4.8	0.9	11.1	4	0	1004.6	-0.05	-0.04	14.7
20/08/2024 06:00	4.8	0.9	11.1	4	0	1003.7	-0.24	-0.05	14.9
20/08/2024 07:00	4.8	0.9	11.0	4	0	1004.6	-0.10	-0.04	15.4
20/08/2024 08:00	4.8	0.9	11.1	4	0	1005.4	-0.01	-0.03	15.5
20/08/2024 09:00	4.8	0.9	11.2	4	0	1006.1	0.10	-0.02	15.7
20/08/2024 10:00	4.5	0.9	11.5	4	0	1006.7	0.20	-0.04	16.4
20/08/2024 11:00	4.5	0.9	11.5	4	0	1006.9	0.22	-0.05	17.1
20/08/2024 12:00	4.3	1.0	11.6	5	0	1006.3	0.19	-0.05	18.3
20/08/2024 13:00	4.2	1.0	11.7	5	0	1007.6	0.38	-0.02	17.9
20/08/2024 14:00	4.0	1.0	11.8	5	0	1007.9	0.52	-0.03	18.1
20/08/2024 15:00	4.0	1.0	11.9	5	0	1008.7	0.51	-0.07	18.7
20/08/2024 16:00	4.1	1.0	11.8	5	0	1008.3	0.36	-0.06	17.6
20/08/2024 17:00	4.2	1.0	11.8	5	0	1008.6	0.31	-0.05	16.7
20/08/2024 18:00	4.1	1.0	11.8	5	0	1008.6	0.24	-0.05	16.6
20/08/2024 19:00	4.3	1.0	11.8	5	0	1009.6	0.34	-0.08	15.7
20/08/2024 20:00	4.5	0.9	11.7	4	0	1010.5	0.53	-0.05	14.7
20/08/2024 21:00	4.7	0.9	11.5	4	0	1011.2	0.45	-0.04	14.0
20/08/2024 22:00	4.8	0.8	11.5	4	0	1011.7	0.48	-0.03	13.6
20/08/2024 23:00	4.9	0.8	11.4	4	0	1011.8	0.39	-0.03	13.4
21/08/2024 00:00	4.9	0.8	11.4	4	0	1013.2	0.61	-0.02	13.2
21/08/2024 01:00	4.9	0.8	11.4	3	0	1013.1	0.56	-0.02	12.7
21/08/2024 02:00	5.0	0.8	11.4	3	0	1013.3	0.59	-0.03	12.7
21/08/2024 03:00	4.9	0.8	11.4	3	0	1013.5	0.49	-0.02	12.8
21/08/2024 04:00	4.8	0.8	11.5	3	0	1013.5	0.38	-0.03	12.6
21/08/2024 05:00	4.9	0.8	11.5	3	0	1014.1	0.36	-0.03	12.3
21/08/2024 06:00	4.9	0.8	11.5	3	0	1014.5	0.35	-0.02	12.0
21/08/2024 07:00	4.9	0.8	11.5	3	0	1014.5	0.34	-0.02	12.7
21/08/2024 08:00	5.0	0.8	11.5	3	0	1014.8	0.20	-0.03	14.0
21/08/2024 09:00	5.0	0.8	11.7	4	0	1015.2	0.26	-0.02	15.5
21/08/2024 10:00	4.5	0.8	12.0	4	0	1014.2	0.11	-0.03	16.8

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
21/08/2024 11:00	4.3	0.9	12.2	5	0	1013.9	0.05	-0.05	18.0
21/08/2024 12:00	4.3	0.9	12.3	5	0	1013.8	0.04	-0.06	18.1
21/08/2024 13:00	4.1	0.9	12.4	5	0	1013.3	-0.10	-0.05	18.7
21/08/2024 14:00	4.0	0.9	12.5	5	0	1013.0	-0.19	-0.03	18.9
21/08/2024 15:00	4.0	0.9	12.5	5	0	1012.6	-0.24	-0.05	18.0
21/08/2024 16:00	4.1	0.9	12.5	5	0	1011.8	-0.38	-0.06	17.2
21/08/2024 17:00	4.2	0.9	12.4	4	0	1010.9	-0.54	-0.04	17.1
21/08/2024 18:00	4.2	0.8	12.3	4	0	1010.6	-0.45	-0.04	17.0
21/08/2024 19:00	4.4	0.8	12.3	4	0	1010.2	-0.46	-0.05	16.8
21/08/2024 20:00	4.5	0.8	12.3	4	0	1009.9	-0.49	-0.04	16.5
21/08/2024 21:00	4.4	0.8	12.2	4	0	1009.7	-0.45	-0.04	16.3
21/08/2024 22:00	4.5	0.8	12.2	4	0	1008.4	-0.58	-0.04	16.2
21/08/2024 23:00	4.5	0.8	12.2	4	0	1007.3	-0.66	-0.04	16.0
22/08/2024 00:00	4.5	0.8	12.2	4	0	1005.8	-0.75	-0.03	16.0
22/08/2024 01:00	4.5	0.8	12.2	4	0	1004.8	-0.76	-0.02	16.2
22/08/2024 02:00	4.7	0.8	12.1	3	0	1004.0	-0.83	-0.07	16.2
22/08/2024 03:00	4.6	0.7	12.1	3	0	1001.4	-1.10	-0.04	15.6
22/08/2024 04:00	4.7	0.7	12.1	3	0	1000.6	-1.16	-0.04	15.4
22/08/2024 05:00	4.5	0.7	12.2	3	0	999.4	-1.29	-0.05	15.4
22/08/2024 06:00	4.7	0.8	12.2	3	0	999.2	-1.15	-0.06	15.9
22/08/2024 07:00	4.6	0.8	12.2	3	0	999.2	-1.01	-0.04	16.6
22/08/2024 08:00	4.7	0.7	12.3	3	0	998.9	-0.86	-0.05	17.4
22/08/2024 09:00	4.7	0.7	12.3	3	0	998.6	-0.77	-0.03	18.0
22/08/2024 10:00	4.5	0.7	12.4	3	0	998.7	-0.66	-0.03	19.8
22/08/2024 11:00	4.4	0.7	12.5	4	0	999.4	-0.25	-0.04	18.8
22/08/2024 12:00	4.4	0.7	12.6	4	0	1000.6	0.00	-0.03	17.4
22/08/2024 13:00	4.3	0.8	12.6	4	0	1001.6	0.28	-0.04	16.7
22/08/2024 14:00	4.4	0.8	12.7	4	0	1002.2	0.38	-0.07	16.6
22/08/2024 15:00	4.2	0.8	12.8	4	0	1002.1	0.36	-0.05	16.5
22/08/2024 16:00	4.2	0.8	12.9	4	0	1001.7	0.35	-0.04	16.3
22/08/2024 17:00	4.3	0.8	12.9	4	0	1001.4	0.35	-0.03	16.1
22/08/2024 18:00	4.3	0.8	12.8	4	0	1001.6	0.36	-0.04	15.7
22/08/2024 19:00	4.3	0.7	12.8	4	0	1001.6	0.28	-0.03	14.7
22/08/2024 20:00	4.4	0.7	12.7	3	0	1001.1	0.06	-0.05	13.8
22/08/2024 21:00	4.7	0.7	12.6	3	0	1000.3	-0.16	-0.04	13.5
22/08/2024 22:00	4.5	0.7	12.5	3	0	999.7	-0.31	-0.03	13.3
22/08/2024 23:00	4.8	0.7	12.5	3	0	998.6	-0.44	-0.03	13.3
23/08/2024 00:00	4.7	0.7	12.5	3	0	996.8	-0.61	-0.02	13.2
23/08/2024 01:00	4.7	0.7	12.4	3	0	995.2	-0.77	-0.02	13.6
23/08/2024 02:00	4.8	0.7	12.4	3	0	992.4	-1.15	-0.03	14.3
23/08/2024 03:00	4.7	0.7	12.4	3	0	990.8	-1.35	-0.03	14.8
23/08/2024 04:00	4.7	0.6	12.4	3	0	989.5	-1.45	-0.01	15.4
23/08/2024 05:00	4.7	0.6	12.5	3	0	989.7	-1.32	-0.04	16.3
23/08/2024 06:00	4.7	0.6	12.5	3	0	991.2	-1.06	-0.07	14.8
23/08/2024 07:00	4.7	0.7	12.6	3	0	995.3	-0.41	-0.04	13.8
23/08/2024 08:00	4.7	0.6	12.6	3	0	997.4	0.08	-0.02	13.9
23/08/2024 09:00	4.8	0.6	12.7	3	0	999.0	0.47	-0.04	14.7
23/08/2024 10:00	4.7	0.7	12.8	3	0	1000.3	0.99	-0.06	15.3
23/08/2024 11:00	4.5	0.7	13.0	3	0	1001.8	1.38	-0.05	15.8
23/08/2024 12:00	4.3	0.7	13.2	3	0	1002.3	1.60	0.00	17.2
23/08/2024 13:00	4.1	0.7	13.5	3	0	1003.1	1.68	0.00	18.0
23/08/2024 14:00	4.0	0.7	13.6	3	0	1003.2	1.50	0.00	18.4
23/08/2024 15:00	3.8	0.7	13.9	3	0	1003.4	1.01	0.00	18.9
23/08/2024 16:00	3.7	0.7	14.0	3	0	1003.5	0.76	0.00	18.4
23/08/2024 17:00	3.6	0.7	14.1	3	0	1003.6	0.58	0.00	17.9
23/08/2024 18:00	3.7	0.7	14.2	3	0	1003.4	0.39	0.00	17.1
23/08/2024 19:00	3.6	0.7	14.1	2	0	1004.1	0.29	0.00	15.9
23/08/2024 20:00	3.7	0.7	14.2	2	0	1004.9	0.33	0.00	14.6
23/08/2024 21:00	3.8	0.7	14.0	2	0	1004.8	0.21	0.00	14.0
23/08/2024 22:00	4.0	0.6	13.9	2	0	1005.0	0.22	0.00	13.5
23/08/2024 23:00	4.0	0.6	13.7	2	0	1003.9	0.06	0.00	13.1
24/08/2024 00:00	4.1	0.6	13.6	1	0	1003.8	0.04	0.00	13.1
24/08/2024 01:00	4.1	0.6	13.6	1	0	1003.3	-0.04	0.00	13.0
24/08/2024 02:00	4.1	0.6	13.6	1	0	1002.6	-0.10	0.00	13.0
24/08/2024 03:00	4.2	0.6	13.6	1	0	1001.0	-0.39	0.00	13.4
24/08/2024 04:00	4.2	0.6	13.7	1	0	1001.6	-0.41	0.00	13.5
24/08/2024 05:00	4.1	0.5	13.7	1	0	1000.9	-0.49	0.00	13.4
24/08/2024 06:00	4.2	0.6	13.7	1	0	1000.4	-0.58	0.00	13.1
24/08/2024 07:00	4.1	0.5	13.7	1	0	1000.5	-0.42	0.00	13.5
24/08/2024 08:00	4.0	0.6	13.8	1	0	1001.1	-0.34	0.00	14.1
24/08/2024 09:00	4.0	0.6	13.9	1	0	1001.2	-0.26	0.00	14.3
24/08/2024 10:00	3.9	0.6	14.0	1	0	1002.1	-0.06	0.00	14.9
24/08/2024 11:00	3.8	0.6	14.2	1	0	1002.2	0.15	0.00	15.2
24/08/2024 12:00	3.5	0.6	14.6	2	0	1001.8	0.02	-0.02	16.0
24/08/2024 13:00	3.3	0.7	14.9	2	0	1002.8	0.24	-0.02	17.0
24/08/2024 14:00	3.3	0.7	14.9	2	0	1003.1	0.34	-0.04	16.9

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Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
24/08/2024 15:00	3.2	0.6	15.0	2	0	1003.3	0.35	-0.06	16.8
24/08/2024 16:00	3.3	0.6	14.9	2	0	1004.6	0.44	-0.06	16.2
24/08/2024 17:00	3.4	0.6	14.8	2	0	1005.2	0.50	-0.04	15.7
24/08/2024 18:00	3.4	0.6	14.8	2	0	1005.5	0.42	-0.03	15.3
24/08/2024 19:00	3.5	0.6	14.8	2	0	1007.1	0.61	-0.04	14.5
24/08/2024 20:00	3.5	0.6	14.7	1	0	1008.2	0.80	-0.03	13.5
24/08/2024 21:00	3.6	0.6	14.5	1	0	1009.2	0.80	0.00	12.9
24/08/2024 22:00	3.7	0.6	14.4	1	0	1009.2	0.76	0.00	12.3
24/08/2024 23:00	3.9	0.5	14.3	1	0	1010.2	0.86	0.00	12.3
25/08/2024 00:00	NM	0.5	14.2	1	0	1011.3	0.84	0.00	12.2
25/08/2024 01:00	NM	0.5	14.2	1	0	1012.0	0.85	0.00	11.9
25/08/2024 02:00	NM	0.5	14.2	1	0	1012.8	0.91	0.00	11.7
25/08/2024 03:00	NM	0.5	14.1	1	0	1013.7	0.83	0.00	11.6
25/08/2024 04:00	NM	0.5	14.1	1	0	1013.8	0.70	0.00	11.1
25/08/2024 05:00	NM	0.5	14.1	1	0	1014.1	0.61	0.00	10.4
25/08/2024 06:00	NM	0.5	14.0	1	0	1014.4	0.65	0.00	9.9
25/08/2024 07:00	NM	0.5	13.9	1	0	1014.4	0.52	0.00	10.9
25/08/2024 08:00	NM	0.5	14.0	1	0	1014.7	0.43	0.00	12.5
25/08/2024 09:00	NM	0.5	14.4	1	0	1014.9	0.36	0.00	14.3
25/08/2024 10:00	3.6	0.5	14.8	1	0	1014.0	0.15	0.00	15.3
25/08/2024 11:00	3.3	0.6	15.3	1	0	1013.7	0.00	0.00	15.2
25/08/2024 12:00	3.3	0.6	15.4	1	0	1013.2	-0.07	0.00	15.7
25/08/2024 13:00	3.1	0.6	15.4	1	0	1012.5	-0.20	0.00	15.9
25/08/2024 14:00	3.2	0.6	15.5	1	0	1012.3	-0.26	0.00	17.1
25/08/2024 15:00	3.1	0.6	15.5	1	0	1012.6	-0.22	0.00	17.1
25/08/2024 16:00	3.2	0.6	15.5	1	0	1011.9	-0.35	0.00	17.4
25/08/2024 17:00	3.1	0.6	15.6	1	0	1011.7	-0.40	0.00	16.9
25/08/2024 18:00	3.0	0.6	15.7	1	0	1011.7	-0.29	0.00	16.4
25/08/2024 19:00	3.2	0.5	15.6	1	0	1012.0	-0.21	0.00	16.0
25/08/2024 20:00	3.2	0.5	15.5	1	0	1012.6	-0.08	0.00	15.4
25/08/2024 21:00	3.3	0.5	15.4	1	0	1012.3	-0.03	0.00	14.7
25/08/2024 22:00	3.3	0.5	15.3	1	0	1012.8	0.06	0.00	14.2
25/08/2024 23:00	3.2	0.5	15.3	1	0	1013.3	0.09	0.00	14.1
26/08/2024 00:00	3.4	0.5	15.2	1	0	1013.6	0.21	0.00	13.8
26/08/2024 01:00	3.5	0.5	15.2	1	0	1014.3	0.32	0.00	13.6
26/08/2024 02:00	3.4	0.5	15.2	0	0	1014.3	0.32	0.00	13.5
26/08/2024 03:00	3.4	0.5	15.2	0	0	1013.4	0.17	0.00	13.3
26/08/2024 04:00	3.4	0.5	15.2	1	0	1014.4	0.22	0.00	13.2
26/08/2024 05:00	3.4	0.5	15.1	1	0	1014.7	0.30	0.00	13.1
26/08/2024 06:00	2.4	0.5	15.1	1	0	1014.7	0.24	0.00	13.0
26/08/2024 07:00	3.5	0.5	15.2	0	0	1015.3	0.25	0.00	13.6
26/08/2024 08:00	3.4	0.5	15.2	0	0	1015.8	0.27	0.00	14.7
26/08/2024 09:00	3.3	0.5	15.4	1	0	1016.4	0.26	0.00	16.3
26/08/2024 10:00	3.1	0.5	15.6	1	0	1016.5	0.28	0.00	17.8
26/08/2024 11:00	3.0	0.5	15.8	1	0	1016.5	0.39	0.00	18.6
26/08/2024 12:00	2.9	0.5	16.0	1	0	1016.3	0.24	0.00	19.5
26/08/2024 13:00	2.7	0.6	16.2	1	0	1016.6	0.24	0.00	19.8
26/08/2024 14:00	2.5	0.6	16.5	1	0	1017.0	0.29	-0.04	20.2
26/08/2024 15:00	2.6	0.6	16.5	1	0	1017.2	0.24	-0.02	20.2
26/08/2024 16:00	2.5	0.6	16.5	1	0	1016.5	0.09	-0.02	19.8
26/08/2024 17:00	2.4	0.6	16.5	1	0	1016.2	-0.02	-0.03	19.0
26/08/2024 18:00	2.5	0.6	16.5	1	0	1016.3	-0.03	-0.04	18.4
26/08/2024 19:00	2.7	0.6	16.3	1	0	1016.9	0.05	-0.04	17.4
26/08/2024 20:00	2.8	0.6	16.2	1	0	1017.1	0.10	-0.05	16.3
26/08/2024 21:00	2.9	0.6	16.0	1	0	1017.6	0.13	0.00	16.0
26/08/2024 22:00	3.0	0.5	15.9	1	0	1016.6	-0.05	0.00	15.5
26/08/2024 23:00	3.1	0.5	15.7	1	0	1016.3	-0.11	0.00	15.4
27/08/2024 00:00	3.2	0.5	15.6	1	0	1016.4	-0.01	0.00	15.5
27/08/2024 01:00	3.2	0.5	15.7	1	0	1015.6	-0.08	0.00	15.4
27/08/2024 02:00	3.1	0.5	15.7	1	0	1015.2	-0.14	0.00	15.5
27/08/2024 03:00	3.1	0.5	15.6	1	0	1015.0	-0.24	0.00	15.5
27/08/2024 04:00	3.1	0.5	15.7	1	0	1014.3	-0.35	0.00	15.5
27/08/2024 05:00	3.1	0.5	15.7	0	0	1014.1	-0.44	0.00	15.5
27/08/2024 06:00	3.1	0.5	15.8	0	0	1013.9	-0.34	0.00	15.4
27/08/2024 07:00	3.0	0.5	15.8	1	0	1014.0	-0.29	0.00	15.9
27/08/2024 08:00	3.0	0.5	15.8	1	0	1014.5	-0.24	0.00	16.8
27/08/2024 09:00	2.9	0.5	16.0	1	0	1014.1	-0.19	0.00	17.5
27/08/2024 10:00	2.7	0.5	16.3	1	0	1014.5	-0.09	0.00	17.9
27/08/2024 11:00	2.5	0.5	16.5	1	0	1014.2	-0.10	0.00	18.5
27/08/2024 12:00	2.4	0.6	16.6	1	0	1013.7	-0.07	0.00	19.2
27/08/2024 13:00	2.4	0.6	16.7	1	0	1014.3	0.02	0.00	19.6
27/08/2024 14:00	2.4	0.6	16.7	1	0	1013.9	0.00	0.00	19.5
27/08/2024 15:00	2.4	0.5	16.6	1	0	1014.5	0.06	0.00	17.8
27/08/2024 16:00	2.5	0.5	16.6	1	0	1014.1	-0.05	0.00	17.4
27/08/2024 17:00	2.5	0.5	16.6	1	0	1013.9	-0.03	0.00	17.1
27/08/2024 18:00	2.5	0.5	16.6	1	0	1014.7	0.03	0.00	17.2

ggs
Experts in Continuous Monitoring

Date and Time	CH % v/v	CO % v/v	O % v/v	CO ppm/v	H S ppm/v	Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Flow Ltr/hr	Temperature °C
27/08/2024 19:00	2.4	0.5	16.5	1	0	1014.4	0.02	0.00	16.8
27/08/2024 20:00	2.5	0.5	16.4	1	0	1014.8	0.14	0.00	16.7
27/08/2024 21:00	2.7	0.5	16.3	1	0	1013.9	-0.05	0.00	16.7
27/08/2024 22:00	2.5	0.5	16.3	0	0	1013.8	-0.01	0.00	16.6
27/08/2024 23:00	2.8	0.5	16.2	0	0	1013.5	-0.13	0.00	16.6
28/08/2024 00:00	2.7	0.5	16.2	0	0	1014.1	0.00	0.00	16.4
28/08/2024 01:00	2.8	0.5	16.1	0	0	1013.6	-0.04	0.00	16.2
28/08/2024 02:00	2.8	0.5	16.1	0	0	1013.7	-0.13	0.00	16.1
28/08/2024 03:00	2.8	0.5	16.1	0	0	1013.1	-0.16	0.00	15.6
28/08/2024 04:00	2.7	0.5	16.1	0	0	1012.8	-0.25	0.00	15.7
28/08/2024 05:00	2.8	0.5	16.2	0	0	1012.8	-0.14	0.00	15.8
28/08/2024 06:00	2.8	0.5	16.2	0	0	1012.7	-0.14	0.00	15.5
28/08/2024 07:00	2.8	0.5	16.2	0	0	1012.7	-0.10	0.00	15.6
28/08/2024 08:00	2.7	0.5	16.2	0	0	1013.0	-0.14	0.00	16.0
28/08/2024 09:00	2.7	0.5	16.3	0	0	1013.4	-0.03	0.00	17.0

ggs
Experts in Continuous Monitoring

Time Series Data

Project Ref:	GGS3078
Project Name:	Ryebank Road, Chorlton
Borehole ref:	WS205
Instrument Name and ID:	Gas Sentinel® 03000036
Start Date:	06/08/2024 15:00
End Date:	28/08/2024 09:00
Days of monitoring:	22
Monitoring Frequency (mins):	60
Total samples taken:	523

Experts in Continuous Monitoring

Summary Table

	CH_4	CO_2	O_2	CO	H_2S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
Minimum	0.0	0.0	17.9	0	0	989.5	-1.45	-0.13	9.8
Maximum	0.0	1.8	19.6	0	0	1022.5	1.68	0.00	25.4
Range	0.0	1.7	1.8	0	0	33.0	3.13	0.13	15.6

Date and Time	CH_4 % v/v	CO_2 % v/v	O_2 % v/v	CO ppm/v	H_2S ppm/v	Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Flow Ltr/hr	Temperature °C
06/08/2024 15:00	0.0	0.1	19.6	0	0	1006.5	N/A	0.00	21.2
06/08/2024 16:00	0.0	0.1	19.6	0	0	1007.2	N/A	0.00	21.0
06/08/2024 17:00	0.0	0.1	19.6	0	0	1007.0	N/A	-0.02	20.7
06/08/2024 18:00	0.0	0.1	19.6	0	0	1007.4	N/A	-0.01	20.2
06/08/2024 19:00	0.0	0.1	19.6	0	0	1007.6	N/A	-0.01	19.0
06/08/2024 20:00	0.0	0.1	19.5	0	0	1008.2	N/A	0.00	17.6
06/08/2024 21:00	0.0	0.1	19.4	0	0	1008.8	N/A	0.00	16.3
06/08/2024 22:00	0.0	0.2	19.2	0	0	1008.8	N/A	0.00	15.2
06/08/2024 23:00	0.0	0.2	19.0	0	0	1008.9	0.30	0.00	14.4
07/08/2024 00:00	0.0	0.2	18.9	0	0	1008.3	0.14	0.00	13.5
07/08/2024 01:00	0.0	0.2	18.9	0	0	1009.0	0.25	0.00	13.1
07/08/2024 02:00	0.0	0.3	18.8	0	0	1008.5	0.14	0.00	12.7
07/08/2024 03:00	0.0	0.3	18.7	0	0	1007.7	0.01	0.00	12.4
07/08/2024 04:00	0.0	0.4	18.7	0	0	1008.3	0.01	0.00	12.2
07/08/2024 05:00	0.0	0.4	18.7	0	0	1008.8	0.00	0.00	12.0
07/08/2024 06:00	0.0	0.4	18.6	0	0	1009.1	0.04	0.00	12.7
07/08/2024 07:00	0.0	0.4	18.7	0	0	1008.8	-0.01	0.00	14.1
07/08/2024 08:00	0.0	0.4	18.7	0	0	1008.5	0.03	0.00	15.9
07/08/2024 09:00	0.0	0.4	18.7	0	0	1009.0	0.00	0.00	17.1
07/08/2024 10:00	0.0	0.3	18.8	0	0	1008.4	-0.01	0.00	17.8
07/08/2024 11:00	0.0	0.3	18.9	0	0	1008.5	0.10	0.00	18.3
07/08/2024 12:00	0.0	0.3	19.0	0	0	1008.5	0.03	0.00	19.1
07/08/2024 13:00	0.0	0.3	19.0	0	0	1008.8	0.00	0.00	19.7
07/08/2024 14:00	0.0	0.3	19.0	0	0	1009.3	0.02	0.00	20.1
07/08/2024 15:00	0.0	0.2	19.1	0	0	1009.5	0.09	0.00	19.4
07/08/2024 16:00	0.0	0.2	19.1	0	0	1009.7	0.15	0.00	18.9
07/08/2024 17:00	0.0	0.2	19.1	0	0	1009.6	0.08	0.00	18.7
07/08/2024 18:00	0.0	0.2	19.1	0	0	1009.5	0.14	0.00	18.0
07/08/2024 19:00	0.0	0.2	19.2	0	0	1010.6	0.26	0.00	17.3
07/08/2024 20:00	0.0	0.2	19.2	0	0	1011.1	0.33	0.00	16.5
07/08/2024 21:00	0.0	0.2	19.1	0	0	1011.3	0.31	0.00	15.9
07/08/2024 22:00	0.0	0.2	19.0	0	0	1012.1	0.35	0.00	15.0
07/08/2024 23:00	0.0	0.2	19.0	0	0	1012.2	0.34	0.00	14.2
08/08/2024 00:00	0.0	0.2	18.9	0	0	1012.1	0.30	0.00	14.3
08/08/2024 01:00	0.0	0.2	18.9	0	0	1012.3	0.34	0.00	14.4
08/08/2024 02:00	0.0	0.2	18.9	0	0	1012.4	0.36	0.00	14.6
08/08/2024 03:00	0.0	0.2	18.9	0	0	1011.9	0.16	0.00	15.1
08/08/2024 04:00	0.0	0.2	18.8	0	0	1012.0	0.11	0.00	15.1
08/08/2024 05:00	0.0	0.3	18.8	0	0	1011.6	0.04	0.00	14.8
08/08/2024 06:00	0.0	0.3	18.8	0	0	1011.5	-0.08	0.00	14.4
08/08/2024 07:00	0.0	0.3	18.8	0	0	1012.0	-0.03	0.00	14.6
08/08/2024 08:00	0.0	0.3	18.8	0	0	1012.0	-0.01	0.00	15.0
08/08/2024 09:00	0.0	0.3	18.8	0	0	1011.2	-0.14	0.00	15.7
08/08/2024 10:00	0.0	0.3	18.9	0	0	1010.3	-0.26	0.00	16.2
08/08/2024 11:00	0.0	0.3	19.0	0	0	1009.3	-0.33	0.00	16.5
08/08/2024 12:00	0.0	0.3	19.1	0	0	1009.1	-0.36	0.00	17.1
08/08/2024 13:00	0.0	0.3	19.2	0	0	1008.3	-0.41	0.00	17.3
08/08/2024 14:00	0.0	0.3	19.2	0	0	1007.7	-0.47	0.00	17.8
08/08/2024 15:00	0.0	0.2	19.2	0	0	1006.7	-0.66	0.00	18.6
08/08/2024 16:00	0.0	0.2	19.2	0	0	1006.4	-0.70	0.00	18.8
08/08/2024 17:00	0.0	0.2	19.2	0	0	1005.9	-0.66	0.00	19.0
08/08/2024 18:00	0.0	0.2	19.2	0	0	1003.8	-0.81	0.00	19.3

ggs Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
08/08/2024 19:00	0.0	0.2	19.2	0	0	1005.8	-0.44	0.00	19.4
08/08/2024 20:00	0.0	0.2	19.2	0	0	1005.9	-0.40	0.00	19.2
08/08/2024 21:00	0.0	0.2	19.2	0	0	1005.2	-0.39	0.00	19.2
08/08/2024 22:00	0.0	0.2	19.2	0	0	1005.0	-0.34	0.00	18.9
08/08/2024 23:00	0.0	0.2	19.2	0	0	1005.2	-0.19	0.00	18.6
09/08/2024 00:00	0.0	0.1	19.2	0	0	1005.4	-0.13	0.00	18.3
09/08/2024 01:00	0.0	0.1	19.1	0	0	1006.0	0.01	0.00	18.1
09/08/2024 02:00	0.0	0.1	19.1	0	0	1006.4	0.33	0.00	17.8
09/08/2024 03:00	0.0	0.1	19.1	0	0	1005.8	0.00	0.00	17.2
09/08/2024 04:00	0.0	0.1	19.0	0	0	1007.0	0.14	0.00	16.4
09/08/2024 05:00	0.0	0.1	19.0	0	0	1007.8	0.32	0.00	15.7
09/08/2024 06:00	0.0	0.1	19.0	0	0	1009.2	0.53	0.00	15.4
09/08/2024 07:00	0.0	0.2	18.9	0	0	1010.0	0.60	0.00	15.7
09/08/2024 08:00	0.0	0.2	18.9	0	0	1010.7	0.66	0.00	16.2
09/08/2024 09:00	0.0	0.2	18.9	0	0	1012.1	0.76	0.00	17.2
09/08/2024 10:00	0.0	0.2	19.0	0	0	1011.3	0.61	0.00	18.1
09/08/2024 11:00	0.0	0.2	19.1	0	0	1012.3	0.81	0.00	19.0
09/08/2024 12:00	0.0	0.2	19.2	0	0	1012.1	0.64	0.00	20.2
09/08/2024 13:00	0.0	0.2	19.3	0	0	1012.5	0.59	0.00	20.5
09/08/2024 14:00	0.0	0.2	19.3	0	0	1013.0	0.47	0.00	20.8
09/08/2024 15:00	0.0	0.2	19.4	0	0	1013.1	0.39	0.00	20.8
09/08/2024 16:00	0.0	0.2	19.5	0	0	1013.5	0.35	-0.01	20.8
09/08/2024 17:00	0.0	0.2	19.5	0	0	1013.8	0.21	-0.01	20.7
09/08/2024 18:00	0.0	0.2	19.6	0	0	1013.5	0.28	-0.01	20.4
09/08/2024 19:00	0.0	0.2	19.5	0	0	1014.6	0.29	0.00	19.1
09/08/2024 20:00	0.0	0.2	19.4	0	0	1014.8	0.34	0.00	17.6
09/08/2024 21:00	0.0	0.2	19.3	0	0	1014.6	0.26	0.00	16.6
09/08/2024 22:00	0.0	0.2	19.2	0	0	1015.3	0.29	0.00	15.6
09/08/2024 23:00	0.0	0.2	19.0	0	0	1015.4	0.29	0.00	15.0
10/08/2024 00:00	0.0	0.2	19.0	0	0	1015.0	0.19	0.00	14.5
10/08/2024 01:00	0.0	0.2	18.9	0	0	1015.4	0.20	0.00	14.3
10/08/2024 02:00	0.0	0.3	18.8	0	0	1015.3	0.22	0.00	14.2
10/08/2024 03:00	0.0	0.3	18.8	0	0	1015.2	0.08	0.00	14.7
10/08/2024 04:00	0.0	0.3	18.7	0	0	1015.3	0.06	0.00	14.4
10/08/2024 05:00	0.0	0.3	18.7	0	0	1015.6	0.13	0.00	14.2
10/08/2024 06:00	0.0	0.3	18.6	0	0	1015.7	0.05	0.00	14.8
10/08/2024 07:00	0.0	0.4	18.6	0	0	1015.7	0.04	0.00	16.2
10/08/2024 08:00	0.0	0.4	18.7	0	0	1015.8	0.10	0.00	17.8
10/08/2024 09:00	0.0	0.4	18.8	0	0	1015.1	-0.04	0.00	19.2
10/08/2024 10:00	0.0	0.3	18.9	0	0	1016.1	0.10	0.00	20.2
10/08/2024 11:00	0.0	0.3	19.0	0	0	1016.7	0.19	0.00	20.6
10/08/2024 12:00	0.0	0.3	19.1	0	0	1016.2	0.11	0.00	20.6
10/08/2024 13:00	0.0	0.3	19.2	0	0	1017.3	0.21	0.00	21.0
10/08/2024 14:00	0.0	0.3	19.3	0	0	1017.3	0.20	0.00	21.4
10/08/2024 15:00	0.0	0.3	19.3	0	0	1017.7	0.25	0.00	21.1
10/08/2024 16:00	0.0	0.4	19.4	0	0	1018.3	0.31	-0.01	20.9
10/08/2024 17:00	0.0	0.4	19.4	0	0	1019.0	0.49	-0.02	20.3
10/08/2024 18:00	0.0	0.4	19.5	0	0	1019.6	0.44	-0.02	20.0
10/08/2024 19:00	0.0	0.4	19.5	0	0	1020.1	0.42	-0.02	19.1
10/08/2024 20:00	0.0	0.5	19.4	0	0	1020.6	0.55	0.00	17.9
10/08/2024 21:00	0.0	0.5	19.2	0	0	1020.4	0.39	0.00	17.3
10/08/2024 22:00	0.0	0.6	19.0	0	0	1021.0	0.46	0.00	16.6
10/08/2024 23:00	0.0	0.6	18.8	0	0	1021.4	0.46	0.00	16.2
11/08/2024 00:00	0.0	0.6	18.6	0	0	1021.9	0.45	0.00	15.2
11/08/2024 01:00	0.0	0.7	18.5	0	0	1022.1	0.39	0.00	14.4
11/08/2024 02:00	0.0	0.7	18.4	0	0	1022.1	0.31	0.00	14.1
11/08/2024 03:00	0.0	0.8	18.4	0	0	1022.4	0.29	0.00	13.6
11/08/2024 04:00	0.0	0.8	18.4	0	0	1022.3	0.21	0.00	13.1
11/08/2024 05:00	0.0	0.9	18.3	0	0	1022.5	0.26	0.00	12.7
11/08/2024 06:00	0.0	0.9	18.3	0	0	1022.3	0.16	0.00	13.2
11/08/2024 07:00	0.0	0.9	18.3	0	0	1022.0	0.08	0.00	14.9
11/08/2024 08:00	0.0	0.9	18.3	0	0	1022.4	0.06	0.00	17.4
11/08/2024 09:00	0.0	0.9	18.5	0	0	1021.7	-0.05	0.00	19.8
11/08/2024 10:00	0.0	0.9	18.8	0	0	1021.6	-0.06	0.00	21.2
11/08/2024 11:00	0.0	0.9	19.0	0	0	1021.0	-0.17	0.00	22.3
11/08/2024 12:00	0.0	1.0	19.2	0	0	1020.2	-0.26	-0.01	23.4
11/08/2024 13:00	0.0	1.0	19.4	0	0	1019.7	-0.35	-0.02	24.3
11/08/2024 14:00	0.0	1.0	19.4	0	0	1019.4	-0.36	-0.03	24.9
11/08/2024 15:00	0.0	1.0	19.5	0	0	1018.4	-0.45	-0.06	25.3
11/08/2024 16:00	0.0	1.0	19.5	0	0	1017.9	-0.56	-0.09	25.4
11/08/2024 17:00	0.0	1.1	19.5	0	0	1016.8	-0.61	-0.08	25.2
11/08/2024 18:00	0.0	1.1	19.5	0	0	1015.8	-0.73	-0.07	24.8
11/08/2024 19:00	0.0	1.1	19.5	0	0	1015.5	-0.69	-0.07	23.8
11/08/2024 20:00	0.0	1.2	19.4	0	0	1015.7	-0.56	-0.02	21.8
11/08/2024 21:00	0.0	1.2	19.2	0	0	1015.4	-0.54	0.00	20.4
11/08/2024 22:00	0.0	1.3	19.0	0	0	1014.7	-0.59	0.00	19.7

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
11/08/2024 23:00	0.0	1.4	18.8	0	0	1014.2	-0.52	0.00	19.3
12/08/2024 00:00	0.0	1.4	18.7	0	0	1013.5	-0.55	0.00	18.6
12/08/2024 01:00	0.0	1.5	18.6	0	0	1013.0	-0.47	0.00	18.2
12/08/2024 02:00	0.0	1.6	18.5	0	0	1011.9	-0.49	0.00	18.1
12/08/2024 03:00	0.0	1.6	18.4	0	0	1009.8	-0.71	0.00	18.2
12/08/2024 04:00	0.0	1.6	18.4	0	0	1009.5	-0.78	0.00	18.4
12/08/2024 05:00	0.0	1.7	18.4	0	0	1008.9	-0.81	0.00	18.3
12/08/2024 06:00	0.0	1.7	18.4	0	0	1008.4	-0.79	0.00	18.8
12/08/2024 07:00	0.0	1.7	18.4	0	0	1007.4	-0.85	0.00	20.1
12/08/2024 08:00	0.0	1.7	18.4	0	0	1006.8	-0.84	0.00	22.7
12/08/2024 09:00	0.0	1.8	18.5	0	0	1006.2	-0.85	0.00	23.4
12/08/2024 10:00	0.0	1.7	18.5	0	0	1006.5	-0.67	0.00	23.8
12/08/2024 11:00	0.0	1.7	18.7	0	0	1006.7	-0.39	-0.01	24.0
12/08/2024 12:00	0.0	1.7	18.9	0	0	1006.0	-0.44	0.00	24.3
12/08/2024 13:00	0.0	1.6	18.9	0	0	1006.4	-0.31	-0.02	24.1
12/08/2024 14:00	0.0	1.6	18.9	0	0	1006.9	-0.19	0.00	22.7
12/08/2024 15:00	0.0	1.5	18.9	0	0	1007.4	0.00	0.00	21.8
12/08/2024 16:00	0.0	1.6	18.9	0	0	1007.4	0.08	-0.02	21.9
12/08/2024 17:00	0.0	1.6	19.0	0	0	1007.0	0.10	-0.03	21.5
12/08/2024 18:00	0.0	1.7	19.1	0	0	1007.4	0.11	-0.01	20.7
12/08/2024 19:00	0.0	1.7	19.1	0	0	1008.4	0.21	-0.02	19.3
12/08/2024 20:00	0.0	1.7	19.0	0	0	1008.6	0.33	0.00	18.0
12/08/2024 21:00	0.0	1.6	18.8	0	0	1008.7	0.29	-0.01	17.5
12/08/2024 22:00	0.0	1.7	18.6	0	0	1008.3	0.17	0.00	16.5
12/08/2024 23:00	0.0	1.7	18.4	0	0	1008.6	0.15	0.00	15.7
13/08/2024 00:00	0.0	1.7	18.3	0	0	1009.0	0.20	0.00	15.4
13/08/2024 01:00	0.0	1.6	18.2	0	0	1008.6	0.20	0.00	14.8
13/08/2024 02:00	0.0	1.6	18.1	0	0	1008.2	0.10	0.00	14.2
13/08/2024 03:00	0.0	1.6	18.0	0	0	1008.3	-0.01	0.00	13.4
13/08/2024 04:00	0.0	1.6	18.0	0	0	1008.2	-0.05	0.00	13.2
13/08/2024 05:00	0.0	1.6	18.0	0	0	1008.2	-0.06	0.00	13.1
13/08/2024 06:00	0.0	1.5	18.1	0	0	1008.4	0.01	0.00	13.6
13/08/2024 07:00	0.0	1.5	18.1	0	0	1008.2	-0.05	0.00	14.6
13/08/2024 08:00	0.0	1.4	18.2	0	0	1007.9	-0.14	0.00	15.9
13/08/2024 09:00	0.0	1.3	18.4	0	0	1006.8	-0.23	0.00	17.8
13/08/2024 10:00	0.0	1.2	18.7	0	0	1007.1	-0.14	0.00	19.2
13/08/2024 11:00	0.0	1.2	18.9	0	0	1007.3	-0.13	-0.01	20.5
13/08/2024 12:00	0.0	1.1	19.0	0	0	1007.1	-0.14	-0.01	21.3
13/08/2024 13:00	0.0	1.1	19.1	0	0	1007.6	-0.08	0.00	21.1
13/08/2024 14:00	0.0	1.0	19.2	0	0	1007.7	-0.09	0.00	21.6
13/08/2024 15:00	0.0	1.0	19.1	0	0	1007.5	-0.09	0.00	22.2
13/08/2024 16:00	0.0	1.0	19.1	0	0	1007.6	-0.04	0.00	20.8
13/08/2024 17:00	0.0	1.0	19.0	0	0	1007.8	0.13	0.00	19.5
13/08/2024 18:00	0.0	1.0	18.9	0	0	1009.1	0.25	0.00	17.7
13/08/2024 19:00	0.0	1.0	18.8	0	0	1009.3	0.25	0.00	17.3
13/08/2024 20:00	0.0	1.0	18.8	0	0	1009.8	0.34	0.00	17.2
13/08/2024 21:00	0.0	1.0	18.7	0	0	1010.0	0.30	0.00	16.9
13/08/2024 22:00	0.0	1.0	18.7	0	0	1010.9	0.40	0.00	16.7
13/08/2024 23:00	0.0	1.0	18.6	0	0	1011.2	0.46	0.00	16.6
14/08/2024 00:00	0.0	1.0	18.6	0	0	1011.1	0.44	0.00	16.3
14/08/2024 01:00	0.0	1.1	18.6	0	0	1012.2	0.55	0.00	15.9
14/08/2024 02:00	0.0	1.0	18.5	0	0	1012.4	0.41	0.00	15.2
14/08/2024 03:00	0.0	1.1	18.5	0	0	1012.7	0.43	0.00	14.8
14/08/2024 04:00	0.0	1.1	18.4	0	0	1012.9	0.39	0.00	14.6
14/08/2024 05:00	0.0	1.1	18.4	0	0	1013.2	0.40	0.00	14.4
14/08/2024 06:00	0.0	1.1	18.4	0	0	1014.0	0.39	0.00	14.1
14/08/2024 07:00	0.0	1.2	18.4	0	0	1014.5	0.41	0.00	14.4
14/08/2024 08:00	0.0	1.2	18.4	0	0	1015.2	0.51	0.00	15.4
14/08/2024 09:00	0.0	1.2	18.4	0	0	1015.4	0.40	0.00	16.6
14/08/2024 10:00	0.0	1.2	18.5	0	0	1015.0	0.33	0.00	17.5
14/08/2024 11:00	0.0	1.2	18.6	0	0	1015.0	0.29	0.00	18.6
14/08/2024 12:00	0.0	1.2	18.8	0	0	1014.4	0.19	-0.01	20.0
14/08/2024 13:00	0.0	1.3	18.9	0	0	1015.3	0.26	-0.02	20.6
14/08/2024 14:00	0.0	1.3	19.0	0	0	1015.1	0.14	-0.01	20.6
14/08/2024 15:00	0.0	1.3	19.1	0	0	1014.9	0.05	-0.02	20.1
14/08/2024 16:00	0.0	1.3	19.2	0	0	1014.9	-0.04	-0.04	20.2
14/08/2024 17:00	0.0	1.3	19.2	0	0	1014.5	-0.11	-0.02	20.4
14/08/2024 18:00	0.0	1.3	19.2	0	0	1014.1	-0.11	-0.03	20.6
14/08/2024 19:00	0.0	1.3	19.1	0	0	1014.8	-0.03	-0.01	19.6
14/08/2024 20:00	0.0	1.4	19.0	0	0	1015.5	0.14	0.00	17.7
14/08/2024 21:00	0.0	1.3	18.8	0	0	1014.2	-0.14	0.00	16.6
14/08/2024 22:00	0.0	1.4	18.5	0	0	1015.2	0.01	0.00	15.7
14/08/2024 23:00	0.0	1.4	18.4	0	0	1015.0	0.01	0.00	15.3
15/08/2024 00:00	0.0	1.4	18.3	0	0	1014.3	-0.08	0.00	14.4
15/08/2024 01:00	0.0	1.4	18.2	0	0	1014.0	-0.06	0.00	13.6
15/08/2024 02:00	0.0	1.3	18.2	0	0	1013.9	-0.03	0.00	13.3

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
15/08/2024 03:00	0.0	1.3	18.3	0	0	1013.1	-0.21	0.00	13.5
15/08/2024 04:00	0.0	1.2	18.3	0	0	1012.6	-0.36	0.00	13.7
15/08/2024 05:00	0.0	1.1	18.4	0	0	1011.7	-0.31	0.00	13.9
15/08/2024 06:00	0.0	1.0	18.4	0	0	1010.8	-0.55	0.00	13.8
15/08/2024 07:00	0.0	1.0	18.4	0	0	1011.3	-0.46	0.00	14.6
15/08/2024 08:00	0.0	0.9	18.5	0	0	1010.4	-0.49	0.00	15.5
15/08/2024 09:00	0.0	0.8	18.6	0	0	1009.6	-0.55	0.00	15.5
15/08/2024 10:00	0.0	0.8	18.7	0	0	1009.0	-0.61	0.00	16.0
15/08/2024 11:00	0.0	0.7	18.7	0	0	1008.6	-0.56	0.00	16.5
15/08/2024 12:00	0.0	0.7	18.8	0	0	1006.8	-0.73	0.00	17.2
15/08/2024 13:00	0.0	0.6	18.9	0	0	1007.7	-0.50	0.00	17.6
15/08/2024 14:00	0.0	0.5	18.9	0	0	1008.1	-0.34	0.00	18.4
15/08/2024 15:00	0.0	0.5	19.0	0	0	1008.2	-0.39	0.00	19.1
15/08/2024 16:00	0.0	0.4	19.1	0	0	1008.1	-0.29	0.00	19.6
15/08/2024 17:00	0.0	0.4	19.1	0	0	1008.4	-0.15	0.00	19.7
15/08/2024 18:00	0.0	0.4	19.1	0	0	1010.1	0.14	0.00	18.6
15/08/2024 19:00	0.0	0.4	19.0	0	0	1010.9	0.29	0.00	17.0
15/08/2024 20:00	0.0	0.4	19.0	0	0	1011.9	0.64	0.00	15.7
15/08/2024 21:00	0.0	0.5	18.9	0	0	1012.9	0.65	0.00	14.4
15/08/2024 22:00	0.0	0.5	18.8	0	0	1013.0	0.61	0.00	13.4
15/08/2024 23:00	0.0	0.6	18.6	0	0	1013.9	0.71	0.00	12.8
16/08/2024 00:00	0.0	0.6	18.5	0	0	1014.6	0.81	0.00	12.1
16/08/2024 01:00	0.0	0.7	18.3	0	0	1015.0	0.83	0.00	12.0
16/08/2024 02:00	0.0	0.7	18.3	0	0	1014.8	0.59	0.00	12.1
16/08/2024 03:00	0.0	0.8	18.2	0	0	1014.9	0.50	0.00	12.0
16/08/2024 04:00	0.0	0.8	18.2	0	0	1014.5	0.33	0.00	11.6
16/08/2024 05:00	0.0	0.8	18.1	0	0	1015.0	0.26	0.00	11.3
16/08/2024 06:00	0.0	0.8	18.1	0	0	1015.1	0.26	0.00	11.3
16/08/2024 07:00	0.0	0.9	18.1	0	0	1015.9	0.25	0.00	12.7
16/08/2024 08:00	0.0	0.9	18.1	0	0	1016.3	0.21	0.00	14.5
16/08/2024 09:00	0.0	0.9	18.3	0	0	1015.8	0.10	0.00	15.8
16/08/2024 10:00	0.0	0.9	18.4	0	0	1015.9	0.14	0.00	16.6
16/08/2024 11:00	0.0	0.9	18.5	0	0	1015.8	0.11	0.00	17.5
16/08/2024 12:00	0.0	0.9	18.7	0	0	1015.2	0.09	0.00	18.2
16/08/2024 13:00	0.0	0.8	18.8	0	0	1015.6	0.08	0.00	18.8
16/08/2024 14:00	0.0	0.9	18.9	0	0	1015.2	0.01	0.00	19.3
16/08/2024 15:00	0.0	0.9	19.0	0	0	1014.4	-0.19	0.00	19.9
16/08/2024 16:00	0.0	0.9	19.1	0	0	1014.0	-0.29	-0.01	19.9
16/08/2024 17:00	0.0	0.9	19.1	0	0	1014.0	-0.22	0.00	18.4
16/08/2024 18:00	0.0	0.9	19.1	0	0	1013.7	-0.27	0.00	17.3
16/08/2024 19:00	0.0	0.9	19.1	0	0	1014.4	-0.17	0.00	16.2
16/08/2024 20:00	0.0	1.0	18.9	0	0	1014.3	-0.11	0.00	15.0
16/08/2024 21:00	0.0	1.0	18.7	0	0	1014.3	-0.16	0.00	14.4
16/08/2024 22:00	0.0	1.1	18.5	0	0	1014.3	-0.11	0.00	13.4
16/08/2024 23:00	0.0	1.1	18.3	0	0	1014.6	0.03	0.00	12.6
17/08/2024 00:00	0.0	1.1	18.2	0	0	1014.1	0.01	0.00	11.8
17/08/2024 01:00	0.0	1.1	18.1	0	0	1014.3	0.04	0.00	11.4
17/08/2024 02:00	0.0	1.2	18.0	0	0	1014.2	0.06	0.00	10.9
17/08/2024 03:00	0.0	1.2	18.0	0	0	1013.8	-0.08	0.00	10.5
17/08/2024 04:00	0.0	1.2	17.9	0	0	1013.6	-0.09	0.00	10.1
17/08/2024 05:00	0.0	1.2	17.9	0	0	1014.0	-0.04	0.00	9.8
17/08/2024 06:00	0.0	1.2	17.9	0	0	1014.3	0.00	0.00	10.1
17/08/2024 07:00	0.0	1.2	18.0	0	0	1014.1	-0.06	0.00	11.6
17/08/2024 08:00	0.0	1.2	18.0	0	0	1014.2	0.01	0.00	14.0
17/08/2024 09:00	0.0	1.2	18.1	0	0	1014.2	-0.01	0.00	16.3
17/08/2024 10:00	0.0	1.2	18.2	0	0	1013.5	-0.09	0.00	17.0
17/08/2024 11:00	0.0	1.2	18.5	0	0	1013.4	-0.05	0.00	17.8
17/08/2024 12:00	0.0	1.1	18.6	0	0	1013.3	-0.04	0.00	18.5
17/08/2024 13:00	0.0	1.1	18.7	0	0	1013.1	-0.11	0.00	18.5
17/08/2024 14:00	0.0	1.1	18.8	0	0	1013.1	-0.15	0.00	18.7
17/08/2024 15:00	0.0	1.1	18.8	0	0	1012.5	-0.20	0.00	19.1
17/08/2024 16:00	0.0	1.1	18.9	0	0	1012.2	-0.25	0.00	19.0
17/08/2024 17:00	0.0	1.0	18.9	0	0	1012.0	-0.28	-0.01	18.1
17/08/2024 18:00	0.0	1.0	18.9	0	0	1012.4	-0.14	0.00	17.1
17/08/2024 19:00	0.0	1.0	18.8	0	0	1011.8	-0.20	0.00	16.7
17/08/2024 20:00	0.0	1.0	18.7	0	0	1011.9	-0.17	-0.01	15.6
17/08/2024 21:00	0.0	1.0	18.7	0	0	1011.6	-0.19	0.00	14.5
17/08/2024 22:00	0.0	1.0	18.6	0	0	1011.9	-0.15	0.00	13.6
17/08/2024 23:00	0.0	0.9	18.6	0	0	1011.7	-0.10	0.00	12.7
18/08/2024 00:00	0.0	0.9	18.5	0	0	1011.9	-0.04	0.00	12.0
18/08/2024 01:00	0.0	0.9	18.5	0	0	1012.0	0.00	0.00	11.4
18/08/2024 02:00	0.0	0.9	18.5	0	0	1011.6	-0.10	0.00	11.1
18/08/2024 03:00	0.0	0.9	18.5	0	0	1010.6	-0.15	0.00	11.5
18/08/2024 04:00	0.0	0.9	18.5	0	0	1010.5	-0.17	0.00	11.4
18/08/2024 05:00	0.0	0.9	18.5	0	0	1010.6	-0.13	0.00	11.4
18/08/2024 06:00	0.0	0.8	18.5	0	0	1010.4	-0.19	0.00	12.3

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
18/08/2024 07:00	0.0	0.8	18.5	0	0	1011.8	0.01	0.00	13.7
18/08/2024 08:00	0.0	0.7	18.5	0	0	1012.2	0.04	0.00	15.3
18/08/2024 09:00	0.0	0.7	18.6	0	0	1012.4	0.05	0.00	16.5
18/08/2024 10:00	0.0	0.7	18.7	0	0	1013.1	0.19	0.00	16.5
18/08/2024 11:00	0.0	0.6	18.8	0	0	1013.6	0.38	0.00	17.2
18/08/2024 12:00	0.0	0.6	18.8	0	0	1014.0	0.44	0.00	18.1
18/08/2024 13:00	0.0	0.6	18.9	0	0	1014.3	0.46	0.00	18.1
18/08/2024 14:00	0.0	0.6	19.0	0	0	1014.8	0.55	-0.01	18.3
18/08/2024 15:00	0.0	0.6	19.1	0	0	1014.5	0.34	0.00	18.5
18/08/2024 16:00	0.0	0.6	19.2	0	0	1015.0	0.35	0.00	18.4
18/08/2024 17:00	0.0	0.6	19.3	0	0	1015.0	0.33	0.00	18.0
18/08/2024 18:00	0.0	0.6	19.3	0	0	1015.9	0.35	0.00	17.6
18/08/2024 19:00	0.0	0.6	19.2	0	0	1016.3	0.34	0.00	17.0
18/08/2024 20:00	0.0	0.6	19.0	0	0	1016.9	0.36	0.00	16.0
18/08/2024 21:00	0.0	0.6	18.8	0	0	1016.6	0.29	0.00	14.7
18/08/2024 22:00	0.0	0.7	18.6	0	0	1017.2	0.30	0.00	14.0
18/08/2024 23:00	0.0	0.8	18.5	0	0	1016.8	0.29	0.00	13.6
19/08/2024 00:00	0.0	0.8	18.3	0	0	1017.5	0.31	0.00	12.5
19/08/2024 01:00	0.0	0.8	18.2	0	0	1017.2	0.28	0.00	12.0
19/08/2024 02:00	0.0	0.9	18.2	0	0	1017.1	0.15	0.00	11.8
19/08/2024 03:00	0.0	0.9	18.1	0	0	1016.7	0.05	0.00	11.8
19/08/2024 04:00	0.0	0.9	18.1	0	0	1016.0	-0.11	0.00	11.9
19/08/2024 05:00	0.0	0.9	18.1	0	0	1015.9	-0.09	0.00	11.7
19/08/2024 06:00	0.0	0.9	18.1	0	0	1015.2	-0.25	0.00	12.0
19/08/2024 07:00	0.0	1.0	18.1	0	0	1014.7	-0.26	0.00	13.4
19/08/2024 08:00	0.0	1.0	18.2	0	0	1014.5	-0.38	0.00	14.9
19/08/2024 09:00	0.0	0.9	18.3	0	0	1013.9	-0.41	-0.01	15.9
19/08/2024 10:00	0.0	0.8	18.4	0	0	1013.1	-0.50	0.00	17.0
19/08/2024 11:00	0.0	0.8	18.6	0	0	1012.5	-0.53	-0.05	18.5
19/08/2024 12:00	0.0	0.7	18.7	0	0	1012.3	-0.46	-0.01	18.3
19/08/2024 13:00	0.0	0.6	18.8	0	0	1011.4	-0.56	-0.05	19.5
19/08/2024 14:00	0.0	0.5	18.9	0	0	1010.2	-0.63	-0.02	19.3
19/08/2024 15:00	0.0	0.5	19.0	0	0	1009.6	-0.64	-0.04	19.7
19/08/2024 16:00	0.0	0.4	19.0	0	0	1008.5	-0.75	-0.03	18.8
19/08/2024 17:00	0.0	0.4	19.1	0	0	1007.4	-0.81	-0.05	18.5
19/08/2024 18:00	0.0	0.3	19.1	0	0	1005.6	-0.94	-0.07	17.9
19/08/2024 19:00	0.0	0.3	19.1	0	0	1006.5	-0.75	-0.04	17.4
19/08/2024 20:00	0.0	0.3	19.0	0	0	1005.8	-0.81	-0.05	16.8
19/08/2024 21:00	0.0	0.3	19.0	0	0	1005.0	-0.80	-0.06	16.9
19/08/2024 22:00	0.0	0.2	19.0	0	0	1005.6	-0.58	-0.06	16.8
19/08/2024 23:00	0.0	0.2	19.0	0	0	1005.4	-0.53	-0.05	16.7
20/08/2024 00:00	0.0	0.2	19.0	0	0	1005.5	-0.38	-0.01	16.6
20/08/2024 01:00	0.0	0.2	19.0	0	0	1005.3	-0.26	-0.01	16.6
20/08/2024 02:00	0.0	0.2	19.0	0	0	1005.1	-0.06	-0.02	16.3
20/08/2024 03:00	0.0	0.2	19.0	0	0	1005.1	-0.17	-0.01	15.8
20/08/2024 04:00	0.0	0.2	19.0	0	0	1004.8	-0.13	-0.02	15.1
20/08/2024 05:00	0.0	0.2	19.0	0	0	1004.6	-0.05	0.00	14.7
20/08/2024 06:00	0.0	0.2	18.9	0	0	1003.7	-0.24	-0.03	14.9
20/08/2024 07:00	0.0	0.2	18.9	0	0	1004.6	-0.10	-0.02	15.4
20/08/2024 08:00	0.0	0.1	18.9	0	0	1005.4	-0.01	-0.01	15.5
20/08/2024 09:00	0.0	0.1	19.0	0	0	1006.1	0.10	-0.04	15.7
20/08/2024 10:00	0.0	0.2	19.1	0	0	1006.7	0.20	-0.05	16.4
20/08/2024 11:00	0.0	0.2	19.1	0	0	1006.9	0.22	0.00	17.1
20/08/2024 12:00	0.0	0.2	19.2	0	0	1006.3	0.19	0.00	18.3
20/08/2024 13:00	0.0	0.2	19.3	0	0	1007.6	0.38	0.00	17.9
20/08/2024 14:00	0.0	0.2	19.3	0	0	1007.9	0.52	0.00	18.1
20/08/2024 15:00	0.0	0.3	19.3	0	0	1008.7	0.51	-0.03	18.7
20/08/2024 16:00	0.0	0.3	19.3	0	0	1008.3	0.36	-0.13	17.6
20/08/2024 17:00	0.0	0.3	19.4	0	0	1008.6	0.31	-0.04	16.7
20/08/2024 18:00	0.0	0.2	19.4	0	0	1008.6	0.24	-0.01	16.6
20/08/2024 19:00	0.0	0.2	19.3	0	0	1009.6	0.34	-0.12	15.7
20/08/2024 20:00	0.0	0.2	19.2	0	0	1010.5	0.53	-0.03	14.7
20/08/2024 21:00	0.0	0.2	19.0	0	0	1011.2	0.45	0.00	14.0
20/08/2024 22:00	0.0	0.2	18.9	0	0	1011.7	0.48	-0.01	13.6
20/08/2024 23:00	0.0	0.2	18.9	0	0	1011.8	0.39	0.00	13.4
21/08/2024 00:00	0.0	0.2	18.9	0	0	1013.2	0.61	0.00	13.2
21/08/2024 01:00	0.0	0.2	18.8	0	0	1013.1	0.56	0.00	12.7
21/08/2024 02:00	0.0	0.2	18.8	0	0	1013.3	0.59	0.00	12.7
21/08/2024 03:00	0.0	0.2	18.8	0	0	1013.5	0.49	0.00	12.8
21/08/2024 04:00	0.0	0.2	18.8	0	0	1013.5	0.38	0.00	12.6
21/08/2024 05:00	0.0	0.2	18.8	0	0	1014.1	0.36	-0.04	12.3
21/08/2024 06:00	0.0	0.2	18.8	0	0	1014.5	0.35	0.00	12.0
21/08/2024 07:00	0.0	0.2	18.7	0	0	1014.5	0.34	0.00	12.7
21/08/2024 08:00	0.0	0.2	18.8	0	0	1014.8	0.20	0.00	14.0
21/08/2024 09:00	0.0	0.2	18.9	0	0	1015.2	0.26	0.00	15.5
21/08/2024 10:00	0.0	0.2	19.0	0	0	1014.2	0.11	0.00	16.8

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
21/08/2024 11:00	0.0	0.1	19.2	0	0	1013.9	0.05	0.00	18.0
21/08/2024 12:00	0.0	0.1	19.3	0	0	1013.8	0.04	-0.10	18.1
21/08/2024 13:00	0.0	0.1	19.3	0	0	1013.3	-0.10	-0.09	18.7
21/08/2024 14:00	0.0	0.1	19.4	0	0	1013.0	-0.19	0.00	18.9
21/08/2024 15:00	0.0	0.1	19.4	0	0	1012.6	-0.24	0.00	18.0
21/08/2024 16:00	0.0	0.1	19.3	0	0	1011.8	-0.38	0.00	17.2
21/08/2024 17:00	0.0	0.1	19.2	0	0	1010.9	-0.54	0.00	17.1
21/08/2024 18:00	0.0	0.1	19.2	0	0	1010.6	-0.45	0.00	17.0
21/08/2024 19:00	0.0	0.1	19.2	0	0	1010.2	-0.46	0.00	16.8
21/08/2024 20:00	0.0	0.1	19.1	0	0	1009.9	-0.49	0.00	16.5
21/08/2024 21:00	0.0	0.1	19.1	0	0	1009.7	-0.45	0.00	16.3
21/08/2024 22:00	0.0	0.1	19.1	0	0	1008.4	-0.58	0.00	16.2
21/08/2024 23:00	0.0	0.1	19.1	0	0	1007.3	-0.66	0.00	16.0
22/08/2024 00:00	0.0	0.1	19.0	0	0	1005.8	-0.75	0.00	16.0
22/08/2024 01:00	0.0	0.1	19.0	0	0	1004.8	-0.76	0.00	16.2
22/08/2024 02:00	0.0	0.1	19.0	0	0	1004.0	-0.83	0.00	16.2
22/08/2024 03:00	0.0	0.1	19.0	0	0	1001.4	-1.10	0.00	15.6
22/08/2024 04:00	0.0	0.1	19.0	0	0	1000.6	-1.16	0.00	15.4
22/08/2024 05:00	0.0	0.1	19.0	0	0	999.4	-1.29	0.00	15.4
22/08/2024 06:00	0.0	0.1	19.0	0	0	999.2	-1.15	0.00	15.9
22/08/2024 07:00	0.0	0.1	19.0	0	0	999.2	-1.01	0.00	16.6
22/08/2024 08:00	0.0	0.0	19.0	0	0	998.9	-0.86	0.00	17.4
22/08/2024 09:00	0.0	0.1	19.0	0	0	998.6	-0.77	0.00	18.0
22/08/2024 10:00	0.0	0.1	19.0	0	0	998.7	-0.66	0.00	19.8
22/08/2024 11:00	0.0	0.0	19.1	0	0	999.4	-0.25	0.00	18.8
22/08/2024 12:00	0.0	0.1	19.1	0	0	1000.6	0.00	0.00	17.4
22/08/2024 13:00	0.0	0.1	19.1	0	0	1001.6	0.28	0.00	16.7
22/08/2024 14:00	0.0	0.1	19.2	0	0	1002.2	0.38	0.00	16.6
22/08/2024 15:00	0.0	0.1	19.2	0	0	1002.1	0.36	-0.01	16.5
22/08/2024 16:00	0.0	0.1	19.3	0	0	1001.7	0.35	0.00	16.3
22/08/2024 17:00	0.0	0.1	19.2	0	0	1001.4	0.35	0.00	16.1
22/08/2024 18:00	0.0	0.1	19.2	0	0	1001.6	0.36	0.00	15.7
22/08/2024 19:00	0.0	0.1	19.1	0	0	1001.6	0.28	0.00	14.7
22/08/2024 20:00	0.0	0.1	19.1	0	0	1001.1	0.06	0.00	13.8
22/08/2024 21:00	0.0	0.1	19.0	0	0	1000.3	-0.16	0.00	13.5
22/08/2024 22:00	0.0	0.2	18.9	0	0	999.7	-0.31	0.00	13.3
22/08/2024 23:00	0.0	0.2	18.8	0	0	998.6	-0.44	0.00	13.3
23/08/2024 00:00	0.0	0.2	18.8	0	0	996.8	-0.61	0.00	13.2
23/08/2024 01:00	0.0	0.2	18.7	0	0	995.2	-0.77	0.00	13.6
23/08/2024 02:00	0.0	0.3	18.7	0	0	992.4	-1.15	0.00	14.3
23/08/2024 03:00	0.0	0.3	18.7	0	0	990.8	-1.35	0.00	14.8
23/08/2024 04:00	0.0	0.3	18.7	0	0	989.5	-1.45	0.00	15.4
23/08/2024 05:00	0.0	0.3	18.7	0	0	989.7	-1.32	0.00	16.3
23/08/2024 06:00	0.0	0.2	18.8	0	0	991.2	-1.06	0.00	14.8
23/08/2024 07:00	0.0	0.1	18.9	0	0	995.3	-0.41	0.00	13.8
23/08/2024 08:00	0.0	0.1	18.8	0	0	997.4	0.08	0.00	13.9
23/08/2024 09:00	0.0	0.1	18.9	0	0	999.0	0.47	0.00	14.7
23/08/2024 10:00	0.0	0.1	18.9	0	0	1000.3	0.99	0.00	15.3
23/08/2024 11:00	0.0	0.1	19.0	0	0	1001.8	1.38	0.00	15.8
23/08/2024 12:00	0.0	0.1	19.1	0	0	1002.3	1.60	0.00	17.2
23/08/2024 13:00	0.0	0.1	19.2	0	0	1003.1	1.68	-0.01	18.0
23/08/2024 14:00	0.0	0.1	19.3	0	0	1003.2	1.50	0.00	18.4
23/08/2024 15:00	0.0	0.1	19.3	0	0	1003.4	1.01	-0.02	18.9
23/08/2024 16:00	0.0	0.1	19.4	0	0	1003.5	0.76	-0.02	18.4
23/08/2024 17:00	0.0	0.1	19.4	0	0	1003.6	0.58	0.00	17.9
23/08/2024 18:00	0.0	0.1	19.4	0	0	1003.4	0.39	0.00	17.1
23/08/2024 19:00	0.0	0.1	19.3	0	0	1004.1	0.29	0.00	15.9
23/08/2024 20:00	0.0	0.1	19.3	0	0	1004.9	0.33	0.00	14.6
23/08/2024 21:00	0.0	0.1	19.1	0	0	1004.8	0.21	0.00	14.0
23/08/2024 22:00	0.0	0.1	19.0	0	0	1005.0	0.22	0.00	13.5
23/08/2024 23:00	0.0	0.1	19.0	0	0	1003.9	0.06	0.00	13.1
24/08/2024 00:00	0.0	0.1	18.9	0	0	1003.8	0.04	0.00	13.1
24/08/2024 01:00	0.0	0.1	18.9	0	0	1003.3	-0.04	0.00	13.0
24/08/2024 02:00	0.0	0.1	18.8	0	0	1002.6	-0.10	0.00	13.0
24/08/2024 03:00	0.0	0.1	18.8	0	0	1001.0	-0.39	0.00	13.4
24/08/2024 04:00	0.0	0.1	18.8	0	0	1001.6	-0.41	0.00	13.5
24/08/2024 05:00	0.0	0.1	18.8	0	0	1000.9	-0.49	0.00	13.4
24/08/2024 06:00	0.0	0.1	18.8	0	0	1000.4	-0.58	0.00	13.1
24/08/2024 07:00	0.0	0.1	18.8	0	0	1000.5	-0.42	0.00	13.5
24/08/2024 08:00	0.0	0.1	18.8	0	0	1001.1	-0.34	0.00	14.1
24/08/2024 09:00	0.0	0.2	18.8	0	0	1001.2	-0.26	0.00	14.3
24/08/2024 10:00	0.0	0.2	18.8	0	0	1002.1	-0.06	0.00	14.9
24/08/2024 11:00	0.0	0.2	18.9	0	0	1002.2	0.15	0.00	15.2
24/08/2024 12:00	0.0	0.1	19.1	0	0	1001.8	0.02	-0.01	16.0
24/08/2024 13:00	0.0	0.2	19.2	0	0	1002.8	0.24	0.00	17.0
24/08/2024 14:00	0.0	0.2	19.2	0	0	1003.1	0.34	0.00	16.9

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
24/08/2024 15:00	0.0	0.2	19.3	0	0	1003.3	0.35	-0.01	16.8
24/08/2024 16:00	0.0	0.3	19.3	0	0	1004.6	0.44	-0.01	16.2
24/08/2024 17:00	0.0	0.3	19.3	0	0	1005.2	0.50	0.00	15.7
24/08/2024 18:00	0.0	0.4	19.3	0	0	1005.5	0.42	-0.03	15.3
24/08/2024 19:00	0.0	0.5	19.2	0	0	1007.1	0.61	-0.01	14.5
24/08/2024 20:00	0.0	0.5	19.1	0	0	1008.2	0.80	0.00	13.5
24/08/2024 21:00	0.0	0.6	18.9	0	0	1009.2	0.80	0.00	12.9
24/08/2024 22:00	0.0	0.6	18.8	0	0	1009.2	0.76	0.00	12.3
24/08/2024 23:00	0.0	0.5	18.7	0	0	1010.2	0.86	0.00	12.3
25/08/2024 00:00	0.0	0.5	18.7	0	0	1011.3	0.84	0.00	12.2
25/08/2024 01:00	0.0	0.4	18.6	0	0	1012.0	0.85	0.00	11.9
25/08/2024 02:00	0.0	0.5	18.6	0	0	1012.8	0.91	0.00	11.7
25/08/2024 03:00	0.0	0.5	18.6	0	0	1013.7	0.83	0.00	11.6
25/08/2024 04:00	0.0	0.5	18.5	0	0	1013.8	0.70	0.00	11.1
25/08/2024 05:00	0.0	0.5	18.5	0	0	1014.1	0.61	0.00	10.4
25/08/2024 06:00	0.0	0.4	18.5	0	0	1014.4	0.65	0.00	9.9
25/08/2024 07:00	0.0	0.5	18.4	0	0	1014.4	0.52	0.00	10.9
25/08/2024 08:00	0.0	0.5	18.4	0	0	1014.7	0.43	0.00	12.5
25/08/2024 09:00	0.0	0.4	18.5	0	0	1014.9	0.36	0.00	14.3
25/08/2024 10:00	0.0	0.4	18.8	0	0	1014.0	0.15	0.00	15.3
25/08/2024 11:00	0.0	0.3	19.0	0	0	1013.7	0.00	0.00	15.2
25/08/2024 12:00	0.0	0.2	19.0	0	0	1013.2	-0.07	0.00	15.7
25/08/2024 13:00	0.0	0.2	19.0	0	0	1012.5	-0.20	0.00	15.9
25/08/2024 14:00	0.0	0.1	19.1	0	0	1012.3	-0.26	0.00	17.1
25/08/2024 15:00	0.0	0.1	19.1	0	0	1012.6	-0.22	0.00	17.1
25/08/2024 16:00	0.0	0.1	19.1	0	0	1011.9	-0.35	0.00	17.4
25/08/2024 17:00	0.0	0.1	19.1	0	0	1011.7	-0.40	0.00	16.9
25/08/2024 18:00	0.0	0.1	19.1	0	0	1011.7	-0.29	0.00	16.4
25/08/2024 19:00	0.0	0.1	19.1	0	0	1012.0	-0.21	0.00	16.0
25/08/2024 20:00	0.0	0.1	19.0	0	0	1012.6	-0.08	0.00	15.4
25/08/2024 21:00	0.0	0.1	19.0	0	0	1012.3	-0.03	0.00	14.7
25/08/2024 22:00	0.0	0.1	19.0	0	0	1012.8	0.06	0.00	14.2
25/08/2024 23:00	0.0	0.1	18.9	0	0	1013.3	0.09	0.00	14.1
26/08/2024 00:00	0.0	0.1	18.9	0	0	1013.6	0.21	0.00	13.8
26/08/2024 01:00	0.0	0.1	18.9	0	0	1014.3	0.32	0.00	13.6
26/08/2024 02:00	0.0	0.1	18.9	0	0	1014.3	0.32	0.00	13.5
26/08/2024 03:00	0.0	0.1	18.9	0	0	1013.4	0.17	0.00	13.3
26/08/2024 04:00	0.0	0.1	18.9	0	0	1014.4	0.22	0.00	13.2
26/08/2024 05:00	0.0	0.1	18.8	0	0	1014.7	0.30	0.00	13.1
26/08/2024 06:00	0.0	0.1	18.8	0	0	1014.7	0.24	0.00	13.0
26/08/2024 07:00	0.0	0.1	18.8	0	0	1015.3	0.25	0.00	13.6
26/08/2024 08:00	0.0	0.1	18.9	0	0	1015.8	0.27	0.00	14.7
26/08/2024 09:00	0.0	0.1	18.9	0	0	1016.4	0.26	0.00	16.3
26/08/2024 10:00	0.0	0.1	19.0	0	0	1016.5	0.28	0.00	17.8
26/08/2024 11:00	0.0	0.1	19.0	0	0	1016.5	0.39	0.00	18.6
26/08/2024 12:00	0.0	0.1	19.1	0	0	1016.3	0.24	-0.01	19.5
26/08/2024 13:00	0.0	0.1	19.3	0	0	1016.6	0.24	0.00	19.8
26/08/2024 14:00	0.0	0.1	19.4	0	0	1017.0	0.29	0.00	20.2
26/08/2024 15:00	0.0	0.1	19.4	0	0	1017.2	0.24	0.00	20.2
26/08/2024 16:00	0.0	0.1	19.4	0	0	1016.5	0.09	0.00	19.8
26/08/2024 17:00	0.0	0.1	19.4	0	0	1016.2	-0.02	0.00	19.0
26/08/2024 18:00	0.0	0.1	19.4	0	0	1016.3	-0.03	-0.01	18.4
26/08/2024 19:00	0.0	0.1	19.3	0	0	1016.9	0.05	0.00	17.4
26/08/2024 20:00	0.0	0.1	19.2	0	0	1017.1	0.10	0.00	16.3
26/08/2024 21:00	0.0	0.1	19.1	0	0	1017.6	0.13	0.00	16.0
26/08/2024 22:00	0.0	0.1	19.1	0	0	1016.6	-0.05	0.00	15.5
26/08/2024 23:00	0.0	0.1	19.0	0	0	1016.3	-0.11	0.00	15.4
27/08/2024 00:00	0.0	0.2	19.0	0	0	1016.4	-0.01	0.00	15.5
27/08/2024 01:00	0.0	0.2	19.0	0	0	1015.6	-0.08	0.00	15.4
27/08/2024 02:00	0.0	0.1	19.0	0	0	1015.2	-0.14	0.00	15.5
27/08/2024 03:00	0.0	0.1	18.9	0	0	1015.0	-0.24	0.00	15.5
27/08/2024 04:00	0.0	0.1	18.9	0	0	1014.3	-0.35	0.00	15.5
27/08/2024 05:00	0.0	0.1	18.9	0	0	1014.1	-0.44	0.00	15.5
27/08/2024 06:00	0.0	0.1	19.0	0	0	1013.9	-0.34	0.00	15.4
27/08/2024 07:00	0.0	0.1	19.0	0	0	1014.0	-0.29	0.00	15.9
27/08/2024 08:00	0.0	0.1	19.0	0	0	1014.5	-0.24	0.00	16.8
27/08/2024 09:00	0.0	0.1	19.0	0	0	1014.1	-0.19	0.00	17.5
27/08/2024 10:00	0.0	0.1	19.1	0	0	1014.5	-0.09	0.00	17.9
27/08/2024 11:00	0.0	0.1	19.2	0	0	1014.2	-0.10	0.00	18.5
27/08/2024 12:00	0.0	0.1	19.2	0	0	1013.7	-0.07	0.00	19.2
27/08/2024 13:00	0.0	0.1	19.3	0	0	1014.3	0.02	0.00	19.6
27/08/2024 14:00	0.0	0.1	19.2	0	0	1013.9	0.00	0.00	19.5
27/08/2024 15:00	0.0	0.1	19.2	0	0	1014.5	0.06	0.00	17.8
27/08/2024 16:00	0.0	0.1	19.1	0	0	1014.1	-0.05	0.00	17.4
27/08/2024 17:00	0.0	0.1	19.1	0	0	1013.9	-0.03	0.00	17.1
27/08/2024 18:00	0.0	0.1	19.1	0	0	1014.7	0.03	0.00	17.2

ggs
Experts in Continuous Monitoring

Date and Time	CH % v/v	CO % v/v	O % v/v	CO ppm/v	H S ppm/v	Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Flow Ltr/hr	Temperature °C
27/08/2024 19:00	0.0	0.2	19.0	0	0	1014.4	0.02	0.00	16.8
27/08/2024 20:00	0.0	0.2	19.0	0	0	1014.8	0.14	0.00	16.7
27/08/2024 21:00	0.0	0.2	18.9	0	0	1013.9	-0.05	0.00	16.7
27/08/2024 22:00	0.0	0.3	18.9	0	0	1013.8	-0.01	0.00	16.6
27/08/2024 23:00	0.0	0.3	18.8	0	0	1013.5	-0.13	0.00	16.6
28/08/2024 00:00	0.0	0.3	18.8	0	0	1014.1	0.00	0.00	16.4
28/08/2024 01:00	0.0	0.3	18.8	0	0	1013.6	-0.04	0.00	16.2
28/08/2024 02:00	0.0	0.4	18.7	0	0	1013.7	-0.13	0.00	16.1
28/08/2024 03:00	0.0	0.4	18.7	0	0	1013.1	-0.16	0.00	15.6
28/08/2024 04:00	0.0	0.4	18.7	0	0	1012.8	-0.25	0.00	15.7
28/08/2024 05:00	0.0	0.4	18.7	0	0	1012.8	-0.14	0.00	15.8
28/08/2024 06:00	0.0	0.4	18.7	0	0	1012.7	-0.14	0.00	15.5
28/08/2024 07:00	0.0	0.5	18.7	0	0	1012.7	-0.10	0.00	15.6
28/08/2024 08:00	0.0	0.5	18.7	0	0	1013.0	-0.14	0.00	16.0
28/08/2024 09:00	0.0	0.5	18.7	0	0	1013.4	-0.03	0.00	17.0

ggs
Experts in Continuous Monitoring

Time Series Data

Project Ref:	GGS3078
Project Name:	Ryebank Road, Chorlton
Borehole ref:	WS202
Instrument Name and ID:	Gas Sentinel® 03000041
Start Date:	06/08/2024 15:00
End Date:	28/08/2024 09:00
Days of monitoring:	22
Monitoring Frequency (mins):	60
Total samples taken:	523

Experts in Continuous Monitoring

Summary Table

	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
Minimum	3.1	0.4	5.9	5	0	989.5	-1.45	-0.02	9.8
Maximum	17.2	5.5	19.5	43	0	1022.5	1.68	0.02	25.4
Range	14.1	5.1	13.7	37	0	33.0	3.13	0.04	15.6

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
06/08/2024 15:00	NM	0.4	19.5	7	0	1006.5	N/A	0.00	21.2
06/08/2024 16:00	NM	0.5	19.5	8	0	1007.2	N/A	0.00	21.0
06/08/2024 17:00	NM	0.7	19.3	8	0	1007.0	N/A	0.00	20.7
06/08/2024 18:00	3.2	0.7	19.0	9	0	1007.4	N/A	0.00	20.2
06/08/2024 19:00	3.1	0.9	18.7	9	0	1007.6	N/A	0.00	19.0
06/08/2024 20:00	NM	1.0	18.2	8	0	1008.2	N/A	0.00	17.6
06/08/2024 21:00	NM	1.1	17.8	8	0	1008.8	N/A	0.00	16.3
06/08/2024 22:00	NM	1.2	17.3	7	0	1008.8	N/A	0.00	15.2
06/08/2024 23:00	NM	1.3	16.8	7	0	1008.9	0.30	0.00	14.4
07/08/2024 00:00	3.7	1.4	16.5	6	0	1008.3	0.14	0.00	13.5
07/08/2024 01:00	NM	1.4	16.3	6	0	1009.0	0.25	0.00	13.1
07/08/2024 02:00	NM	1.5	16.0	6	0	1008.5	0.14	0.00	12.7
07/08/2024 03:00	NM	1.5	15.7	5	0	1007.7	0.01	0.00	12.4
07/08/2024 04:00	NM	1.6	15.5	5	0	1008.3	0.01	0.00	12.2
07/08/2024 05:00	NM	1.7	15.3	5	0	1008.8	0.00	0.00	12.0
07/08/2024 06:00	NM	1.8	15.1	6	0	1009.1	0.04	0.00	12.7
07/08/2024 07:00	NM	1.9	14.9	7	0	1008.8	-0.01	0.00	14.1
07/08/2024 08:00	NM	2.0	14.8	7	0	1008.5	0.03	0.00	15.9
07/08/2024 09:00	NM	2.1	14.8	8	0	1009.0	0.00	0.00	17.1
07/08/2024 10:00	NM	2.2	14.7	8	0	1008.4	-0.01	0.00	17.8
07/08/2024 11:00	NM	2.3	14.7	8	0	1008.5	0.10	0.00	18.3
07/08/2024 12:00	NM	2.5	14.6	9	0	1008.5	0.03	0.00	19.1
07/08/2024 13:00	NM	2.6	14.5	9	0	1008.8	0.00	0.00	19.7
07/08/2024 14:00	NM	2.7	14.4	11	0	1009.3	0.02	0.00	20.1
07/08/2024 15:00	NM	2.7	14.3	13	0	1009.5	0.09	0.00	19.4
07/08/2024 16:00	NM	2.9	14.2	14	0	1009.7	0.15	0.00	18.9
07/08/2024 17:00	NM	2.8	14.0	14	0	1009.6	0.08	0.00	18.7
07/08/2024 18:00	NM	2.9	13.8	16	0	1009.5	0.14	0.00	18.0
07/08/2024 19:00	NM	3.1	13.7	16	0	1010.6	0.26	0.00	17.3
07/08/2024 20:00	NM	3.2	13.5	15	0	1011.1	0.33	0.00	16.5
07/08/2024 21:00	NM	3.2	13.3	15	0	1011.3	0.31	0.00	15.9
07/08/2024 22:00	NM	3.3	13.1	14	0	1012.1	0.35	0.00	15.0
07/08/2024 23:00	NM	3.2	12.9	13	0	1012.2	0.34	0.00	14.2
08/08/2024 00:00	NM	3.2	12.8	13	0	1012.1	0.30	0.00	14.3
08/08/2024 01:00	NM	3.4	12.7	12	0	1012.3	0.34	0.00	14.4
08/08/2024 02:00	NM	3.4	12.6	12	0	1012.4	0.36	0.00	14.6
08/08/2024 03:00	NM	3.4	12.5	12	0	1011.9	0.16	0.00	15.1
08/08/2024 04:00	NM	3.4	12.3	11	0	1012.0	0.11	0.00	15.1
08/08/2024 05:00	NM	3.5	12.2	11	0	1011.6	0.04	0.00	14.8
08/08/2024 06:00	NM	3.6	12.1	11	0	1011.5	-0.08	0.00	14.4
08/08/2024 07:00	NM	3.6	12.0	11	0	1012.0	-0.03	0.00	14.6
08/08/2024 08:00	NM	3.7	11.9	10	0	1012.0	-0.01	0.00	15.0
08/08/2024 09:00	NM	3.8	11.9	10	0	1011.2	-0.14	0.00	15.7
08/08/2024 10:00	NM	3.9	12.0	11	0	1010.3	-0.26	0.00	16.2
08/08/2024 11:00	NM	3.8	12.2	12	0	1009.3	-0.33	0.00	16.5
08/08/2024 12:00	NM	4.0	12.2	12	0	1009.1	-0.36	0.00	17.1
08/08/2024 13:00	NM	3.9	12.2	13	0	1008.3	-0.41	0.00	17.3
08/08/2024 14:00	NM	4.0	12.1	13	0	1007.7	-0.47	0.00	17.8
08/08/2024 15:00	NM	4.0	12.0	13	0	1006.7	-0.66	0.00	18.6
08/08/2024 16:00	NM	4.0	11.9	12	0	1006.4	-0.70	0.00	18.8
08/08/2024 17:00	NM	4.1	11.8	12	0	1005.9	-0.66	0.00	19.0
08/08/2024 18:00	NM	3.9	11.7	13	0	1003.8	-0.81	0.00	19.3
08/08/2024 19:00	NM	4.1	11.6	13	0	1005.8	-0.44	0.00	19.4
08/08/2024 20:00	NM	4.0	11.4	14	0	1005.9	-0.40	0.00	19.2
08/08/2024 21:00	NM	4.1	11.3	15	0	1005.2	-0.39	0.00	19.2
08/08/2024 22:00	NM	4.1	11.2	15	0	1005.0	-0.34	0.00	18.9
08/08/2024 23:00	NM	4.0	11.1	15	0	1005.2	-0.19	0.00	18.6
09/08/2024 00:00	NM	4.2	11.0	15	0	1005.4	-0.13	0.00	18.3
09/08/2024 01:00	NM	4.0	10.9	16	0	1006.0	0.01	0.00	18.1
09/08/2024 02:00	NM	4.1	10.8	15	0	1006.4	0.33	0.00	17.8
09/08/2024 03:00	NM	4.2	10.7	15	0	1005.8	0.00	0.00	17.2
09/08/2024 04:00	NM	4.2	10.6	15	0	1007.0	0.14	0.00	16.4
09/08/2024 05:00	NM	4.4	10.5	14	0	1007.8	0.32	0.00	15.7
09/08/2024 06:00	NM	4.4	10.4	14	0	1009.2	0.53	0.00	15.4
09/08/2024 07:00	NM	4.2	10.3	14	0	1010.0	0.60	0.00	15.7
09/08/2024 08:00	NM	4.3	10.3	13	0	1010.7	0.66	0.00	16.2
09/08/2024 09:00	NM	4.4	10.3	13	0	1012.1	0.76	0.00	17.2
09/08/2024 10:00	NM	4.4	10.4	13	0	1011.3	0.61	0.00	18.1
09/08/2024 11:00	NM	4.6	10.5	14	0	1012.3	0.81	0.00	19.0
09/08/2024 12:00	NM	4.7	10.6	15	0	1012.1	0.64	0.00	20.2
09/08/2024 13:00	NM	4.8	10.7	15	0	1012.5	0.59	0.00	20.5
09/08/2024 14:00	NM	4.7	10.8	15	0	1013.0	0.47	0.00	20.8
09/08/2024 15:00	6.2	4.7	11.0	16	0	1013.1	0.39	0.00	20.8
09/08/2024 16:00	5.9	5.0	11.2	16	0	1013.5	0.35	0.00	20.8
09/08/2024 17:00	6.2	5.1	11.3	16	0	1013.8	0.21	0.00	20.7
09/08/2024 18:00	6.2	5.0	11.3	15	0	1013.5	0.28	0.00	20.4
09/08/2024 19:00	6.2	4.9	11.1	14	0	1014.6	0.29	0.00	19.1
09/08/2024 20:00	6.5	4.5	10.9	14	0	1014.8	0.34	0.00	17.6
09/08/2024 21:00	NM	4.8	10.7	13	0	1014.6	0.26	0.00	16.6
09/08/2024 22:00	NM	4.9	10.5	12	0	1015.3	0.29	0.00	15.6
09/08/2024 23:00	NM	4.9	10.3	11	0	1015.4	0.29	0.00	15.0
10/08/2024 00:00	NM	5.0	10.2	11	0	1015.0	0.19	0.00	14.5
10/08/2024 01:00	NM	4.8	10.1	10	0	1015.4	0.20	0.00	14.3
10/08/2024 02:00	NM	4.7	10.1	10	0	1015.3	0.22	0.00	14.2
10/08/2024 03:00	NM	4.5	10.0	10	0	1015.2	0.08	0.00	14.7
10/08/2024 04:00	NM	4.5	9.9	11	0	1015.3	0.06	0.00	14.4
10/08/2024 05:00	NM	4.5	9.9	10	0	1015.6	0.13	0.00	14.2
10/08/2024 06:00	NM	4.5	9.9	10	0	1015.7	0.05	0.00	14.8
10/08/2024 07:00	NM	4.6	9.9	10	0	1015.7	0.04	0.00	16.2
10/08/2024 08:00	NM	4.6	10.0	12	0	1015.8	0.10	0.00	17.8
10/08/2024 09:00	NM	4.4	10.1	13	0	1015.1	-0.04	0.00	19.2
10/08/2024 10:00	NM	4.8	10.2	13	0	1016.1	0.10	0.00	20.2
10/08/2024 11:00	NM	4.8	10.3	15	0	1016.7	0.19	0.00	20.6

ggs Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
10/08/2024 12:00	NM	4.6	10.5	15	0	1016.2	0.11	0.00	20.6
10/08/2024 13:00	NM	4.6	10.4	17	0	1017.3	0.21	0.00	21.0
10/08/2024 14:00	8.8	4.6	10.5	18	0	1017.3	0.20	0.00	21.4
10/08/2024 15:00	8.7	4.8	10.6	18	0	1017.7	0.25	0.00	21.1
10/08/2024 16:00	8.7	4.7	10.7	18	0	1018.3	0.31	0.00	20.9
10/08/2024 17:00	9.1	4.7	10.8	20	0	1019.0	0.49	0.00	20.3
10/08/2024 18:00	9.0	4.7	10.9	20	0	1019.6	0.44	0.00	20.0
10/08/2024 19:00	9.2	4.6	10.8	18	0	1020.1	0.42	0.00	19.1
10/08/2024 20:00	9.0	4.7	10.6	17	0	1020.6	0.55	-0.01	17.9
10/08/2024 21:00	9.6	4.6	10.3	16	0	1020.4	0.39	0.00	17.3
10/08/2024 22:00	NM	4.6	10.1	15	0	1021.0	0.46	0.00	16.6
10/08/2024 23:00	NM	4.6	9.9	14	0	1021.4	0.46	0.00	16.2
11/08/2024 00:00	NM	4.4	9.8	13	0	1021.9	0.45	0.00	15.2
11/08/2024 01:00	NM	4.4	9.6	13	0	1022.1	0.39	0.00	14.4
11/08/2024 02:00	NM	4.3	9.5	12	0	1022.1	0.31	0.00	14.1
11/08/2024 03:00	NM	4.4	9.5	12	0	1022.4	0.29	0.00	13.6
11/08/2024 04:00	NM	4.2	9.4	12	0	1022.3	0.21	0.00	13.1
11/08/2024 05:00	NM	4.0	9.4	12	0	1022.5	0.26	0.00	12.7
11/08/2024 06:00	NM	4.2	9.4	12	0	1022.3	0.16	0.00	13.2
11/08/2024 07:00	NM	4.1	9.4	12	0	1022.0	0.08	0.00	14.9
11/08/2024 08:00	NM	4.2	9.4	13	0	1022.4	0.06	0.00	17.4
11/08/2024 09:00	NM	4.2	9.7	16	0	1021.7	-0.05	0.00	19.8
11/08/2024 10:00	NM	4.3	10.2	19	0	1021.6	-0.06	0.00	21.2
11/08/2024 11:00	10.2	4.5	10.4	21	0	1021.0	-0.17	0.00	22.3
11/08/2024 12:00	10.3	4.2	10.7	22	0	1020.2	-0.26	0.00	23.4
11/08/2024 13:00	10.2	4.3	10.9	22	0	1019.7	-0.35	0.00	24.3
11/08/2024 14:00	10.5	4.3	11.0	22	0	1019.4	-0.36	0.00	24.9
11/08/2024 15:00	10.6	4.4	11.1	21	0	1018.4	-0.45	0.00	25.3
11/08/2024 16:00	10.6	4.6	11.2	21	0	1017.9	-0.56	0.00	25.4
11/08/2024 17:00	10.8	4.5	11.2	21	0	1016.8	-0.61	0.00	25.2
11/08/2024 18:00	10.8	4.4	11.2	20	0	1015.8	-0.73	0.00	24.8
11/08/2024 19:00	10.9	4.5	11.2	19	0	1015.5	-0.69	0.00	23.8
11/08/2024 20:00	10.8	4.5	11.0	18	0	1015.7	-0.56	0.01	21.8
11/08/2024 21:00	11.0	4.4	10.7	18	0	1015.4	-0.54	0.00	20.4
11/08/2024 22:00	11.3	4.2	10.5	17	0	1014.7	-0.59	0.00	19.7
11/08/2024 23:00	11.4	4.1	10.3	16	0	1014.2	-0.52	0.00	19.3
12/08/2024 00:00	11.5	4.2	10.1	16	0	1013.5	-0.55	0.00	18.6
12/08/2024 01:00	11.4	4.1	10.0	17	0	1013.0	-0.47	0.00	18.2
12/08/2024 02:00	11.7	4.0	9.8	17	0	1011.9	-0.49	0.00	18.1
12/08/2024 03:00	NM	4.2	9.7	17	0	1009.8	-0.71	0.00	18.2
12/08/2024 04:00	NM	4.2	9.6	17	0	1009.5	-0.78	0.00	18.4
12/08/2024 05:00	NM	4.2	9.6	17	0	1008.9	-0.81	0.00	18.3
12/08/2024 06:00	NM	4.0	9.5	18	0	1008.4	-0.79	0.00	18.8
12/08/2024 07:00	NM	4.1	9.5	20	0	1007.4	-0.85	0.00	20.1
12/08/2024 08:00	NM	4.0	9.5	21	0	1006.8	-0.84	0.00	22.7
12/08/2024 09:00	12.6	4.2	9.6	24	0	1006.2	-0.85	0.00	23.4
12/08/2024 10:00	12.5	4.2	9.6	25	0	1006.5	-0.67	0.00	23.8
12/08/2024 11:00	13.0	4.1	9.8	29	0	1006.7	-0.39	0.00	24.0
12/08/2024 12:00	12.9	4.2	10.0	31	0	1006.0	-0.44	0.00	24.3
12/08/2024 13:00	12.6	4.3	10.0	31	0	1006.4	-0.31	0.00	24.1
12/08/2024 14:00	12.6	4.4	10.0	31	0	1006.9	-0.19	0.00	22.7
12/08/2024 15:00	12.6	4.3	9.9	31	0	1007.4	0.00	0.00	21.8
12/08/2024 16:00	13.0	4.3	9.9	33	0	1007.4	0.08	0.00	21.9
12/08/2024 17:00	12.9	4.0	10.0	34	0	1007.0	0.10	0.00	21.5
12/08/2024 18:00	13.2	4.2	10.1	35	0	1007.4	0.11	0.00	20.7
12/08/2024 19:00	12.8	4.4	10.1	35	0	1008.4	0.21	0.00	19.3
12/08/2024 20:00	12.9	4.3	9.9	33	0	1008.6	0.33	0.00	18.0
12/08/2024 21:00	13.0	4.1	9.6	31	0	1008.7	0.29	0.00	17.5
12/08/2024 22:00	13.0	4.3	9.4	29	0	1008.3	0.17	0.00	16.5
12/08/2024 23:00	NM	4.2	9.2	26	0	1008.6	0.15	0.00	15.7
13/08/2024 00:00	NM	4.3	9.1	25	0	1009.0	0.20	0.00	15.4
13/08/2024 01:00	NM	4.2	9.0	24	0	1008.6	0.20	0.00	14.8
13/08/2024 02:00	NM	4.2	9.0	23	0	1008.2	0.10	0.00	14.2
13/08/2024 03:00	NM	4.2	8.9	22	0	1008.3	-0.01	0.00	13.4
13/08/2024 04:00	NM	4.0	8.9	21	0	1008.2	-0.05	0.00	13.2
13/08/2024 05:00	NM	4.1	8.9	21	0	1008.2	-0.06	0.00	13.1
13/08/2024 06:00	NM	4.1	8.9	21	0	1008.4	0.01	0.00	13.6
13/08/2024 07:00	NM	4.1	8.9	21	0	1008.2	-0.05	0.00	14.6
13/08/2024 08:00	NM	4.2	9.0	22	0	1007.9	-0.14	0.00	15.9
13/08/2024 09:00	NM	4.0	9.2	24	0	1006.8	-0.23	0.00	17.8
13/08/2024 10:00	11.9	4.2	9.5	28	0	1007.1	-0.14	0.00	19.2
13/08/2024 11:00	12.0	4.0	9.7	29	0	1007.3	-0.13	0.00	20.5
13/08/2024 12:00	12.0	4.2	9.9	30	0	1007.1	-0.14	0.00	21.3
13/08/2024 13:00	11.7	4.4	10.0	28	0	1007.6	-0.08	0.00	21.1
13/08/2024 14:00	11.9	4.3	10.0	27	0	1007.7	-0.09	0.00	21.6
13/08/2024 15:00	NM	4.2	10.0	27	0	1007.5	-0.09	0.02	22.2
13/08/2024 16:00	16.9	4.0	9.3	40	0	1007.6	-0.04	0.00	20.8
13/08/2024 17:00	16.7	4.0	9.2	43	0	1007.8	0.13	0.00	19.5
13/08/2024 18:00	17.2	4.0	9.1	42	0	1009.1	0.25	0.00	17.7
13/08/2024 19:00	17.0	3.8	9.1	43	0	1009.3	0.25	0.00	17.3
13/08/2024 20:00	16.8	3.9	9.1	41	0	1009.8	0.34	0.00	17.2
13/08/2024 21:00	NM	4.0	9.0	41	0	1010.0	0.30	0.00	16.9
13/08/2024 22:00	NM	4.0	9.0	40	0	1010.9	0.40	0.00	16.7
13/08/2024 23:00	NM	3.9	9.1	38	0	1011.2	0.46	0.00	16.6
14/08/2024 00:00	NM	3.8	9.1	37	0	1011.1	0.44	0.00	16.3
14/08/2024 01:00	NM	4.0	9.1	36	0	1012.2	0.55	0.00	15.9
14/08/2024 02:00	NM	3.9	9.1	36	0	1012.4	0.41	0.00	15.2
14/08/2024 03:00	NM	3.9	9.1	34	0	1012.7	0.43	0.00	14.8
14/08/2024 04:00	NM	3.9	9.1	33	0	1012.9	0.39	0.00	14.6
14/08/2024 05:00	NM	3.8	9.1	32	0	1013.2	0.40	0.00	14.4
14/08/2024 06:00	NM	3.7	9.1	31	0	1014.0	0.39	0.00	14.1
14/08/2024 07:00	NM	3.8	9.2	30	0	1014.5	0.41	0.00	14.4
14/08/2024 08:00	NM	3.8	9.2	30	0	1015.2	0.51	0.00	15.4
14/08/2024 09:00	NM	3.7	9.2	30	0	1015.4	0.40	0.00	16.6
14/08/2024 10:00	NM	3.6	9.4	33	0	1015.0	0.33	0.00	17.5
14/08/2024 11:00	15.4	3.9	9.6	35	0	1015.0	0.29	0.00	18.6
14/08/2024 12:00	15.6	3.8	10.0	39	0	1014.4	0.19	0.00	20.0
14/08/2024 13:00	15.8	3.9	10.2	38	0	1015.3	0.26	0.00	20.6
14/08/2024 14:00	15.8	4.0	10.3	39	0	1015.1	0.14	0.00	20.6
14/08/2024 15:00	15.5	4.0	10.4	38	0	1014.9	0.05	0.00	20.1
14/08/2024 16:00	15.8	4.0	10.4	37	0	1014.9	-0.04	0.00	20.2
14/08/2024 17:00	15.5	4.0	10.5	36	0	1014.5	-0.11	0.00	20.4
14/08/2024 18:00	15.6	4.0	10.4	33	0	1014.1	-0.11	0.00	20.6
14/08/2024 19:00	15.3	3.9	10.2	31	0	1014.8	-0.03	0.00	19.6
14/08/2024 20:00	15.6	3.9	9.9	28	0	1015.5	0.14	0.00	17.7
14/08/2024 21:00	15.4	3.8	9.7	26	0	1014.2	-0.14	0.00	16.6
14/08/2024 22:00	NM	3.9	9.5	24	0	1015.2	0.01	0.00	15.7
14/08/2024 23:00	NM	3.8	9.4	23	0	1015.0	0.01	0.00	15.3
15/08/2024 00:00	NM	3.7	9.3	22	0	1014.3	-0.08	0.00	14.4
15/08/2024 01:00	NM	3.8	9.3	21	0	1014.0	-0.06	0.00	13.6
15/08/2024 02:00	NM	3.8	9.2	21	0	1013.9	-0.03	0.00	13.3
15/08/2024 03:00	NM	3.7	9.2	21	0	1013.1	-0.21	0.00	13.5
15/08/2024 04:00	NM	3.8	9.2	20	0	1012.6	-0.36	0.00	13.7
15/08/2024 05:00	NM	3.8	9.2	20	0	1011.7	-0.31	0.00	13.9
15/08/2024 06:00	NM	3.7	9.2	20	0	1010.8	-0.55	0.00	13.8
15/08/2024 07:00	NM	3.8	9.2	20	0	1011.3	-0.46	0.00	14.6
15/08/2024 08:00	NM	3.8	9.3	20	0	1010.4	-0.49	0.00	15.5

gfg
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
15/08/2024 09:00	NM	3.8	9.3	20	0	1009.6	-0.55	0.00	15.5
15/08/2024 10:00	NM	3.9	9.3	21	0	1009.0	-0.61	0.00	16.0
15/08/2024 11:00	NM	3.7	9.3	21	0	1008.6	-0.56	0.00	16.5
15/08/2024 12:00	NM	3.8	9.4	21	0	1006.8	-0.73	0.00	17.2
15/08/2024 13:00	NM	3.8	9.4	22	0	1007.7	-0.50	0.00	17.6
15/08/2024 14:00	NM	4.0	9.5	22	0	1008.1	-0.34	0.00	18.4
15/08/2024 15:00	14.3	4.1	9.5	22	0	1008.2	-0.39	0.00	19.1
15/08/2024 16:00	14.1	4.2	9.5	22	0	1008.1	-0.29	0.00	19.6
15/08/2024 17:00	14.3	4.0	9.5	21	0	1008.4	-0.15	0.00	19.7
15/08/2024 18:00	14.1	4.1	9.4	21	0	1010.1	0.14	0.00	18.6
15/08/2024 19:00	NM	4.1	9.3	20	0	1010.9	0.29	0.00	17.0
15/08/2024 20:00	NM	4.0	9.2	19	0	1011.9	0.64	0.00	15.7
15/08/2024 21:00	NM	4.1	9.1	19	0	1012.9	0.65	0.00	14.4
15/08/2024 22:00	NM	4.1	9.0	18	0	1013.0	0.61	0.00	13.4
15/08/2024 23:00	NM	4.1	8.9	17	0	1013.9	0.71	0.00	12.8
16/08/2024 00:00	NM	3.9	8.8	16	0	1014.6	0.81	0.00	12.1
16/08/2024 01:00	NM	4.1	8.8	15	0	1015.0	0.83	0.00	12.0
16/08/2024 02:00	NM	4.0	8.8	15	0	1014.8	0.59	0.00	12.1
16/08/2024 03:00	NM	4.0	8.8	15	0	1014.9	0.50	0.00	12.0
16/08/2024 04:00	NM	4.0	8.8	14	0	1014.5	0.33	0.00	11.6
16/08/2024 05:00	NM	3.9	8.7	14	0	1015.0	0.26	0.00	11.3
16/08/2024 06:00	NM	4.1	8.7	14	0	1015.1	0.26	0.00	11.3
16/08/2024 07:00	NM	3.8	8.8	14	0	1015.9	0.25	0.00	12.7
16/08/2024 08:00	NM	3.9	9.0	16	0	1016.3	0.21	0.00	14.5
16/08/2024 09:00	NM	4.1	9.1	17	0	1015.8	0.10	0.00	15.8
16/08/2024 10:00	NM	4.1	9.2	18	0	1015.9	0.14	0.00	16.6
16/08/2024 11:00	NM	4.4	9.4	20	0	1015.8	0.11	0.00	17.5
16/08/2024 12:00	12.8	4.2	9.6	21	0	1015.2	0.09	0.00	18.2
16/08/2024 13:00	12.8	4.3	9.7	21	0	1015.6	0.08	0.00	18.8
16/08/2024 14:00	12.7	4.3	9.9	22	0	1015.2	0.01	0.00	19.3
16/08/2024 15:00	12.6	4.3	10.0	22	0	1014.4	-0.19	0.00	19.9
16/08/2024 16:00	12.6	4.3	10.0	21	0	1014.0	-0.29	0.00	19.9
16/08/2024 17:00	12.7	4.4	10.1	20	0	1014.0	-0.22	0.00	18.4
16/08/2024 18:00	12.5	4.4	10.0	19	0	1013.7	-0.27	0.00	17.3
16/08/2024 19:00	12.2	4.4	9.8	17	0	1014.4	-0.17	0.00	16.2
16/08/2024 20:00	12.0	4.1	9.6	16	0	1014.3	-0.11	0.00	15.0
16/08/2024 21:00	NM	4.2	9.3	14	0	1014.3	-0.16	0.00	14.4
16/08/2024 22:00	NM	4.2	9.2	13	0	1014.3	-0.11	0.00	13.4
16/08/2024 23:00	NM	4.2	9.1	12	0	1014.6	0.03	0.00	12.6
17/08/2024 00:00	NM	4.1	9.0	12	0	1014.1	0.01	0.00	11.8
17/08/2024 01:00	NM	4.2	8.9	11	0	1014.3	0.04	0.00	11.4
17/08/2024 02:00	NM	4.0	8.9	11	0	1014.2	0.06	0.00	10.9
17/08/2024 03:00	NM	4.0	8.8	11	0	1013.8	-0.08	0.00	10.5
17/08/2024 04:00	NM	4.0	8.8	11	0	1013.6	-0.09	0.00	10.1
17/08/2024 05:00	NM	4.1	8.9	11	0	1014.0	-0.04	0.00	9.8
17/08/2024 06:00	NM	4.1	8.9	11	0	1014.3	0.00	0.00	10.1
17/08/2024 07:00	NM	4.1	9.0	12	0	1014.1	-0.06	0.00	11.6
17/08/2024 08:00	NM	4.0	9.1	12	0	1014.2	0.01	0.00	14.0
17/08/2024 09:00	NM	4.2	9.2	13	0	1014.2	-0.01	0.00	16.3
17/08/2024 10:00	NM	4.1	9.5	16	0	1013.5	-0.09	0.00	17.0
17/08/2024 11:00	11.1	4.4	9.7	16	0	1013.4	-0.05	0.00	17.8
17/08/2024 12:00	11.1	4.4	9.8	17	0	1013.3	-0.04	0.00	18.5
17/08/2024 13:00	11.0	4.3	9.8	17	0	1013.1	-0.11	0.00	18.5
17/08/2024 14:00	11.1	4.5	9.9	16	0	1013.1	-0.15	0.00	18.7
17/08/2024 15:00	10.9	4.6	9.9	16	0	1012.5	-0.20	0.00	19.1
17/08/2024 16:00	10.8	4.4	10.0	17	0	1012.2	-0.25	0.00	19.0
17/08/2024 17:00	10.6	4.4	9.9	16	0	1012.0	-0.28	0.00	18.1
17/08/2024 18:00	10.6	4.4	9.8	15	0	1012.4	-0.14	0.00	17.1
17/08/2024 19:00	10.7	4.3	9.7	14	0	1011.8	-0.20	0.00	16.7
17/08/2024 20:00	10.6	4.3	9.6	14	0	1011.9	-0.17	0.00	15.6
17/08/2024 21:00	NM	4.4	9.6	13	0	1011.6	-0.19	0.00	14.5
17/08/2024 22:00	NM	4.4	9.5	12	0	1011.9	-0.15	0.00	13.6
17/08/2024 23:00	NM	4.1	9.4	12	0	1011.7	-0.10	0.00	12.7
18/08/2024 00:00	NM	4.3	9.4	12	0	1011.9	-0.04	0.00	12.0
18/08/2024 01:00	NM	4.2	9.4	12	0	1012.0	0.00	0.00	11.4
18/08/2024 02:00	NM	4.2	9.3	11	0	1011.6	-0.10	0.00	11.1
18/08/2024 03:00	NM	4.2	9.3	12	0	1010.6	-0.15	0.00	11.5
18/08/2024 04:00	NM	4.3	9.3	11	0	1010.5	-0.17	0.00	11.4
18/08/2024 05:00	NM	4.5	9.3	11	0	1010.6	-0.13	0.00	11.4
18/08/2024 06:00	NM	4.2	9.3	11	0	1010.4	-0.19	0.00	12.3
18/08/2024 07:00	NM	4.4	9.3	11	0	1011.8	0.01	0.00	13.7
18/08/2024 08:00	NM	4.3	9.3	12	0	1012.2	0.04	0.00	15.3
18/08/2024 09:00	NM	4.3	9.4	13	0	1012.4	0.05	0.00	16.5
18/08/2024 10:00	NM	4.5	9.5	13	0	1013.1	0.19	0.00	16.5
18/08/2024 11:00	NM	4.4	9.6	13	0	1013.6	0.38	0.00	17.2
18/08/2024 12:00	9.1	4.7	9.7	14	0	1014.0	0.44	0.00	18.1
18/08/2024 13:00	9.2	4.6	9.8	15	0	1014.3	0.46	0.00	18.1
18/08/2024 14:00	9.2	4.6	9.9	15	0	1014.8	0.55	0.00	18.3
18/08/2024 15:00	9.2	4.5	10.1	16	0	1014.5	0.34	0.00	18.5
18/08/2024 16:00	8.9	4.8	10.2	16	0	1015.0	0.35	0.00	18.4
18/08/2024 17:00	8.9	4.7	10.2	14	0	1015.0	0.33	0.00	18.0
18/08/2024 18:00	8.6	4.7	10.0	14	0	1015.9	0.35	0.00	17.6
18/08/2024 19:00	8.5	4.7	9.9	13	0	1016.3	0.34	0.00	17.0
18/08/2024 20:00	8.6	4.6	9.7	12	0	1016.9	0.36	0.00	16.0
18/08/2024 21:00	NM	4.4	9.5	11	0	1016.6	0.29	0.00	14.7
18/08/2024 22:00	NM	4.6	9.3	10	0	1017.2	0.30	0.00	14.0
18/08/2024 23:00	NM	4.4	9.2	10	0	1016.8	0.29	0.00	13.6
19/08/2024 00:00	NM	4.4	9.1	9	0	1017.5	0.31	0.00	12.5
19/08/2024 01:00	NM	4.5	9.1	9	0	1017.2	0.28	0.00	12.0
19/08/2024 02:00	NM	4.5	9.0	9	0	1017.1	0.15	0.00	11.8
19/08/2024 03:00	NM	4.5	9.0	9	0	1016.7	0.05	0.00	11.8
19/08/2024 04:00	NM	4.5	9.0	8	0	1016.0	-0.11	0.00	11.9
19/08/2024 05:00	NM	4.4	8.9	9	0	1015.9	-0.09	0.00	11.7
19/08/2024 06:00	NM	4.6	8.9	8	0	1015.2	-0.25	0.00	12.0
19/08/2024 07:00	NM	4.6	9.0	9	0	1014.7	-0.26	0.00	13.4
19/08/2024 08:00	NM	4.7	9.1	10	0	1014.5	-0.38	0.00	14.9
19/08/2024 09:00	NM	4.4	9.2	11	0	1013.9	-0.41	0.00	15.9
19/08/2024 10:00	NM	4.7	9.3	12	0	1013.1	-0.50	0.00	17.0
19/08/2024 11:00	NM	4.8	9.4	12	0	1012.5	-0.53	0.00	18.5
19/08/2024 12:00	NM	4.5	9.5	13	0	1012.3	-0.46	0.00	18.3
19/08/2024 13:00	NM	4.8	9.5	13	0	1011.4	-0.56	0.00	19.5
19/08/2024 14:00	8.1	4.8	9.5	13	0	1010.2	-0.63	0.00	19.3
19/08/2024 15:00	7.9	4.6	9.5	13	0	1009.6	-0.64	0.00	19.7
19/08/2024 16:00	8.0	4.8	9.5	13	0	1008.5	-0.75	0.00	18.8
19/08/2024 17:00	7.9	4.8	9.5	13	0	1007.4	-0.81	0.00	18.5
19/08/2024 18:00	NM	4.6	9.4	13	0	1005.6	-0.94	0.00	17.9
19/08/2024 19:00	NM	4.8	9.4	12	0	1006.5	-0.75	0.00	17.4
19/08/2024 20:00	NM	4.8	9.3	12	0	1005.8	-0.81	0.00	16.8
19/08/2024 21:00	NM	4.8	9.3	12	0	1005.0	-0.80	0.00	16.9
19/08/2024 22:00	NM	5.0	9.2	11	0	1005.6	-0.58	0.00	16.8
19/08/2024 23:00	NM	5.0	9.2	11	0	1005.4	-0.53	0.00	16.7
20/08/2024 00:00	NM	5.0	9.2	11	0	1005.5	-0.38	0.00	16.6
20/08/2024 01:00	NM	4.8	9.1	11	0	1005.3	-0.26	0.00	16.6
20/08/2024 02:00	NM	4.8	9.1	11	0	1005.1	-0.06	0.00	16.3
20/08/2024 03:00	NM	4.6	9.0	11	0	1005.1	-0.17	0.00	15.8
20/08/2024 04:00	NM	4.7	8.9	11	0	1004.8	-0.13	0.00	15.1
20/08/2024 05:00	NM	4.5	8.9	11	0	1004.6	-0.05	0.00	14.7

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Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
20/08/2024 06:00	NM	4.8	8.8	12	0	1003.7	-0.24	0.00	14.9
20/08/2024 07:00	NM	4.8	8.8	12	0	1004.6	-0.10	0.00	15.4
20/08/2024 08:00	NM	4.7	8.9	13	0	1005.4	-0.01	0.00	15.5
20/08/2024 09:00	8.0	4.9	9.0	14	0	1006.1	0.10	0.00	15.7
20/08/2024 10:00	8.1	5.0	9.0	14	0	1006.7	0.20	0.00	16.4
20/08/2024 11:00	8.2	5.2	9.1	15	0	1006.9	0.22	0.00	17.1
20/08/2024 12:00	8.2	5.1	9.2	15	0	1006.3	0.19	0.00	18.3
20/08/2024 13:00	8.2	4.9	9.2	15	0	1007.6	0.38	0.00	17.9
20/08/2024 14:00	8.1	5.1	9.3	15	0	1007.9	0.52	0.00	18.1
20/08/2024 15:00	8.2	5.1	9.3	15	0	1008.7	0.51	0.00	18.7
20/08/2024 16:00	8.2	5.4	9.3	15	0	1008.3	0.36	0.00	17.6
20/08/2024 17:00	8.3	4.8	9.3	14	0	1008.6	0.31	0.00	16.7
20/08/2024 18:00	8.0	5.2	9.2	14	0	1008.6	0.24	0.00	16.6
20/08/2024 19:00	8.1	5.0	9.0	13	0	1009.6	0.34	-0.01	15.7
20/08/2024 20:00	NM	5.2	8.8	12	0	1010.5	0.53	0.00	14.7
20/08/2024 21:00	NM	5.2	8.7	11	0	1011.2	0.45	0.00	14.0
20/08/2024 22:00	NM	5.1	8.6	11	0	1011.7	0.48	0.00	13.6
20/08/2024 23:00	NM	5.1	8.5	11	0	1011.8	0.39	0.00	13.4
21/08/2024 00:00	NM	5.1	8.5	11	0	1013.2	0.61	0.00	13.2
21/08/2024 01:00	NM	5.1	8.4	11	0	1013.1	0.56	0.00	12.7
21/08/2024 02:00	NM	4.8	8.4	10	0	1013.3	0.59	0.00	12.7
21/08/2024 03:00	NM	4.8	8.4	10	0	1013.5	0.49	0.00	12.8
21/08/2024 04:00	NM	4.9	8.3	10	0	1013.5	0.38	0.00	12.6
21/08/2024 05:00	NM	5.0	8.3	10	0	1014.1	0.36	0.00	12.3
21/08/2024 06:00	NM	5.1	8.3	10	0	1014.5	0.35	0.00	12.0
21/08/2024 07:00	NM	4.8	8.3	11	0	1014.5	0.34	0.00	12.7
21/08/2024 08:00	NM	5.2	8.4	11	0	1014.8	0.20	0.00	14.0
21/08/2024 09:00	NM	5.1	8.5	13	0	1015.2	0.26	0.00	15.5
21/08/2024 10:00	7.9	5.0	8.7	14	0	1014.2	0.11	0.00	16.8
21/08/2024 11:00	8.0	5.0	8.8	15	0	1013.9	0.05	-0.01	18.0
21/08/2024 12:00	7.8	5.3	8.8	14	0	1013.8	0.04	0.00	18.1
21/08/2024 13:00	7.8	5.5	8.8	14	0	1013.3	-0.10	-0.02	18.7
21/08/2024 14:00	7.7	5.3	8.8	13	0	1013.0	-0.19	0.00	18.9
21/08/2024 15:00	8.0	5.4	8.7	13	0	1012.6	-0.24	0.00	18.0
21/08/2024 16:00	8.0	5.2	8.6	13	0	1011.8	-0.38	0.00	17.2
21/08/2024 17:00	7.9	5.2	8.5	12	0	1010.9	-0.54	0.00	17.1
21/08/2024 18:00	8.0	5.2	8.5	12	0	1010.6	-0.45	0.00	17.0
21/08/2024 19:00	NM	5.2	8.4	11	0	1010.2	-0.46	0.00	16.8
21/08/2024 20:00	NM	5.0	8.4	12	0	1009.9	-0.49	0.00	16.5
21/08/2024 21:00	NM	5.2	8.3	12	0	1009.7	-0.45	0.00	16.3
21/08/2024 22:00	NM	5.0	8.3	11	0	1008.4	-0.58	0.00	16.2
21/08/2024 23:00	NM	5.3	8.2	11	0	1007.3	-0.66	0.00	16.0
22/08/2024 00:00	NM	5.1	8.2	12	0	1005.8	-0.75	0.00	16.0
22/08/2024 01:00	NM	4.8	8.1	11	0	1004.8	-0.76	0.00	16.2
22/08/2024 02:00	NM	4.9	8.1	11	0	1004.0	-0.83	0.00	16.2
22/08/2024 03:00	NM	4.9	8.0	11	0	1001.4	-1.10	0.00	15.6
22/08/2024 04:00	NM	4.9	7.9	11	0	1000.6	-1.16	0.00	15.4
22/08/2024 05:00	NM	4.8	7.9	12	0	999.4	-1.29	0.00	15.4
22/08/2024 06:00	NM	4.9	7.9	12	0	999.2	-1.15	0.00	15.9
22/08/2024 07:00	NM	4.8	7.8	12	0	999.2	-1.01	0.00	16.6
22/08/2024 08:00	NM	4.9	7.8	13	0	998.9	-0.86	0.00	17.4
22/08/2024 09:00	NM	5.0	7.8	13	0	998.6	-0.77	0.00	18.0
22/08/2024 10:00	NM	5.0	7.8	13	0	998.7	-0.66	0.00	19.8
22/08/2024 11:00	NM	5.2	7.8	13	0	999.4	-0.25	0.00	18.8
22/08/2024 12:00	9.0	5.2	7.8	14	0	1000.6	0.00	0.00	17.4
22/08/2024 13:00	9.0	5.2	7.8	14	0	1001.6	0.28	0.00	16.7
22/08/2024 14:00	8.8	5.4	7.9	15	0	1002.2	0.38	0.00	16.6
22/08/2024 15:00	8.9	5.4	7.9	15	0	1002.1	0.36	0.00	16.5
22/08/2024 16:00	9.0	5.4	7.8	14	0	1001.7	0.35	0.00	16.3
22/08/2024 17:00	8.8	5.1	7.8	14	0	1001.4	0.35	0.00	16.1
22/08/2024 18:00	8.8	5.3	7.7	14	0	1001.6	0.36	0.00	15.7
22/08/2024 19:00	NM	5.2	7.6	13	0	1001.6	0.28	0.00	14.7
22/08/2024 20:00	NM	4.9	7.5	12	0	1001.1	0.06	0.00	13.8
22/08/2024 21:00	NM	4.9	7.4	12	0	1000.3	-0.16	0.00	13.5
22/08/2024 22:00	NM	4.9	7.4	12	0	999.7	-0.31	0.00	13.3
22/08/2024 23:00	NM	4.6	7.3	12	0	998.6	-0.44	0.00	13.3
23/08/2024 00:00	NM	4.8	7.2	12	0	996.8	-0.61	0.00	13.2
23/08/2024 01:00	NM	4.6	7.1	12	0	995.2	-0.77	0.00	13.6
23/08/2024 02:00	NM	4.6	7.1	12	0	992.4	-1.15	0.00	14.3
23/08/2024 03:00	NM	4.6	7.1	12	0	990.8	-1.35	0.00	14.8
23/08/2024 04:00	NM	4.6	7.0	13	0	989.5	-1.45	0.00	15.4
23/08/2024 05:00	NM	4.8	7.0	13	0	989.7	-1.32	0.00	16.3
23/08/2024 06:00	NM	4.6	7.0	13	0	991.2	-1.06	0.00	14.8
23/08/2024 07:00	NM	4.8	6.9	13	0	995.3	-0.41	0.00	13.8
23/08/2024 08:00	NM	5.0	6.9	14	0	997.4	0.08	0.00	13.9
23/08/2024 09:00	NM	4.9	7.0	14	0	999.0	0.47	0.00	14.7
23/08/2024 10:00	NM	5.0	7.0	15	0	1000.3	0.99	0.00	15.3
23/08/2024 11:00	9.8	5.0	7.1	16	0	1001.8	1.38	-0.01	15.8
23/08/2024 12:00	9.6	5.2	7.2	17	0	1002.3	1.60	0.00	17.2
23/08/2024 13:00	9.6	5.1	7.2	16	0	1003.1	1.68	0.00	18.0
23/08/2024 14:00	9.3	5.3	7.3	17	0	1003.2	1.50	0.00	18.4
23/08/2024 15:00	9.3	5.4	7.3	17	0	1003.4	1.01	0.00	18.9
23/08/2024 16:00	9.4	5.5	7.3	17	0	1003.5	0.76	0.00	18.4
23/08/2024 17:00	9.5	5.1	7.3	16	0	1003.6	0.58	0.00	17.9
23/08/2024 18:00	9.6	5.1	7.1	15	0	1003.4	0.39	0.00	17.1
23/08/2024 19:00	9.7	5.1	7.0	14	0	1004.1	0.29	0.00	15.9
23/08/2024 20:00	9.7	5.0	6.9	13	0	1004.9	0.33	0.00	14.6
23/08/2024 21:00	NM	4.9	6.8	13	0	1004.8	0.21	0.00	14.0
23/08/2024 22:00	NM	5.1	6.7	13	0	1005.0	0.22	0.00	13.5
23/08/2024 23:00	NM	4.8	6.6	12	0	1003.9	0.06	0.00	13.1
24/08/2024 00:00	NM	4.9	6.6	12	0	1003.8	0.04	0.00	13.1
24/08/2024 01:00	NM	4.7	6.5	12	0	1003.3	-0.04	0.00	13.0
24/08/2024 02:00	NM	4.8	6.5	12	0	1002.6	-0.10	0.00	13.0
24/08/2024 03:00	NM	4.9	6.5	12	0	1001.0	-0.39	0.00	13.4
24/08/2024 04:00	NM	4.8	6.4	12	0	1001.6	-0.41	0.00	13.5
24/08/2024 05:00	NM	4.9	6.4	12	0	1000.9	-0.49	0.00	13.4
24/08/2024 06:00	NM	4.8	6.3	12	0	1000.4	-0.58	0.00	13.1
24/08/2024 07:00	NM	4.7	6.3	12	0	1000.5	-0.42	0.00	13.5
24/08/2024 08:00	NM	4.8	6.3	12	0	1001.1	-0.34	0.00	14.1
24/08/2024 09:00	NM	4.8	6.3	12	0	1001.2	-0.26	0.00	14.3
24/08/2024 10:00	NM	4.8	6.4	13	0	1002.1	-0.06	0.00	14.9
24/08/2024 11:00	10.1	5.0	6.5	15	0	1002.2	0.15	0.00	15.2
24/08/2024 12:00	10.3	4.9	6.6	16	0	1001.8	0.02	0.00	16.0
24/08/2024 13:00	10.3	5.1	6.6	16	0	1002.8	0.24	0.00	17.0
24/08/2024 14:00	10.2	4.9	6.7	17	0	1003.1	0.34	0.00	16.9
24/08/2024 15:00	10.5	5.1	6.7	17	0	1003.3	0.35	0.00	16.8
24/08/2024 16:00	10.4	5.1	6.7	16	0	1004.6	0.44	0.00	16.2
24/08/2024 17:00	10.5	5.1	6.7	17	0	1005.2	0.50	0.00	15.7
24/08/2024 18:00	10.6	5.0	6.6	15	0	1005.5	0.42	0.00	15.3
24/08/2024 19:00	10.6	5.0	6.5	14	0	1007.1	0.61	0.00	14.5
24/08/2024 20:00	NM	5.2	6.3	13	0	1008.2	0.80	0.00	13.5
24/08/2024 21:00	NM	4.9	6.2	12	0	1009.2	0.80	0.00	12.9
24/08/2024 22:00	NM	5.1	6.2	12	0	1009.2	0.76	0.00	12.3
24/08/2024 23:00	NM	5.0	6.1	11	0	1010.2	0.86	0.00	12.3
25/08/2024 00:00	NM	4.7	6.1	11	0	1011.3	0.84	0.00	12.2
25/08/2024 01:00	NM	5.1	6.0	11	0	1012.0	0.85	0.00	11.9
25/08/2024 02:00	NM	5.0	6.0	11	0	1012.8	0.91	0.00	11.7

Experts in Continuous Monitoring

Date and Time	CH % v/v	CO % v/v	O % v/v	CO ppm/v	H S ppm/v	Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Flow Ltr/hr	Temperature °C
25/08/2024 03:00	NM	4.9	6.0	11	0	1013.7	0.83	0.00	11.6
25/08/2024 04:00	NM	4.8	5.9	10	0	1013.8	0.70	0.00	11.1
25/08/2024 05:00	NM	4.7	5.9	10	0	1014.1	0.61	0.00	10.4
25/08/2024 06:00	NM	4.6	5.9	10	0	1014.4	0.65	0.00	9.9
25/08/2024 07:00	NM	4.9	5.9	10	0	1014.4	0.52	0.00	10.9
25/08/2024 08:00	NM	4.8	6.0	11	0	1014.7	0.43	0.00	12.5
25/08/2024 09:00	NM	5.1	6.2	13	0	1014.9	0.36	0.00	14.3
25/08/2024 10:00	10.2	5.0	6.3	14	0	1014.0	0.15	0.00	15.3
25/08/2024 11:00	10.2	5.0	6.3	14	0	1013.7	0.00	0.00	15.2
25/08/2024 12:00	11.0	4.8	6.2	14	0	1013.2	-0.07	0.00	15.7
25/08/2024 13:00	11.6	5.1	6.2	13	0	1012.5	-0.20	0.00	15.9
25/08/2024 14:00	11.4	5.0	6.2	14	0	1012.3	-0.26	0.00	17.1
25/08/2024 15:00	11.4	4.9	6.1	15	0	1012.6	-0.22	0.00	17.1
25/08/2024 16:00	11.3	5.2	6.1	14	0	1011.9	-0.35	0.00	17.4
25/08/2024 17:00	11.4	5.0	6.2	15	0	1011.7	-0.40	0.00	16.9
25/08/2024 18:00	NM	5.0	6.1	15	0	1011.7	-0.29	0.00	16.4
25/08/2024 19:00	NM	5.1	6.0	14	0	1012.0	-0.21	0.00	16.0
25/08/2024 20:00	NM	4.8	6.0	14	0	1012.6	-0.08	0.00	15.4
25/08/2024 21:00	NM	5.1	6.0	14	0	1012.3	-0.03	0.00	14.7
25/08/2024 22:00	NM	4.8	5.9	13	0	1012.8	0.06	0.00	14.2
25/08/2024 23:00	NM	4.8	5.9	13	0	1013.3	0.09	0.00	14.1
26/08/2024 00:00	NM	4.9	5.9	13	0	1013.6	0.21	0.00	13.8
26/08/2024 01:00	NM	4.6	5.9	13	0	1014.3	0.32	0.00	13.6
26/08/2024 02:00	NM	4.7	5.9	13	0	1014.3	0.32	0.00	13.5
26/08/2024 03:00	NM	5.0	5.9	13	0	1013.4	0.17	0.00	13.3
26/08/2024 04:00	NM	4.9	5.9	13	0	1014.4	0.22	0.00	13.2
26/08/2024 05:00	NM	4.9	5.9	13	0	1014.7	0.30	0.00	13.1
26/08/2024 06:00	NM	4.8	5.9	13	0	1014.7	0.24	0.00	13.0
26/08/2024 07:00	NM	4.8	5.9	13	0	1015.3	0.25	0.00	13.6
26/08/2024 08:00	NM	5.0	5.9	13	0	1015.8	0.27	0.00	14.7
26/08/2024 09:00	NM	5.1	6.0	14	0	1016.4	0.26	0.00	16.3
26/08/2024 10:00	NM	4.9	6.0	14	0	1016.5	0.28	0.00	17.8
26/08/2024 11:00	11.2	5.1	6.1	15	0	1016.5	0.39	0.00	18.6
26/08/2024 12:00	11.2	5.3	6.2	16	0	1016.3	0.24	0.00	19.5
26/08/2024 13:00	11.2	5.3	6.3	17	0	1016.6	0.24	0.00	19.8
26/08/2024 14:00	11.0	5.2	6.3	16	0	1017.0	0.29	0.00	20.2
26/08/2024 15:00	11.1	5.4	6.3	16	0	1017.2	0.24	0.00	20.2
26/08/2024 16:00	10.8	5.2	6.4	16	0	1016.5	0.09	0.00	19.8
26/08/2024 17:00	10.8	5.3	6.4	15	0	1016.2	-0.02	0.00	19.0
26/08/2024 18:00	11.0	5.2	6.3	14	0	1016.3	-0.03	0.00	18.4
26/08/2024 19:00	11.3	5.3	6.2	14	0	1016.9	0.05	0.00	17.4
26/08/2024 20:00	11.4	5.1	6.2	14	0	1017.1	0.10	0.00	16.3
26/08/2024 21:00	11.4	5.2	6.1	13	0	1017.6	0.13	0.00	16.0
26/08/2024 22:00	NM	5.0	6.1	13	0	1016.6	-0.05	0.00	15.5
26/08/2024 23:00	NM	4.9	6.1	12	0	1016.3	-0.11	0.00	15.4
27/08/2024 00:00	NM	5.2	6.1	12	0	1016.4	-0.01	0.00	15.5
27/08/2024 01:00	NM	5.0	6.1	13	0	1015.6	-0.08	0.00	15.4
27/08/2024 02:00	NM	5.1	6.1	12	0	1015.2	-0.14	0.00	15.5
27/08/2024 03:00	NM	4.9	6.1	12	0	1015.0	-0.24	0.00	15.5
27/08/2024 04:00	NM	5.0	6.1	12	0	1014.3	-0.35	0.00	15.5
27/08/2024 05:00	NM	5.0	6.1	12	0	1014.1	-0.44	0.00	15.5
27/08/2024 06:00	NM	4.9	6.2	12	0	1013.9	-0.34	0.00	15.4
27/08/2024 07:00	NM	4.9	6.2	13	0	1014.0	-0.29	0.00	15.9
27/08/2024 08:00	NM	4.9	6.3	14	0	1014.5	-0.24	0.00	16.8
27/08/2024 09:00	11.1	4.9	6.4	14	0	1014.1	-0.19	0.00	17.5
27/08/2024 10:00	11.1	5.0	6.5	14	0	1014.5	-0.09	0.00	17.9
27/08/2024 11:00	11.0	5.2	6.6	14	0	1014.2	-0.10	0.00	18.5
27/08/2024 12:00	11.1	5.2	6.6	14	0	1013.7	-0.07	0.00	19.2
27/08/2024 13:00	11.2	5.1	6.7	14	0	1014.3	0.02	0.00	19.6
27/08/2024 14:00	11.2	5.1	6.7	13	0	1013.9	0.00	0.00	19.5
27/08/2024 15:00	11.1	5.0	6.7	13	0	1014.5	0.06	0.00	17.8
27/08/2024 16:00	11.1	5.0	6.7	13	0	1014.1	-0.05	0.00	17.4
27/08/2024 17:00	11.2	4.8	6.7	13	0	1013.9	-0.03	0.00	17.1
27/08/2024 18:00	11.1	5.0	6.8	13	0	1014.7	0.03	0.00	17.2
27/08/2024 19:00	11.2	4.8	6.8	13	0	1014.4	0.02	0.00	16.8
27/08/2024 20:00	11.4	4.9	6.7	12	0	1014.8	0.14	0.00	16.7
27/08/2024 21:00	NM	4.8	6.7	12	0	1013.9	-0.05	0.00	16.7
27/08/2024 22:00	NM	4.7	6.8	12	0	1013.8	-0.01	0.00	16.6
27/08/2024 23:00	NM	4.7	6.8	12	0	1013.5	-0.13	0.00	16.6
28/08/2024 00:00	NM	4.9	6.8	12	0	1014.1	0.00	0.00	16.4
28/08/2024 01:00	NM	4.6	6.8	11	0	1013.6	-0.04	0.00	16.2
28/08/2024 02:00	NM	4.8	6.9	12	0	1013.7	-0.13	0.00	16.1
28/08/2024 03:00	NM	4.5	6.9	11	0	1013.1	-0.16	0.00	15.6
28/08/2024 04:00	NM	4.5	7.0	12	0	1012.8	-0.25	0.00	15.7
28/08/2024 05:00	NM	4.6	7.0	12	0	1012.8	-0.14	0.00	15.8
28/08/2024 06:00	NM	4.6	7.0	12	0	1012.7	-0.14	0.00	15.5
28/08/2024 07:00	NM	4.6	7.1	12	0	1012.7	-0.10	0.00	15.6
28/08/2024 08:00	NM	4.5	7.2	12	0	1013.0	-0.14	0.00	16.0
28/08/2024 09:00	NM	4.8	7.2	12	0	1013.4	-0.03	0.00	17.0

ggs
Experts in Continuous Monitoring

Time Series Data

Project Ref:	GGS3078
Project Name:	Ryebank Road, Chorlton
Borehole ref:	CP202 (monitoring extension)
Instrument Name and ID:	Gas Sentinel 03000042
Start Date:	28/08/2024 12:00
End Date:	13/09/2024 09:00
Days of monitoring:	16
Monitoring Frequency (mins):	01:00:00
Total samples taken:	382



Summary Table

	CH₄	CO₂	O₂	CO	H₂S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
Minimum	3.1	1.1	9.6	0	0	987	-1.00	N/A	4.0
Maximum	27.3	1.9	17.3	3	0	1020	0.88	N/A	33.7
Range	24.2	0.8	7.7	3	0	33	1.88	N/A	29.7

Date and Time	CH₄ % v/v	CO₂ % v/v	O₂ % v/v	CO ppm/v	H₂S ppm/v	Atmospheric Pressure mbar	Average 8-hour atmospheric pressure change mbar	Flow Ltr/hr	Temperature °C
28/08/2024 12:00	3.1	1.2	17.3	0	0	998	N/A	NM	24.6
28/08/2024 13:00	3.3	1.2	17.3	0	0	998	N/A	NM	24.7
28/08/2024 14:00	3.4	1.3	17.3	0	0	998	N/A	NM	25.4
28/08/2024 15:00	3.7	1.3	17.3	0	0	998	N/A	NM	25.6
28/08/2024 16:00	4.0	1.3	17.0	0	0	998	N/A	NM	22.5
28/08/2024 17:00	4.4	1.4	16.7	1	0	997	N/A	NM	22.3
28/08/2024 18:00	4.6	1.4	16.6	1	0	997	N/A	NM	24.2
28/08/2024 19:00	4.9	1.4	16.7	1	0	997	-0.13	NM	21.7
28/08/2024 20:00	5.3	1.4	16.4	1	0	998	0.00	NM	19.6
28/08/2024 21:00	5.4	1.4	16.1	1	0	999	0.13	NM	17.9
28/08/2024 22:00	5.9	1.4	15.8	1	0	999	0.13	NM	16.2
28/08/2024 23:00	6.4	1.5	15.5	1	0	999	0.13	NM	14.5
29/08/2024 00:00	6.7	1.5	15.2	1	0	1000	0.38	NM	12.9
29/08/2024 01:00	6.9	1.5	15.0	1	0	1000	0.38	NM	11.8
29/08/2024 02:00	7.0	1.5	14.8	1	0	1000	0.38	NM	10.9
29/08/2024 03:00	7.2	1.6	14.7	1	0	1000	0.25	NM	9.9
29/08/2024 04:00	7.3	1.6	14.5	1	0	1001	0.25	NM	9.2
29/08/2024 05:00	7.6	1.5	14.4	1	0	1001	0.25	NM	8.7
29/08/2024 06:00	7.7	1.6	14.3	1	0	1001	0.25	NM	9.2
29/08/2024 07:00	7.9	1.6	14.3	1	0	1002	0.25	NM	9.6
29/08/2024 08:00	7.9	1.6	14.3	1	0	1003	0.38	NM	11.7
29/08/2024 09:00	8.0	1.6	14.4	1	0	1004	0.50	NM	13.5
29/08/2024 10:00	7.9	1.6	14.7	1	0	1005	0.63	NM	19.5
29/08/2024 11:00	8.0	1.5	15.1	1	0	1005	0.50	NM	23.3
29/08/2024 12:00	7.8	1.6	15.4	1	0	1005	0.50	NM	22.4
29/08/2024 13:00	8.1	1.5	15.5	1	0	1006	0.63	NM	22.2
29/08/2024 14:00	8.0	1.5	15.5	1	0	1006	0.50	NM	22.8
29/08/2024 15:00	8.2	1.5	15.5	1	0	1007	0.50	NM	22.2
29/08/2024 16:00	8.4	1.5	15.5	1	0	1007	0.38	NM	22.9
29/08/2024 17:00	8.8	1.6	15.4	1	0	1008	0.38	NM	25.0
29/08/2024 18:00	8.7	1.6	15.6	1	0	1009	0.50	NM	25.8
29/08/2024 19:00	8.9	1.5	15.5	1	0	1009	0.50	NM	21.4
29/08/2024 20:00	9.3	1.6	15.1	1	0	1009	0.38	NM	17.2
29/08/2024 21:00	9.6	1.6	14.8	1	0	1010	0.50	NM	14.1
29/08/2024 22:00	9.9	1.5	14.4	1	0	1009	0.25	NM	12.1
29/08/2024 23:00	10.2	1.6	14.1	1	0	1010	0.38	NM	10.8
30/08/2024 00:00	10.7	1.6	13.9	1	0	1011	0.38	NM	9.8
30/08/2024 01:00	10.7	1.6	13.7	1	0	1011	0.25	NM	9.2
30/08/2024 02:00	NM	1.6	13.6	1	0	1012	0.38	NM	8.8
30/08/2024 03:00	NM	1.6	13.5	1	0	1012	0.38	NM	9.2
30/08/2024 04:00	10.9	1.6	13.5	1	0	1012	0.25	NM	10.0
30/08/2024 05:00	11.0	1.6	13.6	1	0	1013	0.50	NM	10.4
30/08/2024 06:00	11.4	1.6	13.6	1	0	1013	0.38	NM	10.4
30/08/2024 07:00	11.6	1.5	13.5	1	0	1013	0.25	NM	9.9
30/08/2024 08:00	11.7	1.6	13.4	1	0	1013	0.25	NM	10.2
30/08/2024 09:00	11.6	1.6	13.7	1	0	1014	0.25	NM	18.6
30/08/2024 10:00	11.2	1.6	14.2	1	0	1015	0.38	NM	22.2
30/08/2024 11:00	11.3	1.6	14.5	1	0	1015	0.38	NM	24.2
30/08/2024 12:00	11.3	1.6	14.7	1	0	1016	0.38	NM	26.0
30/08/2024 13:00	11.5	1.6	14.8	1	0	1017	0.50	NM	28.9
30/08/2024 14:00	11.3	1.6	14.9	1	0	1017	0.50	NM	29.0
30/08/2024 15:00	11.5	1.6	15.0	1	0	1016	0.38	NM	32.2
30/08/2024 16:00	11.8	1.6	15.2	2	0	1016	0.25	NM	33.7
30/08/2024 17:00	11.6	1.6	15.4	2	0	1016	0.13	NM	33.3
30/08/2024 18:00	11.8	1.6	15.4	2	0	1016	0.13	NM	31.0
30/08/2024 19:00	11.6	1.6	15.2	2	0	1015	-0.13	NM	26.3
30/08/2024 20:00	11.8	1.6	14.8	1	0	1015	-0.25	NM	22.0
30/08/2024 21:00	12.1	1.6	14.4	1	0	1016	-0.13	NM	18.7
30/08/2024 22:00	12.3	1.6	14.1	1	0	1016	0.00	NM	16.5
30/08/2024 23:00	12.6	1.6	13.8	1	0	1017	0.13	NM	15.4
31/08/2024 00:00	12.7	1.6	13.7	1	0	1017	0.13	NM	14.9
31/08/2024 01:00	12.8	1.7	13.6	1	0	1017	0.13	NM	14.0
31/08/2024 02:00	12.7	1.7	13.4	1	0	1018	0.38	NM	12.9
31/08/2024 03:00	12.9	1.6	13.3	1	0	1018	0.38	NM	11.0
31/08/2024 04:00	13.1	1.7	13.1	1	0	1017	0.13	NM	9.5
31/08/2024 05:00	13.4	1.7	12.9	1	0	1017	0.13	NM	8.4
31/08/2024 06:00	13.4	1.6	12.8	1	0	1017	0.00	NM	7.6
31/08/2024 07:00	13.4	1.7	12.6	1	0	1017	0.00	NM	7.2
31/08/2024 08:00	13.5	1.6	12.6	1	0	1017	0.00	NM	8.4
31/08/2024 09:00	13.5	1.7	12.9	1	0	1018	0.00	NM	17.8
31/08/2024 10:00	13.0	1.7	13.4	1	0	1018	0.00	NM	20.8
31/08/2024 11:00	13.0	1.7	13.7	1	0	1018	0.13	NM	24.2
31/08/2024 12:00	13.0	1.7	13.9	2	0	1017	0.00	NM	27.3
31/08/2024 13:00	12.9	1.7	14.1	2	0	1017	0.00	NM	28.8
31/08/2024 14:00	12.7	1.7	14.3	2	0	1016	-0.13	NM	30.5
31/08/2024 15:00	12.9	1.7	14.4	2	0	1015	-0.25	NM	31.7
31/08/2024 16:00	12.9	1.7	14.5	2	0	1014	-0.50	NM	32.1
31/08/2024 17:00	13.0	1.7	14.6	2	0	1013	-0.63	NM	31.0
31/08/2024 18:00	12.9	1.7	14.5	2	0	1012	-0.75	NM	27.8
31/08/2024 19:00	13.0	1.7	14.3	2	0	1012	-0.63	NM	24.5
31/08/2024 20:00	13.0	1.7	14.1	2	0	1011	-0.75	NM	21.5
31/08/2024 21:00	12.9	1.7	13.8	2	0	1012	-0.50	NM	19.6
31/08/2024 22:00	13.0	1.8	13.6	2	0	1011	-0.50	NM	18.2
31/08/2024 23:00	13.2	1.7	13.4	2	0	1011	-0.38	NM	17.0
01/09/2024 00:00	13.2	1.8	13.3	2	0	1011	-0.25	NM	16.4
01/09/2024 01:00	13.2	1.8	13.2	2	0	1010	-0.25	NM	16.0
01/09/2024 02:00	13.4	1.7	13.2	2	0	1009	-0.38	NM	15.7
01/09/2024 03:00	13.5	1.8	13.1	2	0	1008	-0.38	NM	15.5
01/09/2024 04:00	13.5	1.8	13.1	1	0	1007	-0.63	NM	15.3
01/09/2024 05:00	13.5	1.8	13.0	1	0	1007	-0.50	NM	15.2
01/09/2024 06:00	13.7	1.7	13.0	1	0	1006	-0.63	NM	15.1
01/09/2024 07:00	13.6	1.7	13.0	1	0	1006	-0.63	NM	15.2
01/09/2024 08:00	13.7	1.8	12.9	1	0	1005	-0.63	NM	15.5
01/09/2024 09:00	14.0	1.8	13.0	2	0	1005	-0.50	NM	17.7

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
01/09/2024 10:00	13.9	1.7	13.0	2	0	1005	-0.38	NM	19.3
01/09/2024 11:00	14.2	1.7	13.2	2	0	1004	-0.38	NM	22.6
01/09/2024 12:00	14.1	1.7	13.3	2	0	1004	-0.38	NM	23.3
01/09/2024 13:00	13.9	1.8	13.4	2	0	1003	-0.38	NM	23.9
01/09/2024 14:00	14.1	1.8	13.5	2	0	1003	-0.38	NM	23.6
01/09/2024 15:00	14.2	1.8	13.4	2	0	1002	-0.38	NM	22.2
01/09/2024 16:00	14.7	1.7	13.2	2	0	1001	-0.50	NM	21.3
01/09/2024 17:00	14.9	1.7	13.1	2	0	1001	-0.50	NM	20.1
01/09/2024 18:00	15.2	1.7	13.0	2	0	1000	-0.50	NM	20.1
01/09/2024 19:00	15.4	1.7	13.0	2	0	1000	-0.50	NM	19.8
01/09/2024 20:00	15.8	1.7	12.9	2	0	1000	-0.38	NM	18.8
01/09/2024 21:00	15.9	1.7	12.7	2	0	999	-0.50	NM	18.0
01/09/2024 22:00	16.2	1.7	12.6	2	0	999	-0.38	NM	17.0
01/09/2024 23:00	17.0	1.7	12.3	2	0	998	-0.38	NM	16.3
02/09/2024 00:00	17.4	1.6	12.2	2	0	998	-0.38	NM	15.7
02/09/2024 01:00	17.7	1.6	12.1	2	0	997	-0.38	NM	14.9
02/09/2024 02:00	17.8	1.6	12.0	2	0	997	-0.38	NM	15.0
02/09/2024 03:00	17.9	1.6	12.0	2	0	996	-0.50	NM	15.1
02/09/2024 04:00	18.1	1.6	11.9	2	0	995	-0.50	NM	15.2
02/09/2024 05:00	18.1	1.6	12.0	2	0	995	-0.50	NM	15.5
02/09/2024 06:00	18.1	1.6	11.9	2	0	994	-0.50	NM	15.8
02/09/2024 07:00	18.4	1.6	11.9	2	0	994	-0.50	NM	15.9
02/09/2024 08:00	18.2	1.6	12.0	2	0	994	-0.38	NM	16.8
02/09/2024 09:00	18.5	1.6	12.0	2	0	994	-0.38	NM	17.9
02/09/2024 10:00	18.2	1.6	12.1	2	0	994	-0.25	NM	18.8
02/09/2024 11:00	18.2	1.6	12.1	2	0	993	-0.25	NM	19.4
02/09/2024 12:00	18.3	1.7	12.2	2	0	993	-0.25	NM	18.9
02/09/2024 13:00	18.3	1.6	12.2	2	0	994	0.00	NM	18.9
02/09/2024 14:00	18.5	1.6	12.1	2	0	994	0.00	NM	19.3
02/09/2024 15:00	18.1	1.6	12.2	2	0	994	0.00	NM	20.0
02/09/2024 16:00	18.6	1.6	12.2	2	0	995	0.13	NM	21.6
02/09/2024 17:00	18.5	1.6	12.3	2	0	995	0.13	NM	22.7
02/09/2024 18:00	18.3	1.7	12.3	2	0	996	0.38	NM	20.7
02/09/2024 19:00	18.8	1.6	12.2	2	0	996	0.38	NM	19.3
02/09/2024 20:00	19.2	1.6	12.0	2	0	997	0.38	NM	18.2
02/09/2024 21:00	19.1	1.7	11.9	2	0	997	0.38	NM	17.4
02/09/2024 22:00	19.3	1.6	11.8	2	0	997	0.38	NM	16.9
02/09/2024 23:00	19.3	1.6	11.8	2	0	998	0.38	NM	16.3
03/09/2024 00:00	19.6	1.6	11.7	2	0	998	0.38	NM	15.9
03/09/2024 01:00	19.5	1.6	11.6	2	0	998	0.25	NM	15.5
03/09/2024 02:00	20.0	1.7	11.6	2	0	998	0.25	NM	15.0
03/09/2024 03:00	19.7	1.7	11.5	2	0	998	0.13	NM	14.5
03/09/2024 04:00	19.7	1.7	11.5	2	0	998	0.13	NM	14.1
03/09/2024 05:00	19.7	1.7	11.5	2	0	998	0.13	NM	13.8
03/09/2024 06:00	19.7	1.7	11.4	2	0	998	0.00	NM	13.5
03/09/2024 07:00	20.0	1.6	11.4	2	0	999	0.13	NM	13.3
03/09/2024 08:00	19.9	1.7	11.3	2	0	999	0.13	NM	13.8
03/09/2024 09:00	19.8	1.7	11.4	2	0	1000	0.25	NM	15.0
03/09/2024 10:00	19.9	1.7	11.5	2	0	1000	0.25	NM	19.4
03/09/2024 11:00	19.6	1.7	11.8	2	0	1001	0.38	NM	22.5
03/09/2024 12:00	19.6	1.7	11.9	2	0	1001	0.38	NM	23.7
03/09/2024 13:00	19.3	1.7	12.1	2	0	1001	0.38	NM	26.2
03/09/2024 14:00	19.3	1.8	12.2	2	0	1001	0.25	NM	26.5
03/09/2024 15:00	19.5	1.7	12.3	2	0	1001	0.25	NM	28.5
03/09/2024 16:00	19.1	1.8	12.4	2	0	1002	0.25	NM	28.9
03/09/2024 17:00	19.2	1.8	12.5	2	0	1002	0.25	NM	27.3
03/09/2024 18:00	19.1	1.8	12.4	2	0	1002	0.13	NM	23.9
03/09/2024 19:00	19.2	1.8	12.2	2	0	1002	0.13	NM	20.8
03/09/2024 20:00	19.7	1.8	11.9	2	0	1002	0.13	NM	18.8
03/09/2024 21:00	19.7	1.8	11.7	2	0	1002	0.13	NM	16.7
03/09/2024 22:00	19.9	1.8	11.6	2	0	1003	0.25	NM	15.4
03/09/2024 23:00	19.9	1.8	11.4	2	0	1002	0.00	NM	13.7
04/09/2024 00:00	20.0	1.8	11.3	2	0	1002	0.00	NM	13.5
04/09/2024 01:00	19.8	1.8	11.2	2	0	1002	0.00	NM	13.7
04/09/2024 02:00	20.1	1.8	11.2	2	0	1003	0.13	NM	13.5
04/09/2024 03:00	20.1	1.8	11.2	2	0	1003	0.13	NM	12.5
04/09/2024 04:00	20.2	1.8	11.1	2	0	1004	0.25	NM	11.9
04/09/2024 05:00	20.0	1.8	11.1	2	0	1004	0.13	NM	12.0
04/09/2024 06:00	20.1	1.8	11.1	2	0	1005	0.38	NM	11.9
04/09/2024 07:00	20.0	1.9	11.0	2	0	1005	0.38	NM	11.8
04/09/2024 08:00	20.1	1.8	11.0	2	0	1005	0.38	NM	12.3
04/09/2024 09:00	19.9	1.9	11.1	2	0	1006	0.38	NM	15.9
04/09/2024 10:00	20.1	1.9	11.2	2	0	1007	0.50	NM	16.6
04/09/2024 11:00	19.8	1.9	11.4	2	0	1007	0.38	NM	19.5
04/09/2024 12:00	20.0	1.9	11.4	2	0	1007	0.38	NM	17.6
04/09/2024 13:00	20.0	1.9	11.5	2	0	1007	0.25	NM	19.3
04/09/2024 14:00	19.7	1.9	11.6	2	0	1007	0.25	NM	22.5
04/09/2024 15:00	19.8	1.9	11.8	2	0	1008	0.38	NM	25.6
04/09/2024 16:00	19.9	1.9	11.9	2	0	1008	0.25	NM	24.4
04/09/2024 17:00	20.0	1.9	12.0	2	0	1008	0.13	NM	25.9
04/09/2024 18:00	19.7	1.9	12.0	2	0	1008	0.13	NM	22.6
04/09/2024 19:00	20.0	1.9	11.8	2	0	1008	0.13	NM	18.9
04/09/2024 20:00	20.0	1.9	11.5	2	0	1008	0.13	NM	16.8
04/09/2024 21:00	20.2	1.9	11.4	2	0	1009	0.25	NM	15.2
04/09/2024 22:00	20.4	1.9	11.2	2	0	1009	0.13	NM	14.5
04/09/2024 23:00	20.2	1.9	11.1	2	0	1009	0.13	NM	13.5
05/09/2024 00:00	20.5	1.9	11.0	2	0	1010	0.25	NM	12.8
05/09/2024 01:00	20.4	1.9	11.0	2	0	1010	0.25	NM	12.4
05/09/2024 02:00	20.9	1.9	10.9	2	0	1009	0.13	NM	12.3
05/09/2024 03:00	20.9	1.8	10.9	2	0	1009	0.13	NM	12.3
05/09/2024 04:00	20.9	1.9	10.8	2	0	1009	0.00	NM	12.2
05/09/2024 05:00	20.7	1.9	10.8	2	0	1009	0.00	NM	12.3
05/09/2024 06:00	21.0	1.8	10.8	2	0	1009	0.00	NM	12.5
05/09/2024 07:00	21.0	1.8	10.8	2	0	1009	-0.13	NM	12.8
05/09/2024 08:00	20.9	1.8	10.8	2	0	1008	-0.25	NM	13.5
05/09/2024 09:00	21.0	1.8	10.9	2	0	1008	-0.13	NM	14.8
05/09/2024 10:00	20.8	1.8	11.0	2	0	1009	0.00	NM	15.8
05/09/2024 11:00	21.2	1.8	11.0	2	0	1008	-0.13	NM	17.3
05/09/2024 12:00	21.0	1.8	11.1	2	0	1007	-0.25	NM	19.1
05/09/2024 13:00	21.5	1.8	11.1	2	0	1007	-0.25	NM	18.9
05/09/2024 14:00	21.6	1.8	11.1	2	0	1006	-0.38	NM	18.4
05/09/2024 15:00	21.6	1.8	11.1	2	0	1004	-0.50	NM	18.5
05/09/2024 16:00	21.8	1.8	11.0	2	0	1003	-0.63	NM	18.8
05/09/2024 17:00	21.9	1.7	11.0	2	0	1002	-0.88	NM	19.4
05/09/2024 18:00	22.2	1.8	11.0	3	0	1001	-0.88	NM	18.7
05/09/2024 19:00	22.4	1.7	11.0	3	0	1001	-0.75	NM	17.8
05/09/2024 20:00	22.5	1.7	10.9	2	0	1001	-0.75	NM	16.9
05/09/2024 21:00	22.8	1.7	10.9	2	0	1002	-0.50	NM	16.3
05/09/2024 22:00	22.7	1.7	10.9	2	0	1002	-0.25	NM	15.9
05/09/2024 23:00	22.8	1.7	10.8	2	0	1002	-0.13	NM	16.0
06/09/2024 00:00	22.5	1.7	10.8	2	0	1002	0.00	NM	16.2
06/09/2024 01:00	22.8	1.6	10.8	2	0	1002	0.13	NM	16.3
06/09/2024 02:00	22.8	1.6	10.9	2	0	1001	0.00	NM	16.4
06/09/2024 03:00	22.8	1.6	10.8	2	0	1001	0.00	NM	16.5
06/09/2024 04:00	23.3	1.6	10.8	2	0	1001	-0.13	NM	16.5
06/09/2024 05:00	23.0	1.6	10.8	2	0	1001	-0.13	NM	16.2
06/09/2024 06:00	23.3	1.6	10.8	2	0	1001	-0.13	NM	15.7
06/09/2024 07:00	23.2	1.6	10.8	2	0	1001	-0.13	NM	15.5

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
06/09/2024 08:00	23.2	1.6	10.8	2	0	1000	-0.25	NM	16.5
06/09/2024 09:00	23.4	1.6	10.9	2	0	1000	-0.13	NM	20.7
06/09/2024 10:00	23.1	1.6	11.1	3	0	1000	-0.13	NM	22.8
06/09/2024 11:00	23.1	1.6	11.2	3	0	1000	-0.13	NM	25.5
06/09/2024 12:00	23.5	1.5	11.3	3	0	1000	-0.13	NM	27.9
06/09/2024 13:00	23.6	1.6	11.4	3	0	999	-0.25	NM	30.0
06/09/2024 14:00	23.5	1.6	11.6	3	0	999	-0.25	NM	30.4
06/09/2024 15:00	23.4	1.6	11.6	3	0	998	-0.25	NM	31.8
06/09/2024 16:00	23.9	1.6	11.7	3	0	998	-0.25	NM	32.0
06/09/2024 17:00	NM	1.5	11.8	3	0	998	-0.25	NM	31.3
06/09/2024 18:00	23.6	1.5	11.8	3	0	997	-0.38	NM	29.2
06/09/2024 19:00	23.3	1.5	11.7	3	0	998	-0.25	NM	25.5
06/09/2024 20:00	23.3	1.5	11.6	3	0	998	-0.13	NM	22.6
06/09/2024 21:00	23.2	1.5	11.5	3	0	999	0.00	NM	20.6
06/09/2024 22:00	23.2	1.5	11.4	3	0	999	0.13	NM	19.2
06/09/2024 23:00	23.5	1.4	11.3	3	0	998	0.00	NM	18.2
07/09/2024 00:00	23.4	1.5	11.2	3	0	998	0.00	NM	17.4
07/09/2024 01:00	23.2	1.4	11.2	2	0	998	0.13	NM	16.8
07/09/2024 02:00	23.2	1.4	11.2	2	0	997	-0.13	NM	16.3
07/09/2024 03:00	23.3	1.4	11.2	2	0	997	-0.13	NM	15.8
07/09/2024 04:00	23.3	1.4	11.1	2	0	998	-0.13	NM	15.2
07/09/2024 05:00	23.5	1.4	11.1	2	0	998	-0.13	NM	15.3
07/09/2024 06:00	23.5	1.3	11.1	2	0	998	0.00	NM	15.0
07/09/2024 07:00	23.6	1.4	11.1	2	0	998	0.00	NM	14.3
07/09/2024 08:00	23.7	1.3	11.1	2	0	997	-0.13	NM	15.4
07/09/2024 09:00	23.9	1.3	11.1	2	0	997	0.00	NM	16.6
07/09/2024 10:00	23.5	1.3	11.2	2	0	998	0.13	NM	18.5
07/09/2024 11:00	23.6	1.4	11.3	2	0	998	0.00	NM	18.8
07/09/2024 12:00	23.4	1.3	11.4	2	0	998	0.00	NM	21.5
07/09/2024 13:00	23.4	1.3	11.6	3	0	998	0.00	NM	23.3
07/09/2024 14:00	23.1	1.3	11.6	3	0	997	-0.13	NM	21.8
07/09/2024 15:00	23.1	1.3	11.6	3	0	997	0.00	NM	21.3
07/09/2024 16:00	23.2	1.3	11.6	3	0	997	0.00	NM	20.6
07/09/2024 17:00	23.4	1.3	11.6	3	0	996	-0.25	NM	21.4
07/09/2024 18:00	23.4	1.3	11.6	3	0	996	-0.25	NM	20.3
07/09/2024 19:00	23.4	1.3	11.5	2	0	996	-0.25	NM	19.3
07/09/2024 20:00	23.5	1.3	11.4	2	0	996	-0.25	NM	18.8
07/09/2024 21:00	23.7	1.3	11.4	2	0	996	-0.13	NM	18.3
07/09/2024 22:00	23.7	1.3	11.4	2	0	995	-0.25	NM	18.1
07/09/2024 23:00	24.2	1.2	11.3	2	0	994	-0.38	NM	17.7
08/09/2024 00:00	24.4	1.2	11.2	2	0	994	-0.25	NM	17.5
08/09/2024 01:00	25.0	1.2	11.1	2	0	993	-0.38	NM	17.2
08/09/2024 02:00	25.5	1.2	11.0	2	0	993	-0.38	NM	16.9
08/09/2024 03:00	25.2	1.2	11.0	2	0	991	-0.63	NM	16.8
08/09/2024 04:00	25.2	1.2	11.0	2	0	991	-0.63	NM	16.3
08/09/2024 05:00	25.5	1.2	11.0	2	0	990	-0.63	NM	16.0
08/09/2024 06:00	25.4	1.2	11.0	2	0	990	-0.50	NM	16.1
08/09/2024 07:00	25.9	1.1	10.9	2	0	989	-0.63	NM	16.0
08/09/2024 08:00	25.9	1.1	10.9	2	0	989	-0.50	NM	16.0
08/09/2024 09:00	26.2	1.1	10.8	2	0	989	-0.50	NM	16.3
08/09/2024 10:00	26.0	1.1	10.9	2	0	988	-0.38	NM	16.5
08/09/2024 11:00	26.0	1.1	10.9	2	0	988	-0.38	NM	17.1
08/09/2024 12:00	25.8	1.1	11.0	2	0	988	-0.25	NM	18.4
08/09/2024 13:00	25.8	1.1	11.0	3	0	988	-0.25	NM	19.1
08/09/2024 14:00	25.8	1.1	11.1	3	0	988	-0.13	NM	18.6
08/09/2024 15:00	27.0	1.1	10.8	3	0	988	-0.13	NM	18.1
08/09/2024 16:00	27.0	1.1	10.8	3	0	987	-0.25	NM	17.6
08/09/2024 17:00	27.3	1.1	10.8	3	0	987	-0.13	NM	17.4
08/09/2024 18:00	26.9	1.1	10.8	3	0	987	-0.13	NM	17.2
08/09/2024 19:00	27.2	1.1	10.8	3	0	988	0.00	NM	16.8
08/09/2024 20:00	26.8	1.1	10.8	3	0	988	0.00	NM	16.3
08/09/2024 21:00	26.6	1.1	10.7	3	0	988	0.00	NM	16.2
08/09/2024 22:00	27.0	1.1	10.7	3	0	989	0.13	NM	16.1
08/09/2024 23:00	26.9	1.1	10.7	3	0	989	0.25	NM	15.7
09/09/2024 00:00	26.7	1.1	10.7	2	0	990	0.38	NM	15.4
09/09/2024 01:00	26.7	1.1	10.7	2	0	990	0.38	NM	15.0
09/09/2024 02:00	26.6	1.2	10.7	2	0	991	0.38	NM	14.7
09/09/2024 03:00	26.4	1.2	10.7	2	0	992	0.50	NM	14.6
09/09/2024 04:00	26.5	1.2	10.7	2	0	993	0.63	NM	14.2
09/09/2024 05:00	26.0	1.2	10.7	2	0	993	0.50	NM	13.7
09/09/2024 06:00	25.9	1.2	10.8	2	0	994	0.63	NM	13.4
09/09/2024 07:00	25.5	1.2	10.8	2	0	995	0.63	NM	13.2
09/09/2024 08:00	25.6	1.2	10.7	2	0	996	0.75	NM	13.1
09/09/2024 09:00	25.6	1.3	10.7	2	0	997	0.75	NM	13.0
09/09/2024 10:00	25.2	1.3	10.8	2	0	997	0.63	NM	13.5
09/09/2024 11:00	25.4	1.3	10.9	2	0	998	0.63	NM	16.3
09/09/2024 12:00	25.1	1.3	11.1	2	0	999	0.75	NM	20.2
09/09/2024 13:00	25.6	1.3	11.1	2	0	999	0.63	NM	21.9
09/09/2024 14:00	24.9	1.3	11.3	2	0	1000	0.63	NM	22.7
09/09/2024 15:00	25.0	1.3	11.3	2	0	1000	0.50	NM	20.4
09/09/2024 16:00	25.0	1.3	11.3	2	0	1000	0.38	NM	19.7
09/09/2024 17:00	24.9	1.3	11.3	2	0	1000	0.38	NM	19.1
09/09/2024 18:00	25.0	1.3	11.2	2	0	1000	0.25	NM	17.9
09/09/2024 19:00	25.0	1.3	11.1	2	0	1000	0.13	NM	16.2
09/09/2024 20:00	25.0	1.3	11.0	2	0	1000	0.13	NM	14.7
09/09/2024 21:00	25.0	1.3	10.9	2	0	999	-0.13	NM	13.8
09/09/2024 22:00	25.1	1.3	10.8	2	0	998	-0.25	NM	13.6
09/09/2024 23:00	25.2	1.3	10.8	2	0	997	-0.38	NM	13.5
10/09/2024 00:00	25.1	1.3	10.8	2	0	997	-0.38	NM	13.3
10/09/2024 01:00	25.2	1.3	10.7	2	0	996	-0.50	NM	13.5
10/09/2024 02:00	24.9	1.3	10.7	2	0	995	-0.63	NM	13.1
10/09/2024 03:00	25.0	1.3	10.7	2	0	994	-0.75	NM	12.9
10/09/2024 04:00	25.1	1.3	10.7	2	0	992	-0.88	NM	13.1
10/09/2024 05:00	25.1	1.3	10.7	2	0	991	-0.88	NM	13.0
10/09/2024 06:00	25.1	1.3	10.6	2	0	990	-0.88	NM	13.1
10/09/2024 07:00	25.1	1.3	10.6	2	0	989	-1.00	NM	13.3
10/09/2024 08:00	25.1	1.3	10.6	2	0	988	-1.00	NM	13.9
10/09/2024 09:00	25.0	1.3	10.7	2	0	988	-0.88	NM	14.5
10/09/2024 10:00	24.7	1.4	10.7	2	0	989	-0.63	NM	13.7
10/09/2024 11:00	24.5	1.4	10.7	2	0	989	-0.38	NM	13.1
10/09/2024 12:00	24.4	1.4	10.7	2	0	989	-0.25	NM	14.4
10/09/2024 13:00	24.9	1.4	10.6	2	0	989	-0.13	NM	15.7
10/09/2024 14:00	24.9	1.4	10.6	2	0	989	0.00	NM	15.6
10/09/2024 15:00	25.1	1.4	10.7	2	0	989	0.13	NM	15.2
10/09/2024 16:00	25.1	1.4	10.6	2	0	989	0.13	NM	15.9
10/09/2024 17:00	24.6	1.4	10.7	2	0	989	0.00	NM	19.9
10/09/2024 18:00	24.7	1.4	10.9	2	0	989	0.00	NM	18.6
10/09/2024 19:00	24.8	1.4	10.8	2	0	990	0.13	NM	15.4
10/09/2024 20:00	25.1	1.4	10.6	2	0	990	0.13	NM	13.0
10/09/2024 21:00	25.1	1.4	10.4	2	0	990	0.13	NM	11.1
10/09/2024 22:00	24.7	1.4	10.3	2	0	991	0.25	NM	10.5
10/09/2024 23:00	24.9	1.4	10.2	2	0	991	0.25	NM	9.4
11/09/2024 00:00	24.9	1.4	10.2	2	0	991	0.25	NM	8.3
11/09/2024 01:00	24.5	1.4	10.1	2	0	990	0.13	NM	8.7
11/09/2024 02:00	24.8	1.4	10.1	2	0	990	0.00	NM	8.0
11/09/2024 03:00	24.9	1.4	10.0	1	0	990	0.00	NM	7.5
11/09/2024 04:00	24.8	1.4	10.0	1	0	990	0.00	NM	7.9
11/09/2024 05:00	25.0	1.4	9.9	1	0	990	-0.13	NM	7.9

ggs
Experts in Continuous Monitoring

Date and Time	CH	CO	O	CO	H S	Atmospheric Pressure	Average 8-hour atmospheric pressure change	Flow	Temperature
	% v/v	% v/v	% v/v	ppm/v	ppm/v	mbar	mbar	Ltr/hr	°C
11/09/2024 06:00	24.8	1.4	10.0	1	0	990	-0.13	NM	7.9
11/09/2024 07:00	24.5	1.4	10.0	1	0	991	0.00	NM	8.0
11/09/2024 08:00	24.6	1.4	10.0	1	0	992	0.25	NM	8.2
11/09/2024 09:00	24.6	1.4	10.0	1	0	992	0.25	NM	9.7
11/09/2024 10:00	24.2	1.5	10.0	1	0	993	0.38	NM	10.2
11/09/2024 11:00	24.2	1.5	10.1	1	0	992	0.25	NM	14.0
11/09/2024 12:00	24.0	1.5	10.4	2	0	992	0.25	NM	17.7
11/09/2024 13:00	23.8	1.5	10.5	2	0	993	0.38	NM	18.2
11/09/2024 14:00	23.8	1.5	10.6	2	0	993	0.25	NM	17.7
11/09/2024 15:00	23.9	1.5	10.7	2	0	994	0.25	NM	16.1
11/09/2024 16:00	23.6	1.5	10.6	2	0	994	0.25	NM	14.3
11/09/2024 17:00	24.2	1.5	10.5	2	0	994	0.13	NM	15.1
11/09/2024 18:00	23.9	1.5	10.5	2	0	995	0.38	NM	15.5
11/09/2024 19:00	24.0	1.5	10.5	2	0	996	0.50	NM	11.8
11/09/2024 20:00	24.1	1.5	10.3	1	0	997	0.50	NM	10.0
11/09/2024 21:00	24.2	1.5	10.2	1	0	997	0.50	NM	8.8
11/09/2024 22:00	24.4	1.5	10.0	1	0	998	0.50	NM	7.8
11/09/2024 23:00	24.6	1.5	9.9	1	0	998	0.50	NM	6.5
12/09/2024 00:00	24.7	1.5	9.8	1	0	998	0.50	NM	5.8
12/09/2024 01:00	24.7	1.5	9.8	1	0	999	0.50	NM	5.7
12/09/2024 02:00	24.6	1.5	9.8	1	0	999	0.38	NM	5.3
12/09/2024 03:00	24.4	1.5	9.7	1	0	999	0.25	NM	4.6
12/09/2024 04:00	24.4	1.4	9.8	1	0	1000	0.38	NM	4.3
12/09/2024 05:00	24.7	1.4	9.7	1	0	1000	0.25	NM	4.1
12/09/2024 06:00	24.9	1.4	9.7	1	0	1000	0.25	NM	4.7
12/09/2024 07:00	24.8	1.5	9.7	1	0	1001	0.38	NM	5.6
12/09/2024 08:00	24.8	1.5	9.7	1	0	1002	0.38	NM	6.9
12/09/2024 09:00	24.6	1.5	9.8	1	0	1002	0.38	NM	8.2
12/09/2024 10:00	24.4	1.5	9.9	1	0	1003	0.50	NM	11.5
12/09/2024 11:00	24.7	1.5	10.0	1	0	1003	0.38	NM	14.6
12/09/2024 12:00	24.6	1.5	10.2	1	0	1004	0.50	NM	17.0
12/09/2024 13:00	24.5	1.5	10.3	2	0	1005	0.63	NM	18.3
12/09/2024 14:00	24.6	1.5	10.5	2	0	1006	0.63	NM	19.2
12/09/2024 15:00	24.4	1.5	10.6	2	0	1007	0.63	NM	21.9
12/09/2024 16:00	24.7	1.5	10.7	2	0	1008	0.75	NM	23.2
12/09/2024 17:00	NM	1.5	10.9	2	0	1009	0.75	NM	22.5
12/09/2024 18:00	24.6	1.5	10.8	2	0	1010	0.88	NM	18.2
12/09/2024 19:00	24.9	1.4	10.5	2	0	1011	0.88	NM	14.6
12/09/2024 20:00	25.0	1.5	10.3	2	0	1012	0.88	NM	12.4
12/09/2024 21:00	24.9	1.5	10.2	1	0	1013	0.88	NM	10.3
12/09/2024 22:00	25.3	1.5	10.0	1	0	1014	0.88	NM	7.9
12/09/2024 23:00	25.5	1.5	9.8	1	0	1015	0.88	NM	6.3
13/09/2024 00:00	25.2	1.5	9.8	1	0	1015	0.75	NM	5.4
13/09/2024 01:00	25.4	1.5	9.7	1	0	1016	0.75	NM	4.5
13/09/2024 02:00	25.4	1.5	9.6	1	0	1016	0.63	NM	4.0
13/09/2024 03:00	25.6	1.4	9.6	1	0	1016	0.50	NM	4.3
13/09/2024 04:00	25.5	1.4	9.6	1	0	1017	0.50	NM	4.8
13/09/2024 05:00	25.4	1.5	9.6	1	0	1018	0.50	NM	4.3
13/09/2024 06:00	25.7	1.5	9.6	1	0	1018	0.38	NM	4.7
13/09/2024 07:00	25.5	1.4	9.6	1	0	1019	0.50	NM	5.3
13/09/2024 08:00	25.7	1.5	9.6	1	0	1019	0.38	NM	6.0
13/09/2024 09:00	25.5	1.5	9.7	1	0	1020	0.50	NM	10.1

ggs
Experts in Continuous Monitoring

GGS DataPack® Plus
GGS3078 Ryebank Road, Chorlton

Appendix E

Calibration Certificates

For: E3P Ltd.
Ref No.: GGS3078DPP01
Date: 17/09/2024

Experts in Continuous Monitoring

CALIBRATION CERTIFICATE:

Certificate ref.	GSCAL00423
Issued By:	**VA**
Date:	29/07/2024
Staff No.	-
Instrument:	03000041

Calibration Results			
Sensor	**Lot No.**	**Ref. value**	**Indicated value**
Carbon monoxide	C24438	42	42.85
Hydrogen sulphide	C22238	124	123.39
Methane	C322626	59.04	63.38
Carbon dioxide High	C322626	40.96	37.63
Carbon dioxide Low	C322726	1.98	2.06
Carbon dioxide Low ppm	C24338	503	498.80
Isobutylene ppb	C322826	-	-
Oxygen	C24438	0	0.1

Comments:

Prior to calibration the sensors were allowed to stabilise in ambient air for 1 hour.

The Instrument was calibrated by exposing the sensors to known values of gas concentrations.

The reference values are those generated by the certified source and indicated values are those measured by the Gas Sentinel.

Uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2

This provides a level of confidence of uncertainty of approximately 95%

Ambient conditions	
Temperature	22
Relative Humidity	56.2

CALIBRATION CERTIFICATE:

Certificate ref.	GSCAL00424
Issued By:	**VA**
Date:	05/08/2024
Staff No.	-
Instrument:	03000033

Calibration Results			
Sensor	**Lot No.**	**Ref. value**	**Indicated value**
Carbon monoxide	C24438	42	43.15
Hydrogen sulphide	C22238	124	122.97
Methane	C322626	59.04	57.48
Carbon dioxide High	C322626	40.96	41.29
Carbon dioxide Low	C322726	1.98	2.08
Carbon dioxide Low ppm	C24338	503	496.10
Isobutylene ppb	C322826	-	-
Oxygen	C24438	0	0

Comments:

Prior to calibration the sensors were allowed to stabilise in ambient air for 1 hour.

The Instrument was calibrated by exposing the sensors to known values of gas concentrations.

The reference values are those generated by the certified source and indicated values are those measured by the Gas Sentinel.

Uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2

This provides a level of confidence of uncertainty of approximately 95%

Ambient conditions	
Temperature	21.9
Relative Humidity	58.8

CALIBRATION CERTIFICATE:

Certificate ref.	GSCAL00425
Issued By:	**VA**
Date:	05/08/2024
Staff No.	-
Instrument:	03000036

Calibration Results			
Sensor	**Lot No.**	**Ref. value**	**Indicated value**
Carbon monoxide	C24438	42	41.34
Hydrogen sulphide	C22238	124	122.68
Methane	C322626	59.04	60.14
Carbon dioxide High	C322626	40.96	40.50
Carbon dioxide Low	C322726	1.98	2.00
Carbon dioxide Low ppm	C24338	503	504.35
Isobutylene ppb	C322826	-	-
Oxygen	C24438	0	0

Comments:

Prior to calibration the sensors were allowed to stabilise in ambient air for 1 hour.

The Instrument was calibrated by exposing the sensors to known values of gas concentrations.

The reference values are those generated by the certified source and indicated values are those measured by the Gas Sentinel.

Uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2

This provides a level of confidence of uncertainty of approximately 95%

Ambient conditions	
Temperature	21.9
Relative Humidity	58.5

CALIBRATION CERTIFICATE:

Certificate ref.	GSCAL00426
Issued By:	**VA**
Date:	05/08/2024
Staff No.	-
Instrument:	03000042

Calibration Results			
Sensor	**Lot No.**	**Ref. value**	**Indicated value**
Carbon monoxide	C24438	42	40.27
Hydrogen sulphide	C22238	124	121.47
Methane	C322626	59.04	57.78
Carbon dioxide High	C322626	40.96	40.58
Carbon dioxide Low	C322726	1.98	1.98
Carbon dioxide Low ppm	C24338	503	535.81
Isobutylene ppb	C322826	-	-
Oxygen	C24438	0	-0.1

Comments:

Prior to calibration the sensors were allowed to stabilise in ambient air for 1 hour.

The Instrument was calibrated by exposing the sensors to known values of gas concentrations.

The reference values are those generated by the certified source and indicated values are those measured by the Gas Sentinel.

Uncertainty is based on a standard uncertainty multiplied by a coverage factor of k=2

This provides a level of confidence of uncertainty of approximately 95%

Ambient conditions	
Temperature	23.6
Relative Humidity	50.2

TEST DATE AND CONDITIONS		
Date	01/11/2023	
Atmospheric Pressure	943	mB
Ambient Temperature	20.3	°C
Environics Serial No.	5089	

GAS DATA LTD
Unit D
Earlplace Business Park
Fletchamstead Highway
Coventry
CV4 9XH
Tel 02476303311 Fax 02476307711

GFM430 Final Inspection & Calibration Check Certificate

Customer	Ground Gas Solutions Ltd
Certificate Number	124674
Order Number	336322

Serial Number	10356
Software Version	G430-00.0024/0013

Recalibration DUE Date
01/11/24

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	450	*Accept > 200 cc/min*	Pump Flow @ -200mB	250	*Accept > 200 cc/min*
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
Sensor	CH_4		CO_2		O_2	
	Instrument Gas Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %
	59.7	60	40.0	40	20.9	20.9
	Accept ±3.0		*Accept ±3.0*		*Accept ±0.5*	
	5.1	5	5.2	5	6.0	6
	Accept ±0.3		*Accept ±0.3*		*Accept ±0.3*	
Zero Reading 100% N2	0.0	0	0.0	0	0.0	0
	Accept ±0.0		*Accept ±0.0*		*Accept ±0.1*	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings *(ppm)*			
Toxic Gas	Range *(ppm)*		Zero Reading		Instrument Gas Reading	
H2S	5000	*1500*	0	*Accept ±0.0*	1502	*Accept ±5.0%*
CO	2000	*1000*	0	*Accept ±0.0*	1003	*Accept ±5.0%*

Cross Gas Effects									
Applied Gas *(ppm)*		Instrument Readings *(ppm)*							
Toxic Gas	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:			
H2S	*1500*	1502		0					
CO	*1000*	154		1003					

Pressure Checks						
Atmospheric Pressure [AP] *(mB)*				Static Pressure [SP] *(mB)*		
Current Atmospheric Pressure *(mB)*	Instrument Atmospheric Pressure Reading *(mB)*			Applied Pressure *(mB)*	Instrument Pressure *(mB)*	
All Ports	*Open Ports*	942	*Accept ±2.0*	*0.0mB*	N/A	*Accept ±0.0*
AP Port (Internal)	*+800 mB*	800	*Accept ±5.0*	*+50mB*	*N/A*	*Accept ±2.0*
AP Port (Internal)	*+1200mb*	1200	*Accept ±5.0*	*-100mB*	*N/A*	*Accept ±2.0*

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading *(l/h)*	Instrument Reading *(l/h)*		Applied Pressure *(Pa)*	Instrument Reading *(Pa)*	
-30	-30.0	*Accept ±3.0*	-294	-294	*Accept ±50*
-3	-2.9	*Accept ±1.0*	-13	-12	*Accept ±6.0*
0	0.0	*Accept ±0.0*	0	0	*Accept ±0.5*
3	2.9	*Accept ±0.5*	13	12	*Accept ±3.0*
30	29.8	*Accept ±3.0*	317	313	*Accept ±50*
60	59.4	*Accept ±6.0*	963	944	*Accept ±130*
90	89.3	*Accept ±9.0*	1906	1916	*Accept ±250*

Temperature Checks		
Calibration Temperature Applied Temperature ^{0}C	Instrument Temperature Reading ^{0}C	
-10	-10.0	*Accept ±2.0*
0	0.0	*Accept ±1.0*
30	30.0	*Accept ±1.0*
60	60.0	*Accept ±1.0*
100	100.0	*Accept ±1.0*

Technician:	Date Tested:
Jack Rutland	*01/11/2023*

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.

Gas Data Ltd is certified to BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018.

TEST DATE AND CONDITIONS		
Date	1.11.23	
Atmospheric Pressure	943	mB
Ambient Temperature	20.3	°C
Environics Serial No.	3089	

GAS DATA LTD
Unit 4
Fairfield Court
Seven Stars Estate
Coventry
CV3 4LJ
UK
+44 (0)24 7630 3311

GAS DATA
LISTEN · ANALYSE · INFORM

GFM430 -1 OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
336322	GFM430	10336 GF430-24/13	124674

Calibration Technician ..... **Date** 1.11.23

Inspection Technician J. Williams **Date** 2-11-23

INSTRUMENT CHECKS			Pass (P), Fail (F) or not applicable (NA)	INSTRUMENT PACKING LIST		Tick if included
Function Tests	Dust Caps Fitted		P	Instrument		✓
	Keyboard Test (All Keys)		P	Leather Case		✓
	Backlight		P	Instrument Strap		✓
	Clock Set / Running		P	AC Battery Charger (UK)		✓
	Comms Test		P	AC Battery Charger (EURO)		X
	Pump Flow Test (In & Out)		P	AC Battery Charger (US)		X
	Overall Leak Test (30mB)		n/a	AC Battery Charger (AUS)		X
	Battery Charge Test		P	Hard Carry Case		✓
	Service Date set to?		1-11-24	Gas Sample Tube – *(new issue)*		✓
Channel Test	Data Logging Enabled?		P	Flow Sample Tube – *(new issue)*		✓
	Verify CH4/LEL		P	Spares Pot		✓ x 2
	Verify CO2		P	Allen Key		X
	Verify O2		P	Temperature Probe		X
	Verify LEL		P	Vane Anemometer		X
	Verify 1st Option Gas	H2S	P	USB Cable		✓
	Verify 2nd Option Gas	CO	P	USB Memory stick		X
	Verify 3rd Option Gas		N/A	SiteMan Software	Ver 4.15	X
	Verify 4th Option Gas		N/A	Internal Filter Pack	Qty 0	X
	Verify Atmospheric pressure		P	External Filter Pack	Qty 2	✓
	Verify static pressure		N/A	Field Guide		X
	Verify differential pressure		P	Operation Manual (hard copy)		X
	Verify flow		P	Extra Items:		
	Verify temperature probe input		P	USED GAS FLOW & SAMPLE TUBES. x1		
	Verify vane anemometer input		P			
DataBase Checks	Jobcard(s) completed and signed		P			
	Jobcard(s) booked off database		P			
	Calibration certificate completed		P			
	Complete & print QI record		n/a	Comments:		
Label Checks	No. of Calibration label fitted		GDC 13141			
	Warranty label fitted		P			
H2S Range	H2S Range from Sales Order		5000 ppm			
	H2S Range from Cal Cert		5000 ppm			
	Over-range value correct?		P			

TEST DATE AND CONDITIONS		
Date	11/01/2024	
Atmospheric Pressure	1020	mB
Ambient Temperature	21.6	°C
Environics Serial No.	5089	

GAS DATA LTD
Unit D
Earlplace Business Park
Fletchamstead Highway
Coventry
CV4 9XL
Tel 02476303311 Fax 02476307711

GFM435 Final Inspection & Calibration Check Certificate

Customer	Ground Gas Solutions Ltd
Certificate Number	124851
Order Number	336886

Serial Number	11028
Software Version	G435-00.0024/0004

Recalibration DUE Date
11/01/25

Instrument Checks					
Keyboard	✓		Display Contrast	✓	
Pump Flow In	500	*Accept > 200 cc/min*	Pump Flow @ -200mB	300	*Accept > 200 cc/min*
Clock Set / Running	✓		Labels Fitted	✓	

Gas Checks						
	CH_4		CO_2		O_2	
	Instrument Gas Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %	Instrument Gas Readings %	True Gas Value %
Sensor	59.5	60	39.5	40	20.9	20.9
	Accept ±3.0		*Accept ±3.0*		*Accept ±0.5*	
	4.9	5	4.9	5	6.0	6
	Accept ±0.3		*Accept ±0.3*		*Accept ±0.3*	
Zero Reading 100% N2	0.0	0	0.0	0	0.0	0
	Accept ±0.0		*Accept ±0.0*		*Accept ±0.1*	

Optional Gas Checks						
Applied Gas & Range		Concentration Tested @ (ppm)	Instrument Readings *(ppm)*			
			Zero Reading		Instrument Gas Reading	
Gas Type	Range *(ppm)*					
H2S	5000	*1500*	0	*Accept ±0.0*	1500	*Accept ±5.0%*
CO	2000	*1000*	0	*Accept ±0.0*	1003	*Accept ±5.0%*
Hexane	*2.0%*	2.0%	0	*Accept ±0.0*	1.99	*Accept ±10.0%*

Cross Gas Effects									
Applied Gas *(ppm)*		Instrument Readings *(ppm)*							
Gas Type	Concentration	Toxic 1:	H2S	Toxic 2:	CO	Toxic 3:	HEX		
H2S	*1500*	1500		0		0			
CO	*1000*	110		1003		0			
Hexane	*2.0%*	0		0		1.99			

Pressure Checks			
Atmospheric Pressure [AP] *(mB)*			
Current Atmospheric Pressure (mB)		Instrument Atmospheric Pressure Reading (mB)	
AP Open Ports		1020	*Accept ±2.0*
AP Port (Internal)	*+800 mB*	800	*Accept ±5.0*
	+1200mb	1200	*Accept ±5.0*

Flow Checks					
Borehole Flow			Differential Pressure		
Applied Reading *(l/h)*	Instrument Reading *(l/h)*		Applied Pressure *(Pa)*	Instrument Reading *(Pa)*	
-30	-30.0	*Accept ±3.0*	-261	-263	*Accept ±50*
-3	-3.0	*Accept ±1.0*	-13	-13	*Accept ±6.0*
0	0.0	*Accept ±0.0*	0	0	*Accept ±0.5*
3	3.0	*Accept ±0.5*	13	13	*Accept ±3.0*
30	30.1	*Accept ±3.0*	277	279	*Accept ±50*
60	60.4	*Accept ±6.0*	824	834	*Accept ±130*
90	91.2	*Accept ±9.0*	1616	1680	*Accept ±250*

Temperature Checks		
Calibration Temperature Applied Temperature ^{0}C	Instrument Temperature Reading ^{0}C	
-10	-10.0	*Accept ±2.0*
0	0.0	*Accept ±1.0*
30	30.0	*Accept ±1.0*
60	60.0	*Accept ±1.0*
100	100.0	*Accept ±1.0*

Technician:	Date Tested:
Jack Rutland	*11/01/2024*

The instrument identified by the serial number stated above has been tested by Gas Data personnel for calibration accuracy on the date and under the ambient conditions stated. Gas Data Ltd internal BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018 compliant workshop procedures were followed to apply known calibration test gases, gas flow rates, pressures and temperatures of the values stated. The results displayed on the instrument at each stage are recorded above.

Gas Data Ltd is certified to BS EN ISO9001:2015, BS EN ISO14001:2015, BS EN ISO45001:2018.

TEST DATE AND CONDITIONS		
Date	11 - 1 - 24	
Atmospheric Pressure	1020	mB
Ambient Temperature	21.6	°C
Environics Serial No.	5089	

GAS DATA LTD
Unit D
Earlplace Business Park
Fletchamstead Highway
Coventry
CV4 9XL
UK +44 (0) 24 7630 3311

GAS DATA
LISTEN · ANALYSE · INFORM

GFM435-1 (MCERTS) OUTWARD INSPECTION & QUALITY CHECK SHEET

INSTRUMENT DETAILS			
SO Number	Instrument Type	Instrument Serial Number + SW Version	Job Number(s)
336886	GFM435	11028 G435-24/04	124851

Calibration Technician ..... **Date** 11.1.24

Inspection Technician ..... **Date** 12-1-24

INSTRUMENT CHECKS		Pass (P), Fail (F) or not applicable (NA)
Function Tests	Dust Caps Fitted	P
	Keyboard Test (All Keys)	P
	Backlight	P
	Clock Set / Running	P
	Comms Test	P
	Pump Flow Test (In & Out)	P
	Overall Leak Test (30mB)	n/a
	Battery Charge Test	P
	Service Date set to?	11/01/25
Channel Tests	Data Logging Enabled?	P
	Verify CH4/LEL/Hexane/PID	P
	Verify CO2	P
	Verify O2	P
	Verify H2S	P
	Verify CO	P
	Verify LEL	P
	Verify 1st Option Gas	N/A
	Verify Atmospheric pressure	P
	Verify differential pressure	P
	Verify flow	P
	Verify temperature probe input	P
	Verify vane anemometer input	P
DataBase Checks	Jobcard(s) completed and signed	P
	Jobcard(s) booked off database	P
	Calibration certificate completed	P
	Complete & print QI record	n/a
Label Checks	No. of Calibration label fitted	GDC 13206
	MCERTS label displayed	P
	Warranty label fitted	P
H2S Range	H2S Range from Sales Order	5000 ppm
	H2S Range from Cal Cert	5000 ppm
	Over-range value correct?	P

INSTRUMENT PACKING LIST		Tick if included
Instrument		✓
Leather Case		✓
Instrument Strap		✓
AC Battery Charger (UK)		✓
AC Battery Charger (EURO)		X
AC Battery Charger (US)		X
AC Battery Charger (AUS)		X
Gas Sample Pipe - *(new issue)*		✓
Flow Sample Pipe - *(new issue)*		✓
Hard Carry Case		✓
Spares Pot		✓
Allen Key		X
Temperature Probe		X
Vane Anemometer		X
USB Cable		✓
USB Memory stick		✓
SiteMan Software	Ver 4.15	X
Internal Filter Pack	Qty	X
External Filter Pack	Qty	X
Field Guide		X

Extra Items:
USED GAS & FLOW PIPES, OLD CERTS & MANUAL GUIDE BEHIND TOP COVER.

Comments:

GGS DataPack® Plus
GGS3078 Ryebank Road, Chorlton

Appendix F

Gas Sentinel® Instrumentation Overview & Deployment Information

For: E3P Ltd.
Ref No.: GGS3078DPP01
Date: 17/09/2024

Experts in Continuous Monitoring

GGS Gas Sentinel® Instrumentation Overview & Deployment Information

Experts in Continuous Monitoring



Introduction

GGS Gas Sentinel® is a transportable, continuous, multi-gas analyser; with 2-way telemetry capability. It is easy to use for both short term and long term monitoring of landfill, contaminated land and existing buildings. Versatile remote data acquisition through an intuitive dashboard provides cost effective regulatory compliance. The equipment is designed to be ATEX* and IP68* rated and can operate safely in explosive atmospheres and survive flooding environments (*awaiting certification).

GGS Gas Sentinel® devices can be configured to carry an extended range of gas sensors but is normally available to monitor methane, carbon dioxide, oxygen, TVOC, hydrogen sulphide and carbon monoxide. Sensors for both full range and high resolution 0-5% methane and 0-2,000ppm carbon dioxide are available. The device also records atmospheric pressure, borehole pressure and temperature and borehole gas flow as standard.

GGS can also provide high frequency water level logging in conjunction with Gas Sentinel deployments

Gas Sentinel® Sensor Specifications, Service and Maintenance

The GGS instruments are serviced and calibrated annually. Routine maintenance including the replacement of filters and operational checks are carried out at regular intervals and prior to deployment at a site. Copies of the calibration certificates for the instruments used on site are included as standard within reporting. Details of the sensor specification are provided below:

Sensor	Method / Type	Range	Resolution & Tolerance
Methane (0-100%)	Infrared	0 - 100%v/v	0.1% v/v 2%FSD or ± 10% of reading whichever is the greatest
Methane (0-5%) High Resolution	Infrared	0-5%v/v	0.01% v/v or 2%FSD or ± 10% of reading whichever is the greatest
Carbon Dioxide (0-100%)	Infrared	0 - 100%v/v	0.1% v/v or 2%FSD or ± 10% of reading whichever is the greatest
Carbon Dioxide (0-2,000ppm) High Resolution	Infrared	0-2,000ppmv	10ppm or 2%FSD or ± 10% of reading whichever is the greatest
Oxygen	Electrochemical	0 - 25%v/v	0.1% v/v or ± 10% of reading whichever is the greatest
Hydrogen Sulphide	Electrochemical	0 - 100ppmv	1ppm ±4ppm or ± 10% of reading whichever is the greatest
Carbon Monoxide	Electrochemical	0 – 1,000ppmv	1ppm ±6ppm or ± 10% of reading whichever is the greatest
Total Volatile Organic Compounds	PID	0 – 4,000ppmv	1ppm ±10ppm or ± 10% of reading whichever is the greatest
Atmospheric Pressure	Piezoelectric	800 – 1,200mb	±1mbar
Borehole Pressure	Piezoelectric	800 – 1,200mb	±1mbar
Temperature	Internal chip	-5°C to +50°C	0.1°C ±0.5°C of reading
Humidity	Capacitive Internal chip	0-100%RH	1%RH ±1.8%RH
Gas Flow	Thermal sensor	0–60 Ltr/hr	0.1ltr/hr ±0.1ltr/hr or 10% of reading whichever is the greatest

The GGS Gas Sentinel® is powered by re-chargeable batteries that can provide 4 weeks to several months depending on how many sensors are switched on and the frequency of monitoring. Please discuss your requirements with GGS for the optimum configuration for your site.

Deployment Requirements (IMPORTANT)

The GGS Gas Sentinel® is designed for deployment with standard 50mm installation standpipes but can be used with both larger and smaller diameter standpipes. Secure headworks with sufficient clearance are required for the Gas Sentinel®. GGS recommends a 10 inch diameter flush fit. A minimum 250 mm clearance is required from the top of the 50mm standpipe to the underside of the cover. GGS recommends a minimum distance of 0.25m between the top of the standpipe and standing water level to allow gas sampling. The device is also easily fitted to either inside or to the outside of buildings. Other bespoke deployment options are available. Please contact GGS to discuss options.

Gas Sentinel® Insurance

GGS can provide insurance to cover instruments against theft from site or acts of vandalism.

APPENDIX XIII
SOIL VAPOUR ANALYSIS RESULTS



Element Materials Technology
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Zone 3
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Deeside
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W: www.element.com

Ground Gas Solutions
Pythia House (Unit 10)
Bamford Business Park
Hibbert Street
Stockpot
SK4 1PL

Attention :	Heather Rutter
Date :	12th May, 2020
Your reference :	GGS2230
Our reference :	Test Report 20/5822 Batch 1
Location :	
Date samples received :	1st May, 2020
Status :	Final report
Issue :	1

Six samples were received for analysis on 1st May, 2020 of which six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:

Paul Boden BSc
Senior Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology Environmental UK Limited
Registered in England and Wales
Registered Office: 10 Lower Grosvenor Place, London, SW1W 0EN
Company Registration No: 11371415

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter
EMT Job No: 20/5822

Report : Gas

EMT Sample No.	1	2	3	4	5	6					LOD/LOR	Units	Method No.
Sample ID	WS101	WS102	WS104	WS108	WS110	WS112							
Depth													
COC No / misc													
Containers	GC	GC	GC	GC	GC	GC							
Sample Date	30/04/2020 11:12	30/04/2020 11:32	30/04/2020 11:40	30/04/2020 11:52	30/04/2020 12:03	30/04/2020 11:01							
Sample Type	Gas	Gas	Gas	Gas	Gas	Gas							
Batch Number	1	1	1	1	1	1							
Date of Receipt	01/05/2020	01/05/2020	01/05/2020	01/05/2020	01/05/2020	01/05/2020							
Volatile Gases TICs USEPA	See Attached	See Attached	See Attached	ND	See Attached	See Attached						None	TM68/PM0

Please see attached notes for all abbreviations and acronyms

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS101
Depth:
EMT Job No: 20/5822
EMT Sample No: 1
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1043 0.55
Sample Train Serial number: ST-156

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
75-01-4	62.5	# Vinyl Chloride		**14.1**	**36**	<1.5	<1.5	<3.8	<3.8
75-71-8	120.91	Dichlorodifluoromethane (F-12)		**<2.5**	**<12.4**	<2.5	<2.5	<12.4	<12.4
74-87-3	50.49	Chloromethane		**<1.5**	**<3.1**	<1.5	<1.5	<3.1	<3.1
74-83-9	94.95	# Bromomethane		**<1.5**	**<5.8**	<1.5	<1.5	<5.8	<5.8
75-00-3	64.52	# Chloroethane		**<1.5**	**<4.0**	<1.5	<1.5	<4.0	<4.0
75-69-4	137.36	# Trichlorofluoromethane (F-11)		**<1.5**	**<8.4**	<1.5	<1.5	<8.4	<8.4
75-35-4	96.95	1,1-Dichloroethene (1,1 DCE)		**<1.5**	**<5.9**	<1.5	<1.5	<5.9	<5.9
75-09-2	84.93	# Dichloromethane (DCM)		**<14.4**	**<50**	<14.4	<14.4	<50	<50
156-60-5	96.94	Trans-1,2-Dichloroethene		**<1.5**	**<5.9**	<1.5	<1.5	<5.9	<5.9
75-34-3	98.97	# 1,1-Dichloroethane		**<1.5**	**<6.1**	<1.5	<1.5	<6.1	<6.1
156-59-2	96.94	# cis-1,2-Dichloroethene		**2**	**8**	<1	<1	<4	<4
594-20-7	112.99	2,2-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38	Bromochloromethane (Int Std)		**NA**	**NA**	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	# Chloroform		**<1.5**	**<7.3**	<1.5	<1.5	<7.3	<7.3
71-55-6	133.42	# 1,1,1-Trichloroethane		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
563-58-6	110.97	1,1-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
56-23-5	153.84	# Carbon Tetrachloride		**<1.5**	**<9.4**	<1.5	<1.5	<9.4	<9.4
107-06-2	98.96	# 1,2-Dichloroethane		**<1.5**	**<6.1**	<1.5	<1.5	<6.1	<6.1
71-43-2	78.11	# Benzene		**7.6**	**24.3**	<1.5	<1.5	<4.8	<4.8
79-01-6	131.4	# Trichloroethene (TCE)		**<1.5**	**<8.1**	<1.5	<1.5	<8.1	<8.1
78-87-5	112.99	# 1,2-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
74-95-3	173.83	Dibromomethane		**<1.5**	**<10.7**	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83	Bromodichloromethane		**<1.5**	**<10.1**	<1.5	<1.5	<10.1	<10.1
10061-01-5	110.97	# cis-1,3-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
108-88-3	92.13	# Toluene		**28.7**	**108.1**	<1.5	<1.5	<5.7	<5.7
10061-02-6	110.97	# trans-1,3-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
79-00-5	133.4	# 1,1,2-Trichloroethane		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
127-18-4	165.85	# Tetrachloroethene (PCE)		**<1.5**	**<10.2**	<1.5	<1.5	<10.2	<10.2
142-28-9	112.99	1,3-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
124-48-1	208.28	Dibromochloromethane		**<1.5**	**<12.8**	<1.5	<1.5	<12.8	<12.8
106-93-4	187.86	# 1,2-Dibromoethane		**<1.5**	**<11.5**	<1.5	<1.5	<11.5	<11.5
108-90-7	112.56	# Chlorobenzene		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
630-20-6	167.85	1,1,1,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
100-41-4	106.16	# Ethylbenzene		**5.5**	**23.9**	<1.5	<1.5	<6.5	<6.5
179601-23-1	106.17	# m/p-Xylene		**15.9**	**69**	<1.5	<1.5	<6.5	<6.5
95-47-6	106.17	# o-Xylene		**5.8**	**25.2**	<1.5	<1.5	<6.5	<6.5
100-42-5	104.14	# Styrene		**3.6**	**15.3**	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77	Bromoform		**<1.5**	**<15.5**	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19	Isopropylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS101
Depth:
EMT Job No: 20/5822
EMT Sample No: 1
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1043 0.55
Sample Train Serial number: ST-156

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
79-34-5	167.85	# 1,1,2,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
108-86-1	157.01	Bromobenzene		**<1.5**	**<9.6**	<1.5	<1.5	<9.6	<9.6
96-18-4	147.43	1,2,3-Trichloropropane		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
103-65-1	120.19	Propylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
95-49-8	126.58	2-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
108-67-8	120.2	# 1,3,5-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
106-43-4	126.58	4-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
98-06-6	134.22	Tert-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-63-6	120.19	# 1,2,4-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
135-98-8	134.22	Sec-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
99-87-6	134.22	4-Isopropyltoluene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
106-46-7	147.01	# 1,4-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
541-73-1	147.01	# 1,3-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
104-51-8	134.22	n-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-50-1	147	# 1,2-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
96-12-8	236.33	1,2-Dibromo-3-chloropropane		**<1.5**	**<14.5**	<1.5	<1.5	<14.5	<14.5
120-82-1	181.46	1,2,4-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
87-68-3	260.76	Hexachlorobutadiene		**<1.5**	**<16.0**	<1.5	<1.5	<16.0	<16.0
91-20-3	128.17	Naphthalene		**<0.32**	**<1.7**	<0.32	<0.32	<1.7	<1.7
87-61-6	181.45	1,2,3-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
1634-04-4	88.15	Methyl tertiary butyl ether		**<1.5**	**<5.4**	<1.5	<1.5	<5.4	<5.4
		Sum of VOC USEPA compounds		**83.2**	**309.8**				
460-00-4		4-Bromofluorobenzene Surrogate Recovery		**103%**		0%	0%		
	81	Aliphatic >C4-C6		**187**	**619**	<10	<10	<33	<33
	100	Aliphatic >C6-C8		**837**	**3423**	<10	<10	<41	<41
	130	Aliphatic >C8-C10		**7367**	**39169**	<10	<10	<53	<53
	160	Aliphatic >C10-C12		**568**	**3717**	<10	<10	<65	<65
	78.11	Aromatic >C5-EC7 (Benzene)		**7.6**	**24.3**	<1.5	<1.5	<4.8	<4.8
	92.13	Aromatic >EC7-EC8 (Toluene)		**28.7**	**108.1**	<1.5	<1.5	<5.7	<5.7
	120	Aromatic >EC8-EC10		**25**	**123**	<10	<10	<49	<49
	130	Aromatic >EC10-EC12		**48**	**255**	<10	<10	<53	<53

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS102
Depth:
EMT Job No: 20/5822
EMT Sample No: 2
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1034 0.55
Sample Train Serial number: ST-149

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
75-01-4	62.5	# Vinyl Chloride		5.5	14.1	<1.5	<1.5	<3.8	<3.8
75-71-8	120.91	Dichlorodifluoromethane (F-12)		<2.5	<12.4	<2.5	<2.5	<12.4	<12.4
74-87-3	50.49	Chloromethane		<1.5	<3.1	<1.5	<1.5	<3.1	<3.1
74-83-9	94.95	# Bromomethane		<1.5	<5.8	<1.5	<1.5	<5.8	<5.8
75-00-3	64.52	# Chloroethane		<1.5	<4.0	<1.5	<1.5	<4.0	<4.0
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1.5	<8.4	<1.5	<1.5	<8.4	<8.4
75-35-4	96.95	1,1-Dichloroethene (1,1 DCE)		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-09-2	84.93	# Dichloromethane (DCM)		<14.4	<50	<14.4	<14.4	<50	<50
156-60-5	96.94	Trans-1,2-Dichloroethene		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-34-3	98.97	# 1,1-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4	<1	<1	<4	<4
594-20-7	112.99	2,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38	Bromochloromethane (Int Std)		NA	NA	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	# Chloroform		<1.5	<7.3	<1.5	<1.5	<7.3	<7.3
71-55-6	133.42	# 1,1,1-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
563-58-6	110.97	1,1-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
56-23-5	153.84	# Carbon Tetrachloride		<1.5	<9.4	<1.5	<1.5	<9.4	<9.4
107-06-2	98.96	# 1,2-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
71-43-2	78.11	# Benzene		<1.5	<4.8	<1.5	<1.5	<4.8	<4.8
79-01-6	131.4	# Trichloroethene (TCE)		<1.5	<8.1	<1.5	<1.5	<8.1	<8.1
78-87-5	112.99	# 1,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-95-3	173.83	Dibromomethane		<1.5	<10.7	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83	Bromodichloromethane		<1.5	<10.1	<1.5	<1.5	<10.1	<10.1
10061-01-5	110.97	# cis-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
108-88-3	92.13	# Toluene		18.2	68.6	<1.5	<1.5	<5.7	<5.7
10061-02-6	110.97	# trans-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
79-00-5	133.4	# 1,1,2-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
127-18-4	165.85	# Tetrachloroethene (PCE)		<1.5	<10.2	<1.5	<1.5	<10.2	<10.2
142-28-9	112.99	1,3-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
124-48-1	208.28	Dibromochloromethane		<1.5	<12.8	<1.5	<1.5	<12.8	<12.8
106-93-4	187.86	# 1,2-Dibromoethane		<1.5	<11.5	<1.5	<1.5	<11.5	<11.5
108-90-7	112.56	# Chlorobenzene		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
630-20-6	167.85	1,1,1,2-Tetrachloroethane		<1.5	<10.3	<1.5	<1.5	<10.3	<10.3
100-41-4	106.16	# Ethylbenzene		2	8.7	<1.5	<1.5	<6.5	<6.5
179601-23-1	106.17	# m/p-Xylene		6.1	26.5	<1.5	<1.5	<6.5	<6.5
95-47-6	106.17	# o-Xylene		4.3	18.7	<1.5	<1.5	<6.5	<6.5
100-42-5	104.14	# Styrene		<1.5	<6.4	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77	Bromoform		<1.5	<15.5	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19	Isopropylbenzene		<1.5	<7.4	<1.5	<1.5	<7.4	<7.4

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS102
Depth:
EMT Job No: 20/5822
EMT Sample No: 2
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1034 0.55
Sample Train Serial number: ST-149

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
79-34-5	167.85	# 1,1,2,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
108-86-1	157.01	Bromobenzene		**<1.5**	**<9.6**	<1.5	<1.5	<9.6	<9.6
96-18-4	147.43	1,2,3-Trichloropropane		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
103-65-1	120.19	Propylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
95-49-8	126.58	2-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
108-67-8	120.2	# 1,3,5-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
106-43-4	126.58	4-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
98-06-6	134.22	Tert-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-63-6	120.19	# 1,2,4-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
135-98-8	134.22	Sec-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
99-87-6	134.22	4-Isopropyltoluene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
106-46-7	147.01	# 1,4-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
541-73-1	147.01	# 1,3-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
104-51-8	134.22	n-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-50-1	147	# 1,2-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
96-12-8	236.33	1,2-Dibromo-3-chloropropane		**<1.5**	**<14.5**	<1.5	<1.5	<14.5	<14.5
120-82-1	181.46	1,2,4-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
87-68-3	260.76	Hexachlorobutadiene		**<1.5**	**<16.0**	<1.5	<1.5	<16.0	<16.0
91-20-3	128.17	Naphthalene		**<0.32**	**<1.7**	<0.32	<0.32	<1.7	<1.7
87-61-6	181.45	1,2,3-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
1634-04-4	88.15	Methyl tertiary butyl ether		**<1.5**	**<5.4**	<1.5	<1.5	<5.4	<5.4
		Sum of VOC USEPA compounds		**36.1**	**136.6**				
460-00-4		4-Bromofluorobenzene Surrogate Recovery		**101%**		0%	0%		
	81	Aliphatic >C4-C6		**451**	**1494**	<10	<10	<33	<33
	100	Aliphatic >C6-C8		**1035**	**4233**	<10	<10	<41	<41
	130	Aliphatic >C8-C10		**6317**	**33586**	<10	<10	<53	<53
	160	Aliphatic >C10-C12		**1246**	**8153**	<10	<10	<65	<65
	78.11	Aromatic >C5-EC7 (Benzene)		**<1.5**	**<4.8**	<1.5	<1.5	<4.8	<4.8
	92.13	Aromatic >EC7-EC8 (Toluene)		**18.2**	**68.6**	<1.5	<1.5	<5.7	<5.7
	120	Aromatic >EC8-EC10		**13**	**64**	<10	<10	<49	<49
	130	Aromatic >EC10-EC12		**60**	**319**	<10	<10	<53	<53

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS104
Depth:
EMT Job No: 20/5822
EMT Sample No: 3
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1150 0.55
Sample Train Serial number: ST-164

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight		Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
75-01-4	62.5	#	Vinyl Chloride		<1.5	<3.8	<1.5	<1.5	<3.8	<3.8
75-71-8	120.91		Dichlorodifluoromethane (F-12)		<2.5	<12.4	<2.5	<2.5	<12.4	<12.4
74-87-3	50.49		Chloromethane		<1.5	<3.1	<1.5	<1.5	<3.1	<3.1
74-83-9	94.95	#	Bromomethane		<1.5	<5.8	<1.5	<1.5	<5.8	<5.8
75-00-3	64.52	#	Chloroethane		<1.5	<4.0	<1.5	<1.5	<4.0	<4.0
75-69-4	137.36	#	Trichlorofluoromethane (F-11)		<1.5	<8.4	<1.5	<1.5	<8.4	<8.4
75-35-4	96.95		1,1-Dichloroethene (1,1 DCE)		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-09-2	84.93	#	Dichloromethane (DCM)		<14.4	<50	<14.4	<14.4	<50	<50
156-60-5	96.94		Trans-1,2-Dichloroethene		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-34-3	98.97	#	1,1-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
156-59-2	96.94	#	cis-1,2-Dichloroethene		<1	<4	<1	<1	<4	<4
594-20-7	112.99		2,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38		Bromochloromethane (Int Std)		NA	NA	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	#	Chloroform		<1.5	<7.3	<1.5	<1.5	<7.3	<7.3
71-55-6	133.42	#	1,1,1-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
563-58-6	110.97		1,1-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
56-23-5	153.84	#	Carbon Tetrachloride		<1.5	<9.4	<1.5	<1.5	<9.4	<9.4
107-06-2	98.96	#	1,2-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
71-43-2	78.11	#	Benzene		<1.5	<4.8	<1.5	<1.5	<4.8	<4.8
79-01-6	131.4	#	Trichloroethene (TCE)		<1.5	<8.1	<1.5	<1.5	<8.1	<8.1
78-87-5	112.99	#	1,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-95-3	173.83		Dibromomethane		<1.5	<10.7	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83		Bromodichloromethane		<1.5	<10.1	<1.5	<1.5	<10.1	<10.1
10061-01-5	110.97	#	cis-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
108-88-3	92.13	#	Toluene		10.9	41.1	<1.5	<1.5	<5.7	<5.7
10061-02-6	110.97	#	trans-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
79-00-5	133.4	#	1,1,2-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
127-18-4	165.85	#	Tetrachloroethene (PCE)		<1.5	<10.2	<1.5	<1.5	<10.2	<10.2
142-28-9	112.99		1,3-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
124-48-1	208.28		Dibromochloromethane		<1.5	<12.8	<1.5	<1.5	<12.8	<12.8
106-93-4	187.86	#	1,2-Dibromoethane		<1.5	<11.5	<1.5	<1.5	<11.5	<11.5
108-90-7	112.56	#	Chlorobenzene		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
630-20-6	167.85		1,1,1,2-Tetrachloroethane		<1.5	<10.3	<1.5	<1.5	<10.3	<10.3
100-41-4	106.16	#	Ethylbenzene		<1.5	<6.5	<1.5	<1.5	<6.5	<6.5
179601-23-1	106.17	#	m/p-Xylene		4	17.4	<1.5	<1.5	<6.5	<6.5
95-47-6	106.17	#	o-Xylene		1.5	6.5	<1.5	<1.5	<6.5	<6.5
100-42-5	104.14	#	Styrene		<1.5	<6.4	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77		Bromoform		<1.5	<15.5	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19		Isopropylbenzene		<1.5	<7.4	<1.5	<1.5	<7.4	<7.4

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS104
Depth:
EMT Job No: 20/5822
EMT Sample No: 3
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1150 0.55
Sample Train Serial number: ST-164

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
79-34-5	167.85	# 1,1,2,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
108-86-1	157.01	Bromobenzene		**<1.5**	**<9.6**	<1.5	<1.5	<9.6	<9.6
96-18-4	147.43	1,2,3-Trichloropropane		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
103-65-1	120.19	Propylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
95-49-8	126.58	2-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
108-67-8	120.2	# 1,3,5-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
106-43-4	126.58	4-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
98-06-6	134.22	Tert-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-63-6	120.19	# 1,2,4-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
135-98-8	134.22	Sec-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
99-87-6	134.22	4-Isopropyltoluene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
106-46-7	147.01	# 1,4-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
541-73-1	147.01	# 1,3-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
104-51-8	134.22	n-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-50-1	147	# 1,2-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
96-12-8	236.33	1,2-Dibromo-3-chloropropane		**<1.5**	**<14.5**	<1.5	<1.5	<14.5	<14.5
120-82-1	181.46	1,2,4-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
87-68-3	260.76	Hexachlorobutadiene		**<1.5**	**<16.0**	<1.5	<1.5	<16.0	<16.0
91-20-3	128.17	Naphthalene		**<0.32**	**<1.7**	<0.32	<0.32	<1.7	<1.7
87-61-6	181.45	1,2,3-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
1634-04-4	88.15	Methyl tertiary butyl ether		**<1.5**	**<5.4**	<1.5	<1.5	<5.4	<5.4
		Sum of VOC USEPA compounds		**16.4**	**65**				
460-00-4		4-Bromofluorobenzene Surrogate Recovery		**94%**		0%	0%		
	81	Aliphatic >C4-C6		**28**	**93**	<10	<10	<33	<33
	100	Aliphatic >C6-C8		**31**	**127**	<10	<10	<41	<41
	130	Aliphatic >C8-C10		**4562**	**24255**	<10	<10	<53	<53
	160	Aliphatic >C10-C12		**939**	**6145**	<10	<10	<65	<65
	78.11	Aromatic >C5-EC7 (Benzene)		**<1.5**	**<4.8**	<1.5	<1.5	<4.8	<4.8
	92.13	Aromatic >EC7-EC8 (Toluene)		**10.9**	**41.1**	<1.5	<1.5	<5.7	<5.7
	120	Aromatic >EC8-EC10		**<10**	**<49**	<10	<10	<49	<49
	130	Aromatic >EC10-EC12		**147**	**782**	<10	<10	<53	<53

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS108
Depth:
EMT Job No: 20/5822
EMT Sample No: 4
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1167 0.55
Sample Train Serial number: ST-167

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
75-01-4	62.5	# Vinyl Chloride		<1.5	<3.8	<1.5	<1.5	<3.8	<3.8
75-71-8	120.91	Dichlorodifluoromethane (F-12)		<2.5	<12.4	<2.5	<2.5	<12.4	<12.4
74-87-3	50.49	Chloromethane		<1.5	<3.1	<1.5	<1.5	<3.1	<3.1
74-83-9	94.95	# Bromomethane		<1.5	<5.8	<1.5	<1.5	<5.8	<5.8
75-00-3	64.52	# Chloroethane		<1.5	<4.0	<1.5	<1.5	<4.0	<4.0
75-69-4	137.36	# Trichlorofluoromethane (F-11)		<1.5	<8.4	<1.5	<1.5	<8.4	<8.4
75-35-4	96.95	1,1-Dichloroethene (1,1 DCE)		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-09-2	84.93	# Dichloromethane (DCM)		<14.4	<50	<14.4	<14.4	<50	<50
156-60-5	96.94	Trans-1,2-Dichloroethene		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-34-3	98.97	# 1,1-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
156-59-2	96.94	# cis-1,2-Dichloroethene		<1	<4	<1	<1	<4	<4
594-20-7	112.99	2,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38	Bromochloromethane (Int Std)		NA	NA	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	# Chloroform		<1.5	<7.3	<1.5	<1.5	<7.3	<7.3
71-55-6	133.42	# 1,1,1-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
563-58-6	110.97	1,1-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
56-23-5	153.84	# Carbon Tetrachloride		<1.5	<9.4	<1.5	<1.5	<9.4	<9.4
107-06-2	98.96	# 1,2-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
71-43-2	78.11	# Benzene		<1.5	<4.8	<1.5	<1.5	<4.8	<4.8
79-01-6	131.4	# Trichloroethene (TCE)		<1.5	<8.1	<1.5	<1.5	<8.1	<8.1
78-87-5	112.99	# 1,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-95-3	173.83	Dibromomethane		<1.5	<10.7	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83	Bromodichloromethane		<1.5	<10.1	<1.5	<1.5	<10.1	<10.1
10061-01-5	110.97	# cis-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
108-88-3	92.13	# Toluene		7.4	27.9	<1.5	<1.5	<5.7	<5.7
10061-02-6	110.97	# trans-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
79-00-5	133.4	# 1,1,2-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
127-18-4	165.85	# Tetrachloroethene (PCE)		<1.5	<10.2	<1.5	<1.5	<10.2	<10.2
142-28-9	112.99	1,3-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
124-48-1	208.28	Dibromochloromethane		<1.5	<12.8	<1.5	<1.5	<12.8	<12.8
106-93-4	187.86	# 1,2-Dibromoethane		<1.5	<11.5	<1.5	<1.5	<11.5	<11.5
108-90-7	112.56	# Chlorobenzene		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
630-20-6	167.85	1,1,1,2-Tetrachloroethane		<1.5	<10.3	<1.5	<1.5	<10.3	<10.3
100-41-4	106.16	# Ethylbenzene		<1.5	<6.5	<1.5	<1.5	<6.5	<6.5
179601-23-1	106.17	# m/p-Xylene		3.4	14.8	<1.5	<1.5	<6.5	<6.5
95-47-6	106.17	# o-Xylene		<1.5	<6.5	<1.5	<1.5	<6.5	<6.5
100-42-5	104.14	# Styrene		<1.5	<6.4	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77	Bromoform		<1.5	<15.5	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19	Isopropylbenzene		<1.5	<7.4	<1.5	<1.5	<7.4	<7.4

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS108
Depth:
EMT Job No: 20/5822
EMT Sample No: 4
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1167 0.55
Sample Train Serial number: ST-167

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
79-34-5	167.85	# 1,1,2,2-Tetrachloroethane		<1.5	<10.3	<1.5	<1.5	<10.3	<10.3
108-86-1	157.01	Bromobenzene		<1.5	<9.6	<1.5	<1.5	<9.6	<9.6
96-18-4	147.43	1,2,3-Trichloropropane		<1.5	<9.0	<1.5	<1.5	<9.0	<9.0
103-65-1	120.19	Propylbenzene		<1.5	<7.4	<1.5	<1.5	<7.4	<7.4
95-49-8	126.58	2-Chlorotoluene		<1.5	<7.8	<1.5	<1.5	<7.8	<7.8
108-67-8	120.2	# 1,3,5-Trimethylbenzene		<1.5	<7.4	<1.5	<1.5	<7.4	<7.4
106-43-4	126.58	4-Chlorotoluene		<1.5	<7.8	<1.5	<1.5	<7.8	<7.8
98-06-6	134.22	Tert-Butylbenzene		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
95-63-6	120.19	# 1,2,4-Trimethylbenzene		<1.5	<7.4	<1.5	<1.5	<7.4	<7.4
135-98-8	134.22	Sec-Butylbenzene		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
99-87-6	134.22	4-Isopropyltoluene		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
106-46-7	147.01	# 1,4-Dichlorobenzene		<1.5	<9.0	<1.5	<1.5	<9.0	<9.0
541-73-1	147.01	# 1,3-Dichlorobenzene		<1.5	<9.0	<1.5	<1.5	<9.0	<9.0
104-51-8	134.22	n-Butylbenzene		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
95-50-1	147	# 1,2-Dichlorobenzene		<1.5	<9.0	<1.5	<1.5	<9.0	<9.0
96-12-8	236.33	1,2-Dibromo-3-chloropropane		<1.5	<14.5	<1.5	<1.5	<14.5	<14.5
120-82-1	181.46	1,2,4-Trichlorobenzene		<1.5	<11.1	<1.5	<1.5	<11.1	<11.1
87-68-3	260.76	Hexachlorobutadiene		<1.5	<16.0	<1.5	<1.5	<16.0	<16.0
91-20-3	128.17	Naphthalene		<0.32	<1.7	<0.32	<0.32	<1.7	<1.7
87-61-6	181.45	1,2,3-Trichlorobenzene		<1.5	<11.1	<1.5	<1.5	<11.1	<11.1
1634-04-4	88.15	Methyl tertiary butyl ether		<1.5	<5.4	<1.5	<1.5	<5.4	<5.4
		Sum of VOC USEPA compounds		10.8	42.7				
460-00-4		4-Bromofluorobenzene Surrogate Recovery		89%		0%	0%		
	81	Aliphatic >C4-C6		11	36	<10	<10	<33	<33
	100	Aliphatic >C6-C8		<10	<41	<10	<10	<41	<41
	130	Aliphatic >C8-C10		<10	<53	<10	<10	<53	<53
	160	Aliphatic >C10-C12		<10	<65	<10	<10	<65	<65
	78.11	Aromatic >C5-EC7 (Benzene)		<1.5	<4.8	<1.5	<1.5	<4.8	<4.8
	92.13	Aromatic >EC7-EC8 (Toluene)		7.4	27.9	<1.5	<1.5	<5.7	<5.7
	120	Aromatic >EC8-EC10		<10	<49	<10	<10	<49	<49
	130	Aromatic >EC10-EC12		<10	<53	<10	<10	<53	<53

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS110
Depth:
EMT Job No: 20/5822
EMT Sample No: 5
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1037 0.55
Sample Train Serial number: ST-169

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight		Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
75-01-4	62.5	#	Vinyl Chloride		**<1.5**	**<3.8**	<1.5	<1.5	<3.8	<3.8
75-71-8	120.91		Dichlorodifluoromethane (F-12)		**<2.5**	**<12.4**	<2.5	<2.5	<12.4	<12.4
74-87-3	50.49		Chloromethane		**<1.5**	**<3.1**	<1.5	<1.5	<3.1	<3.1
74-83-9	94.95	#	Bromomethane		**<1.5**	**<5.8**	<1.5	<1.5	<5.8	<5.8
75-00-3	64.52	#	Chloroethane		**<1.5**	**<4.0**	<1.5	<1.5	<4.0	<4.0
75-69-4	137.36	#	Trichlorofluoromethane (F-11)		**<1.5**	**<8.4**	<1.5	<1.5	<8.4	<8.4
75-35-4	96.95		1,1-Dichloroethene (1,1 DCE)		**<1.5**	**<5.9**	<1.5	<1.5	<5.9	<5.9
75-09-2	84.93	#	Dichloromethane (DCM)		**<14.4**	**<50**	<14.4	<14.4	<50	<50
156-60-5	96.94		Trans-1,2-Dichloroethene		**<1.5**	**<5.9**	<1.5	<1.5	<5.9	<5.9
75-34-3	98.97	#	1,1-Dichloroethane		**<1.5**	**<6.1**	<1.5	<1.5	<6.1	<6.1
156-59-2	96.94	#	cis-1,2-Dichloroethene		**<1**	**<4**	<1	<1	<4	<4
594-20-7	112.99		2,2-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38		Bromochloromethane (Int Std)		**NA**	**NA**	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	#	Chloroform		**<1.5**	**<7.3**	<1.5	<1.5	<7.3	<7.3
71-55-6	133.42	#	1,1,1-Trichloroethane		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
563-58-6	110.97		1,1-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
56-23-5	153.84	#	Carbon Tetrachloride		**<1.5**	**<9.4**	<1.5	<1.5	<9.4	<9.4
107-06-2	98.96	#	1,2-Dichloroethane		**<1.5**	**<6.1**	<1.5	<1.5	<6.1	<6.1
71-43-2	78.11	#	Benzene		**53.4**	**170.6**	<1.5	<1.5	<4.8	<4.8
79-01-6	131.4	#	Trichloroethene (TCE)		**<1.5**	**<8.1**	<1.5	<1.5	<8.1	<8.1
78-87-5	112.99	#	1,2-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
74-95-3	173.83		Dibromomethane		**<1.5**	**<10.7**	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83		Bromodichloromethane		**<1.5**	**<10.1**	<1.5	<1.5	<10.1	<10.1
10061-01-5	110.97	#	cis-1,3-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
108-88-3	92.13	#	Toluene		**340.5**	**1283**	<1.5	<1.5	<5.7	<5.7
10061-02-6	110.97	#	trans-1,3-Dichloropropene		**<1.5**	**<6.8**	<1.5	<1.5	<6.8	<6.8
79-00-5	133.4	#	1,1,2-Trichloroethane		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
127-18-4	165.85	#	Tetrachloroethene (PCE)		**<1.5**	**<10.2**	<1.5	<1.5	<10.2	<10.2
142-28-9	112.99		1,3-Dichloropropane		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
124-48-1	208.28		Dibromochloromethane		**<1.5**	**<12.8**	<1.5	<1.5	<12.8	<12.8
106-93-4	187.86	#	1,2-Dibromoethane		**<1.5**	**<11.5**	<1.5	<1.5	<11.5	<11.5
108-90-7	112.56	#	Chlorobenzene		**<1.5**	**<6.9**	<1.5	<1.5	<6.9	<6.9
630-20-6	167.85		1,1,1,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
100-41-4	106.16	#	Ethylbenzene		**20.6**	**89.4**	<1.5	<1.5	<6.5	<6.5
179601-23-1	106.17	#	m/p-Xylene		**65.1**	**282.7**	<1.5	<1.5	<6.5	<6.5
95-47-6	106.17	#	o-Xylene		**22**	**95.5**	<1.5	<1.5	<6.5	<6.5
100-42-5	104.14	#	Styrene		**<1.5**	**<6.4**	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77		Bromoform		**<1.5**	**<15.5**	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19		Isopropylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS110
Depth:
EMT Job No: 20/5822
EMT Sample No: 5
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1037 0.55
Sample Train Serial number: ST-169

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
79-34-5	167.85	# 1,1,2,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
108-86-1	157.01	Bromobenzene		**<1.5**	**<9.6**	<1.5	<1.5	<9.6	<9.6
96-18-4	147.43	1,2,3-Trichloropropane		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
103-65-1	120.19	Propylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
95-49-8	126.58	2-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
108-67-8	120.2	# 1,3,5-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
106-43-4	126.58	4-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
98-06-6	134.22	Tert-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-63-6	120.19	# 1,2,4-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
135-98-8	134.22	Sec-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
99-87-6	134.22	4-Isopropyltoluene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
106-46-7	147.01	# 1,4-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
541-73-1	147.01	# 1,3-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
104-51-8	134.22	n-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-50-1	147	# 1,2-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
96-12-8	236.33	1,2-Dibromo-3-chloropropane		**<1.5**	**<14.5**	<1.5	<1.5	<14.5	<14.5
120-82-1	181.46	1,2,4-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
87-68-3	260.76	Hexachlorobutadiene		**<1.5**	**<16.0**	<1.5	<1.5	<16.0	<16.0
91-20-3	128.17	Naphthalene		**<0.32**	**<1.7**	<0.32	<0.32	<1.7	<1.7
87-61-6	181.45	1,2,3-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
1634-04-4	88.15	Methyl tertiary butyl ether		**<1.5**	**<5.4**	<1.5	<1.5	<5.4	<5.4
		Sum of VOC USEPA compounds		**501.6**	**1921.2**				
460-00-4		4-Bromofluorobenzene Surrogate Recovery		**91%**		0%	0%		
	81	Aliphatic >C4-C6		**83**	**275**	<10	<10	<33	<33
	100	Aliphatic >C6-C8		**208**	**851**	<10	<10	<41	<41
	130	Aliphatic >C8-C10		**22**	**117**	<10	<10	<53	<53
	160	Aliphatic >C10-C12		**<10**	**<65**	<10	<10	<65	<65
	78.11	Aromatic >C5-EC7 (Benzene)		**53.4**	**170.6**	<1.5	<1.5	<4.8	<4.8
	92.13	Aromatic >EC7-EC8 (Toluene)		**340.5**	**1283**	<1.5	<1.5	<5.7	<5.7
	120	Aromatic >EC8-EC10		**177**	**869**	<10	<10	<49	<49
	130	Aromatic >EC10-EC12		**<10**	**<53**	<10	<10	<53	<53

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS112
Depth:
EMT Job No: 20/5822
EMT Sample No: 6
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1039 0.55
Sample Train Serial number: ST-166

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight		Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
75-01-4	62.5	#	Vinyl Chloride		<1.5	<3.8	<1.5	<1.5	<3.8	<3.8
75-71-8	120.91		Dichlorodifluoromethane (F-12)		<2.5	<12.4	<2.5	<2.5	<12.4	<12.4
74-87-3	50.49		Chloromethane		<1.5	<3.1	<1.5	<1.5	<3.1	<3.1
74-83-9	94.95	#	Bromomethane		<1.5	<5.8	<1.5	<1.5	<5.8	<5.8
75-00-3	64.52	#	Chloroethane		<1.5	<4.0	<1.5	<1.5	<4.0	<4.0
75-69-4	137.36	#	Trichlorofluoromethane (F-11)		<1.5	<8.4	<1.5	<1.5	<8.4	<8.4
75-35-4	96.95		1,1-Dichloroethene (1,1 DCE)		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-09-2	84.93	#	Dichloromethane (DCM)		<14.4	<50	<14.4	<14.4	<50	<50
156-60-5	96.94		Trans-1,2-Dichloroethene		<1.5	<5.9	<1.5	<1.5	<5.9	<5.9
75-34-3	98.97	#	1,1-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
156-59-2	96.94	#	cis-1,2-Dichloroethene		<1	<4	<1	<1	<4	<4
594-20-7	112.99		2,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-97-5	129.38		Bromochloromethane (Int Std)		NA	NA	<1.5	<1.5	<7.9	<7.9
67-66-3	119.39	#	Chloroform		<1.5	<7.3	<1.5	<1.5	<7.3	<7.3
71-55-6	133.42	#	1,1,1-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
563-58-6	110.97		1,1-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
56-23-5	153.84	#	Carbon Tetrachloride		<1.5	<9.4	<1.5	<1.5	<9.4	<9.4
107-06-2	98.96	#	1,2-Dichloroethane		<1.5	<6.1	<1.5	<1.5	<6.1	<6.1
71-43-2	78.11	#	Benzene		2.5	8	<1.5	<1.5	<4.8	<4.8
79-01-6	131.4	#	Trichloroethene (TCE)		<1.5	<8.1	<1.5	<1.5	<8.1	<8.1
78-87-5	112.99	#	1,2-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
74-95-3	173.83		Dibromomethane		<1.5	<10.7	<1.5	<1.5	<10.7	<10.7
75-27-4	163.83		Bromodichloromethane		<1.5	<10.1	<1.5	<1.5	<10.1	<10.1
10061-01-5	110.97	#	cis-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
108-88-3	92.13	#	Toluene		17.8	67.1	<1.5	<1.5	<5.7	<5.7
10061-02-6	110.97	#	trans-1,3-Dichloropropene		<1.5	<6.8	<1.5	<1.5	<6.8	<6.8
79-00-5	133.4	#	1,1,2-Trichloroethane		<1.5	<8.2	<1.5	<1.5	<8.2	<8.2
127-18-4	165.85	#	Tetrachloroethene (PCE)		<1.5	<10.2	<1.5	<1.5	<10.2	<10.2
142-28-9	112.99		1,3-Dichloropropane		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
124-48-1	208.28		Dibromochloromethane		<1.5	<12.8	<1.5	<1.5	<12.8	<12.8
106-93-4	187.86	#	1,2-Dibromoethane		<1.5	<11.5	<1.5	<1.5	<11.5	<11.5
108-90-7	112.56	#	Chlorobenzene		<1.5	<6.9	<1.5	<1.5	<6.9	<6.9
630-20-6	167.85		1,1,1,2-Tetrachloroethane		<1.5	<10.3	<1.5	<1.5	<10.3	<10.3
100-41-4	106.16	#	Ethylbenzene		3.1	13.5	<1.5	<1.5	<6.5	<6.5
179601-23-1	106.17	#	m/p-Xylene		6.5	28.2	<1.5	<1.5	<6.5	<6.5
95-47-6	106.17	#	o-Xylene		1.5	6.5	<1.5	<1.5	<6.5	<6.5
100-42-5	104.14	#	Styrene		<1.5	<6.4	<1.5	<1.5	<6.4	<6.4
75-25-2	252.77		Bromoform		<1.5	<15.5	<1.5	<1.5	<15.5	<15.5
98-82-8	120.19		Isopropylbenzene		<1.5	<7.4	<1.5	<1.5	<7.4	<7.4

Element Materials Technology

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

Sample Date: 30 Apr 2020
Date of Receipt: 1 May 2020
Date Analysed: 4 May 2020

Sample ID: WS112
Depth:
EMT Job No: 20/5822
EMT Sample No: 6
Matrix: Air
Method: TM68 VOCs in gases (GC-MS)

Canister Serial number: V 1039 0.55
Sample Train Serial number: ST-166

Q* - Qualifiers

B Indicates analyte found in associated method blank
++ Indicates value exceeds calibration range

Key

MDL Method Detection Limit
RL Reporting Limit
ISO 17025 (UKAS) accredited

Cas No	Molecular Weight	Compound	Q*	RESULT ppbv	RESULT ug/m^3	RL ppbv	MDL ppbv	RL ug/m^3	MDL ug/m^3
79-34-5	167.85	# 1,1,2,2-Tetrachloroethane		**<1.5**	**<10.3**	<1.5	<1.5	<10.3	<10.3
108-86-1	157.01	Bromobenzene		**<1.5**	**<9.6**	<1.5	<1.5	<9.6	<9.6
96-18-4	147.43	1,2,3-Trichloropropane		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
103-65-1	120.19	Propylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
95-49-8	126.58	2-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
108-67-8	120.2	# 1,3,5-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
106-43-4	126.58	4-Chlorotoluene		**<1.5**	**<7.8**	<1.5	<1.5	<7.8	<7.8
98-06-6	134.22	Tert-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-63-6	120.19	# 1,2,4-Trimethylbenzene		**<1.5**	**<7.4**	<1.5	<1.5	<7.4	<7.4
135-98-8	134.22	Sec-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
99-87-6	134.22	4-Isopropyltoluene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
106-46-7	147.01	# 1,4-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
541-73-1	147.01	# 1,3-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
104-51-8	134.22	n-Butylbenzene		**<1.5**	**<8.2**	<1.5	<1.5	<8.2	<8.2
95-50-1	147	# 1,2-Dichlorobenzene		**<1.5**	**<9.0**	<1.5	<1.5	<9.0	<9.0
96-12-8	236.33	1,2-Dibromo-3-chloropropane		**<1.5**	**<14.5**	<1.5	<1.5	<14.5	<14.5
120-82-1	181.46	1,2,4-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
87-68-3	260.76	Hexachlorobutadiene		**<1.5**	**<16.0**	<1.5	<1.5	<16.0	<16.0
91-20-3	128.17	Naphthalene		**<0.32**	**<1.7**	<0.32	<0.32	<1.7	<1.7
87-61-6	181.45	1,2,3-Trichlorobenzene		**<1.5**	**<11.1**	<1.5	<1.5	<11.1	<11.1
1634-04-4	88.15	Methyl tertiary butyl ether		**<1.5**	**<5.4**	<1.5	<1.5	<5.4	<5.4
		Sum of VOC USEPA compounds		**31.4**	**123.3**				
460-00-4		4-Bromofluorobenzene Surrogate Recovery		**91%**		0%	0%		
	81	Aliphatic >C4-C6		**45**	**149**	<10	<10	<33	<33
	100	Aliphatic >C6-C8		**16**	**65**	<10	<10	<41	<41
	130	Aliphatic >C8-C10		**<10**	**<53**	<10	<10	<53	<53
	160	Aliphatic >C10-C12		**<10**	**<65**	<10	<10	<65	<65
	78.11	Aromatic >C5-EC7 (Benzene)		**2.5**	**8**	<1.5	<1.5	<4.8	<4.8
	92.13	Aromatic >EC7-EC8 (Toluene)		**17.8**	**67.1**	<1.5	<1.5	<5.7	<5.7
	120	Aromatic >EC8-EC10		**20**	**98**	<10	<10	<49	<49
	130	Aromatic >EC10-EC12		**<10**	**<53**	<10	<10	<53	<53

Job number: 20/5822
Sample number: 1
Sample identity: WS101
Sample depth:
Sample Type: Gas
Units: ppbv

Method: VOC
Matrix: Gas

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
74-98-6	Propane	2.959	91	201
78-78-4	Butane, 2-methyl-	4.273	94	21
109-66-0	Pentane	4.721	91	15
79-29-8	Butane, 2,3-dimethyl-	6.390	90	20
107-83-5	Pentane, 2-methyl-	6.513	91	28
96-14-0	Pentane, 3-methyl-	6.968	90	43
110-54-3	n-Hexane	7.548	94	23
96-37-7	Cyclopentane, methyl-	8.534	91	19
108-08-7	Pentane, 2,4-dimethyl-	8.652	90	12
565-59-3	Pentane, 2,3-dimethyl-	10.165	91	34
872-56-0	Isopropylcyclobutane	10.922	93	16
108-87-2	Cyclohexane, methyl-	12.206	91	14
592-13-2	Hexane, 2,5-dimethyl-	12.610	94	30
589-43-5	Hexane, 2,4-dimethyl-	12.704	91	22
16883-48-0	Cyclopentane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.alpha.)-	12.963	91	90
15890-40-1	Cyclopentane, 1,2,3-trimethyl-, (1.alpha.,2.alpha.,3.beta.)-	13.237	94	15
583-48-2	Hexane, 3,4-dimethyl-	14.067	90	28
2613-69-6	Cyclopentane, 1,2,3-trimethyl-, (1.alpha.,2.alpha.,3.alpha.)-	14.215	81	18
20309-77-7	Cyclopentane, 1,1,3,4-tetramethyl-, trans-	14.316	83	50
624-29-3	Cyclohexane, 1,4-dimethyl-, cis-	14.436	90	16
590-66-9	Cyclohexane, 1,1-dimethyl-	14.671	91	73
3726-46-3	Cyclopentane, 1-ethyl-2-methyl-	14.866	91	25
16747-50-5	Cyclopentane, 1-ethyl-1-methyl-	14.967	87	21
6876-23-9	Cyclohexane, 1,2-dimethyl-, trans-	15.101	95	322
2532-67-4	1.alpha.,2.beta.,3.alpha.,4.beta.-Tetramethylcyclopentane	15.269 - 19.747	86,90	321
2207-03-6	Cyclohexane, 1,3-dimethyl-, trans-	15.349	94	47
473-91-6	Cyclopentene, 1,2,3-trimethyl-	15.430	81	11
1839-63-0	Cyclohexane, 1,3,5-trimethyl-	16.340	94	151
3073-66-3	Cyclohexane, 1,1,3-trimethyl-	16.551	91	68
7094-27-1	1,1,4-Trimethylcyclohexane	16.672	87	356

Job number: 20/5822
Sample number: 1
Sample identity: WS101
Sample depth:
Sample Type: Gas
Units: ppbv

Method: VOC
Matrix: Gas

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
19489-10-2	cis-1-Ethyl-3-methyl-cyclohexane	16.766	83	99
7667-60-9	Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.beta.)-	17.083	94	605
1795-26-2	Cyclohexane, 1,3,5-trimethyl-, (1.alpha.,3.alpha.,5.beta.)-	17.186	93	62
53771-88-3	Cyclopentane, 1-methyl-3-(1-methylethyl)-	17.464	90	44
1755-05-1	Pentalene, octahydro-, cis-	17.546	80	62
2234-75-5	Cyclohexane, 1,2,4-trimethyl-	18.009 - 18.132	90,93	243
50876-32-9	Cyclohexane, 1,1,3,5-tetramethyl-, cis-	18.225	91	288
1000152-79-7	Cyclopentane, 1,2,3,4,5-pentamethyl-	18.338	80	69
7154-80-5	Heptane, 3,3,5-trimethyl-	18.636	83	34
872-05-9	1-Decene	18.694	80	55
7058-05-1	Cyclohexane, 1-ethyl-2,3-dimethyl-	20.642	87	203
71186-27-1	1-Ethyl-2,2,6-trimethylcyclohexane	23.331	93	40
493-02-7	Naphthalene, decahydro-, trans-	23.598	93	22

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Job number: 20/5822 **Method:** VOC
Sample number: 2 **Matrix:** Gas
Sample identity: WS102
Sample depth:
Sample Type: Gas
Units: ppbv

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
74-98-6	Propane	2.952	91	546
75-28-5	Isobutane	3.220	80	370
115-11-7	1-Propene, 2-methyl-	3.368 - 3.654	86,87,87	24
78-78-4	Butane, 2-methyl-	4.273	94	140
109-66-0	Pentane	4.713	91	51
75-83-2	Butane, 2,2-dimethyl-	5.546	90	11
79-29-8	Butane, 2,3-dimethyl-	6.389	91	61
96-14-0	Pentane, 3-methyl-	6.968	91	67
110-54-3	n-Hexane	7.540	94	22
590-35-2	Pentane, 2,2-dimethyl-	8.426	83	13
96-37-7	Cyclopentane, methyl-	8.534	91	20
108-08-7	Pentane, 2,4-dimethyl-	8.647	90	29
562-49-2	Pentane, 3,3-dimethyl-	9.610	83	15
110-82-7	Cyclohexane	9.783	91	16
565-59-3	Pentane, 2,3-dimethyl-	10.165	91	64
589-34-4	Hexane, 3-methyl-	10.417	95	13
822-50-4	Cyclopentane, 1,2-dimethyl-, trans-	10.922	91	26
108-87-2	Cyclohexane, methyl-	12.206	91	49
592-13-2	Hexane, 2,5-dimethyl-	12.610	94	35
589-43-5	Hexane, 2,4-dimethyl-	12.697	91	27
16883-48-0	Cyclopentane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.alpha.)-	12.963	91	82
15890-40-1	Cyclopentane, 1,2,3-trimethyl-, (1.alpha.,2.alpha.,3.beta.)-	13.237	91	24
108-88-3	Toluene	13.504	86	23
583-48-2	Hexane, 3,4-dimethyl-	14.060	87	16
20309-77-7	Cyclopentane, 1,1,3,4-tetramethyl-, trans-	14.315	83	45
638-04-0	Cyclohexane, 1,3-dimethyl-, cis-	14.362	90	65
589-90-2	Cyclohexane, 1,4-dimethyl-	14.429	91	39
590-66-9	Cyclohexane, 1,1-dimethyl-	14.664	91	70
3726-46-3	Cyclopentane, 1-ethyl-2-methyl-	14.859	91	19
6876-23-9	Cyclohexane, 1,2-dimethyl-, trans-	15.101	95	180

Job number: 20/5822
Sample number: 2
Sample identity: WS102
Sample depth:
Sample Type: Gas
Units: ppbv

Method: VOC
Matrix: Gas

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
2532-67-4	1.alpha.,2.beta.,3.alpha.,4.beta.-Tetramethylcyclopentane	15.262	87	73
2207-04-7	Cyclohexane, 1,4-dimethyl-, trans-	15.342	94	59
541-05-9	Cyclotrisiloxane, hexamethyl-	15.918	91	52
2213-23-2	Heptane, 2,4-dimethyl-	16.011	91	10
3073-66-3	Cyclohexane, 1,1,3-trimethyl-	16.551	92	200
7094-27-1	1,1,4-Trimethylcyclohexane	16.665	87	167
19489-10-2	cis-1-Ethyl-3-methyl-cyclohexane	16.759	83	49
7667-60-9	Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.beta.)-	17.073	94	341
7094-26-0	Cyclohexane, 1,1,2-trimethyl-	17.330	87	15
1755-05-1	Pentalene, octahydro-, cis-	17.546	91	40
2234-75-5	Cyclohexane, 1,2,4-trimethyl-	17.885 - 18.132	89,93	350
1189-99-7	Heptane, 2,5,5-trimethyl-	18.636	83	14
7146-60-3	Octane, 2,3-dimethyl-	19.195	80	62
15869-89-3	Octane, 2,5-dimethyl-	19.434	90	41
556-67-2	Cyclotetrasiloxane, octamethyl-	21.584	81	160
71186-27-1	1-Ethyl-2,2,6-trimethylcyclohexane	23.331	87	99
493-02-7	Naphthalene, decahydro-, trans-	23.598	93	59
1000152-47-3	trans-Decalin, 2-methyl-	25.313 - 25.767	83,96	39

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Job number: 20/5822 **Method:** VOC
Sample number: 3 **Matrix:** Gas
Sample identity: WS104
Sample depth:
Sample Type: Gas
Units: ppbv

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
96-14-0	Pentane, 3-methyl-	6.968	90	11
6876-23-9	Cyclohexane, 1,2-dimethyl-, trans-	15.094	95	13
2532-67-4	1.alpha.,2.beta.,3.alpha.,4.beta.-Tetramethylcyclopentane	15.262	90	22
541-05-9	Cyclotrisiloxane, hexamethyl-	15.918	91	158
1839-63-0	Cyclohexane, 1,3,5-trimethyl-	16.330	94	92
3073-66-3	Cyclohexane, 1,1,3-trimethyl-	16.552	91	346
7094-27-1	1,1,4-Trimethylcyclohexane	16.658	91	53
7667-60-9	Cyclohexane, 1,2,4-trimethyl-, (1.alpha.,2.beta.,4.beta.)-	17.073	94	124
1795-26-2	Cyclohexane, 1,3,5-trimethyl-, (1.alpha.,3.alpha.,5.beta.)-	17.186	93	23
7094-26-0	Cyclohexane, 1,1,2-trimethyl-	17.320 - 18.132	87,94	145
108-94-1	Cyclohexanone	17.433	93	15
1678-81-5	Cyclohexane, 1,2,3-trimethyl-, (1.alpha.,2.beta.,3.alpha.)-	17.886	90	170
50876-32-9	Cyclohexane, 1,1,3,5-tetramethyl-, cis-	18.225 - 20.083	81,91	500
1000152-79-7	Cyclopentane, 1,2,3,4,5-pentamethyl-	18.338	91	82
50876-31-8	Cyclohexane, 1,1,3,5-tetramethyl-, trans-	18.924	81	445
6783-92-2	Cyclohexane, 1,1,2,3-tetramethyl-	21.063	91	102
19689-18-0	4-Decene	21.689	83	48
81983-71-3	Cyclohexane, 1,1-dimethyl-2-propyl-	23.333	87	86
18968-23-5	Bicyclo[4.1.0]heptane, 3,7,7-trimethyl-, (1.alpha.,3.alpha.,6.alpha.)-	23.600	92	30

Please include all sections of this report if it is reproduced
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Job number: 20/5822
Sample number: 5
Sample identity: WS110
Sample depth:
Sample Type: Gas
Units: ppbv

Method: VOC
Matrix: Gas

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
107-83-5	Pentane, 2-methyl-	6.508	91	20
96-14-0	Pentane, 3-methyl-	6.971	90	24
110-54-3	n-Hexane	7.543	93	14
96-37-7	Cyclopentane, methyl-	8.534	90	11
591-76-4	Hexane, 2-methyl-	10.074	91	13
589-34-4	Hexane, 3-methyl-	10.420	94	17
589-81-1	Heptane, 3-methyl-	14.197	86	11
108-94-1	Cyclohexanone	17.441	93	13
1072-85-1	Benzene, 1-bromo-2-fluoro-	18.808	95	656

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Job number: 20/5822
Sample number: 6
Sample identity: WS112
Sample depth:
Sample Type: Gas
Units: ppbv

Method: VOC
Matrix: Gas

Note: Only samples with TICs (if requested) are reported. If TICs were requested but no compounds found they are not reported.

CAS No.	Tentative Compound Identification	Retention Time (minutes)	% Match	Concentration
96-14-0	Pentane, 3-methyl-	6.970	90	18
110-54-3	n-Hexane	7.542	93	12
541-05-9	Cyclotrisiloxane, hexamethyl-	15.915	91	149
108-94-1	Cyclohexanone	17.428	95	13

Please include all sections of this report if it is reproduced
All solid results are expressed on a dry weight basis unless stated otherwise.

Client Name: Ground Gas Solutions
Reference: GGS2230
Location:
Contact: Heather Rutter

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 20/5822						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 20/5822

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher, this result is not accredited.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

EMT Job No: 20/5822

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM68	Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS.	PM0	No preparation is required.				
TM68	Modified TO-15 method. Volatile Organic Compounds (VOCs) sampled using Gas Canisters, BottleVacs or Tedlar bags and analysed using Entech GC-MS.	PM0	No preparation is required.	Yes			

APPENDIX XIV
WM3 TESTING RESULTS



Waste Classification Report

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

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

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

659KQ-NHNS3-3CY2C

This Waste Classification Report contains user defined substances. See Appendix A for details.

Job name

17-403

Description/Comments

This Waste Classification is based on the analytical results provided by E3P on the Eurofins Chemtest Ltd 'Final Report' Number 24-22675-1. Soil Samples only. During the assessment we have considered the 'worst or most reasonable case' metals compounds as laboratory reports only provide total concentrations of a metal e.g. Cu but not which compound(s) (species) of the metal present within the respective soil samples e.g. CuSO4. If the assessment is non-hazardous based on these worst-case species no further 'species' consideration is required. With TPH, WM3 (EA) require assessment of the potential presence of an unknown 'oil' by assessing the TPH range C6 – C40. Where the concentration of TPH is >0.1% (1000mg/kg) the 'soil' will be classed as HP 7 Carcinogenic and HP 11 Mutagenic, unless the concentration of the marker benzo(a)pyrene is <0.01% of the TPH concentration and confirmation is received that the TPH result has not arisen from petrol or diesel sources. Note that samples consider moisture content correction factors. In the case of any samples exceeding the 1000mg/kg TPH value and also the marker benzo(a)pyrene at <0.01% of the TPH concentration, the moisture correction factor could make it 'non-hazardous'. It is the responsibility of the geo-environmental consultant to target the laboratory analysis suite and testing to appropriately reflect the nature of the site, its activities and its impact on surrounding soils. WM3 states that the assessment of asbestos containing waste considers both the presence of asbestos as a) fibres that are free and dispersed, and b) identifiable pieces of asbestos containing material. If the waste contains fibres that are free and dispersed then the waste will be hazardous if the waste as a whole contains 0.1% or more asbestos. Where the waste contains identifiable pieces of asbestos containing material (i.e. any size that can be identified as potentially being asbestos by a competent person by the naked eye) it is deemed hazardous.

Project

Waste Classification

Site

Ryebank

Classified by

Name:
Benjamin Prescott
Date:
17 Oct 2024 13:44 GMT
Telephone:
07856273713

Company:
RJT Consulting Partnerships Ltd
E3P Building
Taylor Road
Trafford Park, Manchester
M41 7JQ

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

HazWasteOnline™ Certification: CERTIFIED

Course	Date
Hazardous Waste Classification	06 Apr 2023

Next 3 year Refresher due by Apr 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Ryebank Road, Chorlton-cum-Hardy, Manchester **Post Code** M21 9LU

SIC for the process giving rise to the waste

41202 Construction of domestic buildings

Description of industry/producer giving rise to the waste

Residential development on open grassland which was formerly clay pits which have been infilled with Made Ground to depths in excess of 10m bgl.

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

Samples are taken from the MG on site.

Description of the waste

The laboratory test results describe the waste as brown loam with stones and roots.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	TP201	2	Hazardous	HP 7, HP 8	4
2	TP202	1	Hazardous	HP 8	7
3	WS201	2.8	Hazardous	HP 7, HP 8, HP 11	10
4	WS202	3	Hazardous	HP 7, HP 11	13
5	WS203	1	Non Hazardous		16
6	WS204	3.5	Hazardous	HP 3(i), HP 7, HP 10, HP 11, HP 14	18
7	WS205	2	Non Hazardous		21
8	WS206	0.8	Non Hazardous		23
9	CP201	5	Hazardous	HP 7, HP 14	25
10	CP203	5	Hazardous	HP 7	29

Related documents

#	Name	Description
1	Ryebank	waste stream template used to create this Job

Report

Created by: Benjamin Prescott

Created date: 17 Oct 2024 13:44 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	32
Appendix B: Rationale for selection of metal species	33
Appendix C: Version	34

Classification of sample: TP201

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

Sample details

Sample name:
TP201
Sample Depth:
2 m
Moisture content:
37%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

zinc chromate: (compound conc.: 0.113%)

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.6 pH)

Determinands

Moisture content: 37% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		11.6 pH		11.6 pH	11.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1.1 mg/kg	1.884	1.513 mg/kg	0.000151 %	✓	
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11 mg/kg	1.32	10.601 mg/kg	0.00106 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.1 mg/kg	1.142	0.917 mg/kg	0.0000917 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14 mg/kg	1.462	14.936 mg/kg	0.00149 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		440 mg/kg	1.126	361.599 mg/kg	0.0362 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.71 mg/kg	1.353	0.701 mg/kg	0.0000701 %	✓	
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		17 mg/kg	2.976	36.932 mg/kg	0.00369 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
9		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	510	mg/kg	1.56	580.661	mg/kg	0.0372 %	✓	
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.48	mg/kg	1.405	0.492	mg/kg	0.0000492 %	✓	
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		560	mg/kg	2.774	1133.958	mg/kg	0.113 %	✓	
12		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
13		TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
14		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
15		acenaphthylene		205-917-1	208-96-8		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
16		acenaphthene		201-469-6	83-32-9		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
17		fluorene		201-695-5	86-73-7		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
18		phenanthrene		201-581-5	85-01-8		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
19		anthracene		204-371-1	120-12-7		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
20		fluoranthene		205-912-4	206-44-0		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
21		pyrene		204-927-3	129-00-0		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
23		chrysene	601-048-00-0	205-923-4	218-01-9		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
27		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
29		benzo[ghi]perylene		205-883-8	191-24-2		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
30		phenol	604-001-00-2	203-632-7	108-95-2		0.11	mg/kg		0.0803	mg/kg	0.00000803 %	✓	
31		benzene	601-020-00-8	200-753-7	71-43-2		4.3	mg/kg		3.139	mg/kg	0.000314 %	✓	
32		toluene	601-021-00-3	203-625-9	108-88-3		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
33		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
34		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
35		cumene	601-024-00-X	202-704-5	98-82-8		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
36		propylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-097-00-8	203-132-9	103-65-1									
37		mesitylene; 1,3,5-trimethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-025-00-5	203-604-4	108-67-8									
38		1,2,4-trimethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-043-00-3	202-436-9	95-63-6									
39		sec-butylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
			205-227-0	135-98-8									
40		1-isopropyl-4-methylbenzene; p-cymene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-094-00-1	202-796-7	99-87-6									
41		n-butylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
			203-209-7	104-51-8									
42		2-Methylnapthalene				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
			202-078-3	91-57-6									
43		dibenzofuran				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
			205-071-3	132-64-9									
44		carbazole				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
			201-696-0	86-74-8									
45		bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
		607-317-00-9	204-211-0	117-81-7									
										Total:	0.197 %		

Key

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinand:

benzene: (conc.: 0.00031%)

Classification of sample: TP202

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

Sample details

Sample name:
TP202
Sample Depth:
1 m
Moisture content:
16%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.5 pH)

Determinands

Moisture content: 16% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		11.5 pH		11.5 pH	11.5 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	19.35 mg/kg	0.00193 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.21 mg/kg	1.142	0.207 mg/kg	0.0000207 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22 mg/kg	1.462	27.719 mg/kg	0.00277 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		110 mg/kg	1.126	106.765 mg/kg	0.0107 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.23 mg/kg	1.353	0.268 mg/kg	0.0000268 %	✓	
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		30 mg/kg	2.976	76.972 mg/kg	0.0077 %	✓	
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	280 mg/kg	1.56	376.507 mg/kg	0.0241 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.52 mg/kg	1.405	0.63 mg/kg	0.000063 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		270 mg/kg	2.774	645.707 mg/kg	0.0646 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
12		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
13		TPH (C6 to C40) petroleum group			TPH		160	mg/kg		137.931	mg/kg	0.0138 %	✓	
14		naphthalene	601-052-00-2	202-049-5	91-20-3		0.51	mg/kg		0.44	mg/kg	0.000044 %	✓	
15		acenaphthylene		205-917-1	208-96-8		0.67	mg/kg		0.578	mg/kg	0.0000578 %	✓	
16		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
17		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
18		phenanthrene		201-581-5	85-01-8		32	mg/kg		27.586	mg/kg	0.00276 %	✓	
19		anthracene		204-371-1	120-12-7		8.7	mg/kg		7.5	mg/kg	0.00075 %	✓	
20		fluoranthene		205-912-4	206-44-0		27	mg/kg		23.276	mg/kg	0.00233 %	✓	
21		pyrene		204-927-3	129-00-0		19	mg/kg		16.379	mg/kg	0.00164 %	✓	
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		11	mg/kg		9.483	mg/kg	0.000948 %	✓	
23		chrysene	601-048-00-0	205-923-4	218-01-9		9.4	mg/kg		8.103	mg/kg	0.00081 %	✓	
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		12	mg/kg		10.345	mg/kg	0.00103 %	✓	
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		4.4	mg/kg		3.793	mg/kg	0.000379 %	✓	
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		9.7	mg/kg		8.362	mg/kg	0.000836 %	✓	
27		indeno[123-cd]pyrene		205-893-2	193-39-5		6.1	mg/kg		5.259	mg/kg	0.000526 %	✓	
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		1.5	mg/kg		1.293	mg/kg	0.000129 %	✓	
29		benzo[ghi]perylene		205-883-8	191-24-2		4.8	mg/kg		4.138	mg/kg	0.000414 %	✓	
30		phenol	604-001-00-2	203-632-7	108-95-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
											Total:	0.139 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0138%)

Classification of sample: WS201

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

Sample details

Sample name:
WS201
Sample Depth:
2.8 m
Moisture content:
23%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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

Hazard Statements hit:

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

Because of determinands:

asbestos: (conc.: 0.569%)
zinc chromate: (compound conc.: 0.131%)

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.276%)

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH: (conc.: 11.7 pH)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.276%)

Determinands

Moisture content: 23% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1		asbestos 650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6		7000 mg/kg		5691.057 mg/kg	0.569 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
					77536-67-5 12001-29-5									
2		pH			PH		11.7	pH		11.7	pH	11.7 pH		
3		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.9	mg/kg	1.884	1.379	mg/kg	0.000138 %	✓	
4		arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		40	mg/kg	1.32	42.937	mg/kg	0.00429 %	✓	
5		cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.62	mg/kg	1.142	0.576	mg/kg	0.0000576 %	✓	
6		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		33	mg/kg	1.462	39.212	mg/kg	0.00392 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		260	mg/kg	1.126	237.993	mg/kg	0.0238 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.52	mg/kg	1.353	0.572	mg/kg	0.0000572 %	✓	
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		62	mg/kg	2.976	150.023	mg/kg	0.015 %	✓	
10		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	950	mg/kg	1.56	1204.735	mg/kg	0.0772 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.4	mg/kg	1.405	1.599	mg/kg	0.00016 %	✓	
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		580	mg/kg	2.774	1308.134	mg/kg	0.131 %	✓	
13		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<**LOD**
14		TPH (C6 to C40) petroleum group			TPH		3400	mg/kg		2764.228	mg/kg	0.276 %	✓	
15		naphthalene	601-052-00-2	202-049-5	91-20-3		0.71	mg/kg		0.577	mg/kg	0.0000577 %	✓	
16		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
18		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		phenanthrene		201-581-5	85-01-8		12	mg/kg		9.756	mg/kg	0.000976 %	✓	
20		anthracene		204-371-1	120-12-7		3	mg/kg		2.439	mg/kg	0.000244 %	✓	
21		fluoranthene		205-912-4	206-44-0		13	mg/kg		10.569	mg/kg	0.00106 %	✓	
22		pyrene		204-927-3	129-00-0		11	mg/kg		8.943	mg/kg	0.000894 %	✓	
23		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		5.2	mg/kg		4.228	mg/kg	0.000423 %	✓	
24		chrysene	601-048-00-0	205-923-4	218-01-9		4.9	mg/kg		3.984	mg/kg	0.000398 %	✓	
25		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		7.1	mg/kg		5.772	mg/kg	0.000577 %	✓	
26		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		2.4	mg/kg		1.951	mg/kg	0.000195 %	✓	
27		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		5.4	mg/kg		4.39	mg/kg	0.000439 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
28		indeno[123-cd]pyrene				3.7	mg/kg		3.008	mg/kg	0.000301 %	✓	
			205-893-2	193-39-5									
29		dibenz[a,h]anthracene				0.91	mg/kg		0.74	mg/kg	0.000074 %	✓	
		601-041-00-2	200-181-8	53-70-3									
30		benzo[ghi]perylene				3.1	mg/kg		2.52	mg/kg	0.000252 %	✓	
			205-883-8	191-24-2									
31		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	1.107 %		

Key

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.276%)

Classification of sample: WS202

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

Sample details

Sample name:
WS202
Sample Depth:
3 m
Moisture content:
26%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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

Hazard Statements hit:

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

Because of determinands:

lead chromate: (Note 1 conc.: 0.135%)
TPH (C6 to C40) petroleum group: (conc.: 0.952%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.952%)

Determinands

Moisture content: 26% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.9 pH		8.9 pH	8.9 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				73 mg/kg	1.884	109.152 mg/kg	0.0109 %	✓	
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		150 mg/kg	1.32	157.182 mg/kg	0.0157 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.68 mg/kg	1.142	0.616 mg/kg	0.0000616 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		34 mg/kg	1.462	39.439 mg/kg	0.00394 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		450 mg/kg	1.126	402.103 mg/kg	0.0402 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
7		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.2	mg/kg	1.353	1.289	mg/kg	0.000129 %	✓	
8		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		33	mg/kg	2.976	77.95	mg/kg	0.00779 %	✓	
9		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	1700	mg/kg	1.56	2104.513	mg/kg	0.135 %	✓	
10		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.92	mg/kg	1.405	1.026	mg/kg	0.000103 %	✓	
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		310	mg/kg	2.774	682.528	mg/kg	0.0683 %	✓	
12		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<**LOD**
13		TPH (C6 to C40) petroleum group			TPH		12000	mg/kg		9523.81	mg/kg	0.952 %	✓	
14		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
15		acenaphthylene		205-917-1	208-96-8		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
16		acenaphthene		201-469-6	83-32-9		8.5	mg/kg		6.746	mg/kg	0.000675 %	✓	
17		fluorene		201-695-5	86-73-7		2.9	mg/kg		2.302	mg/kg	0.00023 %	✓	
18		phenanthrene		201-581-5	85-01-8		3.3	mg/kg		2.619	mg/kg	0.000262 %	✓	
19		anthracene		204-371-1	120-12-7		1.5	mg/kg		1.19	mg/kg	0.000119 %	✓	
20		fluoranthene		205-912-4	206-44-0		8.8	mg/kg		6.984	mg/kg	0.000698 %	✓	
21		pyrene		204-927-3	129-00-0		7.9	mg/kg		6.27	mg/kg	0.000627 %	✓	
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		3	mg/kg		2.381	mg/kg	0.000238 %	✓	
23		chrysene	601-048-00-0	205-923-4	218-01-9		3.5	mg/kg		2.778	mg/kg	0.000278 %	✓	
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		3.8	mg/kg		3.016	mg/kg	0.000302 %	✓	
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.2	mg/kg		0.952	mg/kg	0.0000952 %	✓	
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		2.9	mg/kg		2.302	mg/kg	0.00023 %	✓	
27		indeno[123-cd]pyrene		205-893-2	193-39-5		1.6	mg/kg		1.27	mg/kg	0.000127 %	✓	
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
29		benzo[ghi]perylene		205-883-8	191-24-2		1.9	mg/kg		1.508	mg/kg	0.000151 %	✓	
30		phenol	604-001-00-2	203-632-7	108-95-2		0.42	mg/kg		0.333	mg/kg	0.0000333 %	✓	
31		benzene	601-020-00-8	200-753-7	71-43-2		6.6	mg/kg		5.238	mg/kg	0.000524 %	✓	
32		toluene	601-021-00-3	203-625-9	108-88-3		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
33		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
34		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2]	95-47-6 [1] 106-42-3 [2]		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
			203-576-3 [3] 215-535-7 [4]	108-38-3 [3] 1330-20-7 [4]									
35		cumene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-024-00-X	202-704-5	98-82-8									
36		propylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-097-00-8	203-132-9	103-65-1									
37		mesitylene; 1,3,5-trimethylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-025-00-5	203-604-4	108-67-8									
38		1,2,4-trimethylbenzene				30	mg/kg		23.81	mg/kg	0.00238 %	✓	
		601-043-00-3	202-436-9	95-63-6									
39		sec-butylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
			205-227-0	135-98-8									
40		1-isopropyl-4-methylbenzene; p-cymene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		601-094-00-1	202-796-7	99-87-6									
41		n-butylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
			203-209-7	104-51-8									
42		2-Methylnapthalene				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
			202-078-3	91-57-6									
43		dibenzofuran				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
			205-071-3	132-64-9									
44		carbazole				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
			201-696-0	86-74-8									
45		bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<LOD
		607-317-00-9	204-211-0	117-81-7									
										Total:	1.243 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinand:

benzene: (conc.: 0.00052%)

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

Because of determinands:

TPH (C6 to C40) petroleum group: (conc.: 0.952%)
1,2,4-trimethylbenzene: (conc.: 0.00238%)

Classification of sample: WS203

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

Sample details

Sample name:
WS203
Sample Depth:
1 m
Moisture content:
8.6%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.9 pH		7.9 pH	7.9 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.1 mg/kg	1.32	8.632 mg/kg	0.000863 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9.4 mg/kg	1.462	12.651 mg/kg	0.00127 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		10 mg/kg	1.126	10.367 mg/kg	0.00104 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.05 mg/kg	1.353	0.0623 mg/kg	0.00000623 %	✓	
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		9.6 mg/kg	2.976	26.31 mg/kg	0.00263 %	✓	
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	14 mg/kg	1.56	20.108 mg/kg	0.00129 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.34 mg/kg	1.405	0.44 mg/kg	0.000044 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		26 mg/kg	2.774	66.416 mg/kg	0.00664 %	✓	
12	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
13	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene											
			205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
16		acenaphthene											
			201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17		fluorene											
			201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
18		phenanthrene											
			201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		anthracene											
			204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
20		fluoranthene											
			205-912-4	206-44-0		0.39	mg/kg		0.359	mg/kg	0.0000359 %	✓	
21		pyrene											
			204-927-3	129-00-0		0.41	mg/kg		0.378	mg/kg	0.0000378 %	✓	
22		benzo[a]anthracene											
		601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
23		chrysene											
		601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
24		benzo[b]fluoranthene											
		601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25		benzo[k]fluoranthene											
		601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
26		benzo[a]pyrene; benzo[def]chrysene											
		601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
27		indeno[123-cd]pyrene											
			205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28		dibenz[a,h]anthracene											
		601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
29		benzo[ghi]perylene											
			205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
30		phenol											
		604-001-00-2	203-632-7	108-95-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
										Total:	0.0152 %		

Key

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

Classification of sample: WS204

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

Sample details

Sample name:	LoW Code:	
WS204	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
3.5 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)
Moisture content:		
25% (dry weight correction)		

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 5.36%)

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

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 5.36%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 2; H361d "Suspected of damaging the unborn child."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 5.36%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:

Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 5.36%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 2; H411 "Toxic to aquatic life with long lasting effects."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 5.36%)

Determinands

Moisture content: 25% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.7	pH		7.7	pH	7.7 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		27	mg/kg	1.32	28.519	mg/kg	0.00285 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6	mg/kg	1.142	0.548	mg/kg	0.0000548 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	17.539	mg/kg	0.00175 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		260	mg/kg	1.126	234.185	mg/kg	0.0234 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		2.7	mg/kg	1.353	2.924	mg/kg	0.000292 %	✓	
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		24	mg/kg	2.976	57.144	mg/kg	0.00571 %	✓	
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	450	mg/kg	1.56	561.533	mg/kg	0.036 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				1.1	mg/kg	1.405	1.236	mg/kg	0.000124 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		440	mg/kg	2.774	976.5	mg/kg	0.0976 %	✓	
12	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<**LOD**
13	TPH (C6 to C40) petroleum group			TPH		67000	mg/kg		53600	mg/kg	5.36 %	✓	
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
15	acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
16	acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
17	fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
18	phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19	anthracene		204-371-1	120-12-7		2.9	mg/kg		2.32	mg/kg	0.000232 %	✓	
20	fluoranthene		205-912-4	206-44-0		7.9	mg/kg		6.32	mg/kg	0.000632 %	✓	
21	pyrene		204-927-3	129-00-0		7.6	mg/kg		6.08	mg/kg	0.000608 %	✓	
22	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
23	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
24	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
25		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-883-8	191-24-2									
30		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	5.53 %		

Key

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 5.36%)

Classification of sample: WS205

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

Sample details

Sample name:
WS205
Sample Depth:
2 m
Moisture content:
19%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.5	pH		10.5	pH	10.5 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<**LOD**
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15	mg/kg	1.32	16.643	mg/kg	0.00166 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.11	mg/kg	1.142	0.106	mg/kg	0.0000106 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16	mg/kg	1.462	19.651	mg/kg	0.00197 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		41	mg/kg	1.126	38.791	mg/kg	0.00388 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.16	mg/kg	1.353	0.182	mg/kg	0.0000182 %	✓	
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		15	mg/kg	2.976	37.516	mg/kg	0.00375 %	✓	
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	150	mg/kg	1.56	196.615	mg/kg	0.0126 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.43	mg/kg	1.405	0.508	mg/kg	0.0000508 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		100	mg/kg	2.774	233.122	mg/kg	0.0233 %	✓	
12	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<**LOD**
13	TPH (C6 to C40) petroleum group			TPH		260	mg/kg		218.487	mg/kg	0.0218 %	✓	
14	naphthalene	601-052-00-2	202-049-5	91-20-3		0.72	mg/kg		0.605	mg/kg	0.0000605 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				1.2	mg/kg		1.008	mg/kg	0.000101 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.27	mg/kg		0.227	mg/kg	0.0000227 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				1.2	mg/kg		1.008	mg/kg	0.000101 %	✓	
			205-912-4	206-44-0									
21		pyrene				1.1	mg/kg		0.924	mg/kg	0.0000924 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				0.51	mg/kg		0.429	mg/kg	0.0000429 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				0.46	mg/kg		0.387	mg/kg	0.0000387 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				0.84	mg/kg		0.706	mg/kg	0.0000706 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.3	mg/kg		0.252	mg/kg	0.0000252 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				0.53	mg/kg		0.445	mg/kg	0.0000445 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				0.52	mg/kg		0.437	mg/kg	0.0000437 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				0.46	mg/kg		0.387	mg/kg	0.0000387 %	✓	
			205-883-8	191-24-2									
30		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.07 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0218%)

Classification of sample: WS206

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

Sample details

Sample name:
WS206
Sample Depth:
0.8 m
Moisture content:
18%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 18% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.8 pH		8.8 pH	8.8 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<**LOD**
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20 mg/kg	1.32	22.378 mg/kg	0.00224 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.46 mg/kg	1.142	0.445 mg/kg	0.0000445 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24 mg/kg	1.462	29.727 mg/kg	0.00297 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		110 mg/kg	1.126	104.956 mg/kg	0.0105 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.42 mg/kg	1.353	0.482 mg/kg	0.0000482 %	✓	
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		26 mg/kg	2.976	65.579 mg/kg	0.00656 %	✓	
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	350 mg/kg	1.56	462.657 mg/kg	0.0297 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.97 mg/kg	1.405	1.155 mg/kg	0.000115 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		300 mg/kg	2.774	705.291 mg/kg	0.0705 %	✓	
12	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
13	TPH (C6 to C40) petroleum group			TPH		140 mg/kg		118.644 mg/kg	0.0119 %	✓	
14	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
15		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
16		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
17		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
18		phenanthrene				2.5	mg/kg		2.119	mg/kg	0.000212 %	✓	
			201-581-5	85-01-8									
19		anthracene				0.6	mg/kg		0.508	mg/kg	0.0000508 %	✓	
			204-371-1	120-12-7									
20		fluoranthene				4.1	mg/kg		3.475	mg/kg	0.000347 %	✓	
			205-912-4	206-44-0									
21		pyrene				3.6	mg/kg		3.051	mg/kg	0.000305 %	✓	
			204-927-3	129-00-0									
22		benzo[a]anthracene				1.8	mg/kg		1.525	mg/kg	0.000153 %	✓	
		601-033-00-9	200-280-6	56-55-3									
23		chrysene				1.9	mg/kg		1.61	mg/kg	0.000161 %	✓	
		601-048-00-0	205-923-4	218-01-9									
24		benzo[b]fluoranthene				2.8	mg/kg		2.373	mg/kg	0.000237 %	✓	
		601-034-00-4	205-911-9	205-99-2									
25		benzo[k]fluoranthene				0.88	mg/kg		0.746	mg/kg	0.0000746 %	✓	
		601-036-00-5	205-916-6	207-08-9									
26		benzo[a]pyrene; benzo[def]chrysene				2	mg/kg		1.695	mg/kg	0.000169 %	✓	
		601-032-00-3	200-028-5	50-32-8									
27		indeno[123-cd]pyrene				1.5	mg/kg		1.271	mg/kg	0.000127 %	✓	
			205-893-2	193-39-5									
28		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
29		benzo[ghi]perylene				1.4	mg/kg		1.186	mg/kg	0.000119 %	✓	
			205-883-8	191-24-2									
30		phenol				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.137 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0119%)

Classification of sample: CP201

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

Sample details

Sample name:
CP201
Sample Depth:
5 m
Moisture content:
20%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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

Hazard Statements hit:

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

Because of determinands:

asbestos: (conc.: 0.542%)
zinc chromate: (compound conc.: 0.324%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

zinc chromate: (compound conc.: 0.324%)

Determinands

Moisture content: 20% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	asbestos	650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5		6500 mg/kg		5416.667 mg/kg	0.542 %	✓	
2	pH			PH		8.6 pH		8.6 pH	8.6 pH		
3	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1.7 mg/kg	1.884	2.669 mg/kg	0.000267 %	✓	
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15 mg/kg	1.32	16.504 mg/kg	0.00165 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<**LOD**

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
6		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19	mg/kg	1.462	23.141	mg/kg	0.00231 %	✓	
7		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		860	mg/kg	1.126	806.887	mg/kg	0.0807 %	✓	
8		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		3	mg/kg	1.353	3.384	mg/kg	0.000338 %	✓	
9		nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		24	mg/kg	2.976	59.525	mg/kg	0.00595 %	✓	
10		lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	610	mg/kg	1.56	792.906	mg/kg	0.0508 %	✓	
11		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.25	mg/kg	1.405	<0.351	mg/kg	<0.0000351 %		<**LOD**
12		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		1400	mg/kg	2.774	3236.504	mg/kg	0.324 %	✓	
13		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<**LOD**
14		naphthalene	601-052-00-2	202-049-5	91-20-3		1.9	mg/kg		1.583	mg/kg	0.000158 %	✓	
15		acenaphthylene		205-917-1	208-96-8		0.84	mg/kg		0.7	mg/kg	0.00007 %	✓	
16		acenaphthene		201-469-6	83-32-9		6.8	mg/kg		5.667	mg/kg	0.000567 %	✓	
17		fluorene		201-695-5	86-73-7		18	mg/kg		15	mg/kg	0.0015 %	✓	
18		phenanthrene		201-581-5	85-01-8		90	mg/kg		75	mg/kg	0.0075 %	✓	
19		anthracene		204-371-1	120-12-7		25	mg/kg		20.833	mg/kg	0.00208 %	✓	
20		fluoranthene		205-912-4	206-44-0		73	mg/kg		60.833	mg/kg	0.00608 %	✓	
21		pyrene		204-927-3	129-00-0		54	mg/kg		45	mg/kg	0.0045 %	✓	
22		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		26	mg/kg		21.667	mg/kg	0.00217 %	✓	
23		chrysene	601-048-00-0	205-923-4	218-01-9		22	mg/kg		18.333	mg/kg	0.00183 %	✓	
24		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		23	mg/kg		19.167	mg/kg	0.00192 %	✓	
25		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		7.5	mg/kg		6.25	mg/kg	0.000625 %	✓	
26		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		17	mg/kg		14.167	mg/kg	0.00142 %	✓	
27		indeno[123-cd]pyrene		205-893-2	193-39-5		7.7	mg/kg		6.417	mg/kg	0.000642 %	✓	
28		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		2	mg/kg		1.667	mg/kg	0.000167 %	✓	
29		benzo[ghi]perylene		205-883-8	191-24-2		7.8	mg/kg		6.5	mg/kg	0.00065 %	✓	
30		phenol	604-001-00-2	203-632-7	108-95-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
31		benzene	601-020-00-8	200-753-7	71-43-2		48	mg/kg		40	mg/kg	0.004 %	✓	
32		toluene	601-021-00-3	203-625-9	108-88-3		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
33		ethylbenzene	601-023-00-4	202-849-4	100-41-4		7.6	mg/kg		6.333	mg/kg	0.000633 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
34		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]				40	mg/kg		33.333	mg/kg	0.00333 %	✓	
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		cumene				73	mg/kg		60.833	mg/kg	0.00608 %	✓	
		601-024-00-X	202-704-5	98-82-8									
36		propylbenzene				85	mg/kg		70.833	mg/kg	0.00708 %	✓	
		601-097-00-8	203-132-9	103-65-1									
37		mesitylene; 1,3,5-trimethylbenzene				13	mg/kg		10.833	mg/kg	0.00108 %	✓	
		601-025-00-5	203-604-4	108-67-8									
38		1,2,4-trimethylbenzene				270	mg/kg		225	mg/kg	0.0225 %	✓	
		601-043-00-3	202-436-9	95-63-6									
39		sec-butylbenzene				30	mg/kg		25	mg/kg	0.0025 %	✓	
			205-227-0	135-98-8									
40		1-isopropyl-4-methylbenzene; p-cymene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		601-094-00-1	202-796-7	99-87-6									
41		n-butylbenzene				25	mg/kg		20.833	mg/kg	0.00208 %	✓	
			203-209-7	104-51-8									
42		2-Methylnapthalene				2.4	mg/kg		2	mg/kg	0.0002 %	✓	
			202-078-3	91-57-6									
43		dibenzofuran				8.7	mg/kg		7.25	mg/kg	0.000725 %	✓	
			205-071-3	132-64-9									
44		carbazole				8.2	mg/kg		6.833	mg/kg	0.000683 %	✓	
			201-696-0	86-74-8									
45		bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				0.75	mg/kg		0.625	mg/kg	0.0000625 %	✓	
		607-317-00-9	204-211-0	117-81-7									
										Total:	1.091 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinands:

benzene: (conc.: 0.004%)
ethylbenzene: (conc.: 0.00063%)

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

Because of determinands:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 0.00333%)
cumene: (conc.: 0.00608%)
propylbenzene: (conc.: 0.00708%)
mesitylene; 1,3,5-trimethylbenzene: (conc.: 0.00108%)

1,2,4-trimethylbenzene: (conc.: 0.0225%)
sec-butylbenzene: (conc.: 0.0025%)
n-butylbenzene: (conc.: 0.00208%)

Classification of sample: CP203

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

Sample details

Sample name:
CP203
Sample Depth:
5 m
Moisture content:
16%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

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

Hazard Statements hit:

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

Because of determinand:

zinc chromate: (compound conc.: 0.11%)

Determinands

Moisture content: 16% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.6 pH		9.6 pH	9.6 pH		
2	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1.3 mg/kg	1.884	2.111 mg/kg	0.000211 %	✓	
3	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13 mg/kg	1.32	14.797 mg/kg	0.00148 %	✓	
4	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.9 mg/kg	1.142	1.871 mg/kg	0.000187 %	✓	
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		33 mg/kg	1.462	41.579 mg/kg	0.00416 %	✓	
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		1200 mg/kg	1.126	1164.712 mg/kg	0.116 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		1.1 mg/kg	1.353	1.283 mg/kg	0.000128 %	✓	
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		28 mg/kg	2.976	71.841 mg/kg	0.00718 %	✓	
9	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	750 mg/kg	1.56	1008.501 mg/kg	0.0647 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<0.25 mg/kg	1.405	<0.351 mg/kg	<0.0000351 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
11		zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		460	mg/kg	2.774	1100.093	mg/kg	0.11 %	✓	
12		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.25	mg/kg	1.923	<0.481	mg/kg	<0.0000481 %		<**LOD**
13		naphthalene	601-052-00-2	202-049-5	91-20-3		19	mg/kg		16.379	mg/kg	0.00164 %	✓	
14		acenaphthylene		205-917-1	208-96-8		<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
15		acenaphthene		201-469-6	83-32-9		6.8	mg/kg		5.862	mg/kg	0.000586 %	✓	
16		fluorene		201-695-5	86-73-7		5.1	mg/kg		4.397	mg/kg	0.00044 %	✓	
17		phenanthrene		201-581-5	85-01-8		35	mg/kg		30.172	mg/kg	0.00302 %	✓	
18		anthracene		204-371-1	120-12-7		6.7	mg/kg		5.776	mg/kg	0.000578 %	✓	
19		fluoranthene		205-912-4	206-44-0		27	mg/kg		23.276	mg/kg	0.00233 %	✓	
20		pyrene		204-927-3	129-00-0		22	mg/kg		18.966	mg/kg	0.0019 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		7.3	mg/kg		6.293	mg/kg	0.000629 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		7	mg/kg		6.034	mg/kg	0.000603 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		7.2	mg/kg		6.207	mg/kg	0.000621 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		2.6	mg/kg		2.241	mg/kg	0.000224 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		6.2	mg/kg		5.345	mg/kg	0.000534 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		2.9	mg/kg		2.5	mg/kg	0.00025 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.65	mg/kg		0.56	mg/kg	0.000056 %	✓	
28		benzo[ghi]perylene		205-883-8	191-24-2		3.3	mg/kg		2.845	mg/kg	0.000284 %	✓	
29		phenol	604-001-00-2	203-632-7	108-95-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
30		benzene	601-020-00-8	200-753-7	71-43-2		50	mg/kg		43.103	mg/kg	0.00431 %	✓	
31		toluene	601-021-00-3	203-625-9	108-88-3		210	mg/kg		181.034	mg/kg	0.0181 %	✓	
32		ethylbenzene	601-023-00-4	202-849-4	100-41-4		360	mg/kg		310.345	mg/kg	0.031 %	✓	
33		o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		2670	mg/kg		2301.724	mg/kg	0.23 %	✓	
34		cumene	601-024-00-X	202-704-5	98-82-8		250	mg/kg		215.517	mg/kg	0.0216 %	✓	
35		propylbenzene	601-097-00-8	203-132-9	103-65-1		470	mg/kg		405.172	mg/kg	0.0405 %	✓	
36		mesitylene; 1,3,5-trimethylbenzene	601-025-00-5	203-604-4	108-67-8		2200	mg/kg		1896.552	mg/kg	0.19 %	✓	
37		1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6		6500	mg/kg		5603.448	mg/kg	0.56 %	✓	
38		sec-butylbenzene		205-227-0	135-98-8		210	mg/kg		181.034	mg/kg	0.0181 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
39		1-isopropyl-4-methylbenzene; p-cymene				370	mg/kg		318.966	mg/kg	0.0319 %	✓	
		601-094-00-1	202-796-7	99-87-6									
40		n-butylbenzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
			203-209-7	104-51-8									
41		2-Methylnapthalene				4.1	mg/kg		3.534	mg/kg	0.000353 %	✓	
			202-078-3	91-57-6									
42		dibenzofuran				4.2	mg/kg		3.621	mg/kg	0.000362 %	✓	
			205-071-3	132-64-9									
43		carbazole				2.6	mg/kg		2.241	mg/kg	0.000224 %	✓	
			201-696-0	86-74-8									
44		bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP				<0.5	mg/kg		<0.5	mg/kg	<0.00005 %		<**LOD**
		607-317-00-9	204-211-0	117-81-7									
										Total:	1.465 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 12000 mg/kg (1.2%) because: HP3(i) Flammable relates to liquids. However, this assessment was undertaken on a solid soil sample and therefore this hazardous property does not apply to the concentration of this sample being below the upper threshold of 12,000mg/kg.

Hazard Statements hit:

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

Because of determinands:

benzene: (conc.: 0.00431%)
toluene: (conc.: 0.0181%)
ethylbenzene: (conc.: 0.031%)

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

Because of determinands:

o-xylene; [1] p-xylene; [2] m-xylene; [3] xylene [4]: (conc.: 0.23%)
cumene: (conc.: 0.0216%)
propylbenzene: (conc.: 0.0405%)
mesitylene; 1,3,5-trimethylbenzene: (conc.: 0.19%)
1,2,4-trimethylbenzene: (conc.: 0.56%)
sec-butylbenzene: (conc.: 0.0181%)
1-isopropyl-4-methylbenzene; p-cymene: (conc.: 0.0319%)

Appendix A: Classifier defined and non GB MCL determinands

- **pH** (CAS Number: PH)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

sec-butylbenzene (EC Number: 205-227-0, CAS Number: 135-98-8)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 02 Mar 2017
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Chronic 2; H411

n-butylbenzene (EC Number: 203-209-7, CAS Number: 104-51-8)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 02 Mar 2017
Hazard Statements: Flam. Liq. 3; H226 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

2-Methylnapthalene (EC Number: 202-078-3, CAS Number: 91-57-6)

Description/Comments: Origins: Organic and Petroleum Products
Data source: https://www.echa.europa.eu/web/guest/brief-profile/-/briefprofile/100.001.890
Data source date: 21 Oct 2020
Hazard Statements: Acute Tox. 4; H302 , Aquatic Chronic 2; H411 , Aquatic Chronic 1; H410 , Aquatic Acute 1; H400 , Eye Irrit. 2; H319 , Skin Irrit. 2; H315 , STOT SE 3; H335 , STOT SE 3; H336

dibenzofuran (EC Number: 205-071-3, CAS Number: 132-64-9)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 02 Mar 2017
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 4; H312 , Acute Tox. 4; H332 , Aquatic Chronic 2; H411

carbazole (EC Number: 201-696-0, CAS Number: 86-74-8)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;
Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 02 Mar 2017
Hazard Statements: Acute Tox. 4; H302 , Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Muta. 2; H341 , Carc. 2; H351 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Acute Tox. 3; H331 , Acute Tox. 3; H311 , Acute Tox. 3; H301

Appendix B: Rationale for selection of metal species

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

Worst Case

arsenic {arsenic trioxide}

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

cadmium {cadmium oxide}

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

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

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

copper {dicopper oxide; copper (I) oxide}

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

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight

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

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.289.6294.11540 (15 Oct 2024)
HazWasteOnline Database: 2024.289.6294.11540 (15 Oct 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024
GB MCL List v5.0 - version 5.0 of 26th June 2024

APPENDIX XV
STATIC PIEZOCONE PENETRATION TEST (CPTUS) RESULTS



IN SITU
SITE INVESTIGATION



STATIC CONE PENETRATION TEST

FACTUAL REPORT

CLIENT: E3P

PROJECT: Ryebank Fields, Chorlton

Project	**Ryebank Fields, Chorlton**
Project No.	**1240280**
Client	**E3P**
Address	**Taylor Road, Urmston, M41 7JQ**

Attention: Claire Gleave

Dear Claire,

We have pleasure in providing a digital copy of our report and data in AGS format for the above project.

We hope that you are satisfied with the performance of our staff, equipment and reporting on this project. If you should have any queries about any aspect of the works carried out, please do not hesitate to contact us. We look forward to being of service to you in the future.

Yours faithfully,
In Situ Site Investigation Limited



Darren Ward
Director

Report Issue

Issue	Date	Prepared	Sign	Checked	Sign	Approved	Sign
02	05/08/2024	Chloe Donovan		Darren Ward		Darren Ward	

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1.0 INTRODUCTION

In Situ Site Investigation Limited (In Situ) was engaged in a geotechnical site investigation at Ryebank Fields, Chorlton at the request of E3P. The site investigation consisted of completing 18 Static Piezocone Penetration Tests (CPTU), and 4 Dissipation Tests to provide information on the soil conditions and derived geotechnical parameters at:

Ryebank Fields,
Ryebank Road,
Chorlton-cum-Hardy,
Manchester
M21 9WW

All test locations were provided by the client. A site map is included in the end of Appendix A of this report (if provided by the client). The tests were stopped when they reached the target depth as per the client's technical specifications or for other technical reasons, as detailed in the *Project Summary Table* in *Appendix A.1* and on each CPTU log included in Appendix B of this report.

The fieldwork was carried out from 15th July 2024 to 16th July 2024 as per the client's request.

The work on site and the final factual reporting have been undertaken in accordance with the international technical standard *ISO 22476-1:2022(E)*.

2.0 FIELDWORK

2.1 CONE PENETRATION TESTS

The fieldwork activity is summarised in Table 2.1.

Table 2.1 Fieldwork Summary	
CPT Operator/s	Roger Shepherd & Nathan Apps
Date Started	15th July 2024
Date Finished	16th July 2024
In Situ S.I. Project Manager	Darren Ward
Main Contractor's Site Manager	Georgia Calvert

2.1.1 Rig Information

Details of CPTU rig used in this project are shown in Table 2.2. Full data sheet for the rig is presented in *Appendix A.2*.

Table 2.2 Rig Summary	
Rig Name	**Rig Description**
CPT025	20 Tonne Track/Wheel Mounted CPT Rig

2.1.2 CPTU Cone

Details of electric CPTU cone (Type TE2) used in this project conforming to the requirements of Application Class 2 of *ISO 22476-1:2022*, are shown in Table 2.3.

Table 2.3 Cone Summary		
Number	**Cross-section area**	**Filter position**
S15.CFIP.1983	15cm^2	u_2
S15.CFIP.2145	15cm^2	u_2

A full datasheet of the cone used is shown in *Appendix A.3*.

The cone's measured parameters are shown in Table 2.4.

Table 2.4 Completed Fieldwork Summary
18 CPTU to a maximum depth of 14.82m. Each test measured Cone Resistance, q_c, Sleeve Friction, f_s, Porewater Pressure in the shoulder position, u_2, Inclination in X and Y axes. 4 Dissipation tests to the required depths. Each Dissipation test measured the decay of excess porewater pressure (kPa) with time (s).
Provision of factual report with estimated soil type, derived geotechnical parameters & AGS data file.

2.1.3 CPTU Cone Calibration

The cone resistance and sleeve friction are recorded by calibrated load cells in the cone. The CPTU load cells and pressure transducers are regularly calibrated in line with *ISO 22476-1:2022(E)* standard by the cone manufacturer. The cone calibration certificate for the cone used at this site are presented in *Appendix A.4*.

2.1.4 CPTU Cone Saturation

The pore water pressure is recorded using a calibrated pressure transducer located in the piezocone. To ensure pore water pressure measurements are not affected by the presence of air in the measuring transducer, a de-airing procedure is carried out prior to each test. The cone and filter are saturated using a glycerine fluid with a viscosity of 10,000 CST.

2.1.5 Test Procedure

The tests are carried out in accordance with the *International Standard for Electrical Cone and Piezocone Penetration Test ISO 22476-1:2022(E)*.

The final depths of the tests were determined by either completion to the specified test depth or when the maximal safe capacity of the equipment was reached. A schedule of the tests performed is shown in *Appendix A.1*, which has been compiled from the operators' daily progress reports.

The data is transmitted from the digital CPTU through an umbilical cable that runs through the push rods to the data acquisition system. Results are displayed instantaneously on the computer logging screen. The results are recorded on the computer hard disc.

The rate of penetration is kept constant at 20 mm/s ± 5 mm/s except when penetrating very dense or hard strata. Before each test is carried out zero values are taken of the cone to check if it is within calibration. At the end of each test, zero values are taken again to see if there has been any drift during the test. These values are inspected during the post processing stage. This is a quality check on the data and the testing procedure. Individual test zero values are shown on their corresponding test results in *Appendix B*.

2.1.6 *In Situ Pore Pressure (u_0)*

The in situ or hydrostatic pore pressure is required for the calculation of several derived parameters included in this report. For this report, the groundwater level is assumed at 0.5m below ground surface, for calculation purposes. The in situ pore pressure, u_0 values are presented on the pore pressure plot, on *CPT Log 01,* which is included in *Appendix B*.

2.2 POSITIONING

Positioning and surveying of all investigated locations was the responsibility of the client.

2.3 DISSIPATION TESTS

As per the client's request 4 dissipation tests were performed at the required depth.
A summary table of the dissipation tests is presented in *Appendix A1*.

The dissipation test is carried out by pausing the penetration at a point when there is excess porewater pressure. This excess pore pressure generated around the cone will then start to dissipate, and the decay of pore pressure with time is recorded. The rate of dissipation depends upon the coefficient of consolidation, which in turn depends on the compressibility and permeability of the soil and on the diameter of the probe. It is common to record the time to reach 50% dissipation, t_{50}. If the equilibrium pore pressure is required, the dissipation test is continued until no further dissipation is observed. This can occur rapidly in sands, but may take many hours in plastic clays. If t_{50} is not reached, due to soils' conditions, $t_{40,}$ t_{30} or t_{20} are calculated. The calculation procedures for dissipation tests are explained in Section 4.16 of this report.

The data recorded from the dissipation tests on site is used to calculate the consolidation characteristics, as shown in Dissipation Test Graphs, *Appendix B*.

3.0 CONE PENETRATION MEASURED PARAMETERS

All measured parameters of tests carried with the CPTU cone are shown in *Appendix B* and all the information about data processing and results are given in sections *3.1*, *3.2* and *3.3*.

3.1 DATA PROCESSING

The measured parameters, cone end resistance, q_c, sleeve friction, f_s, porewater pressure measurements with filter in shoulder position, u_2 and inclination for *x* and *y* axis, I_x, I_y, were recorded for every *10 mm* of penetration keeping a constant speed of *20 mm/s ± 5 mm/s*, which may slightly change when the cone is penetrating hard strata.

The measured data from the site works is processed and presented using specialised CPT software. The interpretations on the CPTU results were carried out following the recommendations of *ISO 22476-1:2022(E)*, *Lunne et al. (1997)* and *Robertson (2015)*. Measured parameters, mentioned in *Sections 3.2* and *3.3*, were used to derive all the geotechnical parameters, which are presented in *Chapter 4.0*. The soil behaviour type method used on this report is *Robertson et al. (1986)*, shown in *Figure 3.2*.

3.1.1 Zero Measurements

Before and after each CPTU test, zero measurements are recorded for each channel of the cone. The zero measurements are presented on the logs in *Appendix B*. This is a routine quality check carried out on site.

3.2 MEASURED PARAMETERS

3.2.1 Cone Resistance (q_c)

Cone resistance, q_c, is measured as the total force acting on the cone, divided by the projected area of the cone. The results are presented in *MPa*, on *CPT Log 01*, in *Appendix B*, scale *0-20 MPa* with a minor scale printing on the same graph at *0-4 MPa*.

3.2.2 Sleeve Friction (f_s)

Sleeve friction, f_s, is measured as the total frictional force acting on the friction sleeve divided by its surface area. The results are presented in *kPa*, on *CPT Log 01*, in *Appendix B*, using a scale of *0-500 kPa*.

3.2.3 Porewater pressure (u_2)

The pore pressure, u_2, is measured during the test. If the material is free draining and saturation is maintained it will normally measure hydrostatic pore pressure. In materials that are not free draining, it will record the total pore pressure (hydrostatic plus any excess pore pressures generated) created by the cone penetration through this material.

The filter element can be mounted in one of three positions. For all tests carried out in this project the filter was mounted in the u_2 position (see *Figure 3.1*).

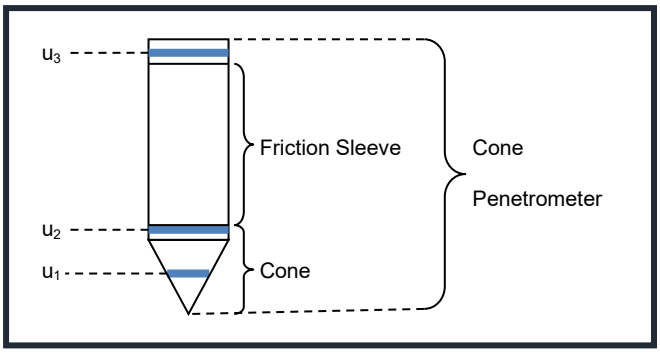


Figure 3.1: *Diagram showing pore pressure filter locations (after Lunne et al., 1997)*

3.2.4 Inclination (I_x, I_y)

The CPT rig was set up to obtain a thrust direction as near as possible to vertical. The CPTU cones have inclinometers incorporated to measure the non-verticality of the test. For test depths less than *15 m*, significant non-verticality is unusual, provided the initial thrust direction is vertical.

3.3 ESTIMATED SOIL BEHAVIOUR TYPE

3.3.1 Friction Ratio (R_f)

The friction ratio, R_f is the ratio between the sleeve friction and the cone resistance (Lunne *et al.,* 1997).

$$Fricton\ Ratio\ (R_f) = \left(\frac{Sleeve\ Friction\ (f_s)}{Cone\ Resistance\ (q_c)}\right) \times 100$$

3.3.2 Estimated Soil Behaviour Type (SBT)

The estimation of soil behaviour type, *SBT*, using measurements of cone resistance and sleeve friction is based upon the variations of the friction ratio and cone resistance. The friction

ratio varies depending upon whether the soil is cohesive or granular. The cone resistance varies depending on the strength and densities of the soil.

The interpretation used in this report is *Robertson et al. (1986)*, which is shown in Figure 3.2. The results are presented on *CPT Log 01*, in *Appendix B*.

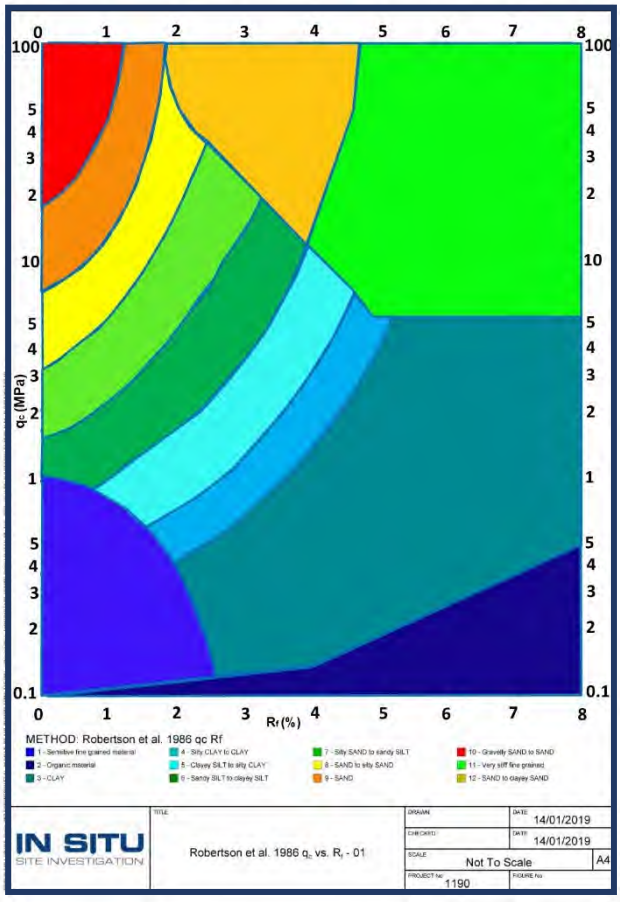


Figure 3.2: *Robertson et al., 1986 soil behaviour type chart.*

3.3.3 Pore Pressure Ratio (B_q)

Pore pressure ratio, B_q is the ratio between the measured pore pressure generated during penetration and the corrected cone resistance minus the total overburden stress.

Pore pressure ratio as defined by *Senneset and Janbu (1985)* is defined as:

$$B_q = \frac{u_2 - u_0}{q_t - \sigma_{vo}}$$

where

u_2	is pore pressure measured between the cone and the friction sleeve
u_0	is equilibrium pore pressure
σ_{vo}	is total overburden stress
q_t	is cone resistance corrected for unequal end area effects

3.4 APPLIED CORRECTIONS

3.4.1 Corrected Cone Resistance (q_t)

For each penetration test, the measured cone resistance, q_c, can be corrected for the ‘‘unequal area effect’’ due to the influence of the ambient pore water pressure acting on the cone.

The correction has been applied using the following equation by Lunne et *al.,* 1997:

$$q_t = q_c + [u_2.(1 - \alpha)]$$

where

α is the cone area ratio

The cone area ratio used for this project is stated on both the cone calibration certificate and the data footer. This value is geometrically measured.

3.4.2 Depth Correction

All tests in the report have been corrected for depth difference caused by inclination. This has been calculated using the method described in *ISO 22476-1:2022*.

To calculate the corrected depth the following formula is used:

$$z = \int_0^l C_{inc} \cdot dl$$

where

z is penetration depth, in *m*
l is penetration length, in *m*
C_{inc} is correction factor for the effect of the inclination of the CPTU relative to the vertical axis.

The equation for calculating the correction factor for the influence of the inclination for a bi-axial inclinometer is:

$$C_{inc} = \frac{1}{\sqrt{(1 + tan^2\beta_1 + tan^2\beta_2}}$$

where

β_1 is the angle between the vertical axis and the projection of the axis of the CPTU on a vertical plane, in degrees
β_2 is the angle between the vertical axis and the projection of the axis of the CPTU on a vertical plane that is perpendicular to the plane of angle β_1, in degrees

4.0 GEOTECHNICAL DERIVED PARAMETERS

A number of empirical correlations can be used to derive geotechnical parameters from CPTU data. This report includes only the parameters which are described in this chapter. The results of all correlations used to obtain the geotechnical derived parameters are presented on *CPT Log 02* and *CPT Log 03* in *Appendix B*.

Please, note that each empirical correlation is derived for a certain type of soil, and may not be appropriate for all the soil types encountered on this project.

4.1 SOIL BEHAVIOUR TYPE INDEX (I_c)

The soil behaviour type index, I_c, was derived by *Jefferies and Davies (1991)*, and was created to simplify the application of CPTU SBT chart shown in *Chapter 3*, *Figure 3.2*. This approach has been modified for use with the *Robertson (1990)* normalised CPT soil classification chart, *Figure 4.1*. The normalised cone parameters Q_t and F_r (for definitions see *Appendix A5* Symbol List) can be combined into one Soil Behaviour Type Index, I_c, *(Lunne et al., 1997)*.

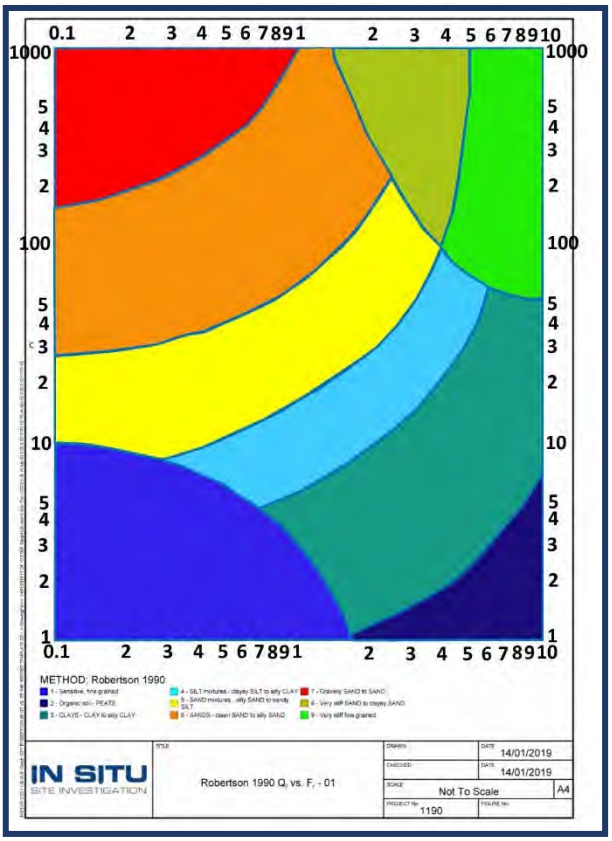


Figure 4.1: *Robertson 1990 soil behaviour type chart.*

The soil behaviour type index, I_c, can then be defined using *Robertson (2010)* formula, given below:

$$I_c = ((3.47 - logQ_t)^2 + (logF_r + 1.22)^2)^{0.5}$$

where

Q_t is the normalized cone resistance which represents the simple normalization with a stress exponent (n) of *1.0*, which applies well to clay-like soils

F_R is the normalized friction ratio, in *%*

The boundaries of soil behaviour type are then given in terms of the index, I_c, presented in *Table 4.1* below.

The soils behaviour type index does not apply to zones *1*, *8* and *9*. The profiles of I_c provide a simple guide to the continuous variation of soil behaviour type in a given soil profile based on CPTU results, with a reliability greater than *80%* compared with soil samples *(Robertson, 2015).*

Zone	Soil Behaviour Type	I_c
1	Sensitive fine grained	N/A
2	Organic Soils – clay	>3.6
3	Clays – silty clay to clay	2.95 – 3.6
4	Silt mixtures – clayey silt to silty clay	2.60 – 2.95
5	Sand mixtures – silty sand to sandy silt	2.05 – 2.6
6	Sands – clean sand to silty sand	1.31 – 2.05
7	Gravelly sand to dense sand	<1.31
8	Very stiff sand to clayey sand*	N/A
9	Very stiff fine grained *	N/A

** Heavily over consolidated or cemented*

Table 4.1: *Normalized CPTU Soil Behaviour Type (SBT_n) Index values, I_c.(Robertson, 2010)*

4.2 N VALUE OF STANDARD PENETRATION TEST (SPT) (N_{60})

The derived *N* value of *SPT, N_{60}*, is strongly and directly related to the cone resistance, q_c.

In this report the N_{60} value is derived using the following correlations, developed by *Robertson and Wride (1998)*, *Jefferies and Davies (1998)* and Robertson (2012):

1) *Robertson & Wride (1998)*

$$N_{60} = \frac{q_c}{8.5 \cdot p_a \left(1 - \frac{I_C}{4.6}\right)}$$

2) *Jefferies and Davies (1993)*

$$N_{60} = \frac{q_c}{0.85 \cdot \left(1 - \frac{I_C}{4.75}\right)}$$

3) *Robertson (2012)*

$$N_{60} = \frac{\frac{q_c}{p_a}}{10^{1.1268 - 0.2817 I_C}}$$

where

q_c is the cone resistance
p_a is the atmospheric pressure equal to *100 kPa*
I_c is the soil behaviour type index calculated as given in *section 4.1*

It is suggested that these methods provide a better estimation of the N_{60} value than the actual measured *N*, due to the poor repeatability of SPT test. However, in fine grained soil with high sensitivity these methods may overestimate N_{60} *(Jefferies and Davies, 1991).* The third method suggested by *Robertson (2012)* provides improved estimates of N_{60} for insensitive clays.

4.3 RELATIVE DENSITY (D_r)

Relative density, D_r, is an intermediate parameter for coarse grained soils, widely used to describe sand deposits. All the research on deriving the relative density from CPTU tests results are carried out for ***clean predominantly quartz sands***. The studies have shown that CPTU resistance in granular soils is controlled by sand relative density, in situ effective stresses and compressibility. The more compressible sands tend to give lower penetration resistance for a given relative density then less compressible sands.

In this report relative density is calculated using the methods suggested by *Baldi et al., (1986)*, *Jamiolkowski et al., (2001)* and *Kulhawy and Mayne (1990)* as shown in the equations below:

1) Baldi et al., (1986)

$$D_r = \frac{1}{C_2} \cdot ln\left(\frac{q_c \cdot Wehr}{C_1 \cdot (\sigma'_{v0})^{0.55}}\right) \cdot 100$$

where

C_1 is a consolidation coefficient which is *157* for normally consolidated soils and *181* for over consolidated soils

C_2 is a consolidation coefficient which is *2.41* for normally consolidated soils and *2.46* for over consolidated soils

Wehr is a correction coefficient for calcareous soils

2) Jamiolkowski et al., (2001)

$$D_r = 100 \cdot \left[0.268 \cdot ln\left(\frac{q_t/\sigma_{atm}}{\sqrt{\sigma'_{v0}/\sigma_{atm}}}\right) + C_1\right]$$

where

C_1 is a compressibility coefficient which is *-0.675* for average compressible soils, *≤1.0* for high compressible soils and carbonate or calcareous sands and *≥-2.0* for low compressible soils

q_t is corrected cone resistance

σ_{atm} is the atmospheric pressure

3) Kulhawy and Mayne, (1990)

$$D_r = \left[\frac{q_{c1}}{305 \cdot C_1 \cdot OCR^{0.18} \cdot \left(1.2 + 0.05 \cdot log(t/100)\right)}\right]^{0.5} \cdot 100$$

where

q_{c1} is the cone resistance corrected for initial vertical effective stress and atmospheric pressure, calculated by the following formula

$$q_{c1} = \frac{q_c}{\sqrt{\sigma'_{v0} \cdot \sigma_{atm}}}$$

where

q_c is the cone resistance in *kPa*

σ'_{v0} is the initial vertical effective stress in *kPa*

C_1 is a compressibility coefficient which is *-0.91* for low compressible sands, *1.0* for medium compressible sands and *1.09* for high compressible sands

t is time in years

4.4 FRICTION ANGLE (φ')

Friction angle, *φ'*, is used to express the shear strength of uncemented, coarse grained soils. In this report friction angle is derived by the correlations of *Mayne and Campanella (2005)*, *Robertson and Campanella (1983)* and *Kulhawy and Mayne (1990)*.

1) Mayne and Campanella, (2005)

$$\varphi' = 29.5^0 \cdot B_q^{0.121} \cdot [0.256 + 0.336 \cdot B_q + logQ_t]$$

where

B_q is the pore pressure ratio, calculated as in Session 3.3

Q_t is the normalized cone resistance

2) Robertson and Campanella, (1983)

$$\varphi' = \tan^{-1}\left(0.1 + 0.38 \cdot log\left(\frac{q_t}{\sigma'_{v0}}\right)\right)$$

where

q_c is the cone resistance in *kPa*

σ'_{v0} is the initial vertical effective stress in *kPa*

3) Kulhawy and Mayne, (1990)

$$\varphi' = 17.6^0 + 11.0^0 \cdot log(q_{t1})$$

where

q_{t1} is the corrected cone resistance corrected for initial vertical effective stress and atmospheric pressure, calculated by the following formula

$$q_{t1} = \frac{q_t}{\sqrt{\sigma'_{v0} \cdot \sigma_{atm}}}$$

The method suggested by *Mayne and Campanella (2005)* will not provide reliable results for heavily over consolidated soils, fissured geomaterials and highly cemented or structures clays. This approach gives reliable results when pore pressure is positive and varies $0.1 < B_q < 1.0$. The correlation suggested by *Robertson and Campanella (1983)* estimates the peak friction angle for uncemented, unaged, moderately compressible, predominately quartz sands. For sands of higher compressibility, the method will tend to predict low friction angles. The method suggested by *Kulhawy and Mayne (1990)* is an alternate relationship for clean, rounded, uncemented, quartz sands.

4.5 FINES CONTENT (*FC*)

The fines content, *FC*, in this report is estimated using two different methods, one from *Robertson and Wride (1998)* and the other, *Suzuki et al. (1998)* as presented below:

1) Robertson and Wride (1998)

$$I_C < 1.26: FC = 0$$
$$1.26 \leq I_C \leq 3.5: FC(\%) = 1.75I_C^{3.25} - 3.7$$
$$3.5 < I_C: \ FC = 100\%$$

2) Suzuki et al. (1998)

$$FC(\%) = 2.8I_C^{2.6}$$

where

I_c is the soil behaviour type index, calculated as in section 4.1

4.6 UNDRAINED SHEAR STRENGTH (s_u)

Estimation of undrained shear strength, s_u, from CPTU tests using corrected cone resistance is carried out using the following correlation from *Lunne et al. (1981)*:

$$S_u = \frac{(q_t - \sigma_{v0})}{N_{kt}}$$

where

N_{kt} is the empirical cone factor, which varies from *10* (*6* for very soft sensitive fine grained soils) to *20*. In this report 3 values are considered: *15*, *17.5* and *20*. N_{kt} tends to increase with increasing plasticity and decrease with increasing soil sensitivity. It decreases as B_q increases. (*Lunne et al., 1997*)
σ_{vo} = total overburden stress.

This report only presents the undrained shear strength data on soils with soil behaviour type index, I_c values greater than *2.60*.

The value of undrained shear strength, s_u to be used in analysis depends on the design problem. In general, the simple shear in the direction of loading often represents the average undrained strength. For larger, moderate to high risk projects, where high quality field and laboratory data may be available, site specific correlations should be developed based on appropriate and reliable values of s_u.

4.7 SENSITIVITY (S_t)

The sensitivity, S_t of clays is defined as the ratio of undisturbed peak undrained shear strength to totally remoulded undrained shear strength.

In this report S_t is calculated using two correlations developed by *Schmertmann (1978)* and *Mayne (2007)*.

1) Schmertmann (1978)

$$S_t = \frac{s_u}{s_{u(rem)}} = \frac{q_t - \sigma_v}{N_{kt}} \left(\frac{1}{f_s}\right)$$

where

$s_{u(rem)}$ is the remoulded undrained shear strength. It can be assumed equal to the sleeve resistance, f_s.

2) Mayne (2007)

$$S_t = \frac{0.073 \cdot (q_t - \sigma_{v0})}{f_s}$$

For relatively sensitive clays, $S_t > 10$, the value of f_s can be very low and not very accurate, hence the estimate of sensitivity should be used as a guide only.

4.8 SOIL UNIT WEIGHT (γ)

Soil unit weight, γ in this report is calculated by using one method for sands, considered under dry conditions and two methods for clays, considered under saturated conditions. These relationships are developed by *Mayne (2007)* and the equations are presented below:

Dry unit weight for sands:

$$\gamma_{dry} = 1.89 \cdot log(q_{t1}) + 11.82$$

Saturated unit weight for clays method 1

$$\gamma_{sat} = 8.32 \cdot log(V_S) - 1.61 \cdot log(z)$$

Saturated unit for clays method 2

$$\gamma_{sat} = 2.60 \cdot log(f_s) + 15 \cdot G_s - 26.5$$

where

q_{t1} is the corrected cone resistance corrected for initial vertical effective stress and atmospheric pressure, calculated by the following formula:

$$q_{t1} = \frac{q_t}{\sqrt{\sigma'_{v0} \cdot \sigma_{atm}}}$$

z is the depth

V_s is the shear wave velocity, calculated as $V_S = 118.8 \cdot log(f_s) + 18.5$
G_s is the specific gravity of solids, typically between *2.40* and *2.90*

4.9 STATE PARAMETER (ψ)

The state parameter, *ψ* is defined as the difference between the current void ratio, *e* and the void ratio at critical state e_{cs}, at the same mean effective stress for granular soils.
The problem of evaluating the state parameter from CPTU response is complex and depends on several soil parameters, including shear stiffness, shear strength, compressibility and plastic hardening. (*Jefferies and Been, 2006*)

In this report, the state parameter is calculated based on five methods as follows:

1) Been et al. (1987)

$$\psi = -\frac{ln\left(\frac{Q_p}{k}\right)}{m}$$

$$Q_p = \left(\frac{3Q_t}{1+2K_0}\right)$$

where
Q_t is the normalized cone resistance
K_0 is the coefficient of lateral earth pressure

2) Shuttle and Jefferies (1998)

$$\psi = -\frac{ln\left(\frac{Q_p}{k}\right)}{m}$$

where

$$k = \left((3.79 + 1.12ln(I_r))(1 + 1.06(M - 1.25))(1 - 0.30(N - 0.2))(H/1000)^{0.326}(-1.55(\lambda - 0.01))\right)^{1.45}$$

$$m = 1.45(1.04 + 0.46ln(I_r))(1 - 0.4(M - 1.25))(1 - 0.30(N - 0.2))(H/100)^{0.15}(1 - 2.21(\lambda - 0.01))$$

where
Q_t is the normalised cone resistance
I_r is rigidity index
K_0 is the coefficient of lateral earth pressure
M is critical state ratio
N is dilation parameter
H is plastic hardening modulus;
λ is slope *CSL* line

3) Shuttle and Jefferies (1998)

The state parameter calculated according this third method is similar to state parameter calculated as presented in the second method, except for the rigidity index that is calculated as follows:

$$I_r = I_{r100}\left(\frac{P_a}{\sigma'_{v0}}\right)^{0.5}$$

where

I_{r100} is rigidity index in reference pressure
P_a is the reference pressure equal to 100 kPa
σ'_{v0} is effective vertical overburden stress

4) Plewes (1992)

$$\psi = -\frac{ln\left(\frac{Q_p/(1-B_q)}{k'}\right)}{m'}$$

where

$$k' = M\left(3 + \frac{0.85}{\lambda}\right)$$
$$m' = 11.9 - 13.3\lambda$$
$$\lambda = \frac{F_r}{10}$$

where

Q_t is the normalised cone resistance
B_q is pore pressure ratio
K_0 is the coefficient of lateral earth pressure
F_R is normalised friction ratio
M is critical state ration

5) Been and Jefferies (1992)

$$\psi = -\frac{ln\left(\frac{Q_p/(1-B_q)}{k'}\right)}{m'}$$

where

$$k' = M\left(3 + \frac{0.85}{\lambda}\right)$$
$$m' = 11.9 - 13.3\lambda$$
$$\lambda = \frac{1}{34 - 10I_C}$$

For high-risk projects a detailed interpretation of CPTU results using laboratory results and numerical modelling can be appropriate (e.g. *Shuttle* and *Cunning*, *2007*), although soil

variability can complicate the interpretation procedure. For low risk projects and in the initial screening for high-risk projects there is a need for a simple estimate of soil state.

Plewes et al (1991) provided a mean to estimate soil state using the normalised soil behaviour type, *SBTn* chart suggested by *Jefferies and Davies (1991)*. *Jefferies and Been (2006)* suggested that soils with a state parameter less than *-0.05* are dilative at large strains.

4.10 IN SITU STRESS RATIO (K_0)

There are various estimations to determine in situ stress ratio, K_0, from CPTU in fine grained soils. In this report the methods suggested by *Mayne (2007)* and *Kulhawy and Mayne (1990)* are used, as given below:

1) Mayne (2007)

$$K_0 = (1 - sin\varphi')OCR^{sin\varphi'}$$

$$Max\ K_0 = K_p = \frac{(1 + sin\varphi')}{(1 - sin\varphi')}$$

$$K_0 = 0.192\left(\frac{q_t}{\sigma_{atm}}\right)^{0.22}\left(\frac{\sigma_{atm}}{\sigma_{v0}}\right)^{0.22}OCR^{0.27}$$

where

OCR is the overconsolidation ratio, calculated as presented in session *4.11*

2) Kulhawy and Mayne (1990)

$$K_0 = 0.1\left(\frac{q_t - \sigma_{v0}}{\sigma_{v0}'}\right)$$

These approaches are generally limited to mechanically overconsolidated, fine grained soils. As considerable scatter exists in the database used for these correlations, in moderate to high risk projects further tests should be performed and these correlations must be considered only as a guide.

4.11 OVERCONSOLIDATION RATIO (OCR)

Overconsolidation ratio, *OCR* is defined as the ratio of the maximum past effective consolidation stress and the present effective overburden stress:

$$OCR = \frac{\sigma'_p}{\sigma'_{v0}}$$

This definition is appropriate for mechanically overconsolidated soils, where the only change has been the removal of overburden stress. For cemented and aged soils, the *OCR* may represent the ratio of the yield stress and the present effective overburden stress.

In this report σ'_p is calculated based on six methods as presented below:

1) Mayne (1995)

$$\sigma'_p = 0.33(q_t - \sigma_{v0})$$

2) Chen and Mayne (1996)

$$\sigma'_p = 0.53\Delta u$$

3) Mayne (2005)

$$\sigma'_p = 0.6(q_t - u_2)$$

4) Robertson (2009)

$$\sigma'_p = 0.25(Q_t^{1.25} - \sigma'_{v0})$$

5) Mayne (2005)

$$\sigma'_p = \left[\frac{0.192\left(\frac{q_t}{\sigma_{atm}}\right)^{0.125}}{(1 - sin\varphi')\left(\frac{\sigma'_{v0}}{\sigma_{atm}}\right)^{0.31}}\right]^{\left(\frac{1}{sin\varphi' - 0.27}\right)} \sigma'_{v0}$$

6) Mayne (2007)

$$\sigma'_p = 0.101\sigma_{atm}^{0.102}(G_0)^{0.478}\sigma'^{0.420}_{v0}$$

For larger, moderate to high risk projects, where additional high-quality field and laboratory data may be available, site specific correlations should be developed based in consistent and relevant values of *OCR*.

4.12 SMALL STRAIN YOUNG'S MODULUS (E_0)

Deriving small strain undrained Young's modulus, E_0, from CPTU is difficult. There is insufficient data available to make a direct correlation and it is recommended that c_u should be derived, then E_U estimated as a rough order of value from one of the available correlations between E_U and c_u (*Meigh, 1987*).

In this report the small strain Young's modulus is derived as follows:

1) Defined from elastic theory:

$$E_0 = 2(1+\nu)G_0$$

where

v is the Poisson ratio, equal to *0.2*

G_0 is the small strain shear modulus calculated by the formula given below:

$$G_0 = 1634\left(\frac{q_c}{\sqrt{\sigma'_{v0}}}\right)^{-0.75} q_c$$

2) Calculated based on the degree of loading, q_c, effective stress and reduction factor

$$E_0 = \alpha q_c$$

where

α is calculated from degree of loading, q_c, effective stress and reduction factor, given in *Figure 4.2*

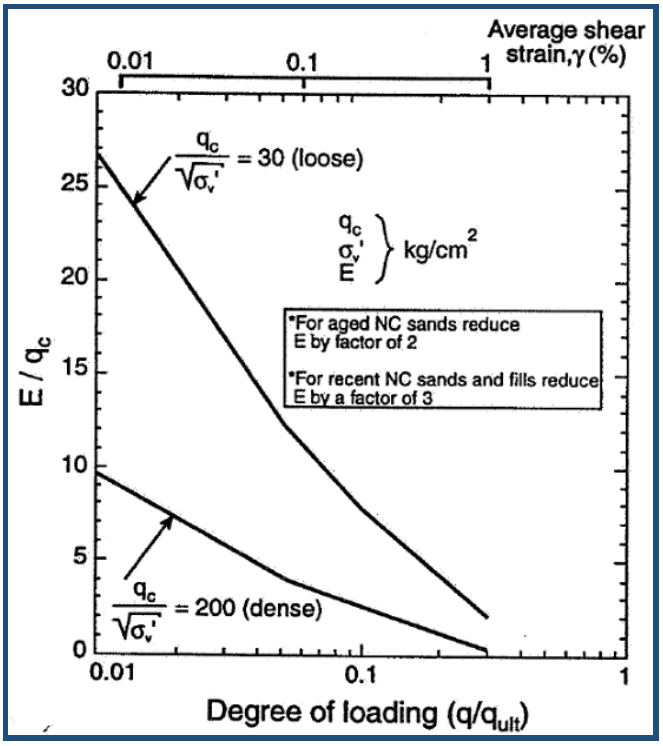


Figure 4.2: *Estimation of equivalent Young's modulus for sand based on degree of loading (Robertson, 1990)*

4.13 CONSTRAINED MODULUS (M)

Constrained Modulus, *M*, can be estimated by CPTU using the following empirical relationship:

$$M = \alpha_M(q_t - \sigma_{v0})$$

where

α_M varies with soil plasticity and natural water content for a wide range of fine-grained soils and organic soils. *Meigh (1987)* suggested that α_M lies in the range of *2 to 8*, whereas *Mayne (2001)* suggested the value of *5*.

Robertson (2001) suggested that α_M varies with Q_t, such that:

When $I_c > 2.2$ (fine grained soils) use: $\alpha_M = Q_t$ when $Q_t < 14$

$\alpha_M = 14$ when $Q_t > 14$

When $I_c < 2.2$ (coarse grained soils) use: $\alpha_M = 0.0188[10^{(0.55I_c+1.68)}]$

In this report the Constrained Modulus, *M*, is calculated after *Kulhawy and Mayne (1990)* using the equation below:

$$M = 8.25(q_t - \sigma_{v0})$$

Also, an alternative method is included in the results, developed by *Burns and Mayne (2002)* using the following relationship:

$$M = 0.02G_0$$

4.13.1 Equivalent Oedometer Coefficient of Compressibility (mv)

Equivalent oedometer coefficient of compressibility, m_v can be calculated directly by the Constrained Modulus, *M*, as follows:

$$m_v = \frac{1}{M}$$

4.14 SMALL STRAIN SHEAR MODULUS (G_0)

I n this report the small strain shear modulus, G0, is derived using the correlation developed by Rix and Stoke (1992).

1) Rix and Stoke (1992)

$$G_0 = 1634\left(\frac{q_c}{\sqrt{\sigma'_{v0}}}\right)^{-0.75} q_c$$

where

q_c is the net cone tip resistance in kPa

σ'_{v0} is the effective initial vertical stress in kPa

This correlation of G_0 is applicable to all soil types.

4.15 RIGIDITY INDEX (I_R)

The rigidity index, I_R, for fine grained soils is defined using the following formula, developed by *Mayne (2001)*:

$$I_R = \exp\left[\left(\frac{1.5}{M} + 2.925\right)\left(\frac{q_t - \sigma_{v0}}{q_t - u_2}\right) - 2.925\right.$$

where

M is the Cam-Clay constant, slope of the critical state line defined as:

$$M = \frac{6sin\varphi'}{3 - sin\varphi'}$$

where

φ' is the internal friction angle.

The second method used to define the rigidity index, I_R, for fine grained soils is based on plasticity index and overconsolidation ratio, *OCR* and calculated after the relationship developed by *Keaveny and Mitchell (1986)* as follows:

$$I_R = \frac{\exp\left(0.0435(137 - PI)\right.}{[1 + \ln\{1 + 0.385(OCR - 1)^{3.2}\}]^{0.8}}$$

where

PI is the plasticity index of the soil, equal to 20.
OCR is the overconsolidation ratio of the soil

A third method to estimate the Rigidity Index is by using the Small Shear Strain Modulus, G_0 from seismic tests and the Undrained Shear Strength, s_u derived from *Lunne et al. (1997)* as explained in *Section 4.6* for cone factor N_k = *15*, using the correlation below:

$$I_R = \frac{G_0}{s_u}$$

4.16 CONSOLIDATION CHARACTERISTICS (ch and cv)

All results for consolidation characteristics calculated from dissipation tests measurements using the formulas below are presented in *Dissipation Graphs in Appendix B*.

The coefficient of consolidation is interlinked with the hydraulic conductivity through the formula below:

$$c = \frac{kM}{\gamma_w}$$

where

M	is the 1-D constrained modulus relevant to the problem (i.e. unloading, reloading, virgin loading, etc)
γ_w	is the unit weight of water
k	is the hydraulic conductivity

In geotechnical practice it is very difficult to measure *coefficient of consolidation* and *permeability of soils*. Due to soil anisotropy *c* and *k* have different values in the horizontal, c_h and k_h and vertical c_v and k_v directions. The relevant design values depend on drainage and loading direction.

The coefficient of consolidation can be estimated from dissipations data and should be interpreted at *50%* degree of dissipation, using the following formula below:

$$c = (\frac{T_{50}}{t_{50}})r_0^2$$

where

T_{50}	is theoretical time factor
t_{50}	is measured time for *50%* degree of dissipation
r_0	is penetrometer radius

In soils of very low permeability the time for dissipation can be decreased by using smaller diameter probes. A theoretical solution for these cases is given by *Teh and Houlsby (1991)* and it is compared with data from around the world by *Robertson et al. (1992)*, as shown in *Figure 4.3*.

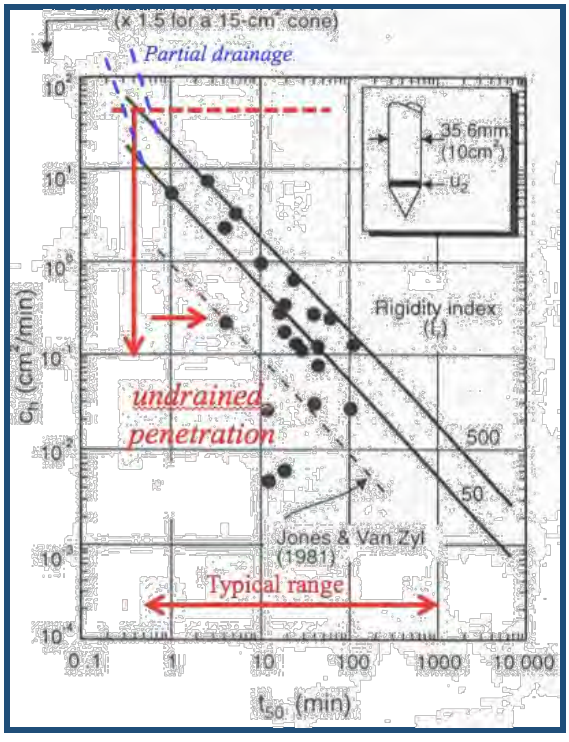


Figure 4.3: *Average laboratory c_h values and CPTU results (after Robertson et al. 1992, Teh and Houlsby theory shown as solid lines for I_R = 50 and I_R = 500).*

c_h estimation is controlled by soil stress history, sensitivity, anisotropy, rigidity index (relative stiffness), fabric and history. In overconsolidated soils, the pore pressure behind the cone tip can be low or negative, results in dissipation data that can initially rise before decreasing to the equilibrium values. Care is required to ensure the dissipation test to end at the right moment of time, not stopped prematurely after the initial rise.

An approximate estimate of the coefficient of consolidation in the vertical direction can be obtained using the ratios of permeability in the horizontal and vertical directions as follows:

$$c_v = c_h(\frac{k_v}{k_h})$$

Jamiolkowski et al. (1985) presented the range of field values (Table 4.4), which can be used to estimate k_v from k_h.

Based on the table below, the nature of clay for this site is considered no macrofabric, or only slightly developed macrofabric, essentially homogenous deposits, so the ratio use is k_h/k_v equal to 1.25 and the ratio c_h/c_v used for calculation purposes in this report is equal to 1.25.

Nature of clay	k_h/k_v
No macrofabric, or only slightly developed macrofabric, essentially homogeneous deposits	1 to 1.5
From fairly well to well-developed macrofabric, e.g. sedimentary clays with discontinuous lenses and layers of more permeable material	2 to 4
Varved clays and other deposits containing embedded and more or less continuous permeable layers	3 to 15

Table 4.4: *Range of field values of k_h/k_v for soft clays (from Jamiolkowski et al., 1985).*

Estimation of soil permeability from CPTU and dissipation data is subject to much uncertainty and should be used as a guide only.

4.17 HYDRAULIC CONDUCTIVITY (k)

Hydraulic conductivity or coefficient of permeability, *k*, based on Soil Behaviour Typre Index, I_c, can be estimated from the following relationships:

When $1.0 < I_c \leq 3.27$ $\quad k = 10^{(0.952-3.04I_c)}$

When $3.27 < I_c \leq 4.0$ $\quad k = 10^{(-4.52-1.37I_c)}$

However, in this report the hydraulic conductivity is estimated from 2 soil behaviour classification charts, *Robertson et al. (1986)* and *Robertson et al. (1990) presented in Table 4.3 and 4.4, respectively*.

SBT Zone	Soil Behaviour Type (SBT)	Range of hydraulic conductivity, *k (m/s)*
1	Sensitive fine grained	$3x10^{-9}$ to $3x10^{-8}$
2	Organic soils	$1x10^{-8}$ to $1x10^{-6}$
3	Clay	$1x10^{-10}$ to $1x10^{-9}$
4	Silty CLAY to CLAY	$3x10^{-9}$ to $1x10^{-8}$
5	Clayey SILT to silty CLAY	$1x10^{-8}$ to $1x10^{-7}$
6	Sandy SILT to clayey SILT	$1x10^{-7}$ to $1x10^{-6}$
7	Silty SAND to sandy SILT	$1x10^{-5}$ to $1x10^{-6}$
8	SAND to silty SAND	$1x10^{-5}$ to $1x10^{-4}$
9	SAND	$1x10^{-4}$ to $1x10^{-3}$
10	Gravelly SAND to SAND	$1x10^{-3}$ to 1
11	Very stiff fine grained	$1x10^{-8}$ to $1x10^{-6}$
12	SAND to clayey SAND	$3x10^{-7}$ to $3x10^{-4}$

Table 4.3: *Estimated soil permeability (k) based on SBT chart by Robertson et al. (1986)*

SBT Zone	Soil Behaviour Type (SBT)	Range of hydraulic conductivity, *k (m/s)*
1	Sensitive fine grained	$3x10^{-9}$ to $3x10^{-8}$
2	Organic soils	$1x10^{-8}$ to $1x10^{-6}$
3	Clay	$1x10^{-10}$ to $1x10^{-9}$
4	Silt Mixture	$3x10^{-9}$ to $1x10^{-7}$
5	Sand Mixture	$1x10^{-7}$ to $1x10^{-5}$
6	Sand	$1x10^{-5}$ to $1x10^{-3}$
7	Gravelly sands to dense sands	$1x10^{-3}$ to 1
8	Very stiff sand to clayey sand	$1x10^{-8}$ to $1x10^{-6}$
9	Very stiff fine grained	$1x10^{-8}$ to $1x10^{-6}$

Table 4.4: *Estimated soils' permeability (k) based on SBT chart by Robertson et al. (1990).*

4.18 DERIVED SHEAR WAVE VELOCITY (V_S)

For the purpose of this project the Shear Wave Velocity is measured as explained in Section 2.4. However, by using various correlations from the literature it is possible to also derive the Shear Wave Velocity, V_s. In this report the derived V_s results generated using Mayne (2006), Hegazy and Mayne (1995), Mayne and Rix (1995) and Baldi et al. (1989) correlations.

1) Mayne (2006)

$$V_s = 118.8 log f_s + 18.5$$

where

f_s is the measured sleeve friction *in kPa*

2) Hegazy and Mayne (1995)

$$V_s = (10.1 log q_t - 11.4)^{1.67} \left(\frac{f_s}{q_t} \cdot 100\right)^{0.3}$$

where

q_t, f_s are corrected cone resistance and measured sleeve friction, respectively *in kPa*

3) Mayne and Rix (1995)

$$V_s = 1.75 (q_t)^{0.627}$$

where

q_t is the corrected cone resistance *in kPa*

4) Baldi et al. (1989)

$$V_s = 277 (q_t)^{0.13} (\sigma'_{v0})^{0.13}$$

where

q_t, σ'_{v0} are corrected cone resistance and effective vertical stress, respectively *in kPa*

5.0 CPTU RESULTS APPLICATIONS

5.1 SOIL PROFILING AND APPLICATIONS IN GEOTECHNICAL DESIGN

5.1.1 Soil Behaviour Type

The major applications of CPTU are on *soil behaviour type and soil profiling*. Typically, the cone resistance, q_c is high in sands and low in clays, and the friction ratio, $R_f = f_s/q_t$ is low in sands and high in clays. The CPTU cannot be expected to provide accurate predictions of soil type based on *physical characteristics,* e.g. *grain size distribution*, but provides a guide to the *mechanical characteristics*, including: *strength*, *stiffness*, and *compressibility* of the soils, or the *soil behaviour type*, *SBT*.

The most commonly used CPTU soil behaviour type chart, suggested by *Robertson et al. (1986)* uses the basic CPTU measured parameters of cone resistance, q_c and friction ratio, R_f. The chart is global in nature and can provide reasonable predictions of soil behaviour type for CPTU testing. The expected overlap in some zones is modified in the interpretations of this report somewhat based on previous experience or local knowledge of the site.

Since both the penetration resistance and sleeve resistance increase with depth due to the increase in effective overburden stress, the CPTU data requires normalization for overburden stress for very shallow and/or very deep tests. A popular CPTU soil behaviour chart based on normalized CPTU data is firstly proposed by *Robertson (1990)*. The chart identifies general trends in ground response, such as: *increasing soil density*, *OCR*, *age* and *cementation* for granular soils, and *increasing stress history*, *OCR* and *soil sensitivity* for cohesive soils.

A more general normalized CPTU *SBT* chart, using large strain *soil behaviour* descriptions, proposed by *Robertson (2012)* is shown in *Figure 5.1*.

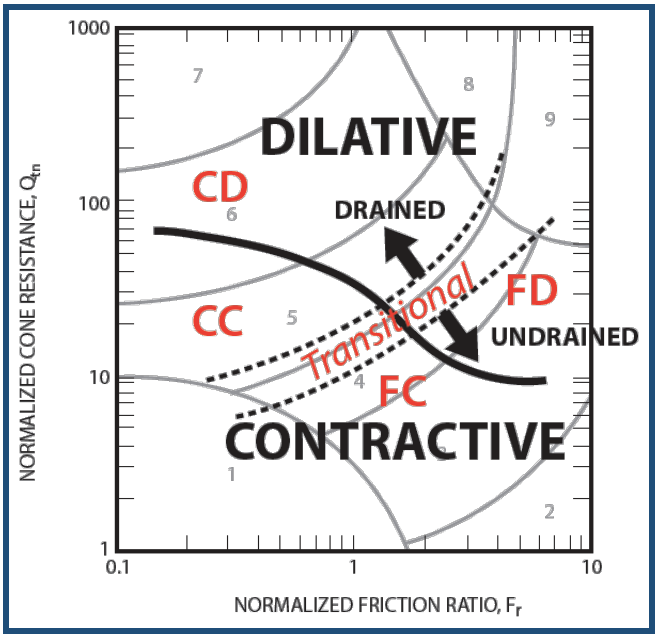


Figure 5.1: Normalized CPTU Soil Behaviour Type (SBT_n) chart, Q_{tn}-F_R using general large strain soil behaviour description (Robertson, 2012).

*

CD	is coarse grained dilative soil-predominately drained CPTU
CC	is coarse grained contractive soil-predominately drained CPTU
FD	is fine grained dilative soil-predominately undrained CPTU
FC	is fine grained contractive soil-predominately undrained CPTU

5.1.2 Soil Profiling

CPTU is an excellent test for soil profiling. The continuous monitoring of pore pressure during the cone penetration improves the soil stratigraphy descriptions. The pore pressure develops in response to the soil type being penetrated in the area where the pore pressure element is located. Soft, firm or stiff clays and contractive silts can show very high pore pressure. Very stiff overconsolidated clays and dilative silts can give very low or negative pore pressures same as very dense silty sands.

The thin layers of sand, or silt in a thick layer of clay, or thin layers of clay or silt in a thick layer of sand are easily distinguished during a CPTU test, which will give a response time sufficiently fast to observe pore pressure changes even in the very thin layers of soils (< *5mm*), depending on the response of soil to the advancing of cone.

The sandy soils tend to produce high cone resistance and low friction ratio, whereas soft clayey soils tend to produce low cone resistance and high friction ratio. Organic soils such as peat tend to have very low cone resistance and very high friction ratio. Soils with high horizontal stresses (*high OCR*) tend to have higher cone resistance and friction ratio.

CPTU is an excellent tool to classify the soils based on their behaviour type, and not based on grain size distribution.

The measurement of sleeve friction, f_s is often less reliable than the measurement of cone resistance, q_c (*Lunne et al., 1986*), but to overpass these problems pore pressure parameter ratio, B_q, and the classification charts based on it.

For more reliability in soil profiling, the soil interpretations in this report are carried out based on three parameters measured on site, cone resistance, sleeve friction and pore pressure and three derived geotechnical parameters soil behaviour type index for all soils, undrained shear strength for cohesive soils and relative density for granular soils.

Generally, soils that fall in zones *8*, *9* and *10* of *Robertson et al. (1986)* chart (*6* and *7* of *Robertson (1990)* chart) represent approximately drained penetration, whereas, soils in zones 1, 2, 3, 4, 5 and 6 of *Robertson et al. (1986)* chart (1, 2, 3 and 4 of *Robertson (1990)* chart) represent approximately undrained penetration. Soils in zones 7, 11 and 12 of *Robertson et al. (1986)* (5, 8 and 9 of *Robertson (1990)* chart) may represent partially drained penetration. The classification is often influenced by changes in *stress history*, *in situ stresses*, *sensitivity*, *stiffness*, *mineralogy*, etc. An advantage of pore pressure measurements during cone penetration is the ability to evaluate drainage conditions more directly. (*Lunne et al., 1997*)

The information about the rate and manner of excess pore pressures during the dissipations significantly helps the accurate classification in the corresponding depths of dissipation tests. In very stiff, overconsolidated clayey soils, the pore pressure behind the cone is very low and sometimes negative of the equilibrium pore pressure, u_0, whereas the pore pressure on the face of the cone is very large due to the large increase in normal stresses created by the cone penetration. When penetration is stopped in overconsolidated clays, pore pressure recorded behind the cone may initially increase before decreasing to the equilibrium pore pressure. The rise is caused by local equalization of the high pore pressure gradient around the cone.

Cone penetration in fine grained soils, such as clays and silts, is generally undrained. Cone penetration tests under undrained conditions generate high pore pressure and this reading is extremely useful, because it affects both cone resistance and sleeve friction measurements. These parameters should be corrected using the measured pore pressure.

CPTU in coarse gained soils, such as sandy or gravelly soils is generally drained. In these conditions there is no excess pore pressure generated as a result of cone penetration. Relative density has been used as the main parameter for description of sandy deposits.

5.1.3 Applications in geotechnical design

CPTU measured parameters are used to derive geotechnical parameters, which are the input in several geotechnical analyses. An alternate approach is to directly apply CPTU results to the geotechnical calculations.

As a guide, *Table 5.1* shows a summary of the applicability of CPTU results for direct design applications. The ratings shown in the table have been assigned based on current experience and represent a qualitative evaluation of the confidence level assessed to each design problem and general soil type. Details of ground conditions and project requirements can influence these ratings.

Type of soil	Pile Design	Bearing Capacity	Settlement	Compaction Control	Liquefaction
Sand	A-B	A-B	B-C	A-B	A-B
Clay	A-B	A-B	B-C	C-D	A-B
Intermediate Soils	A-B	B-C	B-C	B-C	A-B

Table 5.1: *Perceived applicability of CPTU for various direct design problems.*

A is high
B is high to moderate
C is moderate
D is moderate to low

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APPENDIX A

APPENDIX A1 – Project Summary Sheet

Piezocone Tests Summary Sheet

HOLE ID	Final Depth (m)	Date of Test	Cone Used	Test Remarks
CPT101	12.94	16/07/2024	S15-CFIP.2145	Test stopped due to buckling rods.
CPT102	11.93	16/07/2024	S15-CFIP.2145	Test stopped due to buckling rods.
CPT103	13.81	16/07/2024	S15-CFIP.2145	Test stopped due to buckling rods.
CPT104	7.89	16/07/2024	S15-CFIP.2145	Test refused on inclination.
CPT105	6.25	16/07/2024	S15-CFIP.2145	Test refused on total pressure.
CPT106	14.24	16/07/2024	S15-CFIP.2145	Test refused on total pressure.
CPT107	5.19	16/07/2024	S15-CFIP.2145	Test refused on inclination.
CPT108	7.05	16/07/2024	S15-CFIP.2145	Test refused on total pressure.
CPT109	10.95	16/07/2024	S15-CFIP.2145	Test refused on total pressure.
CPT110	11.46	16/07/2024	S15-CFIP.2145	Test stopped due to buckling rods.
CPT111	14.25	15/07/2024	S15-CFIP.2145	Test stopped due to buckling rods.
CPT112	13.90	15/07/2024	S15-CFIP.1983	Test stopped due to buckling rods.
CPT113A	5.07	15/07/2024	S15-CFIP.1983	Test refused on total pressure.
CPT113B	5.97	15/07/2024	S15-CFIP.1983	Test refused on inclination.
CPT113C	9.19	15/07/2024	S15-CFIP.1983	Test refused on inclination.
CPT114	14.82	15/07/2024	S15-CFIP.1983	Test stopped due to buckling rods.
CPT115	13.06	16/07/2024	S15-CFIP.2145	Test refused on total pressure.
CPT116	14.43	16/07/2024	S15-CFIP.2145	Test stopped due to buckling rods.

Dissipation Tests Summary Sheet

HOLE ID	Final Depth (m)	Date of Test	Cone Used	Test Remarks
CPT111	10.00	15/07/2024	S15-CFIP.2145	T50 not reached.
CPT112	8.00	15/07/2024	S15-CFIP.1983	T50 not reached.
CPT113B	5.50	15/07/2024	S15-CFIP.1983	T50 not reached.
CPT116	11.00	16/07/2024	S15-CFIP.2145	T50 not reached.

APPENDIX A2 – CPT Rig Datasheet

RIGS

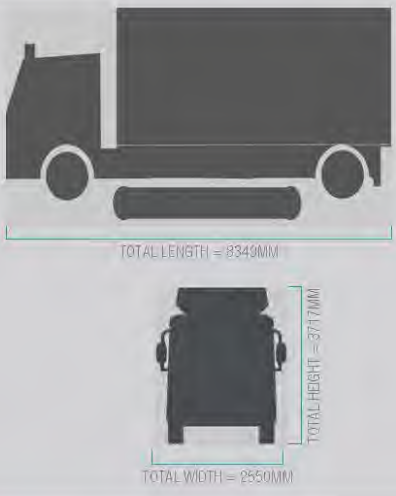
20 TONNE CPT TRACK TRUCK (CPT 025)

Our track-truck, CPT 025, 'Toni', is a versatile CPT rig which can be utilised on most site locations. This rig has the option of converting between wheels and metal tracks depending on the terrain, access and site specifications. It weighs 20 tonnes and can push up to 100- 150 metres per day, depending on the ground conditions.

CPT RIG DETAILS

DRIVE SYSTEM	4x4 WHEEL DRIVE AND TRACKED
TOTAL WEIGHT	20 TONNES
GROUND BEARING PRESSURE	75kPa
CPT RAM THRUST CAPACITY	20 TONNES
MAXIMUM PENETRATION	30-40M DEPENDING ON THE GROUND CONDITIONS.
PERFORMANCE RATES	100-150M OF TESTING IN A DAY DEPENDING ON ACCESS TO POSITIONS.
TYPICAL SITES FOR THIS RIG	HARDSTANDING AND NON HARDSTANDING SITES DUE TO WHEELED / TRACKED OPTION

CPT RIG DIMENSIONS





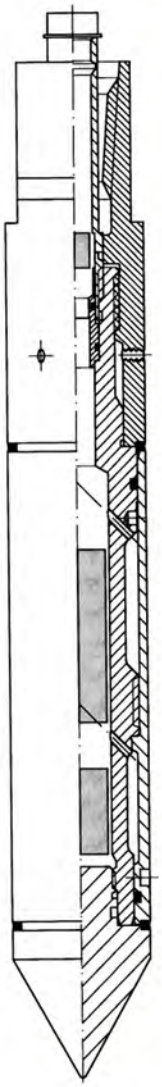




IN SITU SITE INVESTIGATION INSITUSI.COM

APPENDIX A3 – Cone Datasheet

GeoPoint Systems bv
Rijksstraatweg 22F
2171 AL Sassenheim
Tel. : +31 71 301 92 51
Fax : +31 71 301 92 52
E-mail : info@geopoint.nl
ING bank : 68.23.01.396
Postbank : 5226758
BTW nr. : NL806331677B01



SPECIFICATIONS S15 SERIES ELECTRICAL CONES

The electronic subtraction cones have been developed to address the durability problems inherent in other cone designs. The unit consists of a single element temperature compensated strain gauge transducer for measuring both cone resistance and local sleeve friction. This design is therefore more robust than a compression type cone. The cone support electronics package is located directly behind the transducer. The precision strain gauge amplifiers and power supply eliminate the effects of cable resistance on the measurements. A standard subtraction cone is capable of measuring simultaneously the following channels: Tip, Local friction, Pore pressure, Temperature and Inclination.

GENERAL SPECIFICATIONS

Cone Tip Section Area	1,500 mm2
Friction Sleeve Surface	22,500 mm2
Total Length	325 mm
Weight	4200 g
Power Supply	± 15 VDC, 100 mA.
Output	0 – 10 VDC*
Working Temperature	0 - 60˚C
Storage Temperature	- 40 to + 85˚C
Connector	Lemo 10 pins (others on request)

TIP RESISTANCE

Range	100/150* kN
Accuracy	0.25 % FS
Maximum Load	150 % of range
Cone Area Ratio	0.75

LOCAL SLEEVE FRICTION

Range	100/150* kN
Accuracy	0.50 % FS
Maximum Load	150 %
Sleeve Area Ratio	1.0 (EA)

PORE PRESSURE

Range	1/2/5/10* MPa
Accuracy	0.5 % FS
Maximum Load	150 % of range

INCLINATION

Range	25 ˚ (biaxial)
Accuracy	< 2 ˚

All our equipment complies with the ISSMGE, ASTM, DIN and NEN Standards.

Other output and voltage ranges available on request. Loadcells may be calibrated for lower ranges.

APPENDIX A4 – Cone Calibration Certificate

Eijkelkamp GeoPoint
SoilSolutions

Cone Calibration Certificate

Certificate	GS-1983-010
Instrument Type	Measuring cell 25 kN analog
Model	S1-CFIIPM
Serial number	1983
Calibration date	22-04-2024
Client:	In Situ
Calibrated by	R. van Loon
Calibration instruments	
Measurement	Hottinger Baldwin Messtechnik GmbH
Multimeter	Agilent 34970A
Calibration conditions	
Ambient temperature	20.7 °C
Atmospheric pressure	Dep. mBar
Cone specifications	
Cone base area	1000 mm2
Load cell resistance (nom.)	60 kN
Friction sleeve area	2250 mm2
Load cell + cone friction (nom.)	60 kN
Load friction sleeve (nom.)	2.5 kN
Load pore pressure (nom.)	2 MPa
Inclination (nom.)	0 - 20 °
Temperature compensation (all channels)	0 - 40 °C
Maximum overload capacity (all channels)	50 %
Cone measuring range	0 - 75 MPa
Max. measuring deviation relative to measurement value	0.5 %

	Tip:		Sleeve:		Pore Pressure:		Inclinometer:		
	qc in kN	mV	fs in kN	mV	MPa	mV	Degrees	X (mV)	Y (mV)
Zero points:		2351		2355		2355			
	0	2351	0	2355	0	2355	0	2357	2355
	5	2352	5	2356	0.4	2357	10	3401	3397
	10	2354	10	2362	0.8	2364	20	4375	4467
	15	2357	15	2368	1.2	2369			
	20	2359	20	2375	1.6	2376			
	25	2362	25	2386	2.0	2388			
	30	2365	30	2392					
	35	2367	35	2402					
	40	2369	40	2408					
	45	2372	45	2414					
	50	2375	50	2419					

Max. error acc. qc: 35 kPa
Max. error acc. fs: 5 kPa
Max. error acc. u2: 10 kPa
Max. error acc. i: 1°

NEN3649 NEN-EN-ISO 22476-1 NEN5104 5.3.2 ... 0.1MPa ...

Calibrated by: R van Loon
Calibration date: 22-04-2024

Approved by: R. Mossord
Date:

Eijkelkamp GeoPoint SoilSolutions
Trade Reg. Arnhem nr. 09081149
IBAN NL03 RABO 3526 7501 30
BIC RABONL2U

Eijkelkamp GeoPoint
SoilSolutions

Rijksstraatweg 22F
2171 AL Sassenheim
The Netherlands

T +31 71 301 9251
E info@eijkelkamp-geopoint.com
I eijkelkamp-geopoint.com

Cone Calibration Certificate

Certificate:	**GS-2145-004**	
Instrument Type:	Magnetometer 250 µT(analog)	
Model:	S15-CFIIPM	
Serial number:	2145	
Calibration date:	21-03-2024	
Client:	In Situ	
Calibrated by:	D.den Haas	
Calibration instruments		
Manufacturer:	Hottinger Baldwin Messtechnik GmbH	
NMi certificate	2461165.00501	
Calibration conditions		
Ambient temperature:	19.7	°C
Atmospheric pressure:	1026	mBar
Cone specifications		
Cone base area:	1500	mm2
Load tip resistance (nom.):	50	kN
Friction sleeve area:	22500	mm2
Load tip + local friction (nom.):	50	kN
Load friction sleeve (nom.):	22.5	kN
Load pore pressure (nom.):	2	MPa
Inclination (nom.):	+/- 20	°
Temperature compensation (all channels):	0...+40	°C
Maximum overload capacity (all channels):	50	%
Cone area ratio (a):	0.79	
Max. Inaccuracy, relative to measurement value:	1.0	%

	Tip:		Sleeve:		Pore Pressure:		Inclinometer:		
	qc in kN	mV	fs in kN	mV	MPa	mV	Degrees	X (mV)	Y (mV)
Zero points:		0298		0245		0291			
	0	0	0	0	0	0	0	2487	2476
	5	0304	5	0315	0.4	1714	-20	0490	0487
	10	0610	10	0629	0.8	3431	20	4473	4515
	15	0914	15	0943	1.2	5138			
	20	1221	20	1261	1.6	6848			
	25	1528	25	1578	2.0	8551			
	30	1833	30	1895					
	35	2138	35	2210					
	40	2444	40	2526					
	45	2751	45	2843					
	50	3057	50	3160					

Max. error, abs. qc:	35 kPa
Max. error, abs. fs:	5 kPa
Max. error, abs. u2:	10 kPa
Max. error, abs. I:	1 °

This calibration is compliant with Eijkelkamp GeoPoint SoilSolutions internal quality system, internal calibration procedures and meets the requirements of NEN2649, NEN-EN-ISO 22476-1, NORSOK G-001, ISSMFE and ASTM using calibration equipment traceable to (Inter-)National Standards.

Approved by: R. Mosterd
Date: 21-03-2024

Eijkelkamp GeoPoint SoilSolutions
V.A.T. NO. NL 8584.21.422.B01
Trade Reg. Arnhem no. 70686149

IBAN NL43 RABO 0326 7904 38
BIC: RABONL2U

APPENDIX A5 – Symbol List

English

a	is area ratio of the cone ($= {}^{A_n}/_{A_c}$)
A	is area
A_c	is projected area of the cone
A_n	is cross sectional area of load cell or shaft
A_s	is area of friction sleeve
A_{sb}	is bottom end area of friction sleeve
A_{st}	is top end area of friction sleeve
B_q	is pore pressure parameter ($= {}^{(u_2 - u_0)}/_{(q_t - \sigma_{v0})}$)
c_h	is horizontal coefficient of consolidation
c_v	is vertical coefficient of consolidation
D	is diameter
D_r	is relative density ($= \frac{e_{max} - e}{e_{max} - e_{min}} x100\%$)
e	is void ratio
e_{max}	is maximum void ratio
e_{min}	is minimum void ratio
E	is Young's modulus
f_s	is unit sleeve friction resistance
f_t	is sleeve friction corrected for pore pressure effects
F_s	is total force acting on friction sleeve
F_R	is normalized friction ratio ($= {}^{f_s}/_{(q_t - \sigma_{v0})}$)
FoS	is factor of safety
FC	is fines content
g	is acceleration due to gravity
G_0	is initial or maximum shear modulus, shear stiffness
I_c	is soil behavior type index
I_r	is rigidity index ($= {}^{G}/_{s_u}$)
I_p	is plasticity index
k	is coefficient of permeability
k_h	is coefficient of permeability in horizontal direction
k_v	is coefficient of permeability in vertical direction
K_0	is coefficient of earth pressure at rest ($= {}^{\sigma'_{h0}}/_{\sigma'_{v0}}$)
L	is length
m_v	is coefficient of volume change
M	is constrained deformation modulus
M7.5	is earthquake magnitude of 7.5 Richter scale
N	is number of blows of SPT
N_{60}	is SPT energy ratio
N_k	is cone factor
N_{ke}	is cone factor
N_{kt}	is cone factor
$N_{\Delta u}$	is cone factor
p_a	is reference stress ($= 100\ kPa$)
q_c	is measured cone resistance
q_e	is effective cone resistance ($= q_t - u_2$)
q_n	is net cone resistance ($= q_t - \sigma_{v0}$)
q_t	is corrected cone resistance ($= q_c - (1 - a)u_2$)
Q_c	is total force acting on the cone
Q_t	is normalized cone resistance ($= {}^{q_t - \sigma_{v0}}/_{\sigma'_{v0}}$)

R_f is friction ratio ($= \left({}^{f_t}/_{q_t}\right) x100\%$ or alternatively $= \left({}^{f_t}/_{q_t}\right) x100\%$)
s_u is undrained shear strength
s_{ur} is remoulded undrained shear strength
S_t is sensitivity
t is time
t_{50} is time for 50% dissipation of excess pore water pressure
T_{50} is time factor at $U = 50\ \%$
u is pore water pressure
u_0 is in situ pore pressure
u_1 is pore pressure measured on the cone
u_2 is pore pressure measured behind the cone
u_3 is pore pressure measured behind sleeve friction
Δu is excess pore water pressure
U is normalized excess pore pressure
V_s is shear wave velocity
z is depth

Greek

α is constant
α is cone roughness
β is constant
β_1 is the angle between the vertical axis and the projection of the axis of the CPTU on a vertical plane, in degrees
β_2 is the angle between the vertical axis and the projection of the axis of the CPTU on a vertical plane that is perpendicular to the plane of angle β_1, in degrees
γ is unit weight of soil
γ_w unit weight of water
Δ is change
Δu is excess pore pressure ($= u - u_0$)
μ is Poisson's ratio
ρ is density
ψ is state parameter
σ, σ' is normal stress (total, effective)
σ_h, σ_h' is horizontal stress (total, effective)
σ_v, σ_v' is horizontal stress (total, effective)
σ_{v0},σ_{v0}' is overburden stress (total, effective)
τ_{av} is average cyclic shear stress
τ_{cy} is cyclic shear stress
φ' is effective friction angle

APPENDIX A6 – Abbreviations

ASTM	American Society for Testing and Materials
CPTU	Cone Penetration Test with Pore Pressure Measurement (Piezocone Test)
CRR	Cyclic Resistance Ratio
CSR	Cyclic Stress Ratio
GWT	Ground Water Table
NC	Normally Consolidated
OC	Over consolidated
OCR	Over consolidation Ratio
PL	Limit Pressure
SCPT	Seismic Cone Penetration
SDMT	Seismic Dilatometer Marchetti
SPT	Standard Penetration Test
TC	Technical Committee

APPENDIX A7 – Glossary

CPT
Cone Penetration Test.

Cone
The part of the cone penetrometer on which the end bearing is developed.

Cone Penetrometer
The assembly containing the *cone*, *friction sleeve*, any other sensors and measuring systems, as well as the connections to the *push-rods.*

Cone resistance, q_c
The total force acting on the cone, Q_c, divided by the projected area of the cone, A_c. $q_c = {Q_c}/{A_c}$

Corrected cone resistance, q_t
The *cone resistance*, q_c corrected for pore water pressure effects.

Corrected sleeve friction, f_t
The *sleeve friction* corrected for pore water pressure effects on the ends of the *friction sleeve*.

Data acquisition system
The system used to measure and record the measurements made by the *cone penetrometer*.

Dissipation Test
A test when the decay of the pore water pressure is monitored during a pause in penetration.

Filter element
The porous element inserted into the cone penetrometer to allow transmission of the pore water pressure to the pore pressure sensor, while maintaining the correct profile of the *cone penetrometer*.

Friction ratio, R_f
The ratio, expressed as a percentage of the *sleeve friction*, f_s, to the *cone resistance*, q_c, both measured at the same depth.

Friction reducer
A local enlargement on the push-rod surface, placed at a distance above the cone penetrometer, and provided to reduce the friction on the *push-rods*.

Friction sleeve
The section of the *cone penetrometer* upon which the *sleeve friction* is measured.

Normalized cone resistance, Q_c or Q_t
The *cone resistance* expressed in a non-dimensional form and taking account of stress changes *in situ*, $Q_c = {(q_c - \sigma_{v0})}/{\sigma'_{v0}}$, or when the *corrected cone resistance* is used $Q_t = {(q_t - \sigma_{v0})}/{\sigma'_{v0}}$. where σ_{v0} and σ'_{v0} are the total and effective vertical stress respectively.

Net cone resistance, q_n
The *corrected cone resistance* minus the vertical total stress. $q_n = q_t - \sigma_{v0}$

Normalized friction ratio, F_r
The *sleeve friction* normalized by the *net cone resistance*.

Piezocone
A *cone penetrometer* containing a pore pressure sensor.

Pore pressure, *u*
The pore pressure generated during penetration and measured by a pore pressure sensor, u_1 when measured on the cone, u_2 when measured just behind the cone and u_3 when measured just behind the friction sleeve.

Pore pressure ratio, B_q
The *net pore pressure* normalized with respect to the *net cone resistance*.

Push-rods
The thick-walled tubes or rods used for advancing the cone penetrometer.

Rig machine
The equipment which pushes the cone penetrometer and rods into the ground.

Sleeve friction, f_s
The total frictional force acting on the *friction sleeve*, F_s, divided by its *surface area*, A_s. $f_s = {F_s}/{A_s}$

APPENDIX A8 – Soils Description Tables

GRANULAR SOILS (Sands and Gravels)

Description	Relative Density D_r (%)	SPT N value, N_{SPT}
Very Loose	0 – 15	0 - 4
Loose	15 – 35	4 - 10
Medium Dense	35 – 65	10 - 30
Dense	65 – 85	30 - 50
Very Dense	>85	>50

COHESIVE SOILS (Clays and Silts)

Term based on measurement	Undrained Shear Strength Classification, s_u (kPa)
Extremely low	<10
Very low	10 - 20
Low	20 - 40
Medium	40 - 75
High	75 - 150
Very high	150 - 300
Extremely high	>300

APPENDIX B

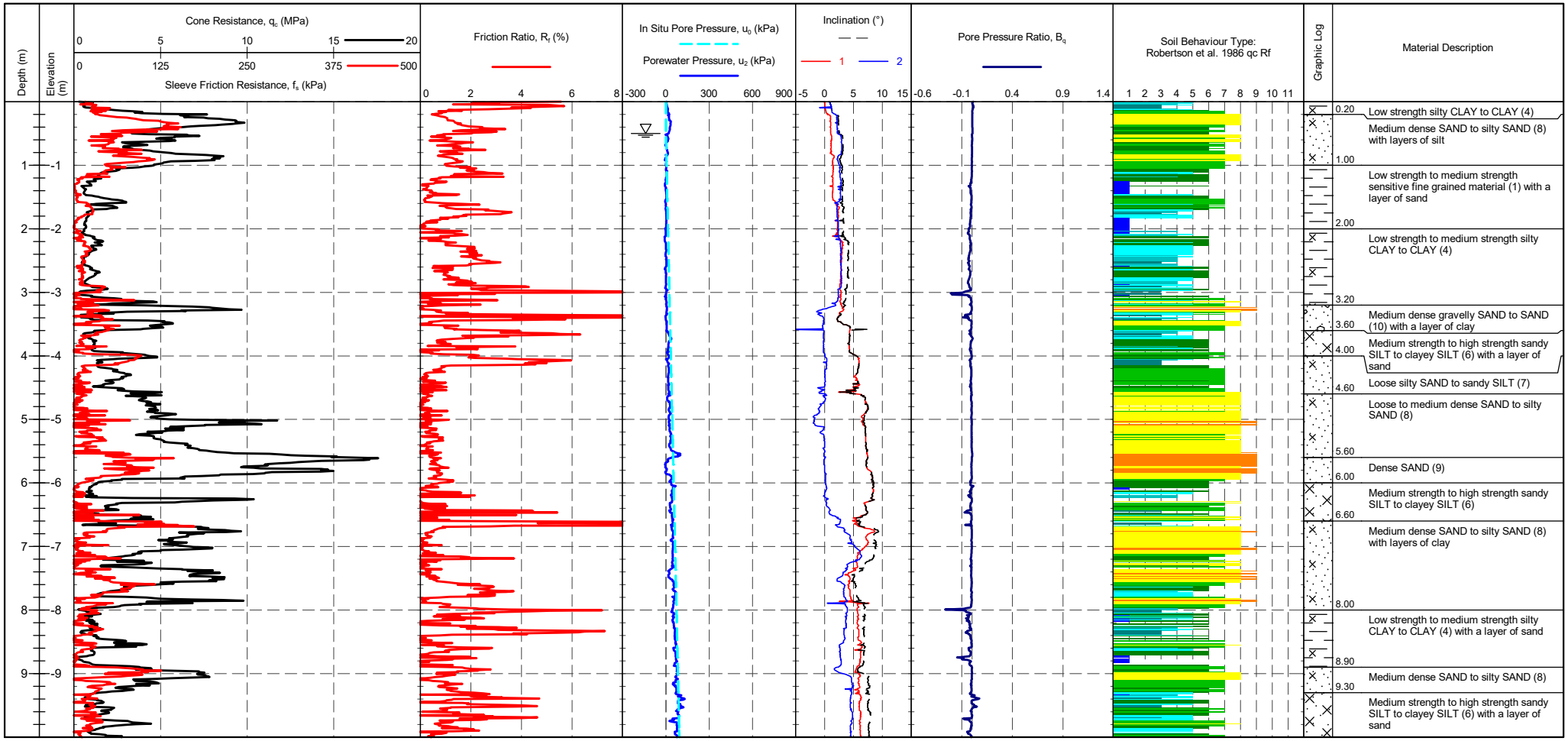
Cone Penetration Measured Parameters and Geotechnical Derived Parameters

CPT LOG 01

Working with:

PointID: **CPT101**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	301 mV	302 mV	0.011 MPa
Sleeve	242 mV	240 mV	-0.001 kPa
Pore Pressure 2	314 mV	372 mV	0.014 kPa
X-Y Inclinometer	2475 mV	2486 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

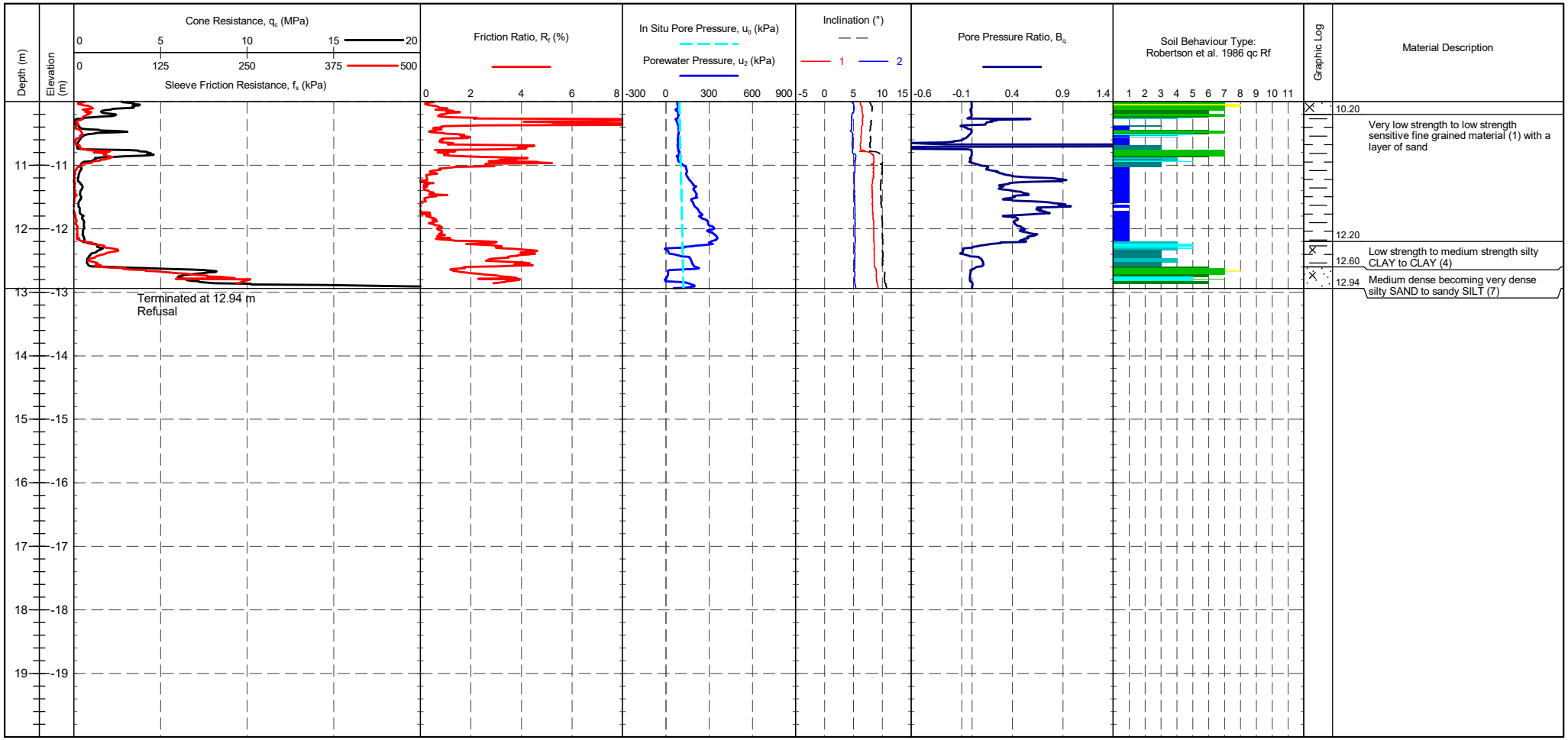
Dissipation Test

CPT LOG 01

Working with:

PointID: **CPT101**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Raining & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	301 mV	302 mV	0.011 MPa
Sleeve	242 mV	240 mV	-0.001 kPa
Pore Pressure 2	314 mV	372 mV	0.014 kPa
X-Y Inclinometer	2475 mV	2486 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

Working with:

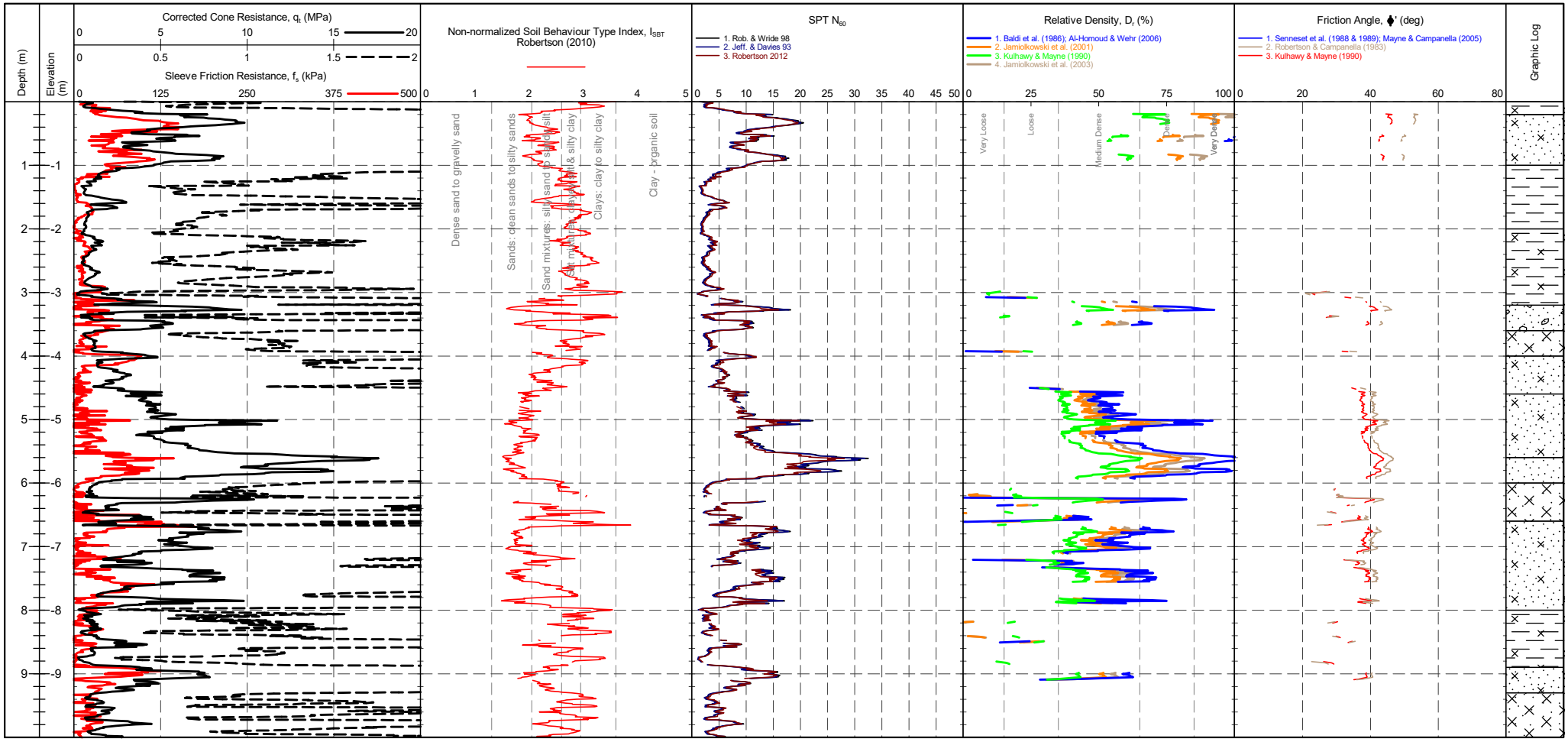
PointID
CPT101

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	301 mV	302 mV	0.011 MPa
Sleeve	242 mV	240 mV	-0.001 kPa
Pore Pressure 2	314 mV	372 mV	0.014 kPa
X-Y Inclinometer	2475 mV	2486 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

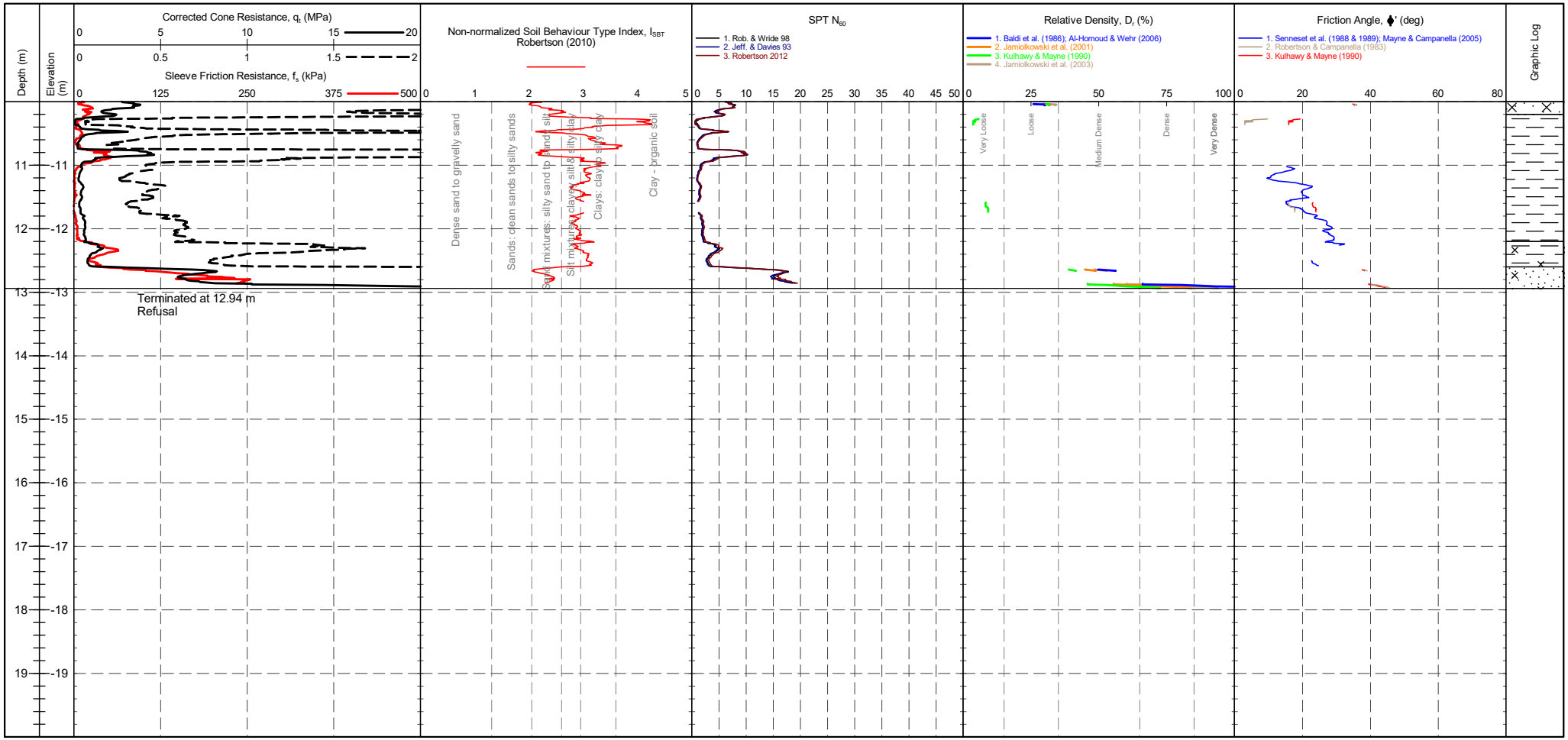
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 02

PointID: **CPT101**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	301 mV	302 mV	0.011 MPa
Sleeve	242 mV	240 mV	-0.001 kPa
Pore Pressure 2	314 mV	372 mV	0.014 kPa
X-Y Inclinometer	2475 mV	2486 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

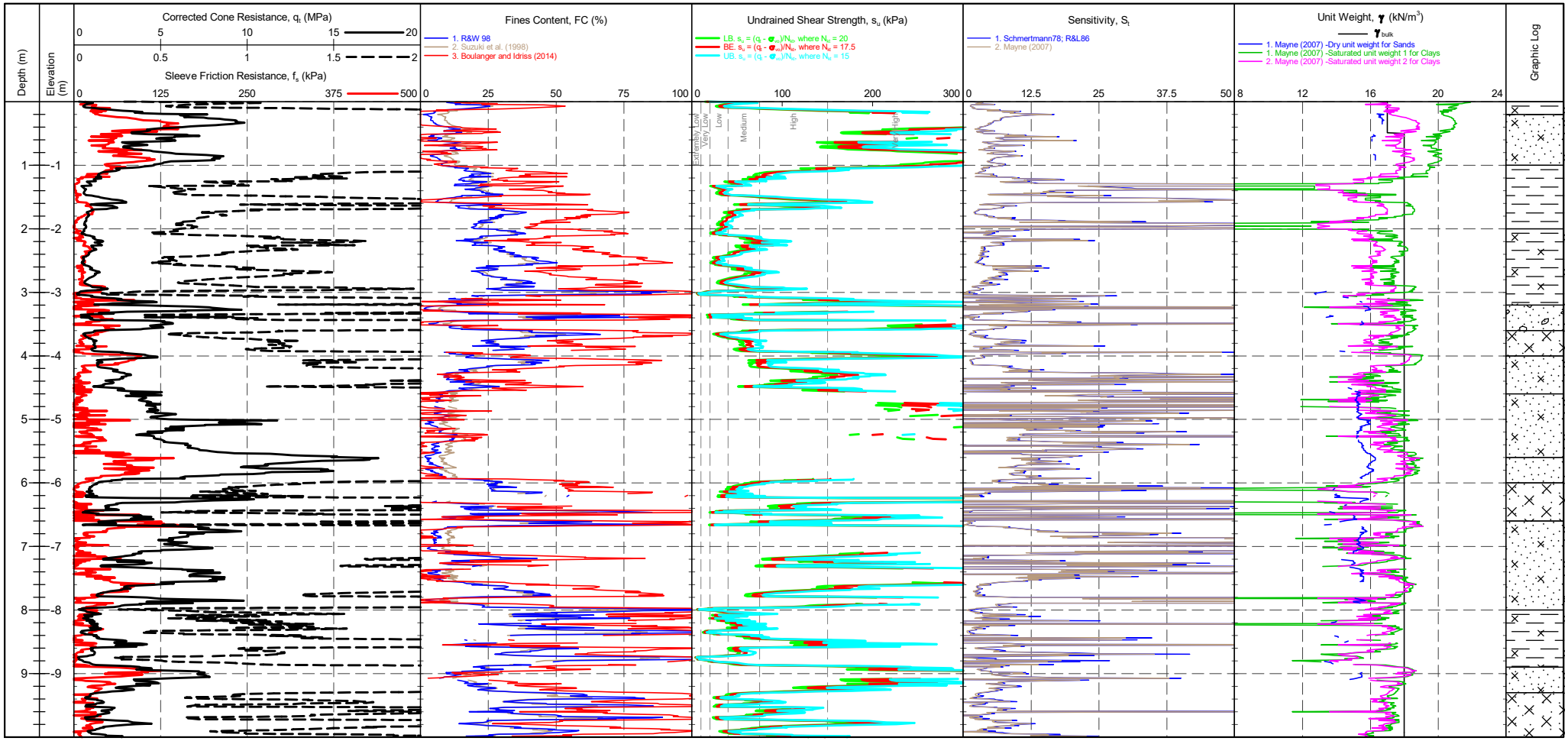
Dissipation Test

CPT LOG 03

Working with:

PointID: **CPT101**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	301 mV	302 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	242 mV	240 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	314 mV	372 mV	0.014 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2475 mV	2486 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

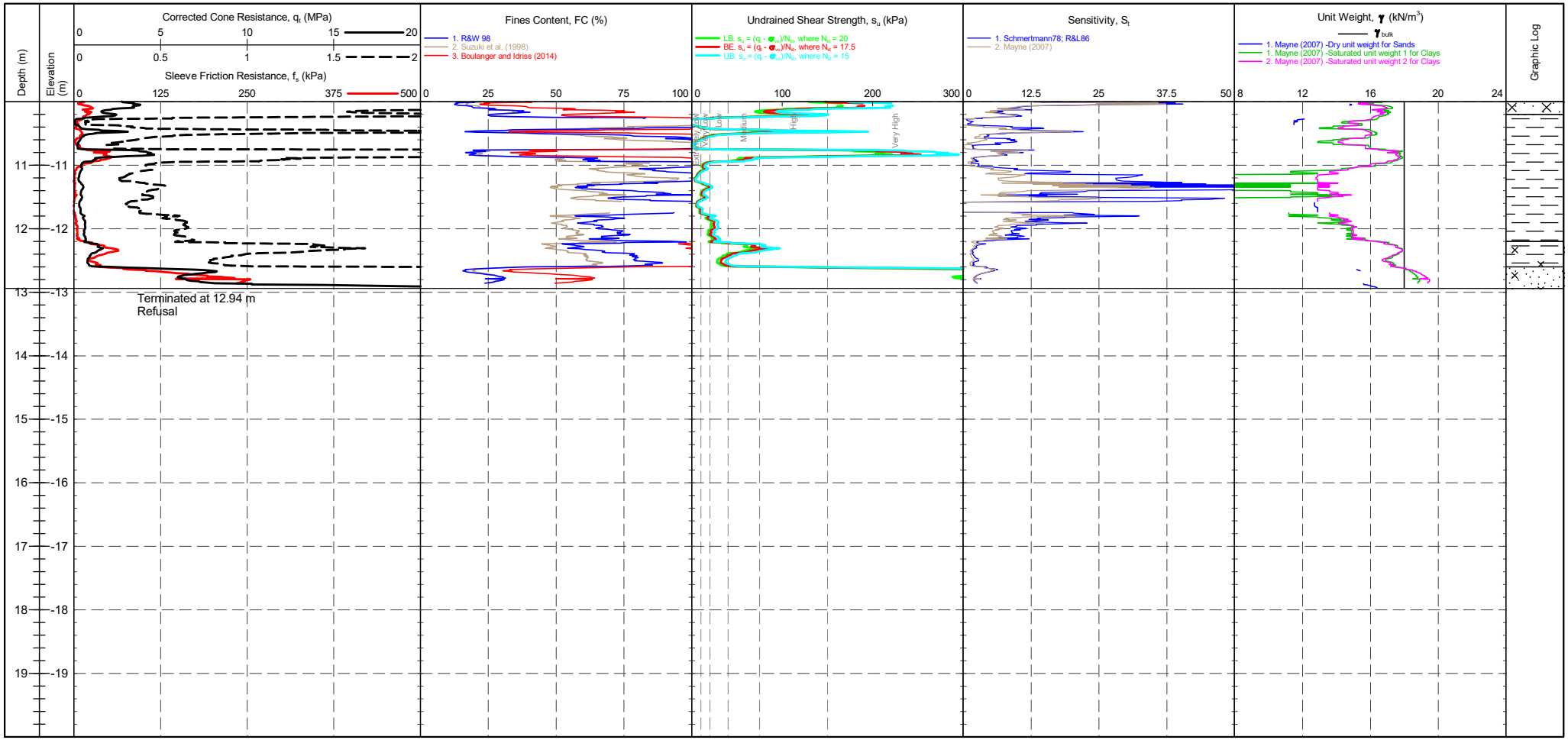
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT101**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	301 mV	302 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	242 mV	240 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	314 mV	372 mV	0.014 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2475 mV	2486 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

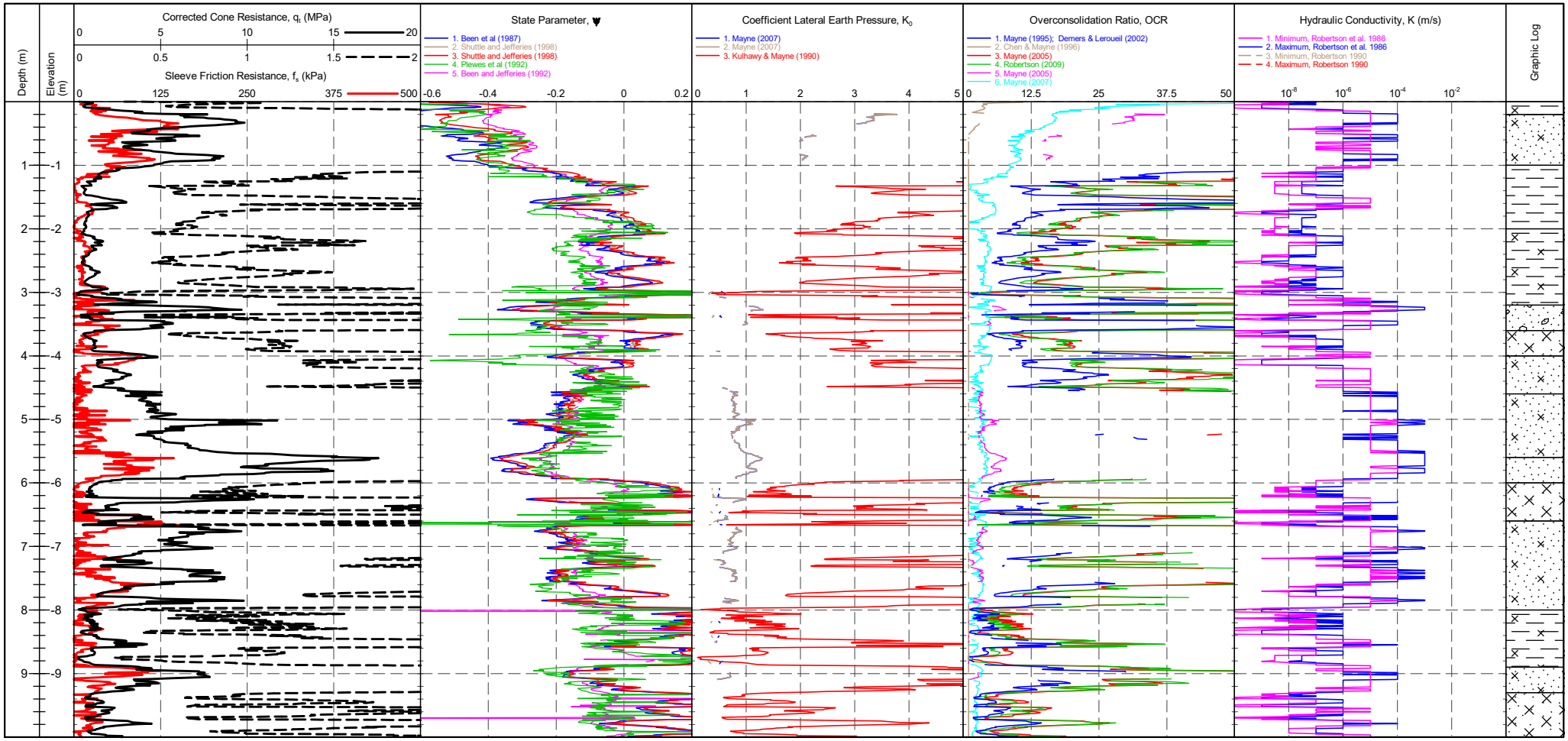
PointID: **CPT101**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	301 mV	302 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	242 mV	240 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	314 mV	372 mV	0.014 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2475 mV	2486 mV	

Groundwater Level

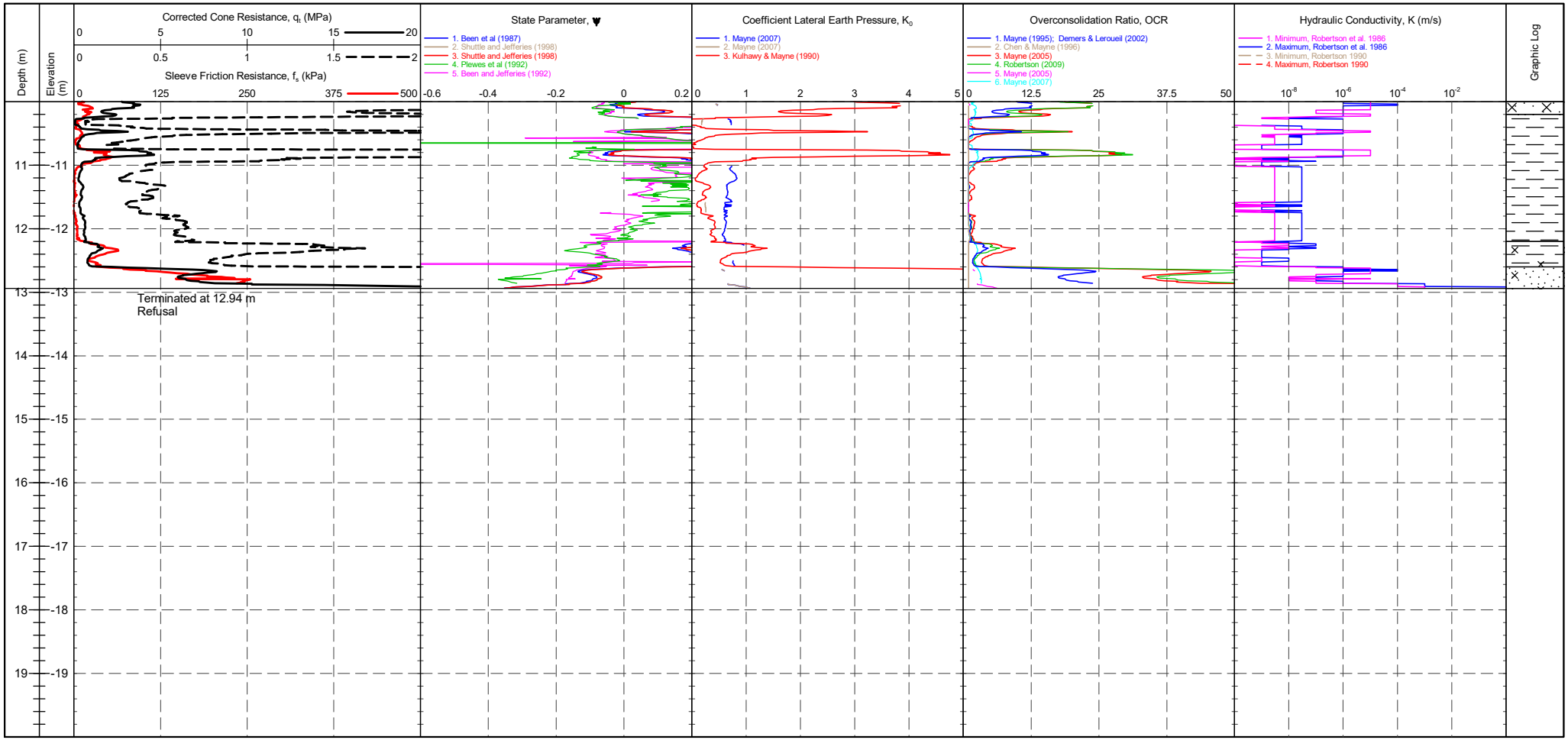
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID **CPT101**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	301 mV	302 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	242 mV	240 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	314 mV	372 mV	0.014 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2475 mV	2486 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

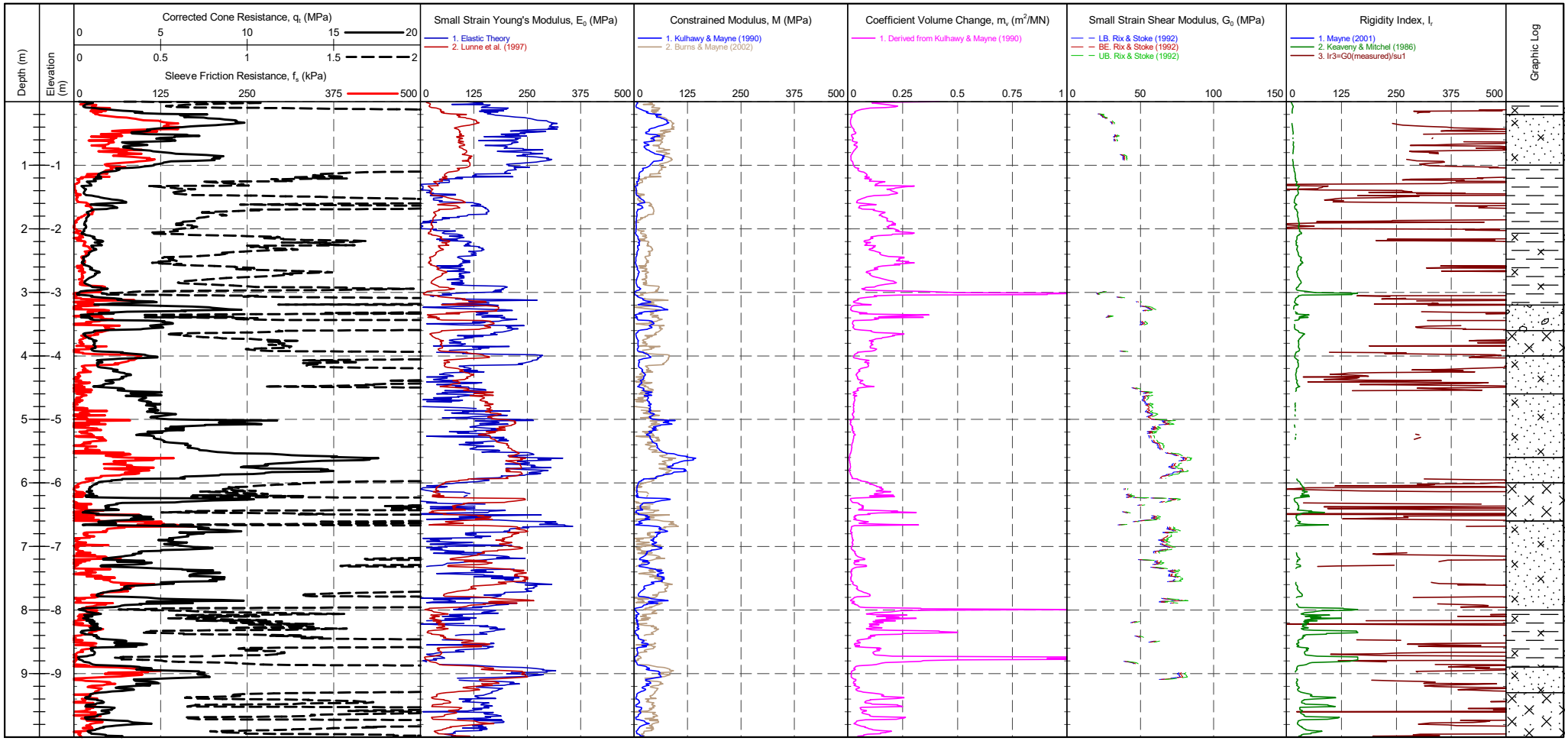
PointID
CPT101

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	301 mV	302 mV	0.011 MPa
Sleeve	242 mV	240 mV	-0.001 kPa
Pore Pressure 2	314 mV	372 mV	0.014 kPa
X-Y Inclinometer	2475 mV	2486 mV	

Groundwater Level

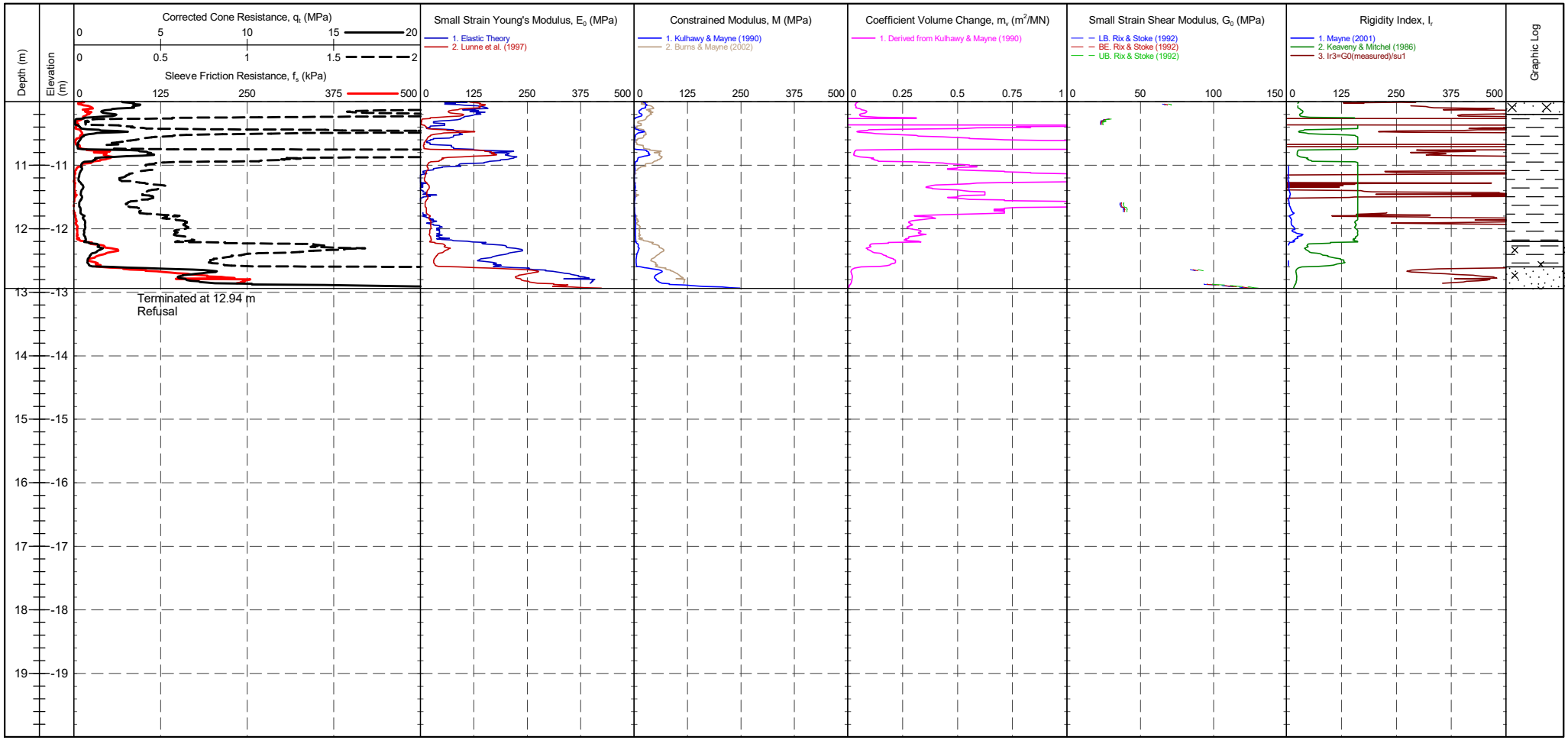
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 05

PointID: **CPT101**

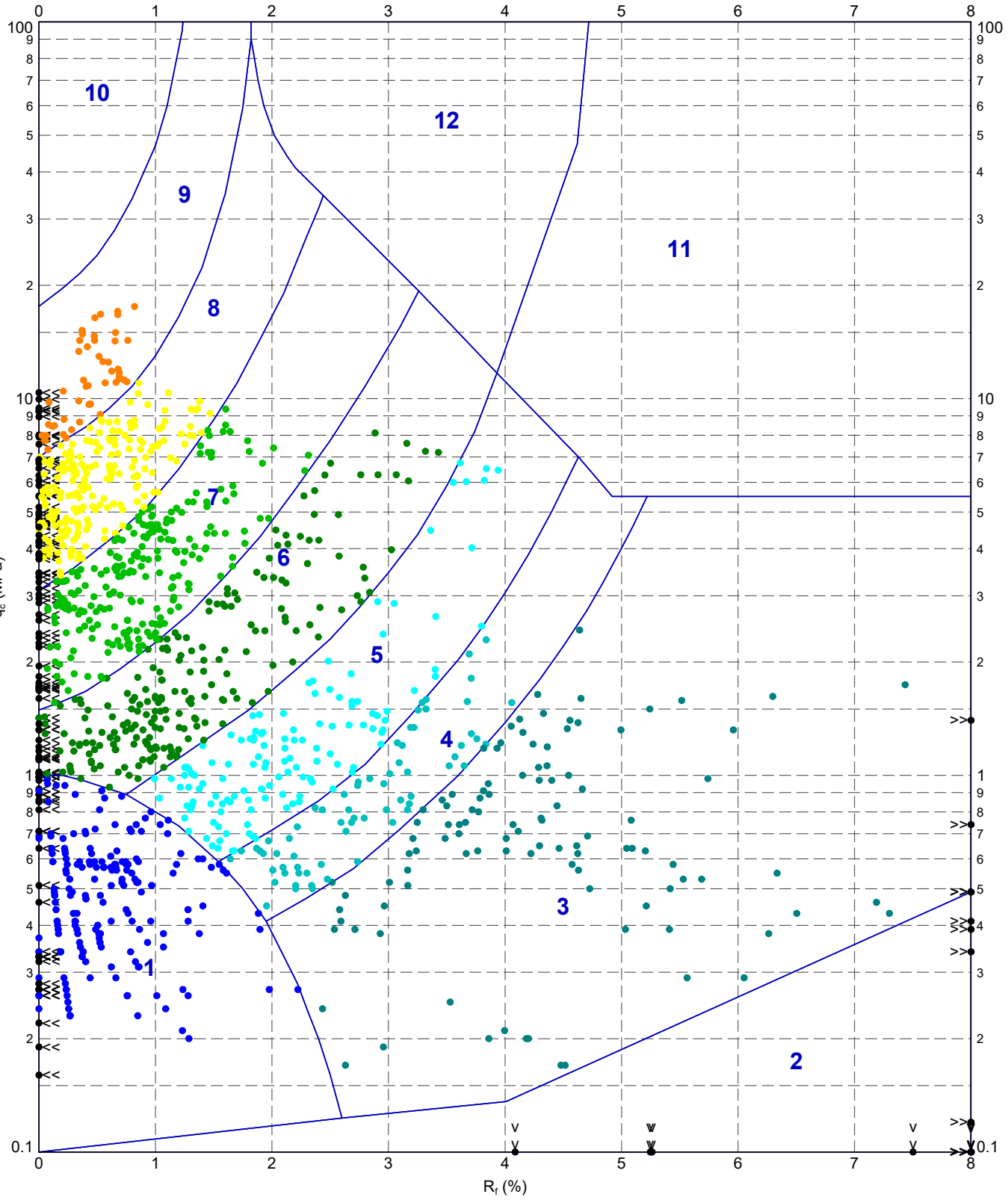
CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	301 mV	302 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	242 mV	240 mV	-0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	314 mV	372 mV	0.014 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2475 mV	2486 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT101

DRAWN	DATE	02/08/2024
CHECKED	DATE	02/08/2024
SCALE	Not To Scale	A4
PROJECT No	1240280	FIGURE No

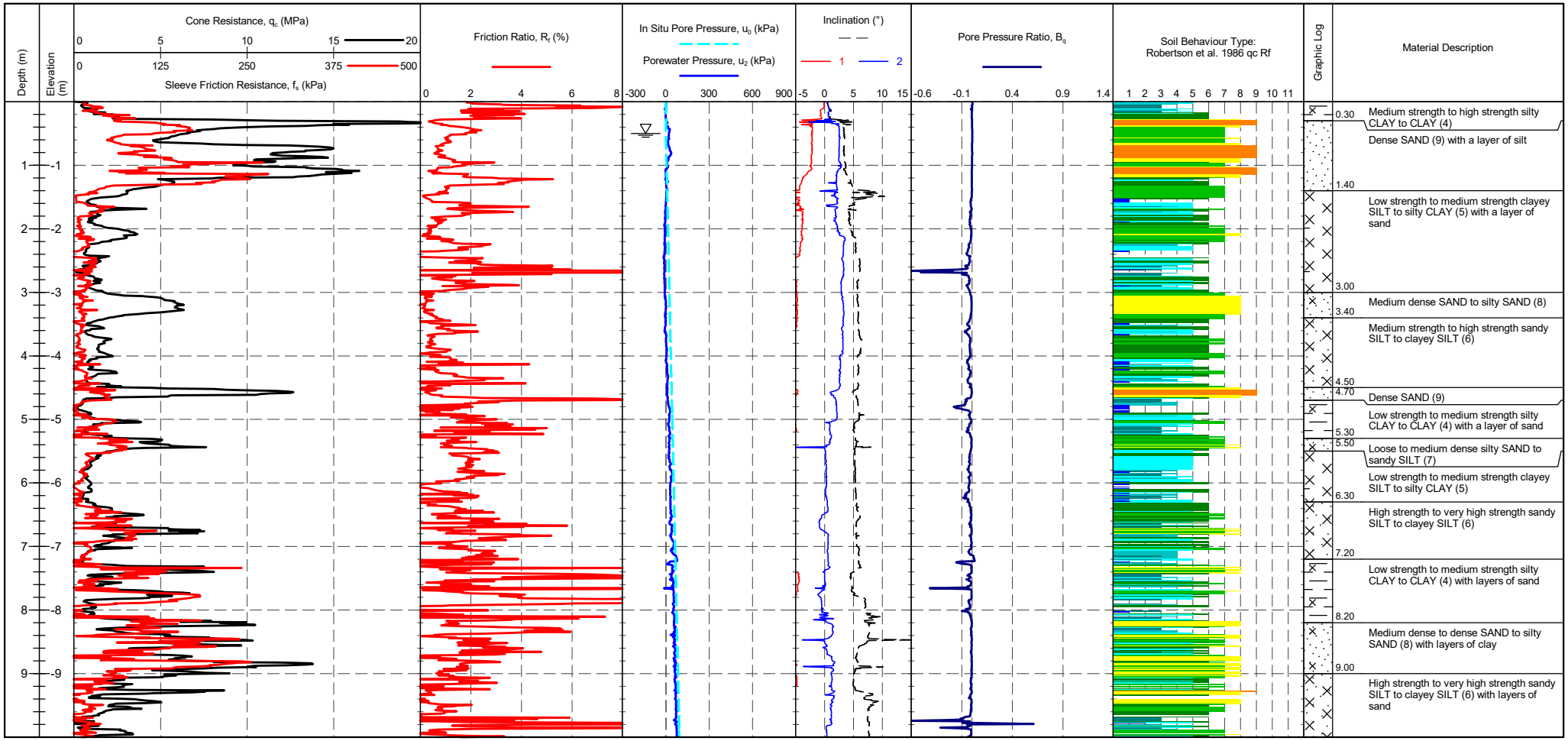
220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:50 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

PointID: **CPT102**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	305 mV	301 mV	-0.044 MPa
Sleeve	244 mV	232 mV	-0.008 kPa
Pore Pressure 2	330 mV	343 mV	0.003 kPa
X-Y Inclinometer	2476 mV	2445 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

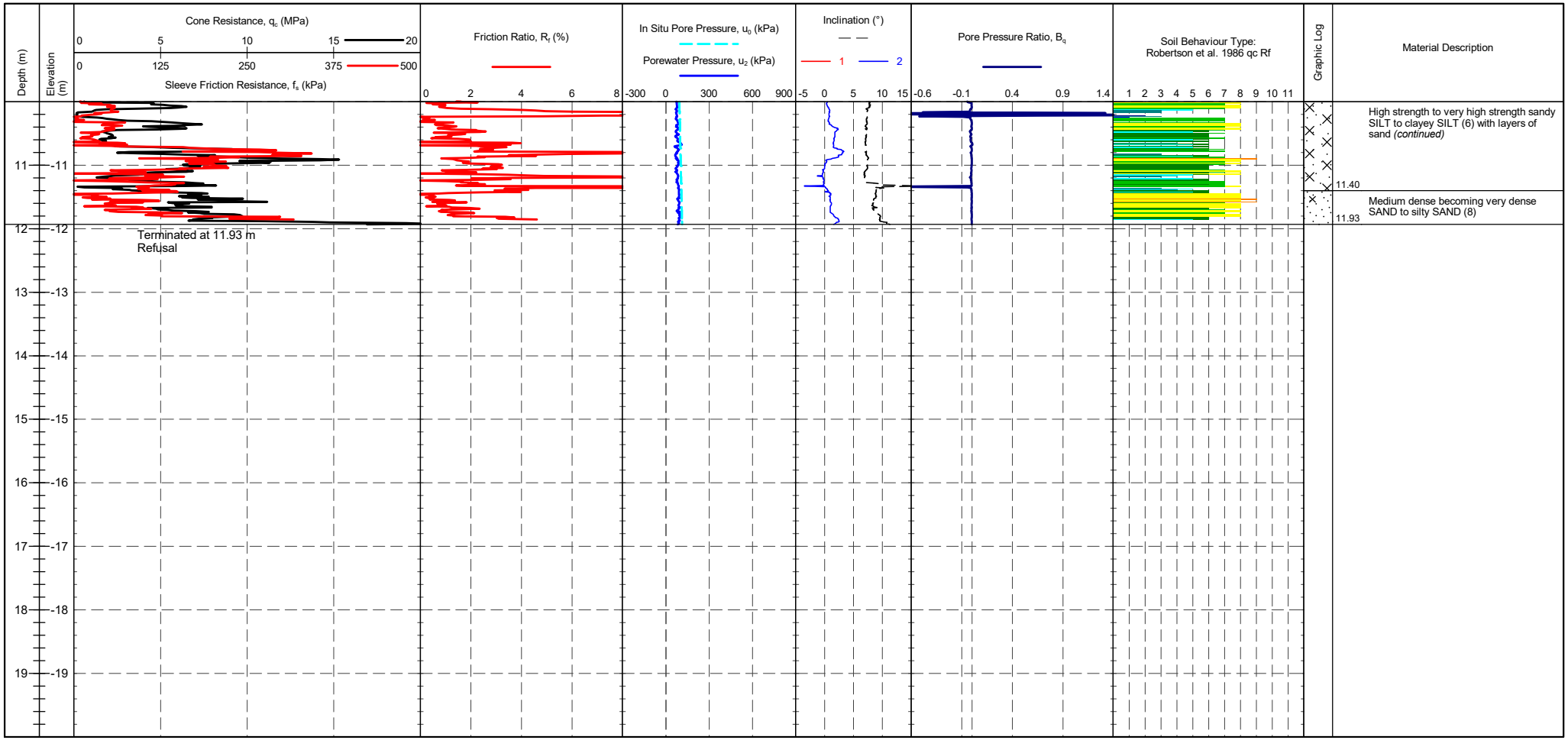
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT102**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm²	OPERATOR	: R Shepherd		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Raining & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	305 mV	301 mV	-0.044 MPa
Sleeve	244 mV	232 mV	-0.008 kPa
Pore Pressure 2	330 mV	343 mV	0.003 kPa
X-Y Inclinometer	2476 mV	2445 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

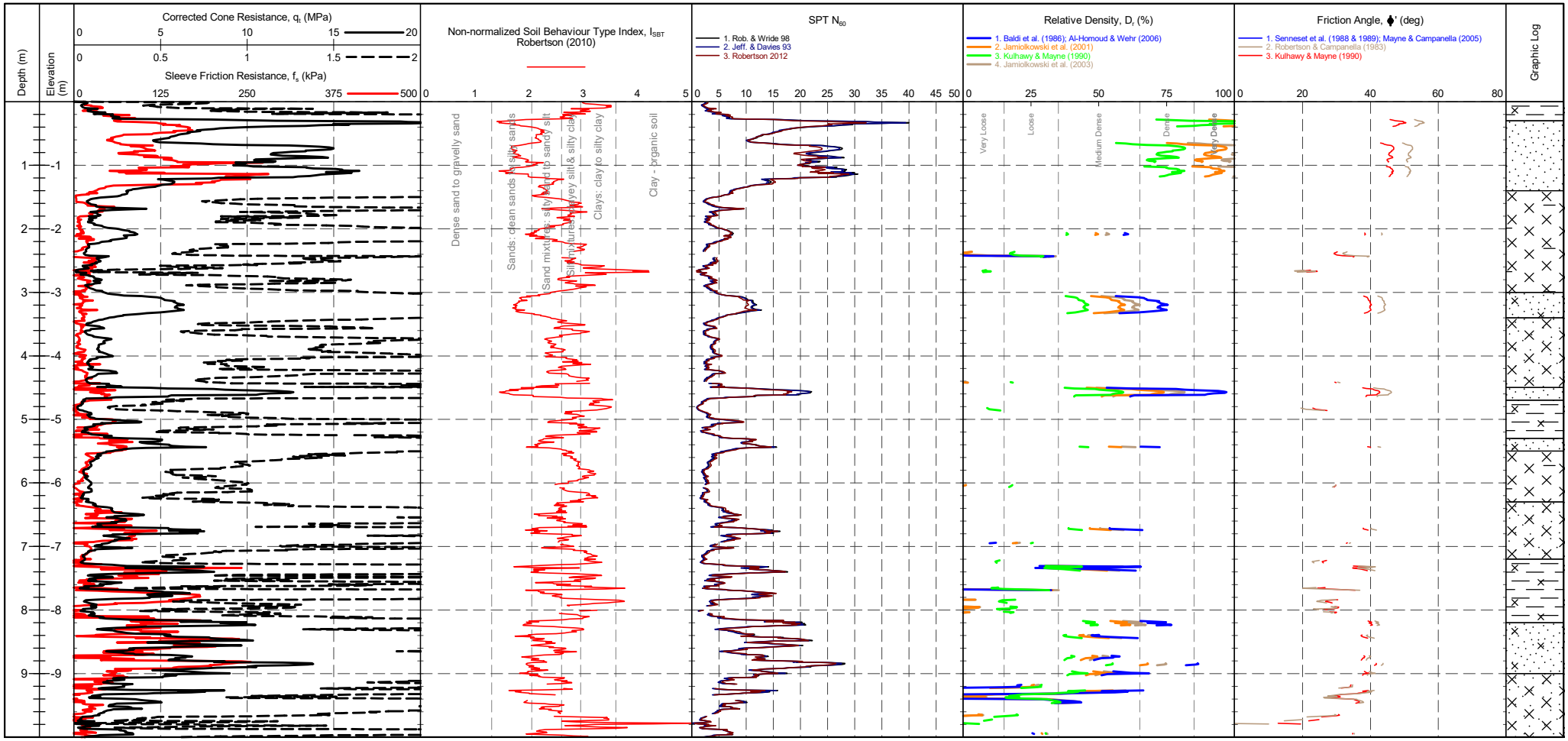
PointID
CPT102

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145
CONE MODEL	: Subtraction
CONE AREA	: 15cm^2
CONE AREA RATIO	: 0.79
FILTER POSITION	: u2
FILTER TYPE	: HDPE

TEST TYPE	: TE2
APPLICATION CLASS	: 2
RIG	: CPT 025 - Toni
OPERATOR	: R Shepherd
FRICTION REDUCER	: None
WEATHER	: Raining & Mild

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	305 mV	301 mV	-0.044 MPa
Sleeve	244 mV	232 mV	-0.008 kPa
Pore Pressure 2	330 mV	343 mV	0.003 kPa
X-Y Inclinometer	2476 mV	2445 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 02

Working with:

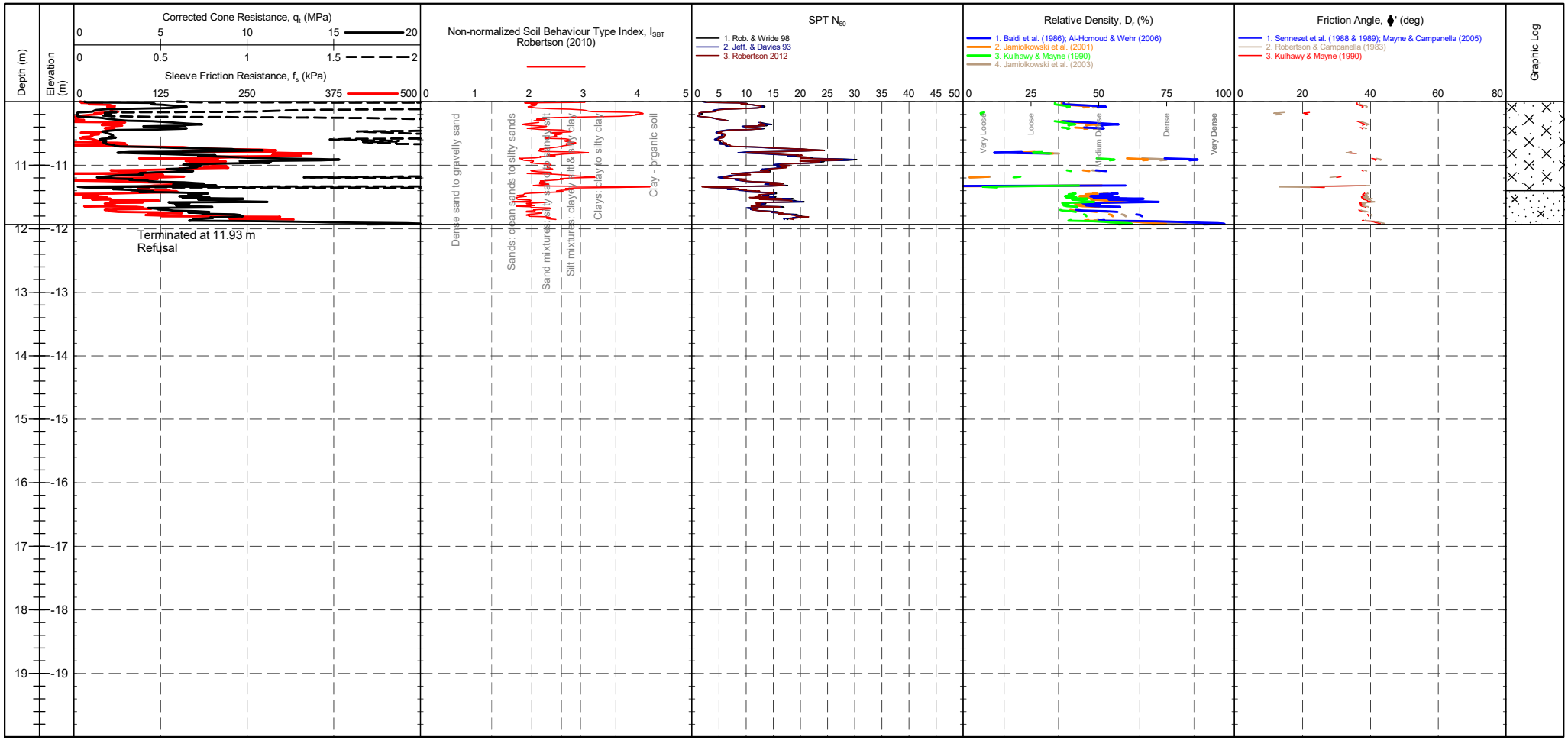
PointID
CPT102

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	305 mV	301 mV	-0.044 MPa
Sleeve	244 mV	232 mV	-0.008 kPa
Pore Pressure 2	330 mV	343 mV	0.003 kPa
X-Y Inclinometer	2476 mV	2445 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

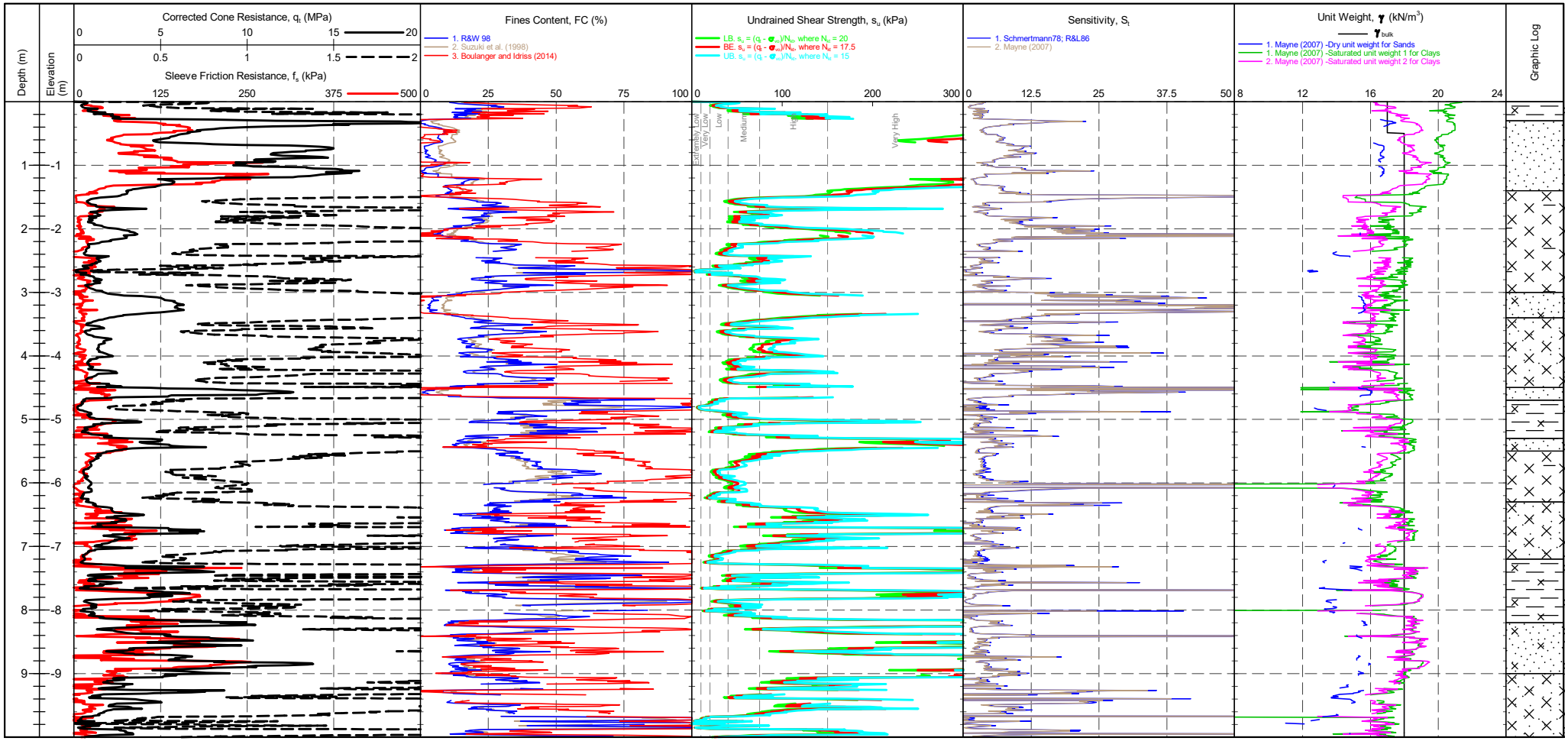
PointID: **CPT102**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer	305 mV	301 mV	-0.044 MPa
Tip	244 mV	232 mV	-0.008 kPa
Sleeve	330 mV	343 mV	0.003 kPa
Pore Pressure 2	2476 mV	2445 mV	
X-Y Inclinometer			

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

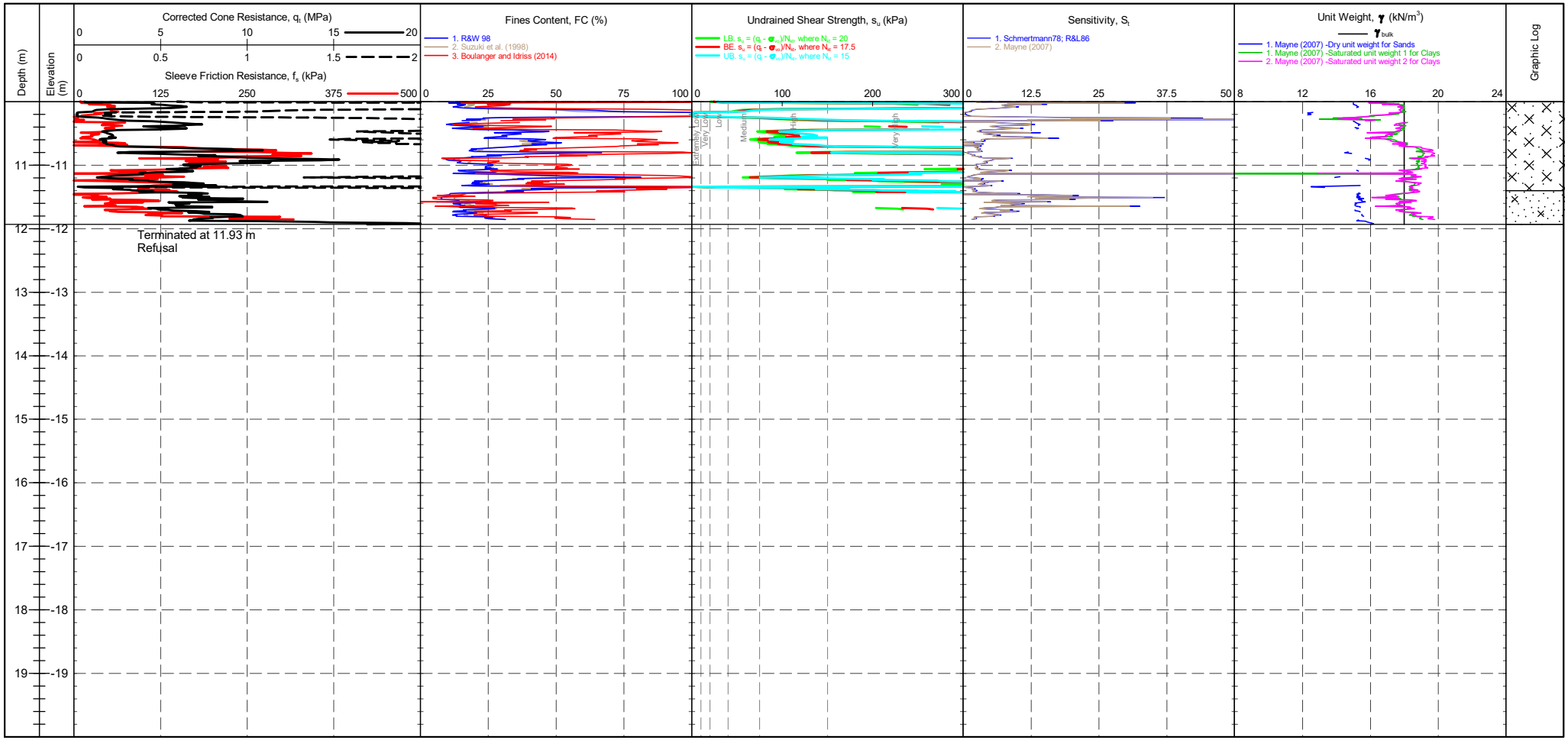
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT102**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	305 mV	301 mV	-0.044 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	244 mV	232 mV	-0.008 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	330 mV	343 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2445 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

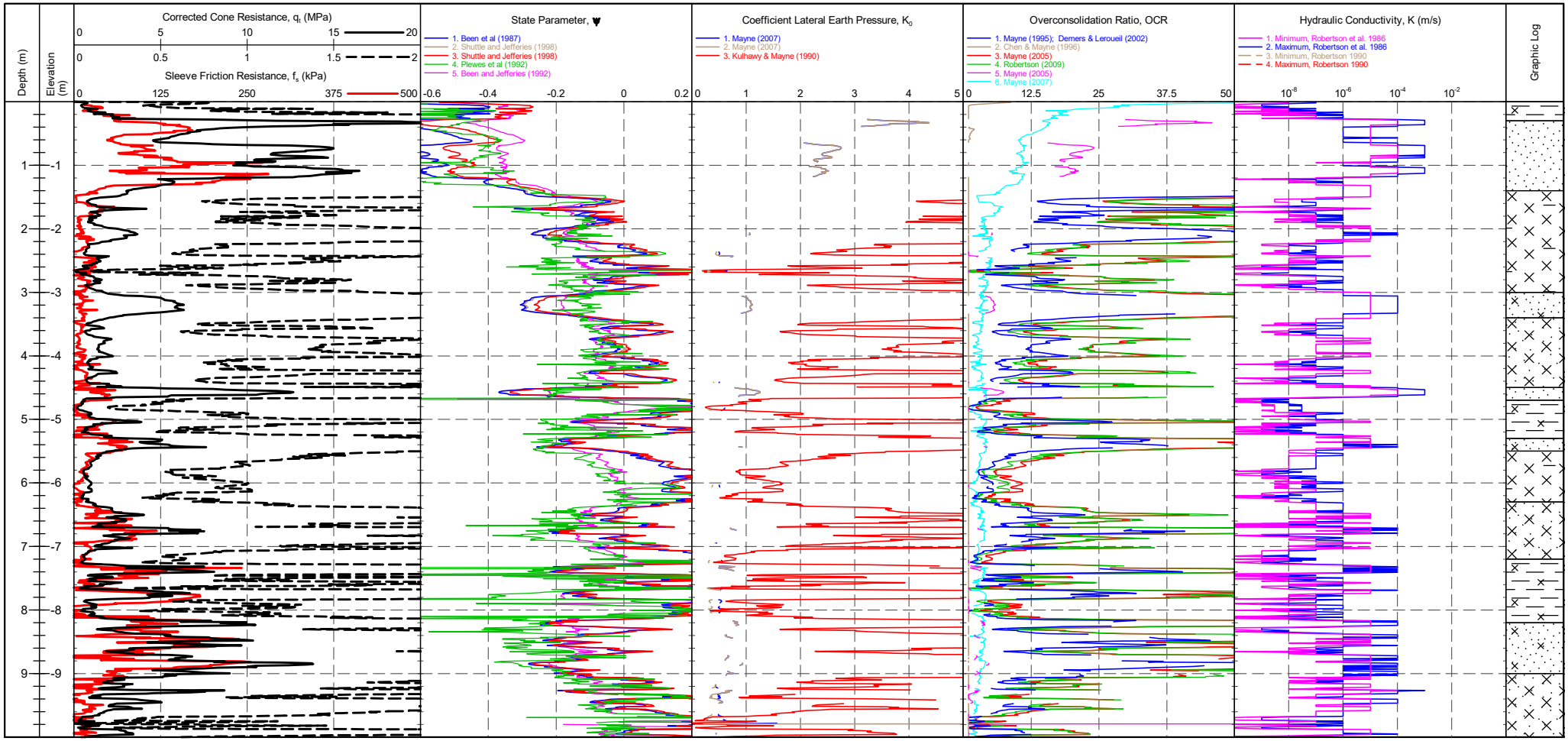
PointID
CPT102

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	305 mV	301 mV	-0.044 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	244 mV	232 mV	-0.008 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	330 mV	343 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2445 mV	

Groundwater Level

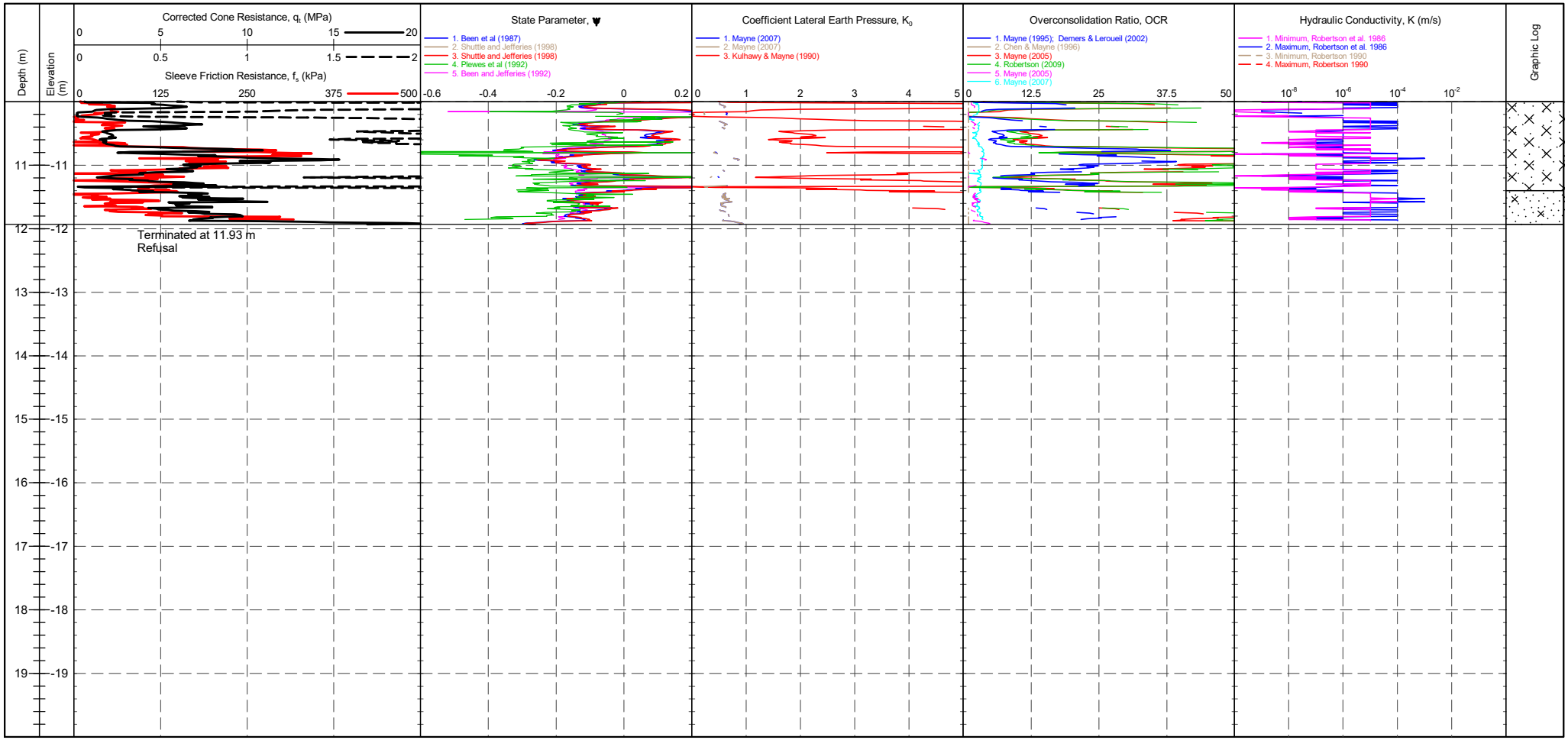
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT102**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	305 mV	301 mV	-0.044 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	244 mV	232 mV	-0.008 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	330 mV	343 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2445 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

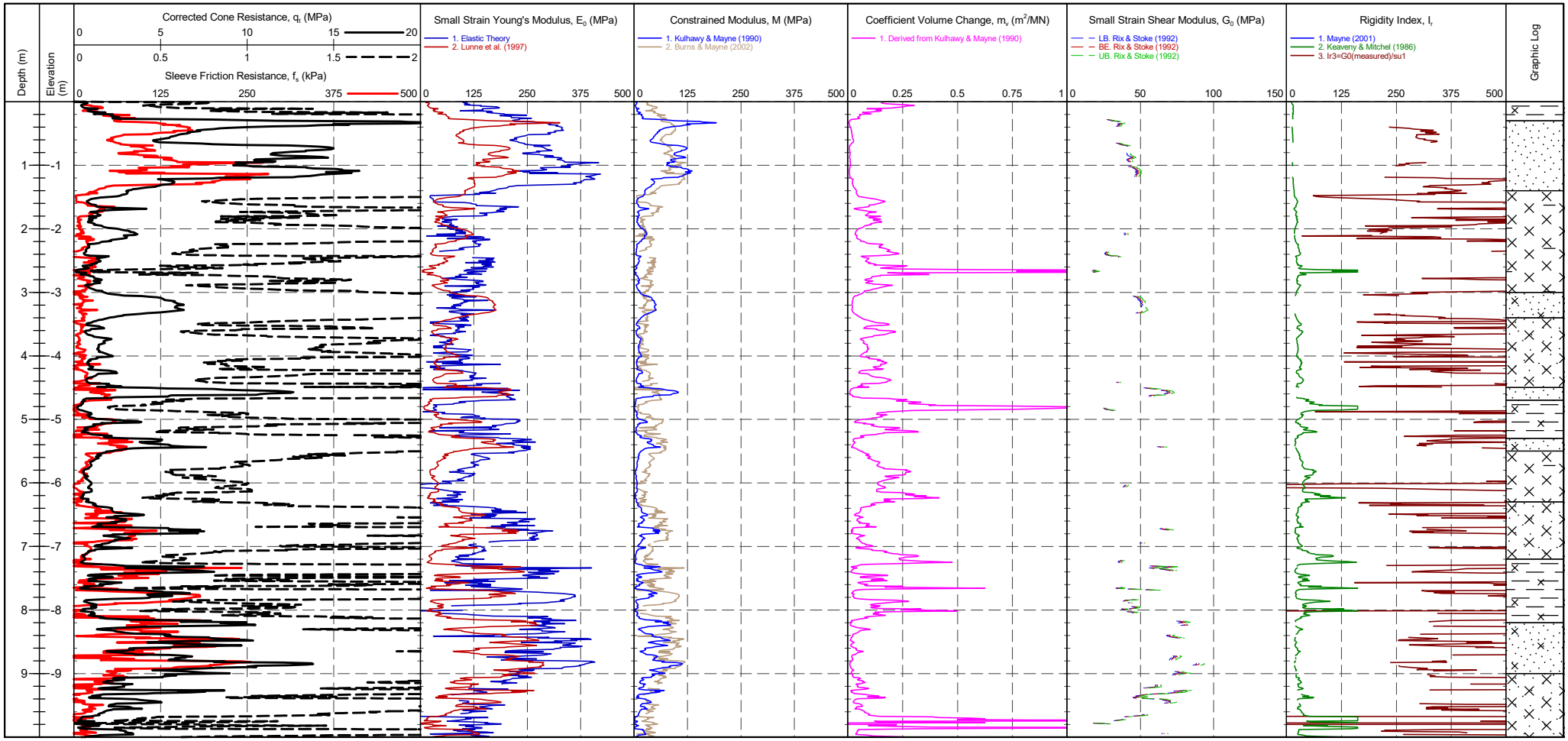
PointID: **CPT102**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

Transducer	Pre	Post	Difference
Tip	305 mV	301 mV	-0.044 MPa
Sleeve	244 mV	232 mV	-0.008 kPa
Pore Pressure 2	330 mV	343 mV	0.003 kPa
X-Y Inclinometer	2476 mV	2445 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

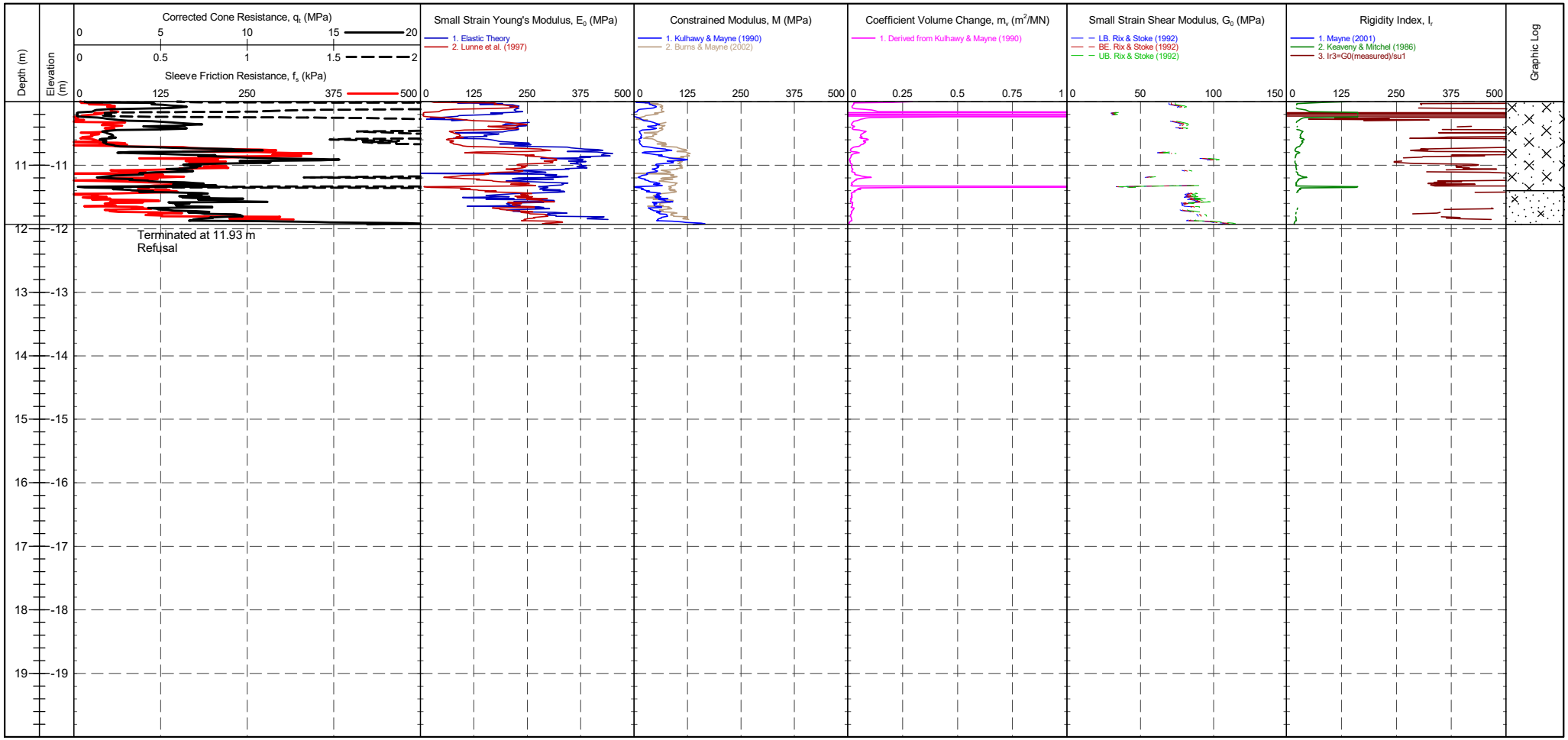
PointID
CPT102

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



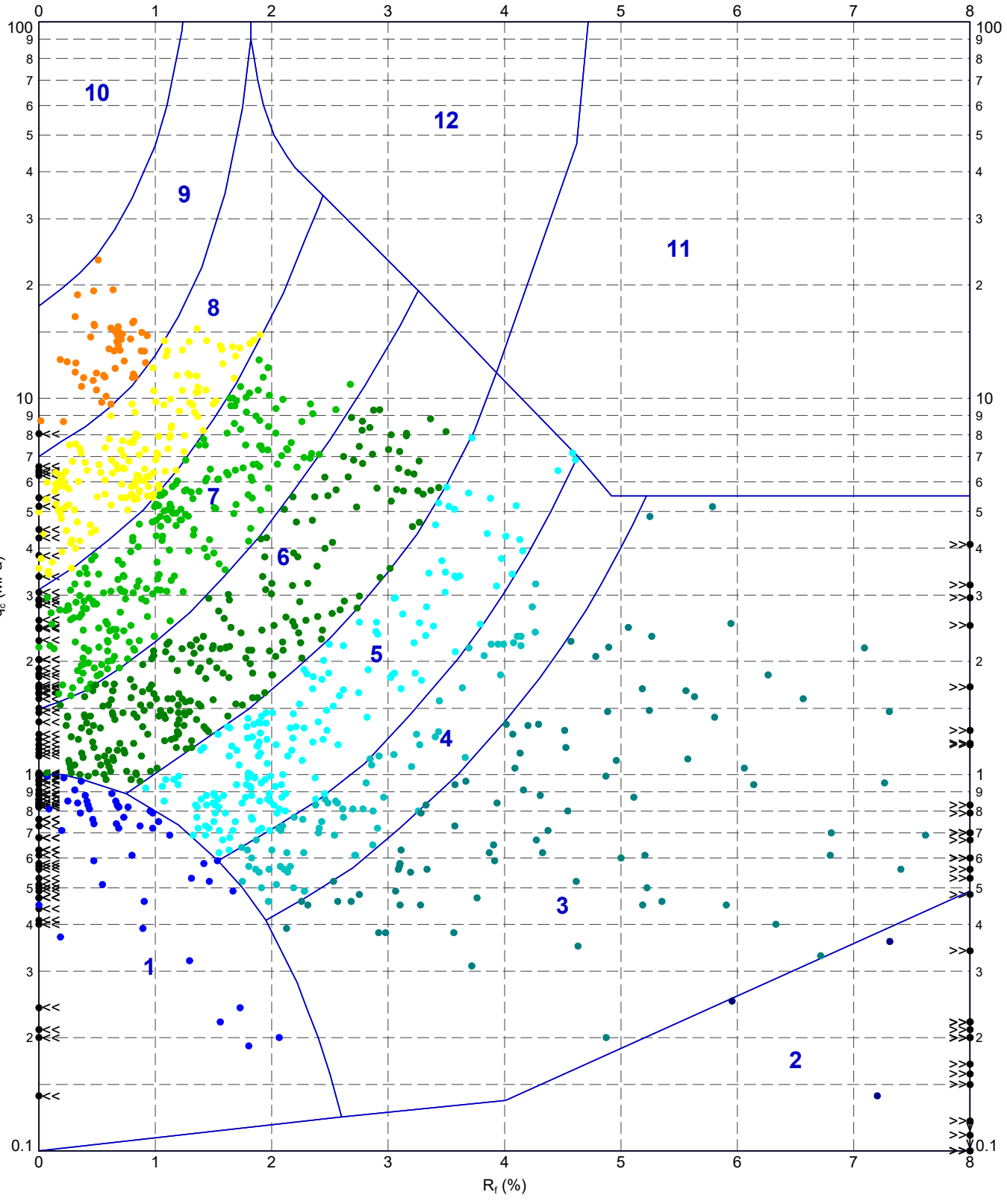
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	305 mV	301 mV	-0.044 MPa
Sleeve	244 mV	232 mV	-0.008 kPa
Pore Pressure 2	330 mV	343 mV	0.003 kPa
X-Y Inclinometer	2476 mV	2445 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE: E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT102	DRAWN	DATE 02/08/2024	
	CHECKED	DATE 02/08/2024	
	SCALE Not To Scale		A4
	PROJECT No 1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:52 10.03.00.09 DatgeLab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

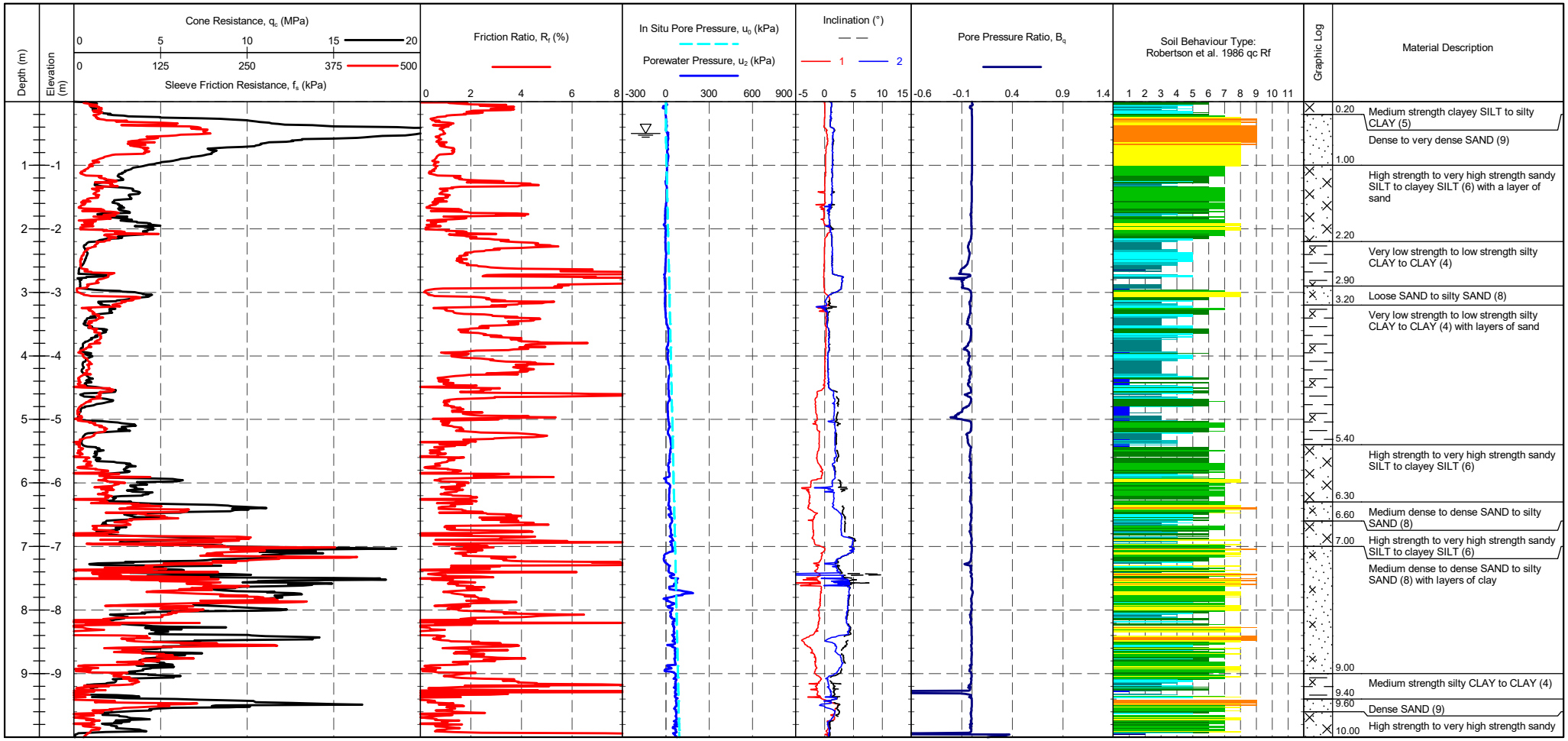
PointID: **CPT103**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	233 mV	228 mV	-0.004 kPa
Pore Pressure 2	313 mV	335 mV	0.005 kPa
X-Y Inclinometer	2461 mV	2466 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

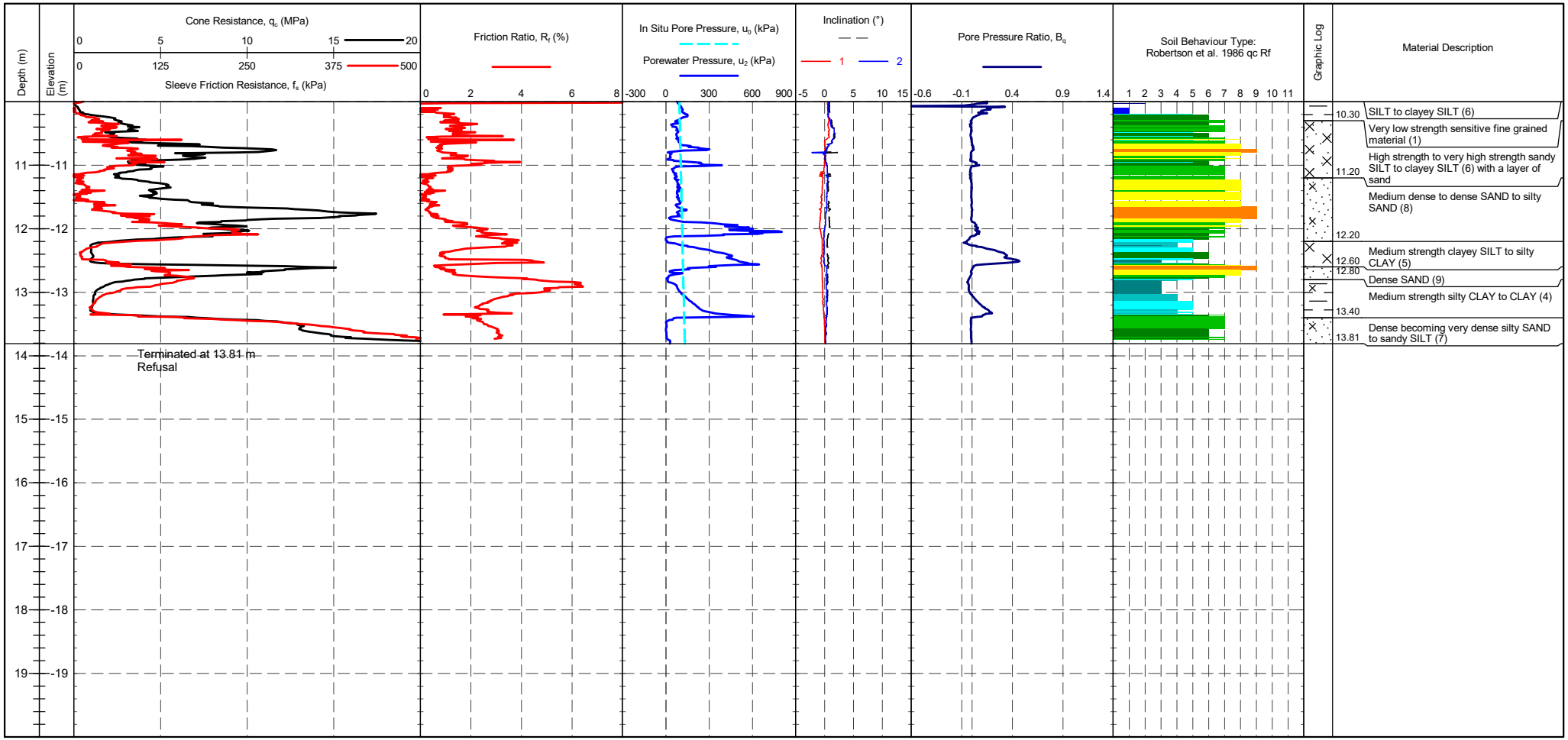
Groundwater Level
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT103**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Raining & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	233 mV	228 mV	-0.004 kPa
Pore Pressure 2	313 mV	335 mV	0.005 kPa
X-Y Inclinometer	2461 mV	2466 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

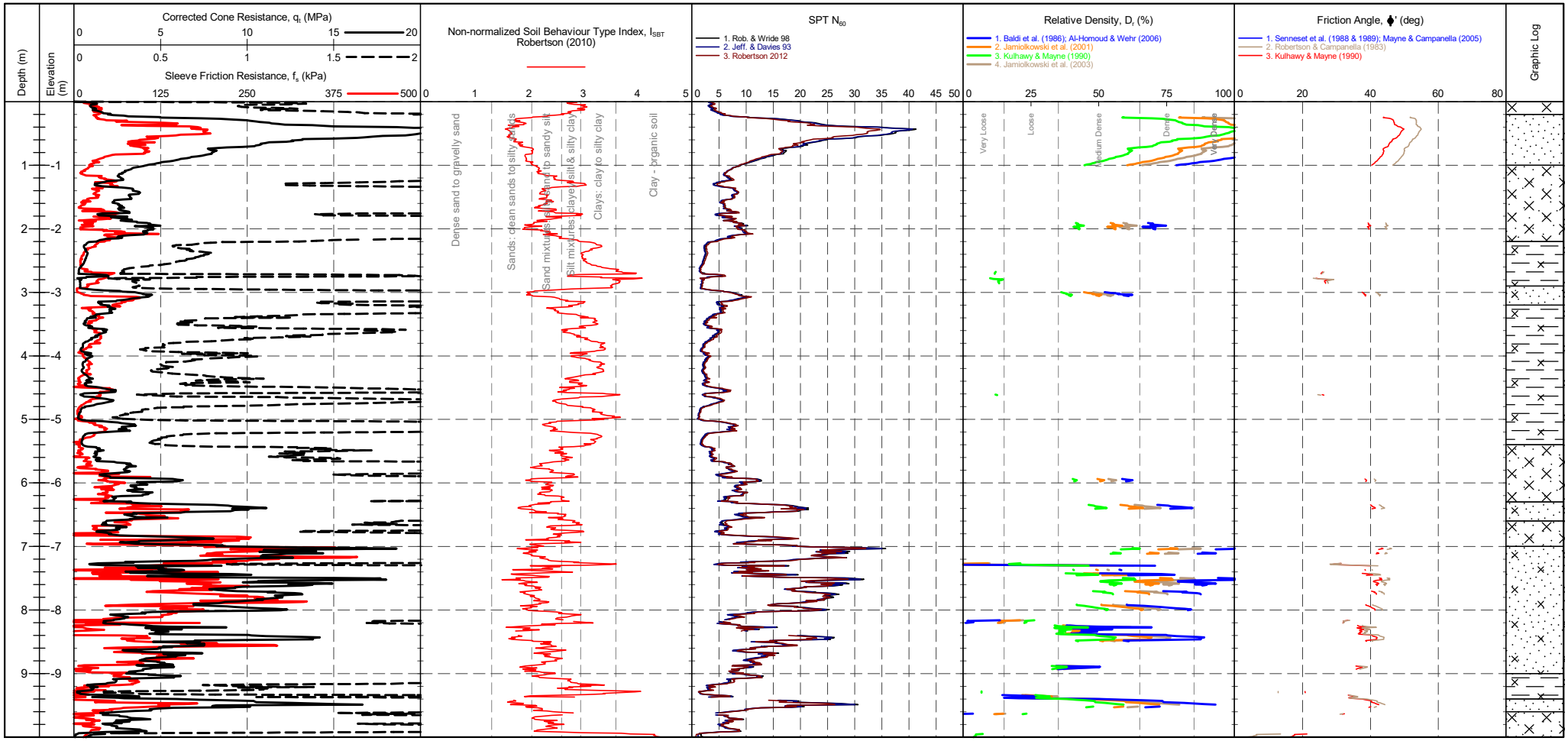
PointID
CPT103

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	233 mV	228 mV	-0.004 kPa
Pore Pressure 2	313 mV	335 mV	0.005 kPa
X-Y Inclinometer	2461 mV	2466 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

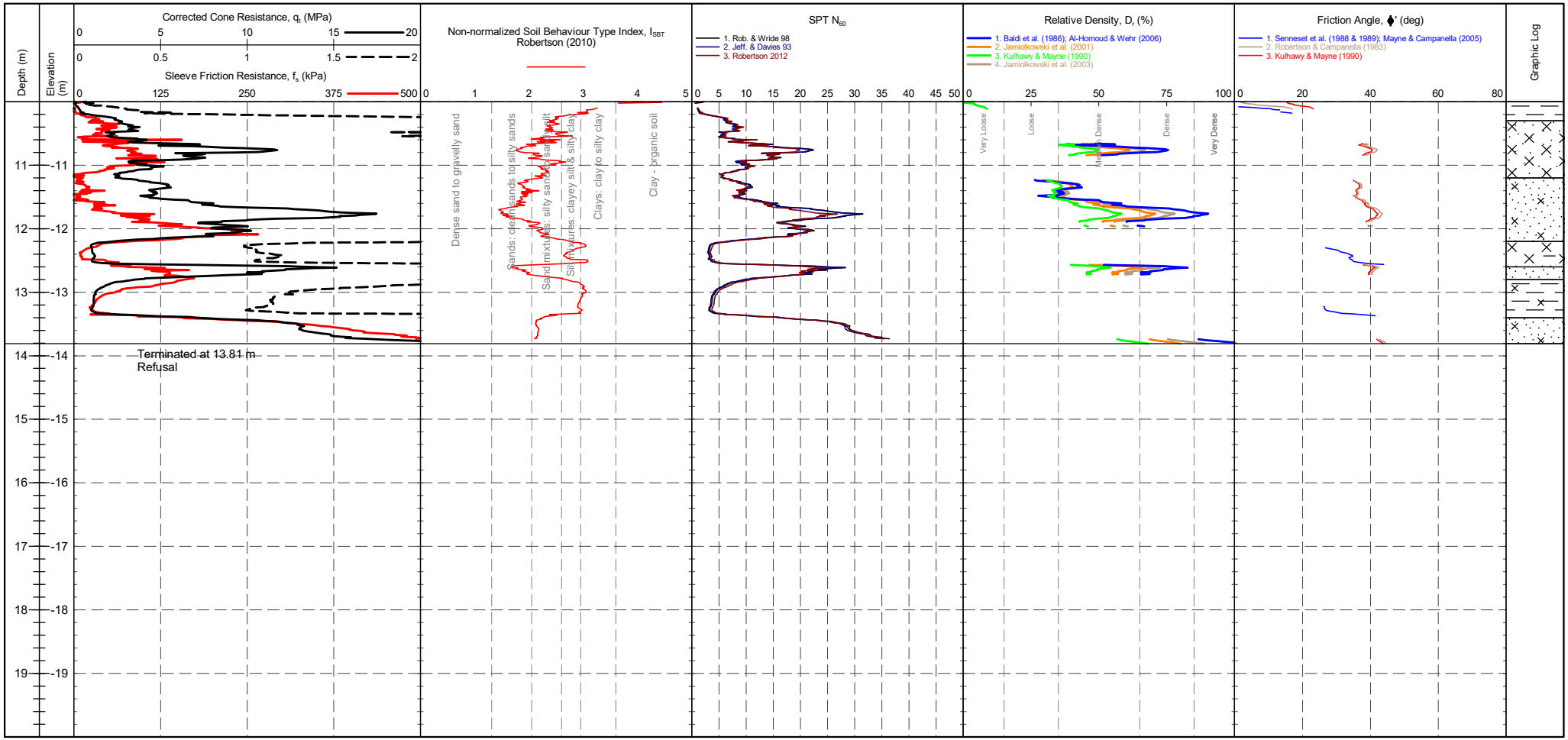
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 02

PointID **CPT103**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	233 mV	228 mV	-0.004 kPa
Pore Pressure 2	313 mV	335 mV	0.005 kPa
X-Y Inclinometer	2461 mV	2466 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

Working with:

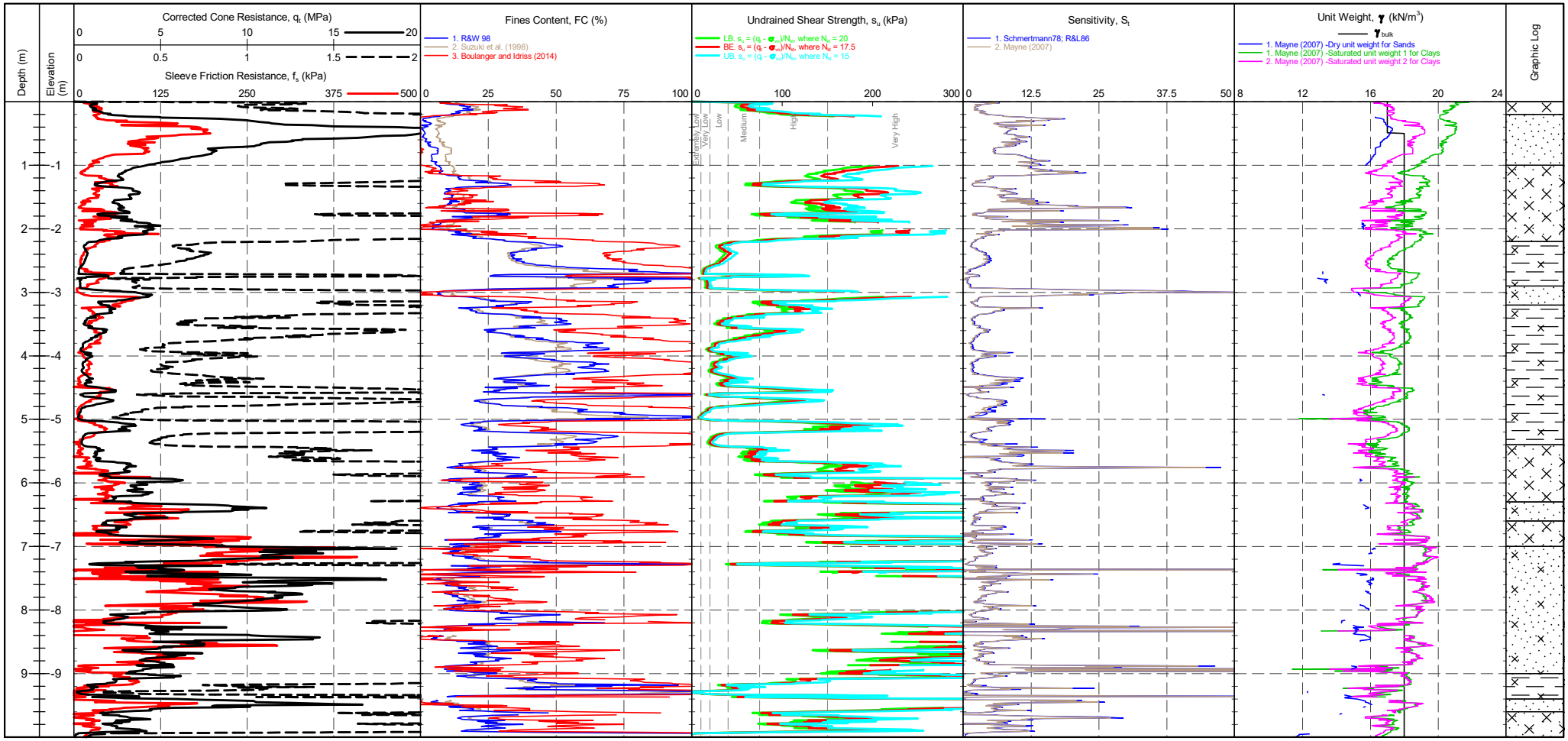
PointID **CPT103**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer	302 mV	301 mV	-0.011 MPa
Tip	233 mV	228 mV	-0.004 kPa
Sleeve	313 mV	335 mV	0.005 kPa
Pore Pressure 2	2461 mV	2466 mV	
X-Y Inclinometer			

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

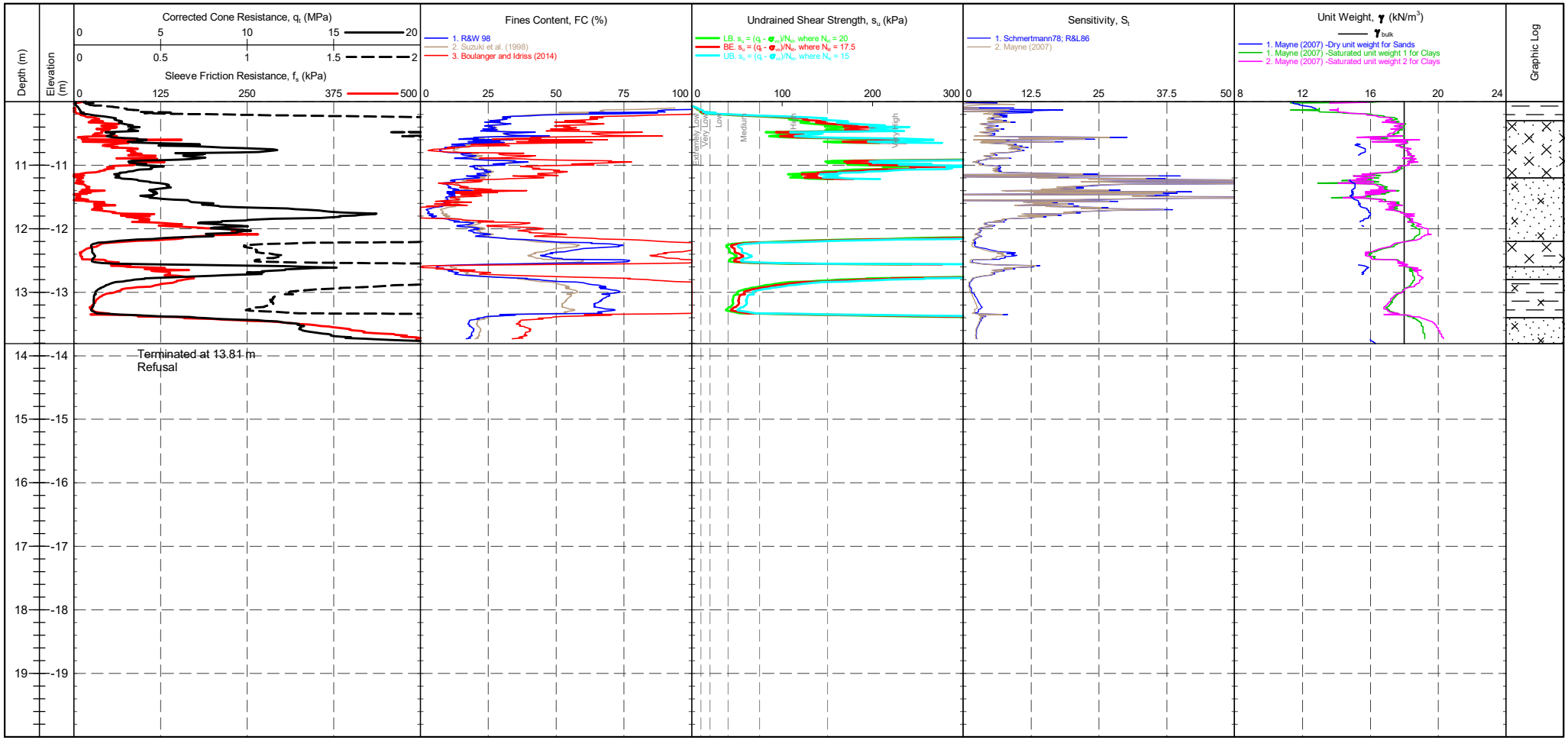
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT103**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	233 mV	228 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	313 mV	335 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2461 mV	2466 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

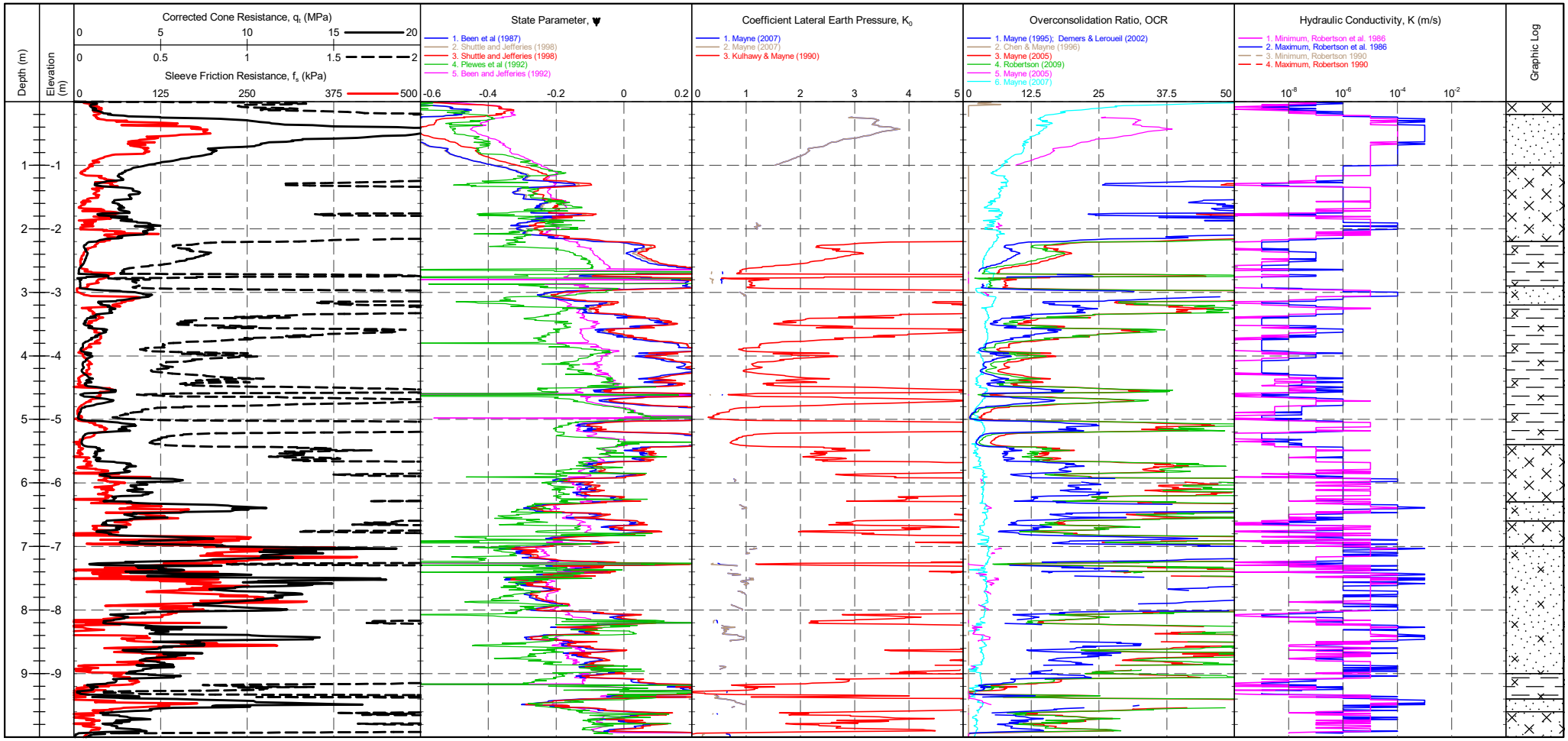
PointID: **CPT103**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	233 mV	228 mV	-0.004 kPa
Pore Pressure 2	313 mV	335 mV	0.005 kPa
X-Y Inclinometer	2461 mV	2466 mV	

Groundwater Level

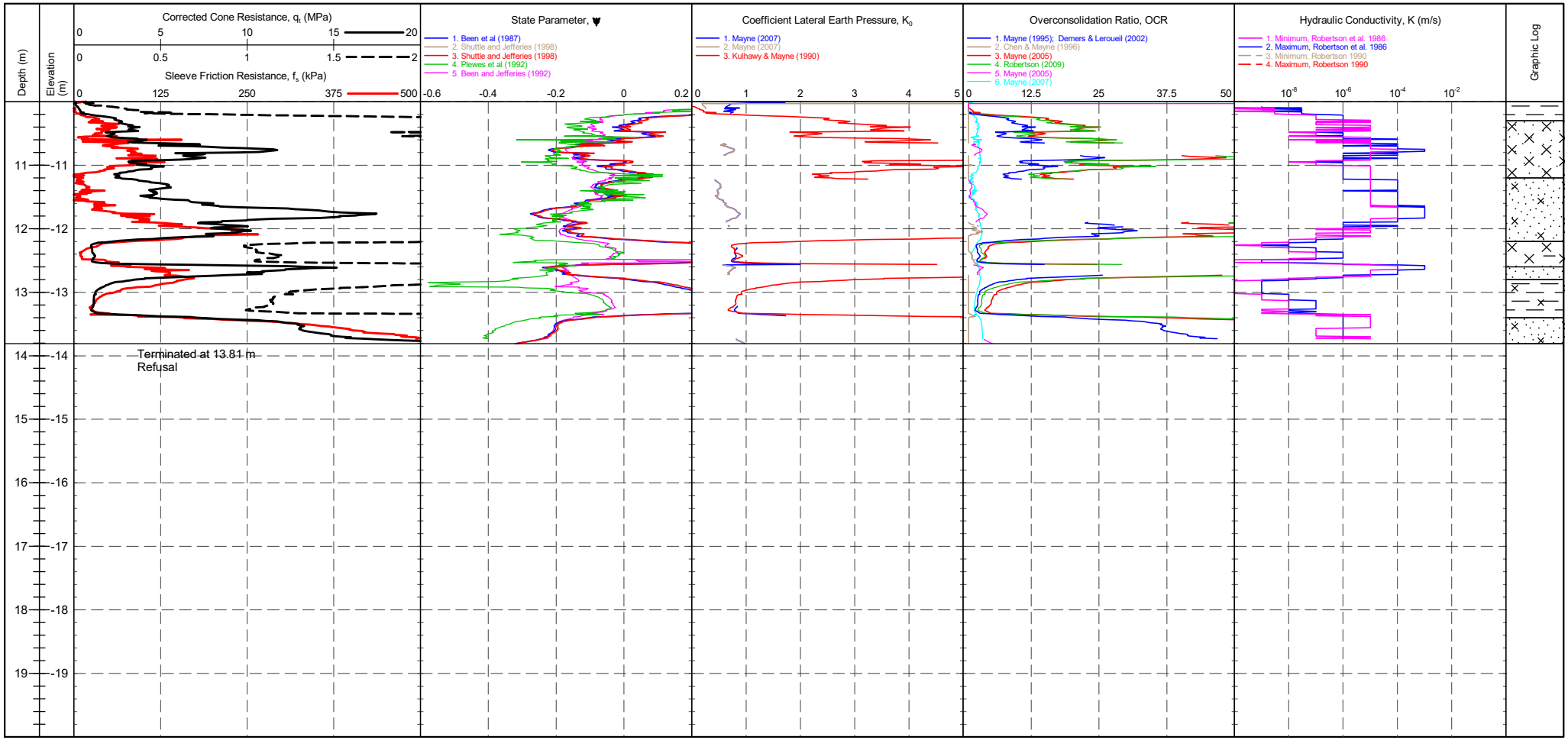
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT103**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV / -0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	233 mV	228 mV / -0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	313 mV	335 mV / 0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2461 mV	2466 mV

Groundwater Level

Dissipation Test

CPT LOG 05

Working with:

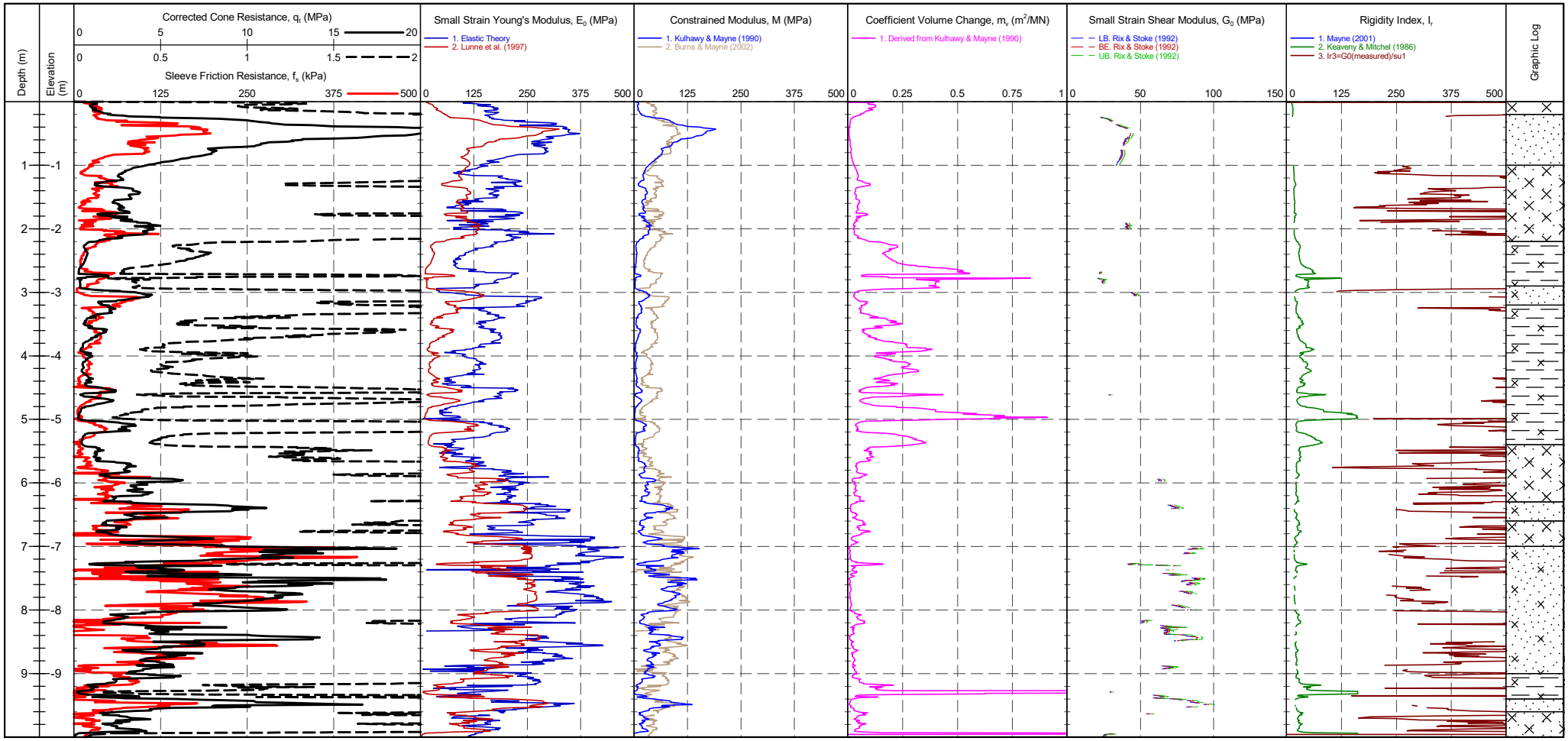
PointID
CPT103

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	233 mV	228 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	313 mV	335 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2461 mV	2466 mV	

Groundwater Level

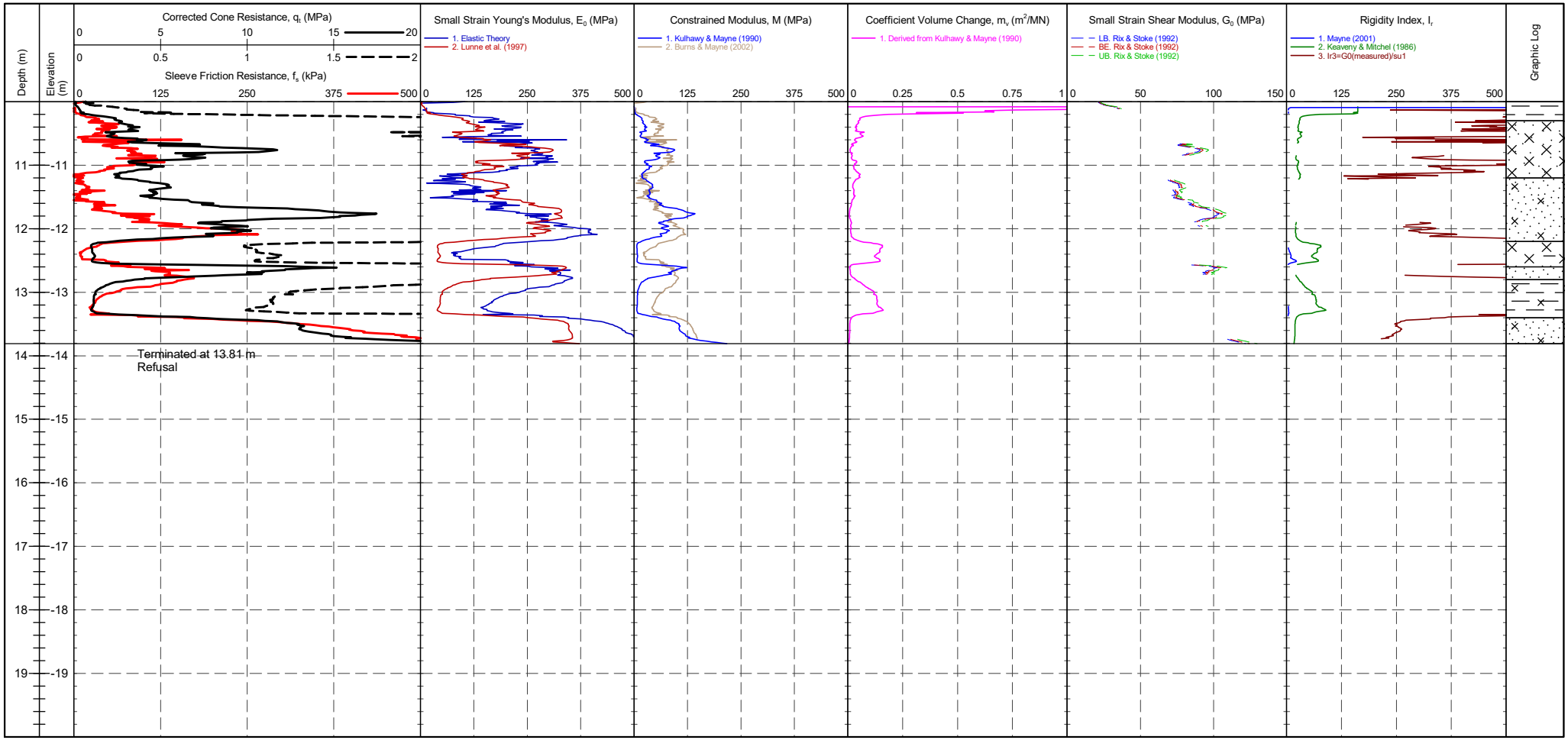
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 05

PointID: **CPT103**

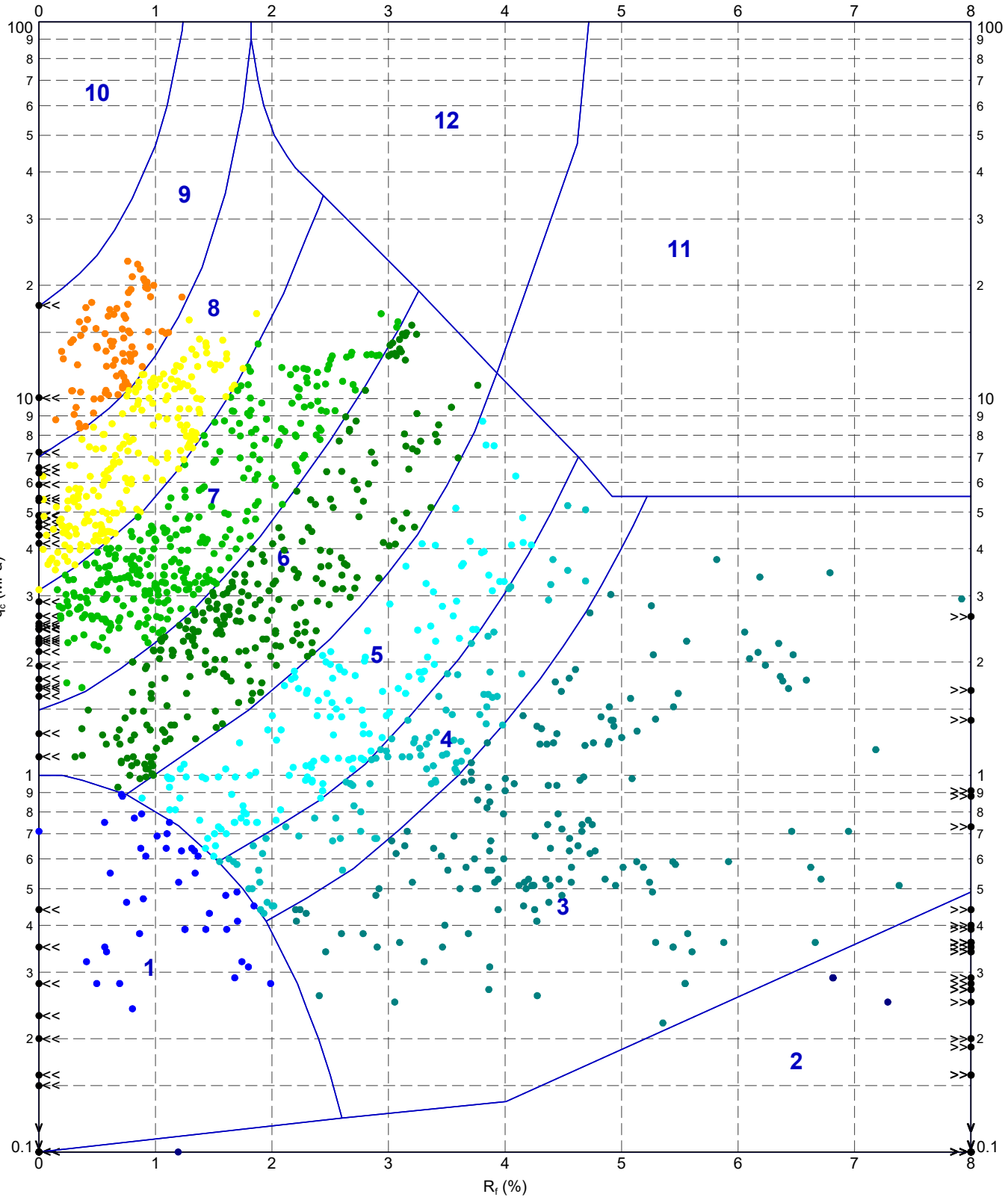
CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	233 mV	228 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	313 mV	335 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2461 mV	2466 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE	E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT103	DRAWN	DATE 02/08/2024
		CHECKED	DATE 02/08/2024
		SCALE Not To Scale	A4
		PROJECT No 1240280	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:53 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prg: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

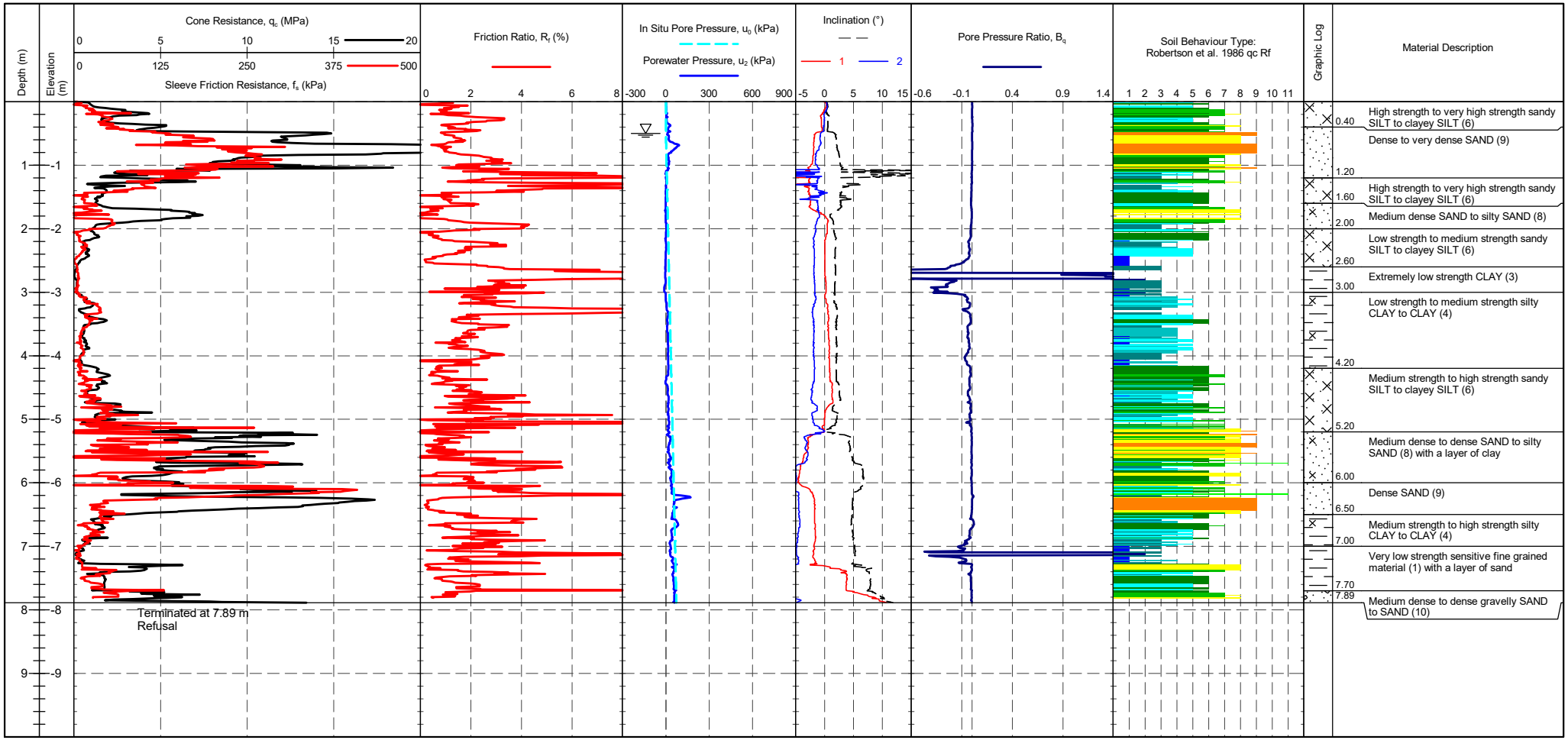
PointID: **CPT104**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	301 mV	303 mV	0.022 MPa
Sleeve	229 mV	225 mV	-0.003 kPa
Pore Pressure 2	293 mV	316 mV	0.005 kPa
X-Y Inclinometer	2475 mV	2461 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

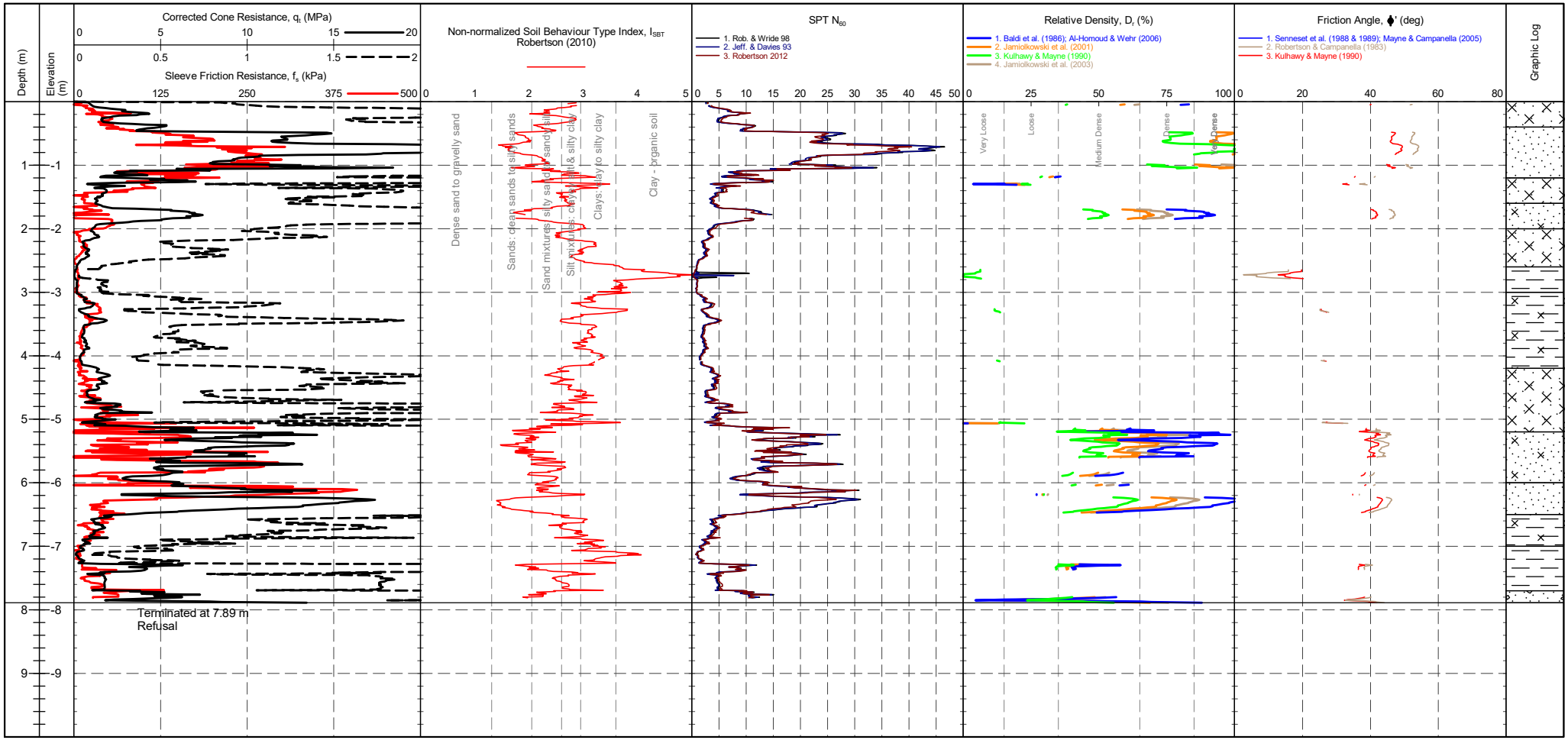
PointID: **CPT104**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	301 mV	303 mV	0.022 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	229 mV	225 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	293 mV	316 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2475 mV	2461 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

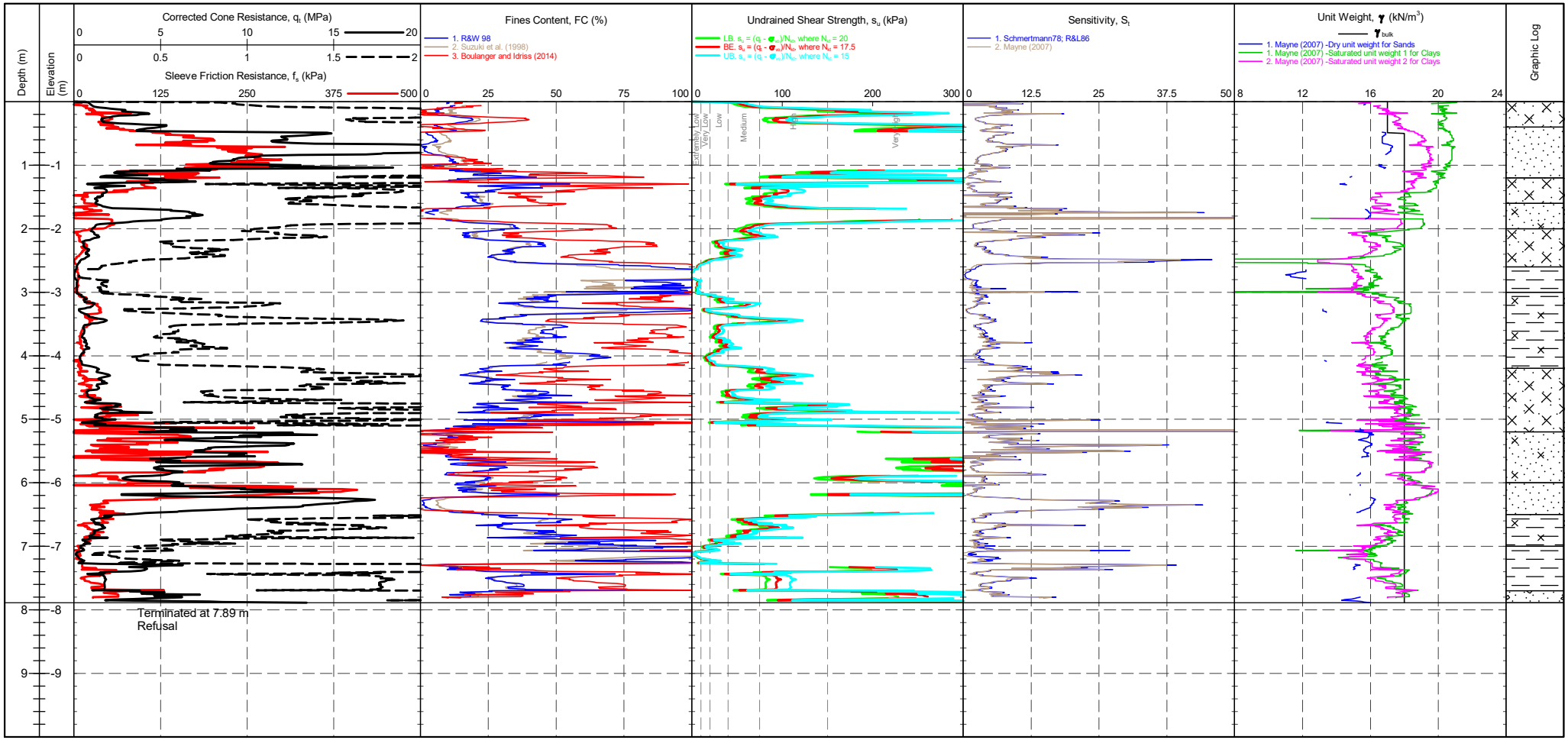
PointID: **CPT104**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	301 mV	303 mV	0.022 MPa
Sleeve	229 mV	225 mV	-0.003 kPa
Pore Pressure 2	293 mV	316 mV	0.005 kPa
X-Y Inclinometer	2475 mV	2461 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

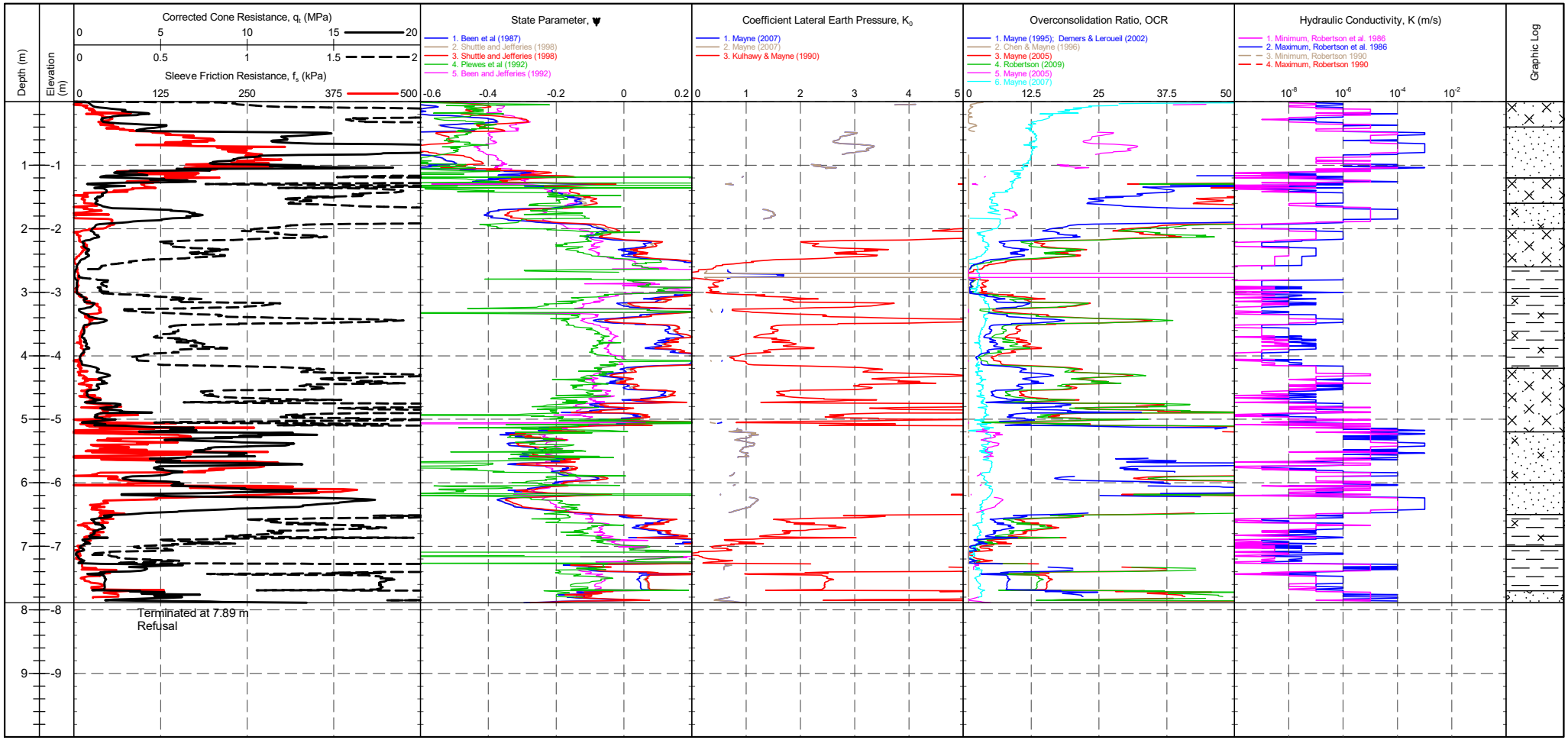
PointID: **CPT104**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	301 mV	303 mV	0.022 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	229 mV	225 mV	-0.003 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	293 mV	316 mV	0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2475 mV	2461 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

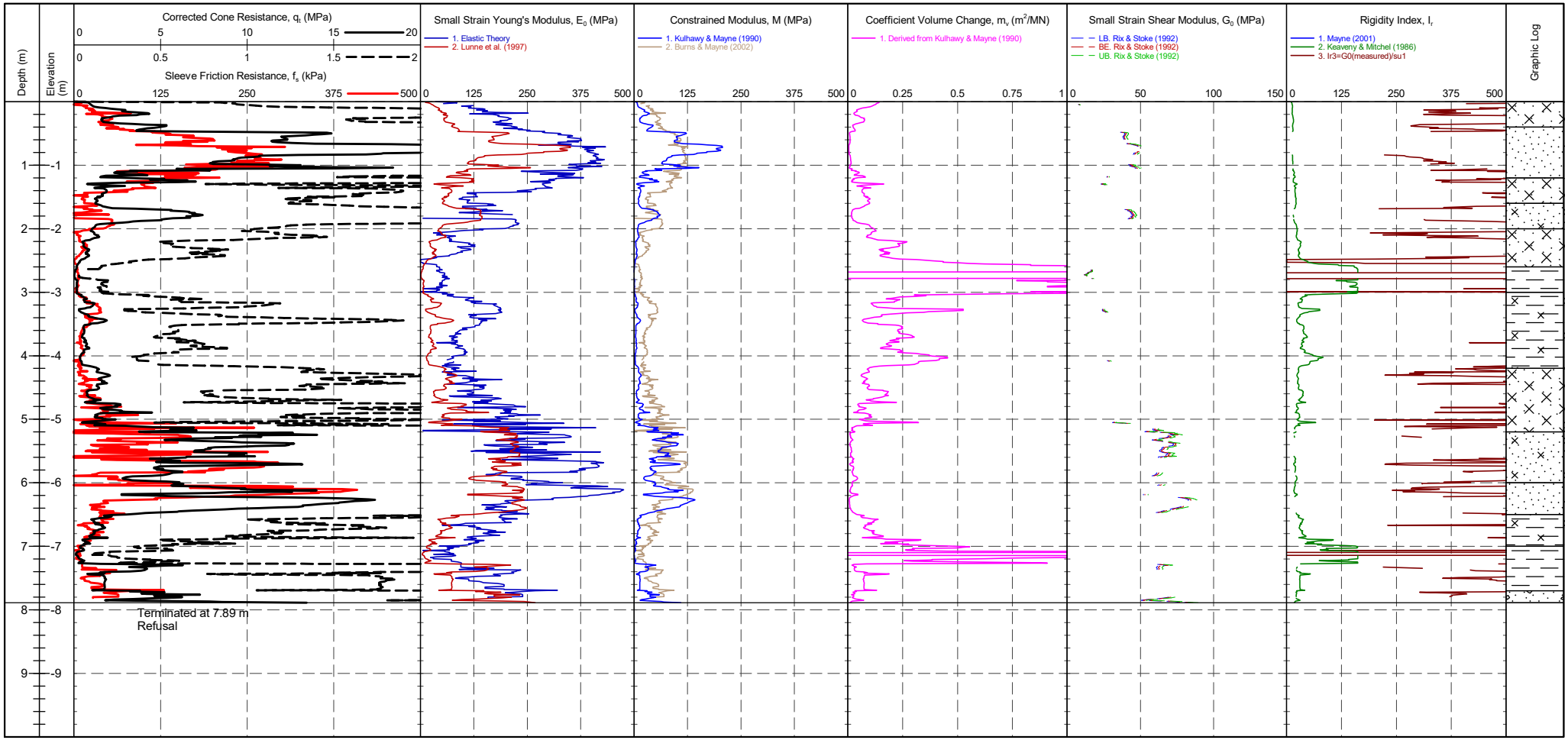
PointID: **CPT104**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



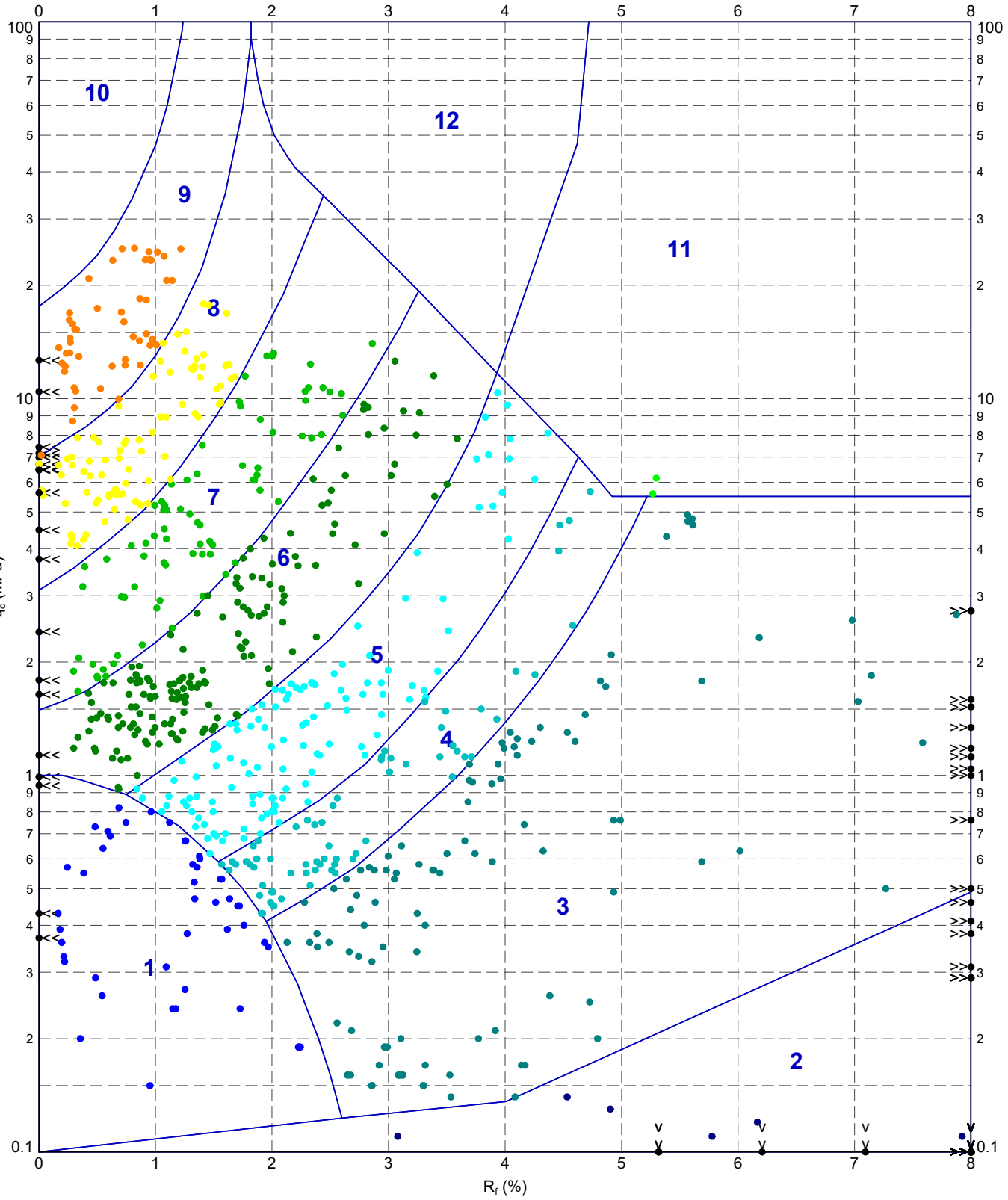
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	301 mV	303 mV	0.022 MPa
Sleeve	229 mV	225 mV	-0.003 kPa
Pore Pressure 2	293 mV	316 mV	0.005 kPa
X-Y Inclinometer	2475 mV	2461 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT104

DRAWN		DATE	02/08/2024
CHECKED		DATE	02/08/2024
SCALE	Not To Scale		A4
PROJECT No	1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:55 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prg: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

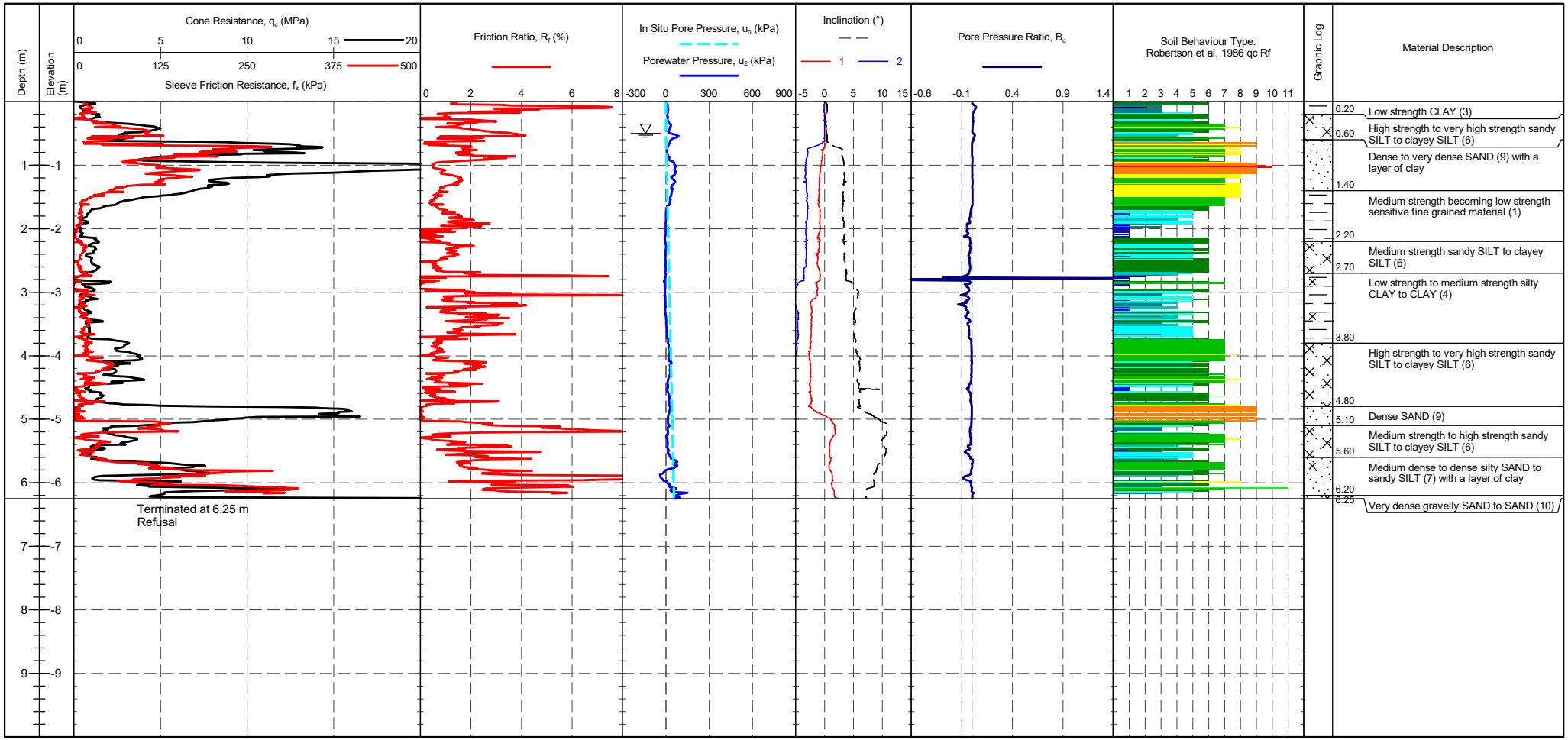
PointID: **CPT105**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	226 mV	227 mV	0.001 kPa
Pore Pressure 2	307 mV	312 mV	0.001 kPa
X-Y Inclinometer	2492 mV	2482 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

CPT LOG 02

Working with:

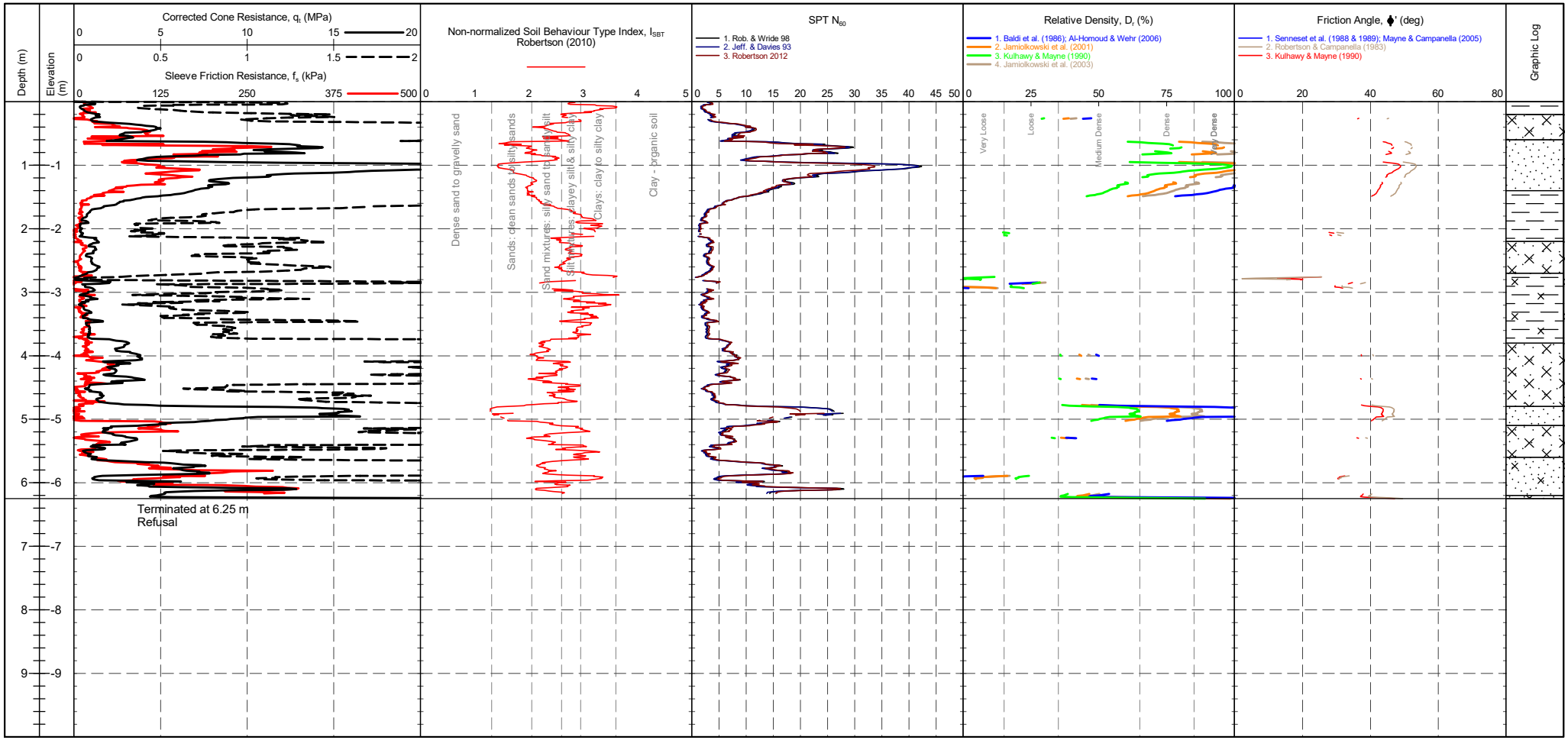
PointID
CPT105

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	226 mV	227 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	307 mV	312 mV	0.001 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2492 mV	2482 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

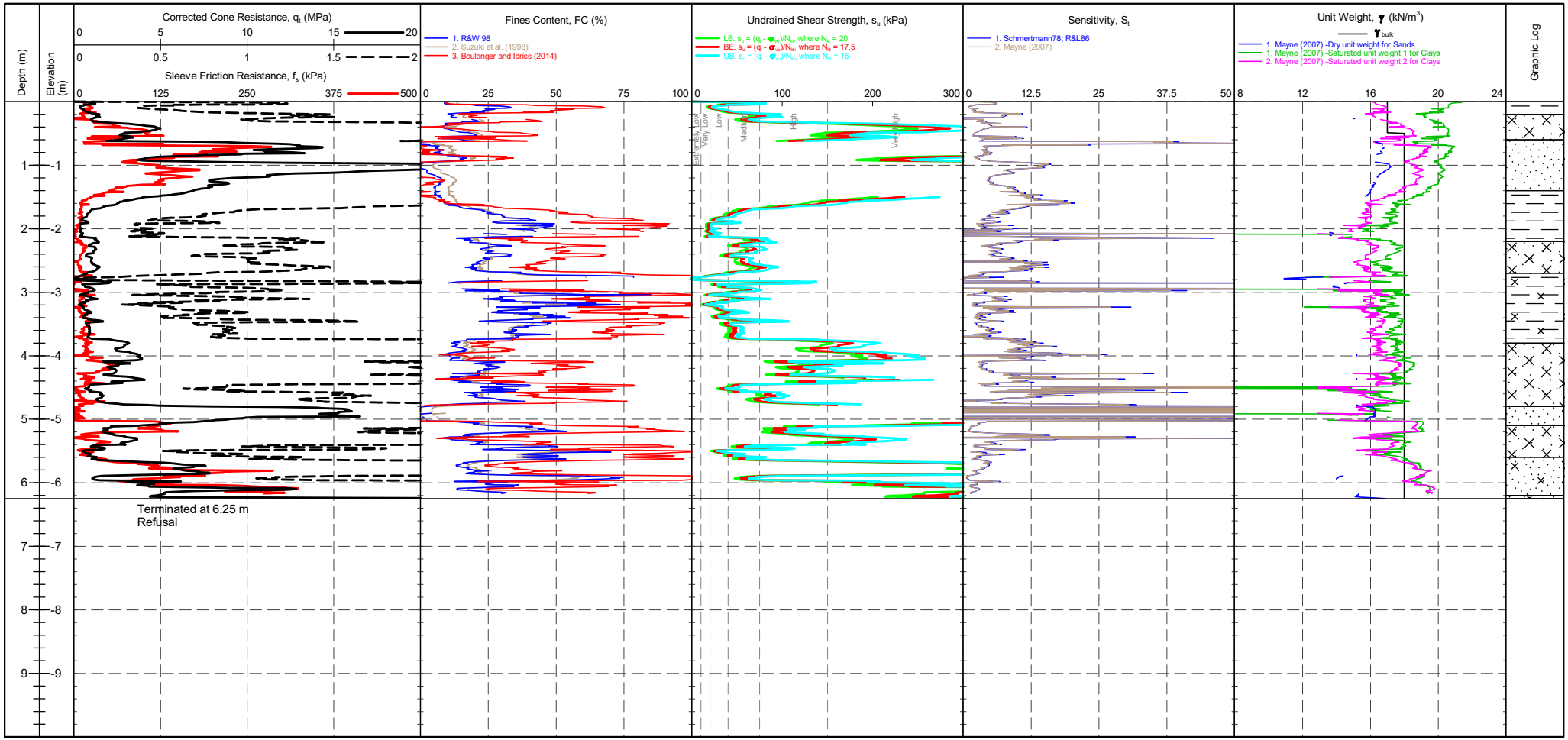
Dissipation Test

CPT LOG 03

Working with:

PointID: **CPT105**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 1
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2				
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2				
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni				
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd				
FILTER POSITION	: u2	FRICTION REDUCER	: None				
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild				

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	226 mV	227 mV	0.001 kPa
Pore Pressure 2	307 mV	312 mV	0.001 kPa
X-Y Inclinometer	2492 mV	2482 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

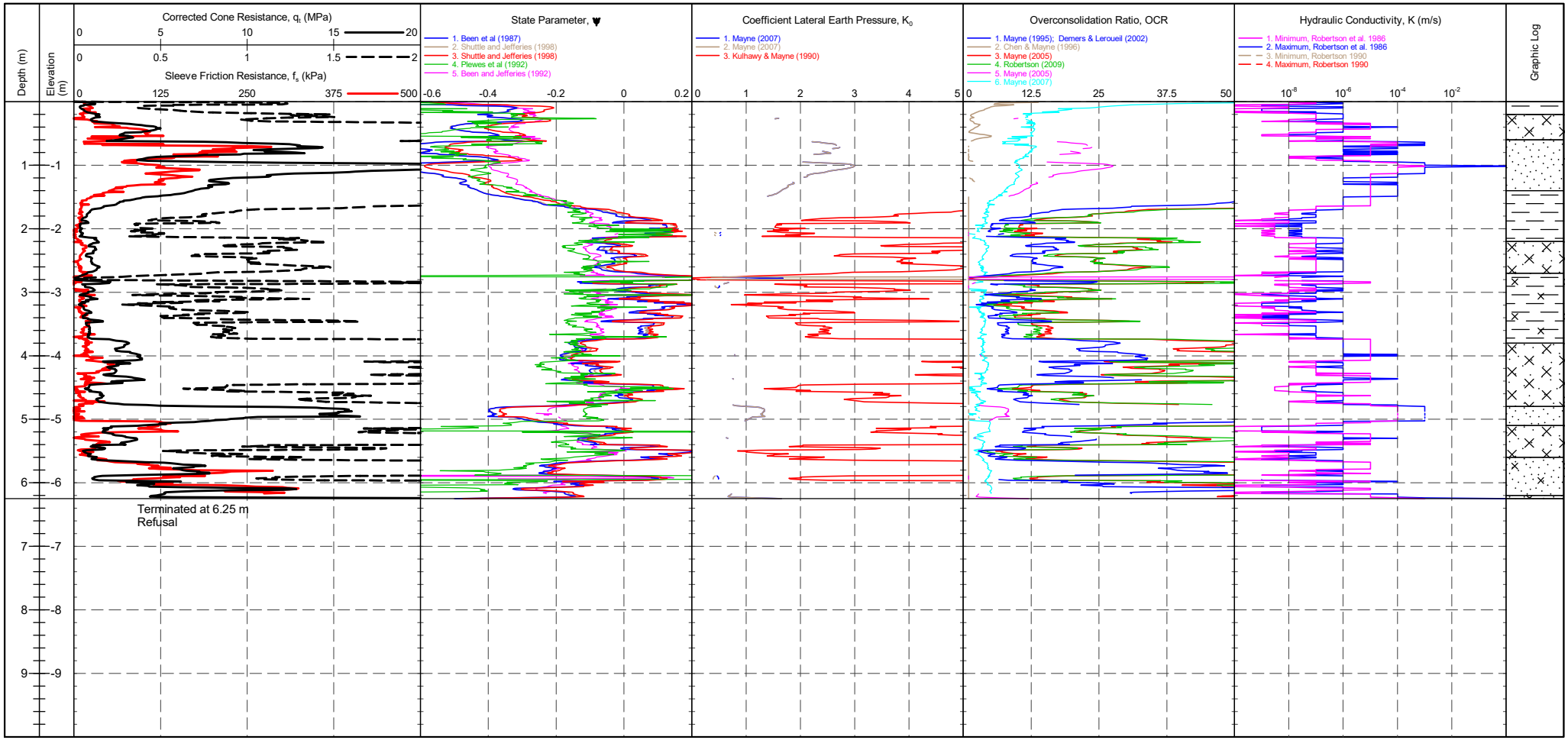
PointID: **CPT105**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	226 mV	227 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	307 mV	312 mV	0.001 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2492 mV	2482 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

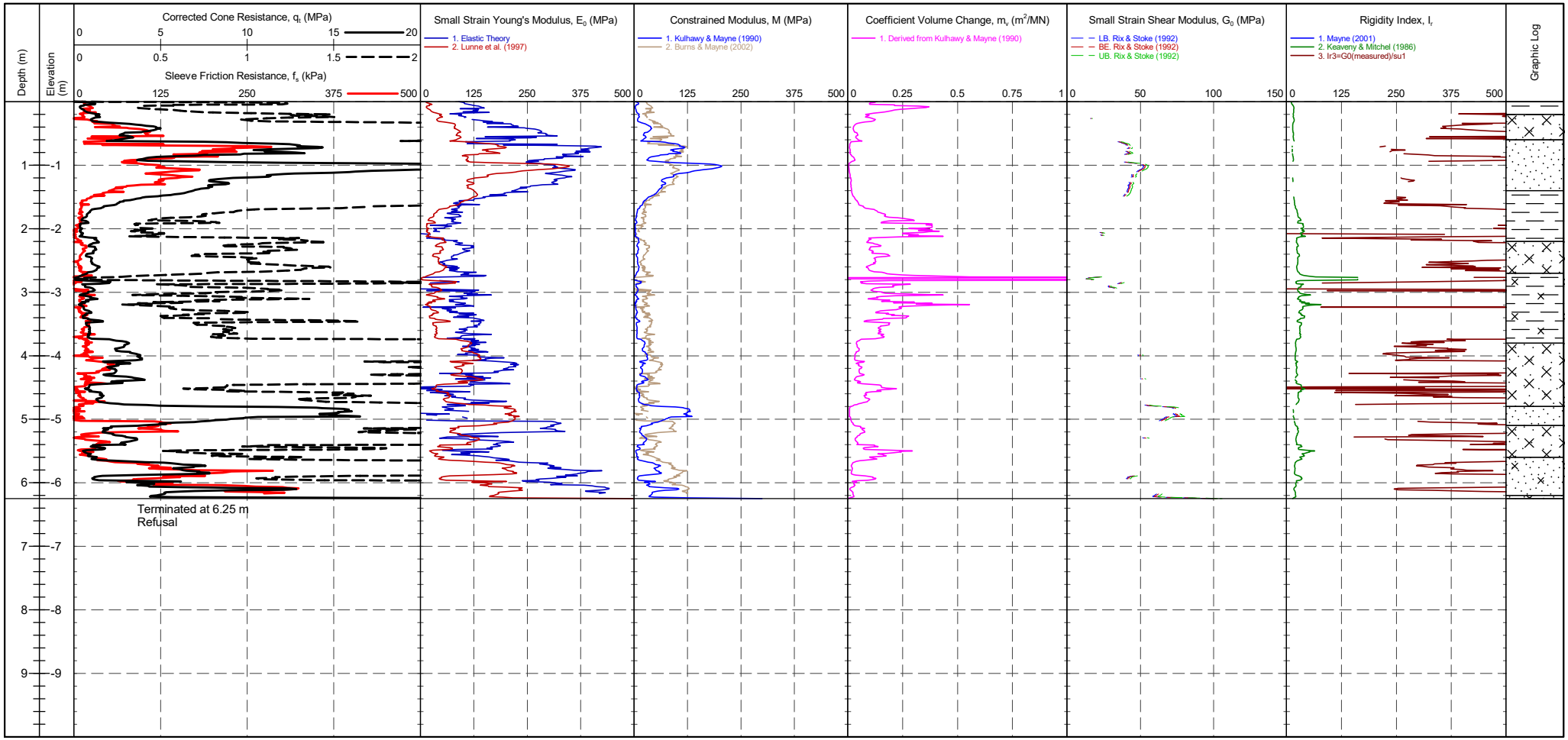
PointID
CPT105

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022

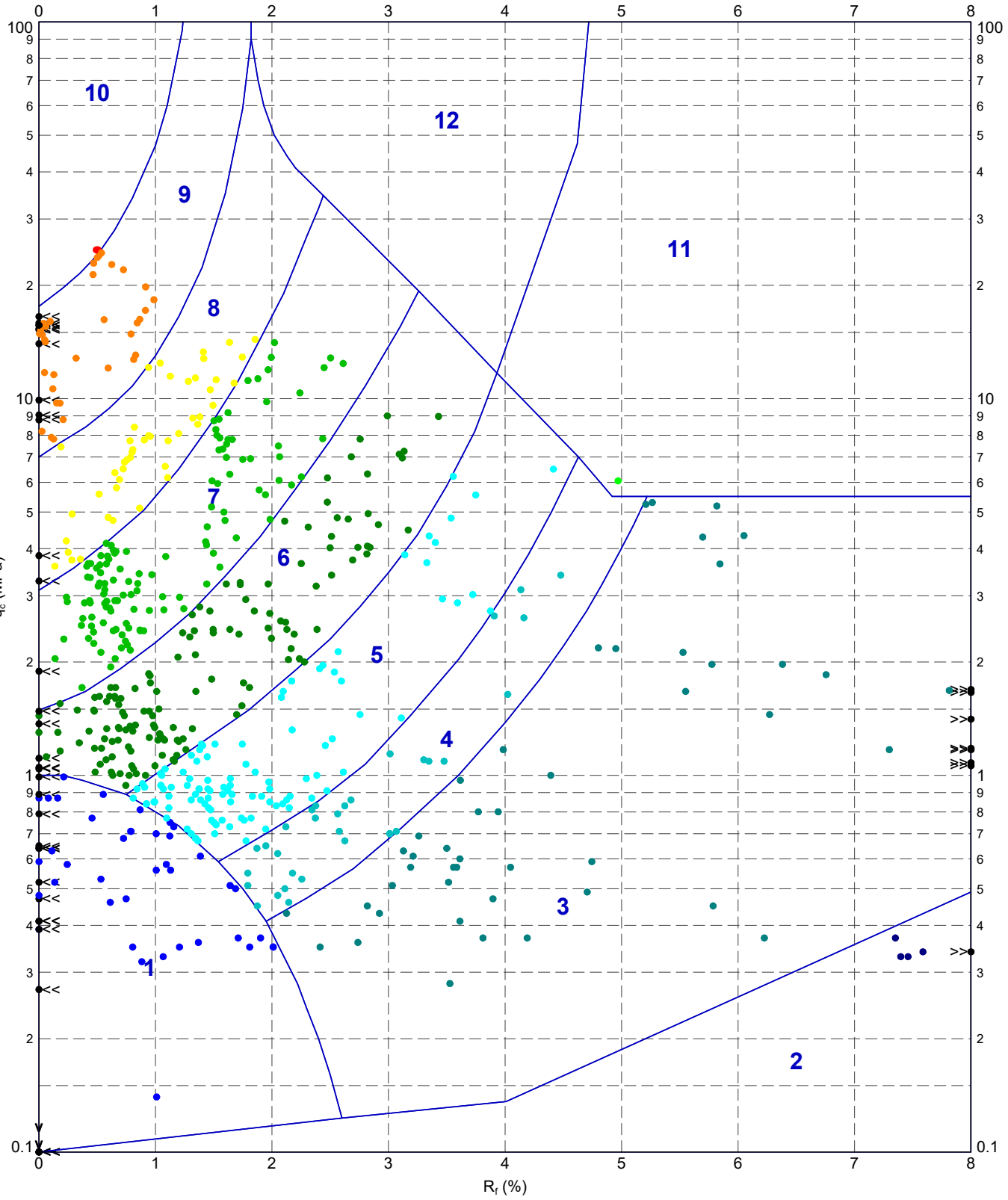


CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	226 mV	227 mV	0.001 kPa
Pore Pressure 2	307 mV	312 mV	0.001 kPa
X-Y Inclinometer	2492 mV	2482 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE: E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT105	DRAWN	DATE 02/08/2024	
	CHECKED	DATE 02/08/2024	
	SCALE Not To Scale		A4
	PROJECT No 1240280	FIGURE No	

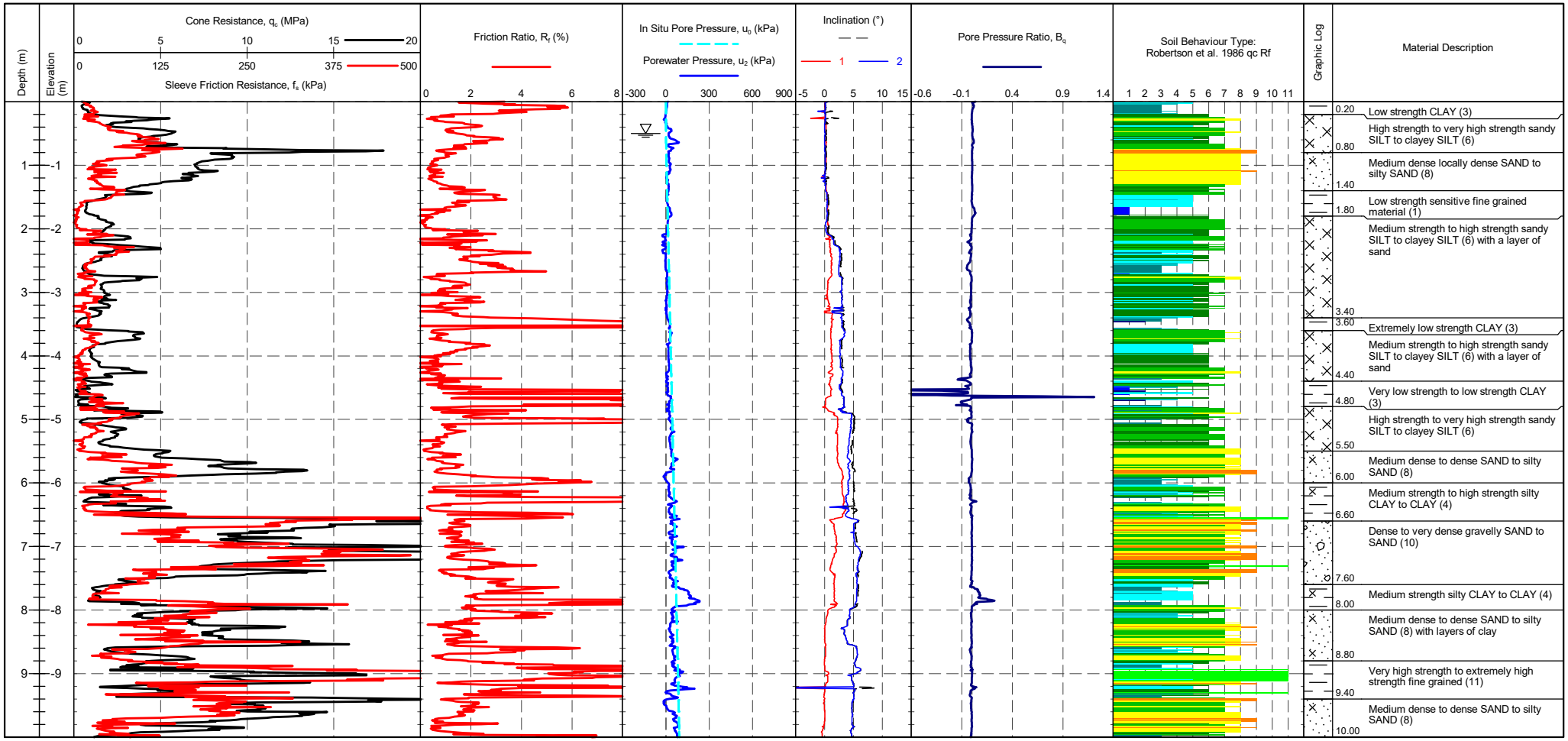
220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:56 10.03.00.09 DatgeLab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prg: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

PointID: **CPT106**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	238 mV	0.006 kPa
Pore Pressure 2	303 mV	353 mV	0.012 kPa
X-Y Inclinometer	2491 mV	2480 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

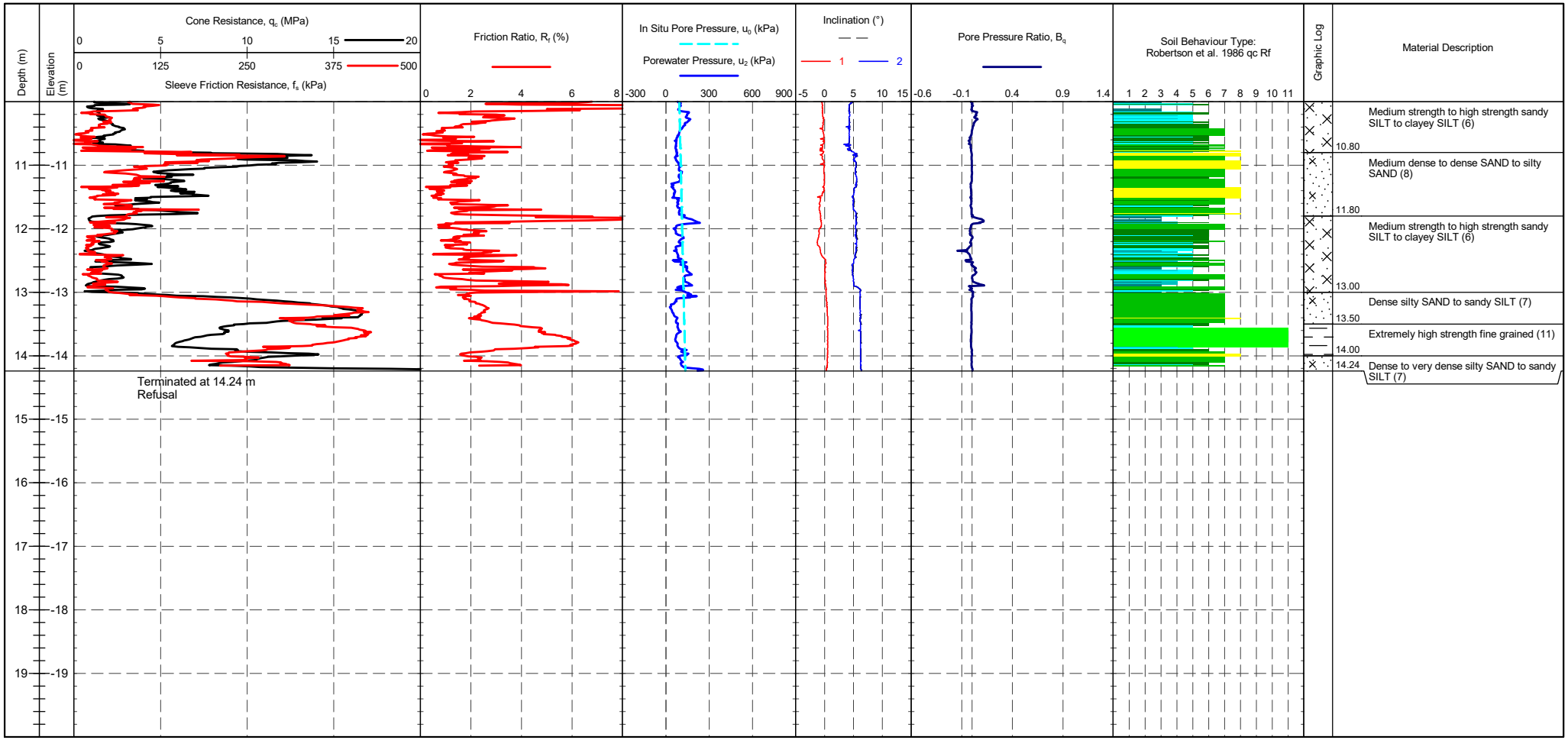
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT106**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	238 mV	0.006 kPa
Pore Pressure 2	303 mV	353 mV	0.012 kPa
X-Y Inclinometer	2491 mV	2480 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

Working with:

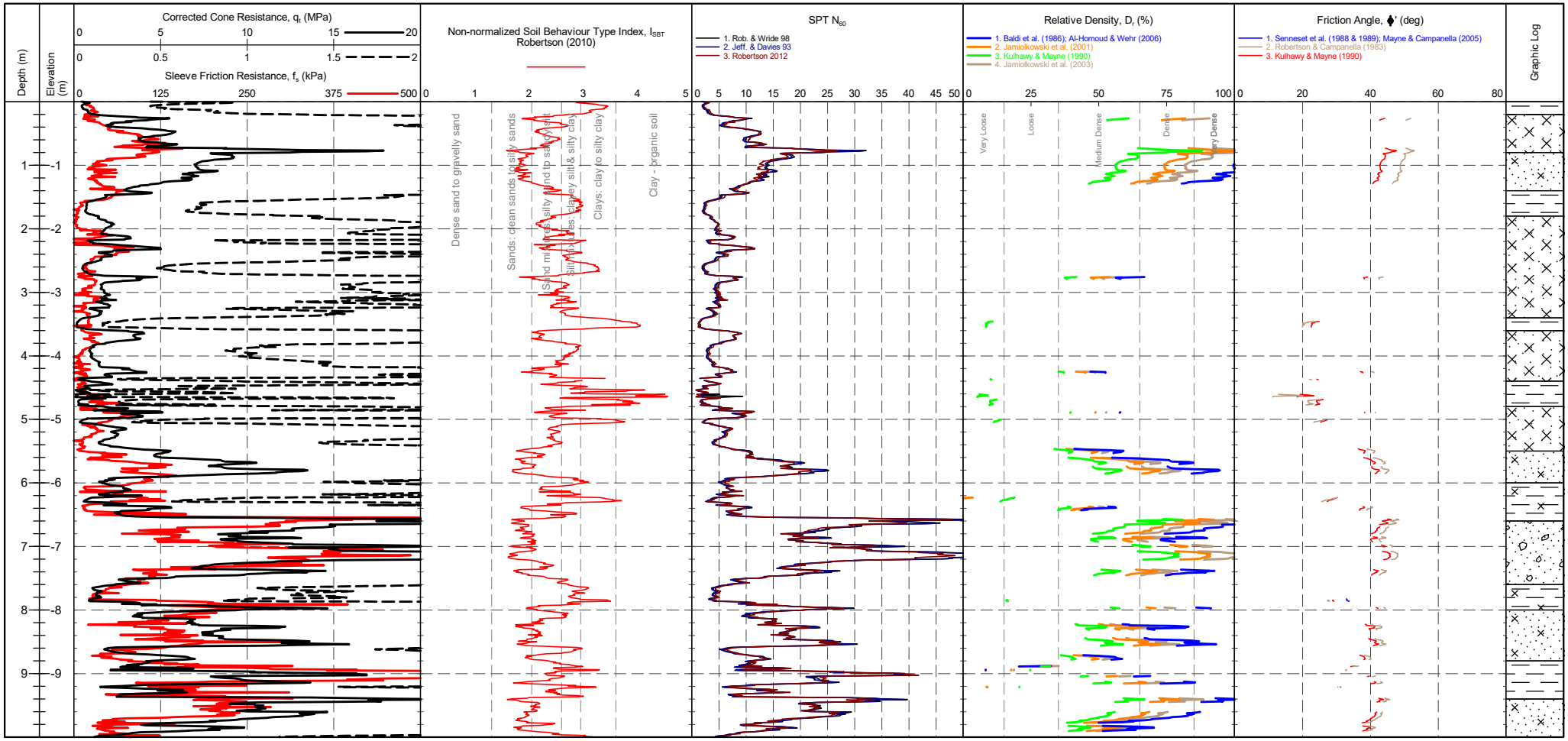
PointID
CPT106

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	238 mV	0.006 kPa
Pore Pressure 2	303 mV	353 mV	0.012 kPa
X-Y Inclinometer	2491 mV	2480 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

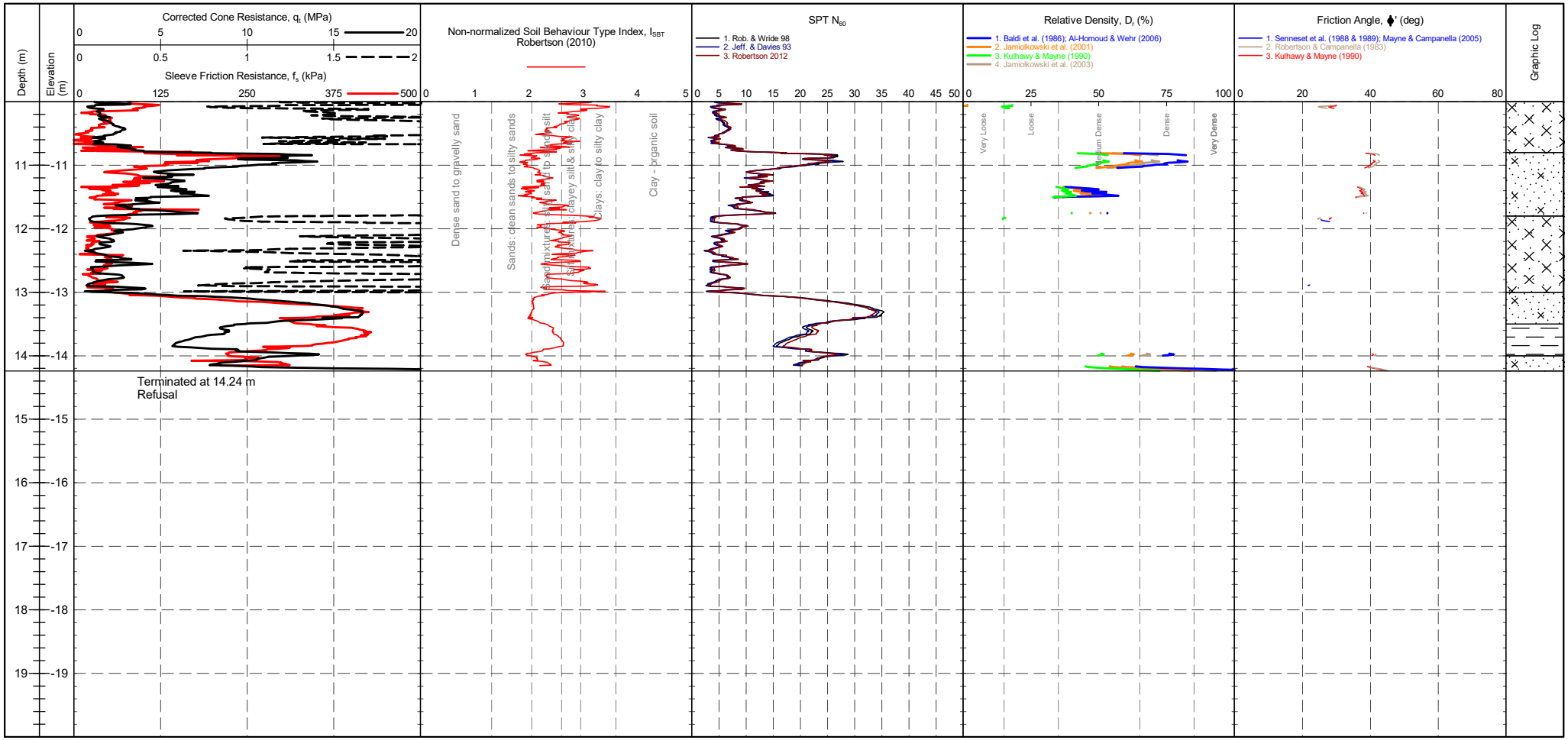
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 02

PointID: **CPT106**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	238 mV	0.006 kPa
Pore Pressure 2	303 mV	353 mV	0.012 kPa
X-Y Inclinometer	2491 mV	2480 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

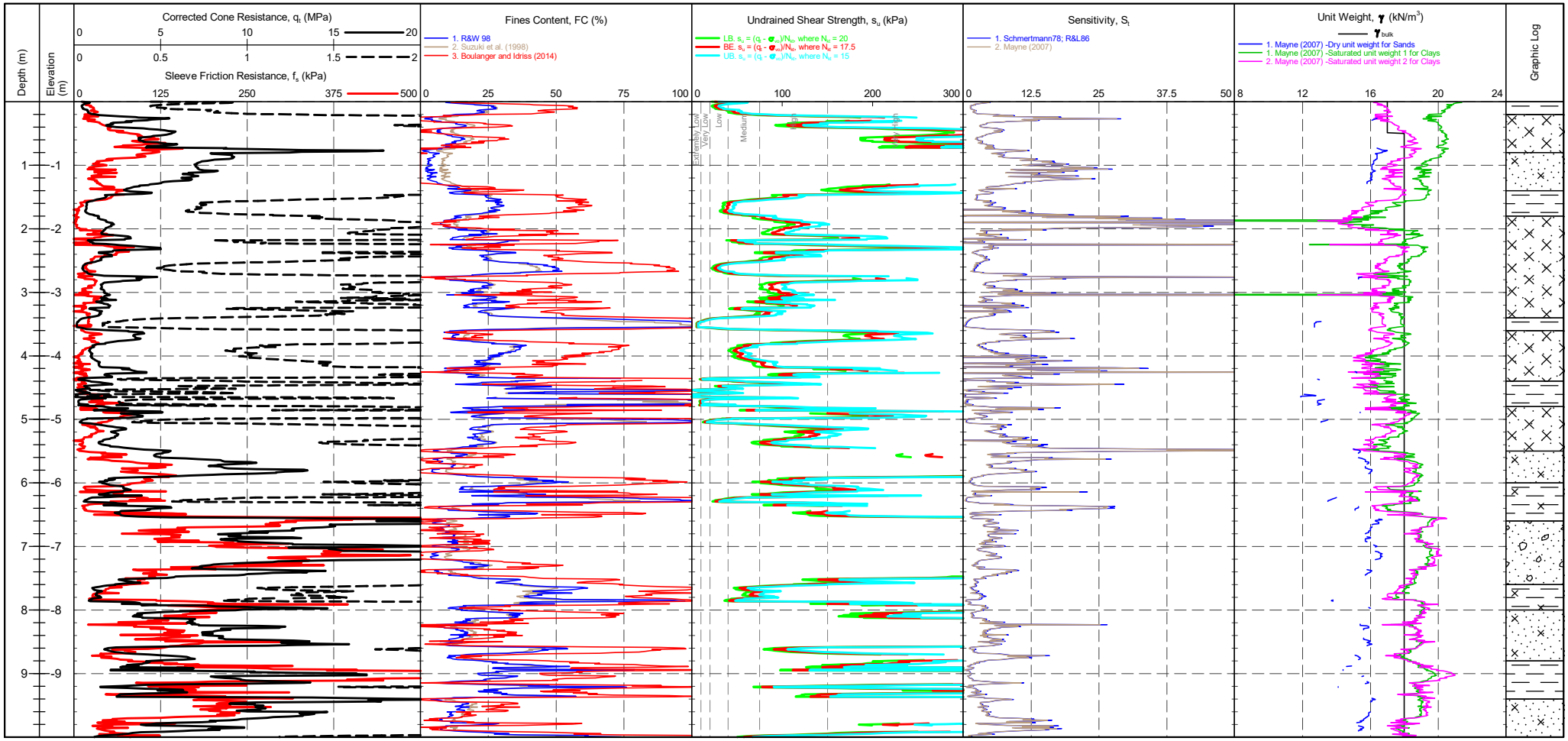
PointID: **CPT106**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	238 mV	0.006 kPa
Pore Pressure 2	303 mV	353 mV	0.012 kPa
X-Y Inclinometer	2491 mV	2480 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

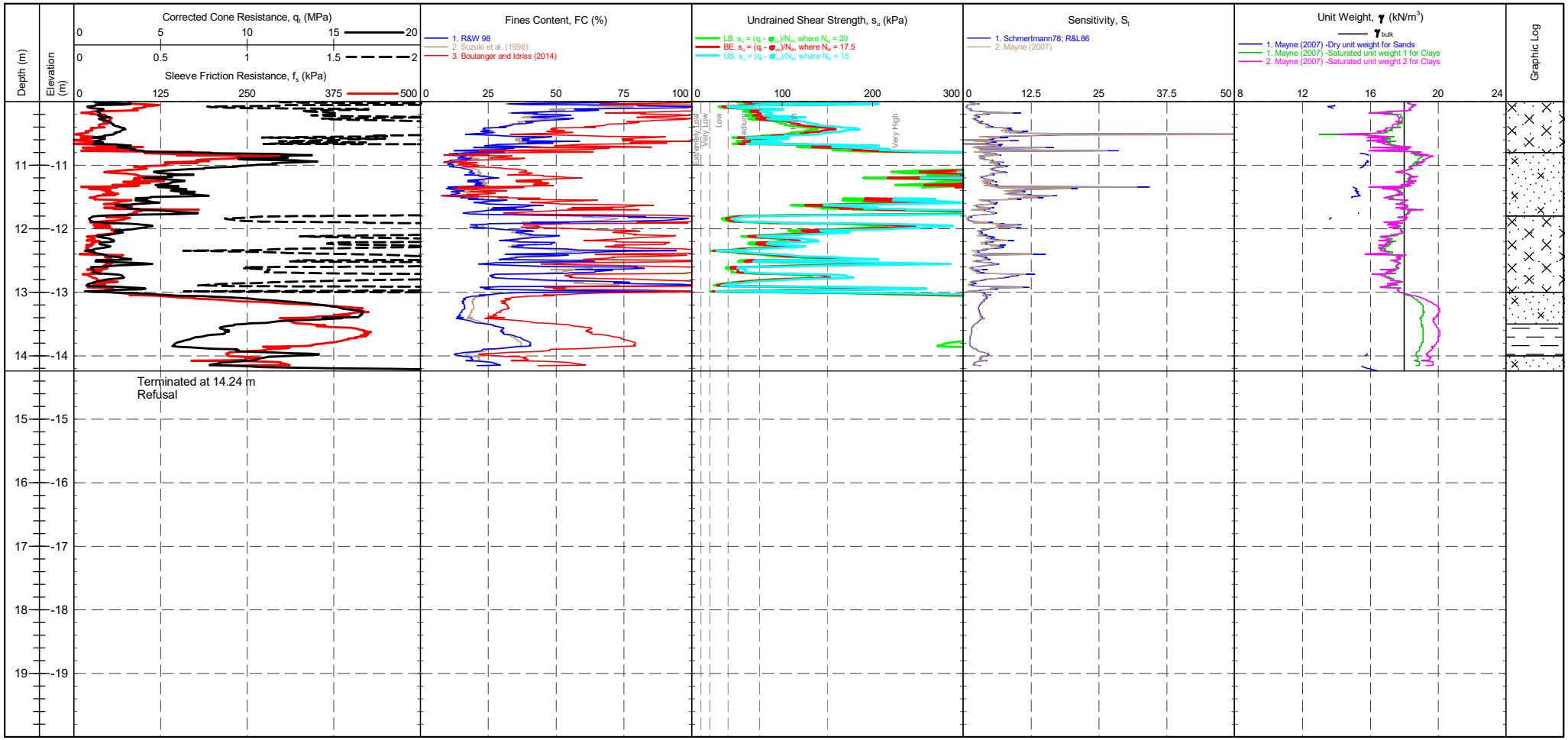
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID **CPT106**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	229 mV	238 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	353 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2491 mV	2480 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

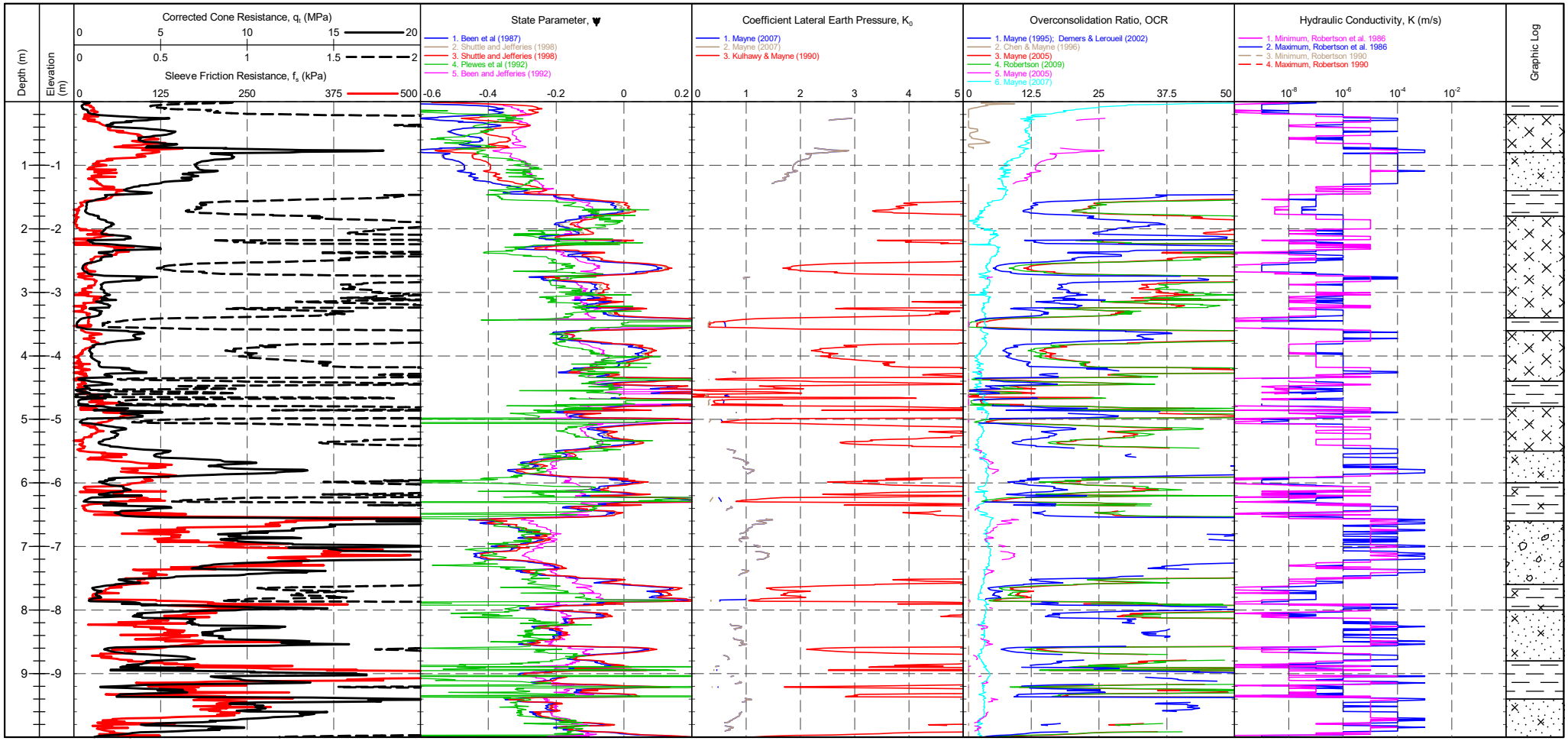
PointID: **CPT106**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	229 mV	238 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	353 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2491 mV	2480 mV	

Groundwater Level

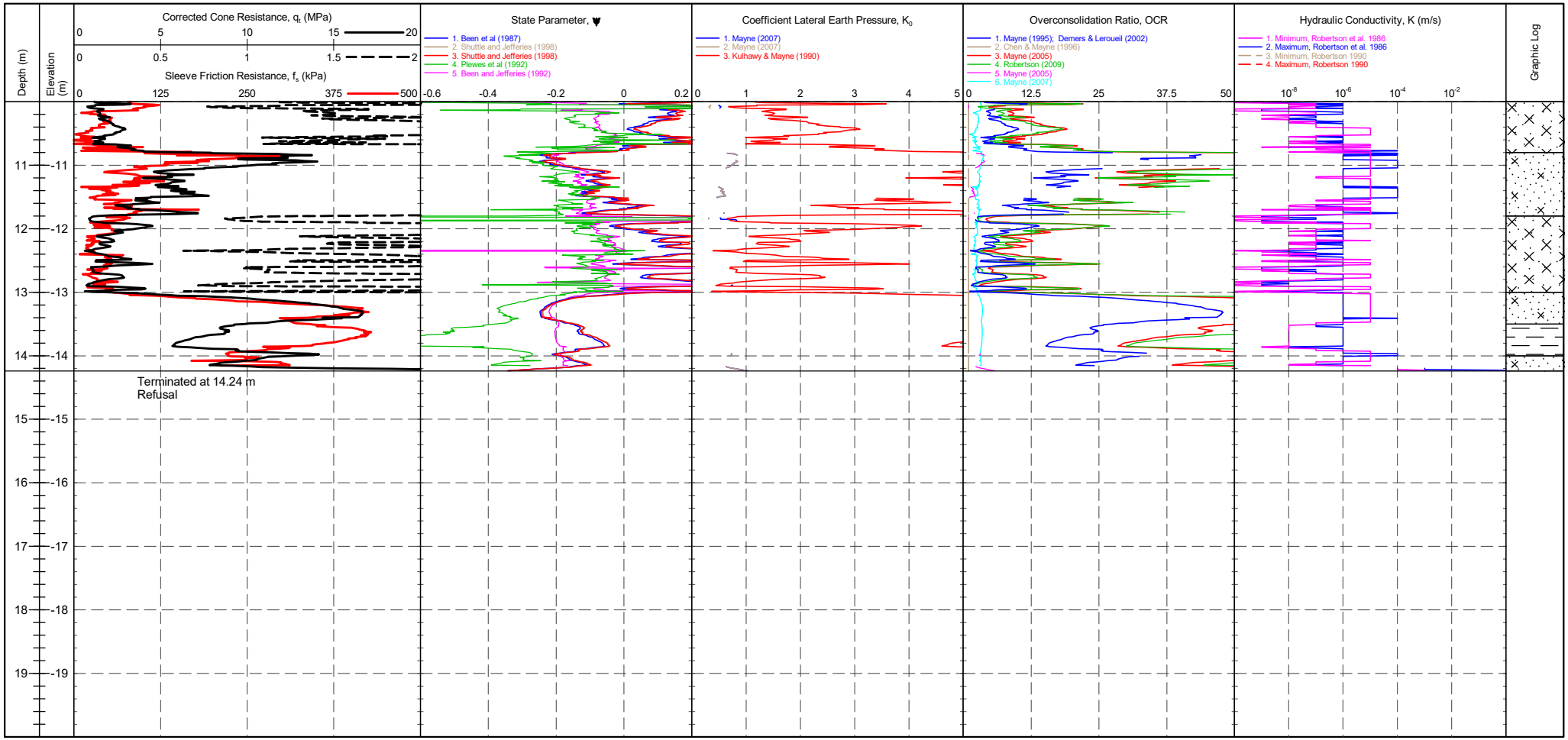
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT106**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	229 mV	238 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	353 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2491 mV	2480 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

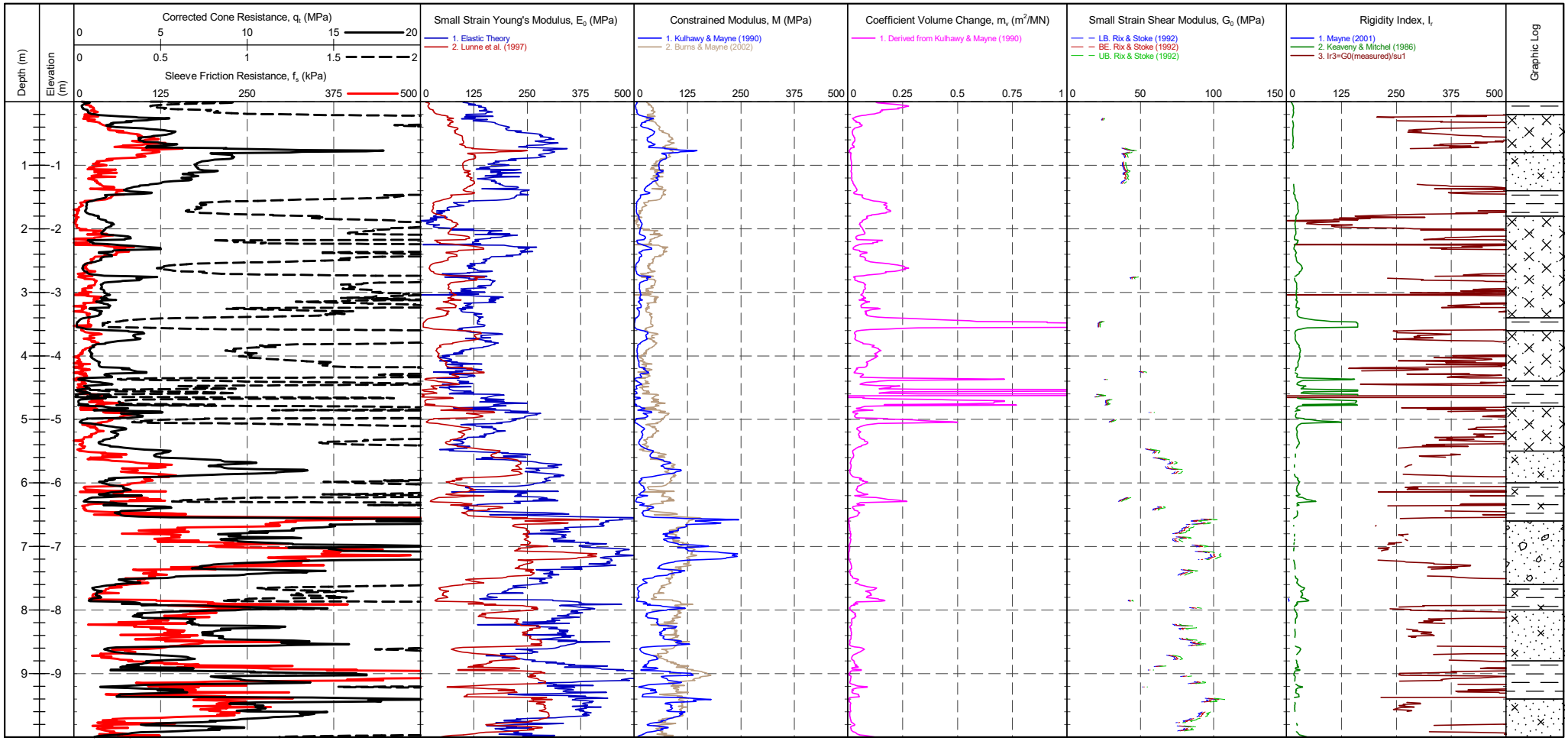
PointID: **CPT106**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	238 mV	0.006 kPa
Pore Pressure 2	303 mV	353 mV	0.012 kPa
X-Y Inclinometer	2491 mV	2480 mV	

Groundwater Level

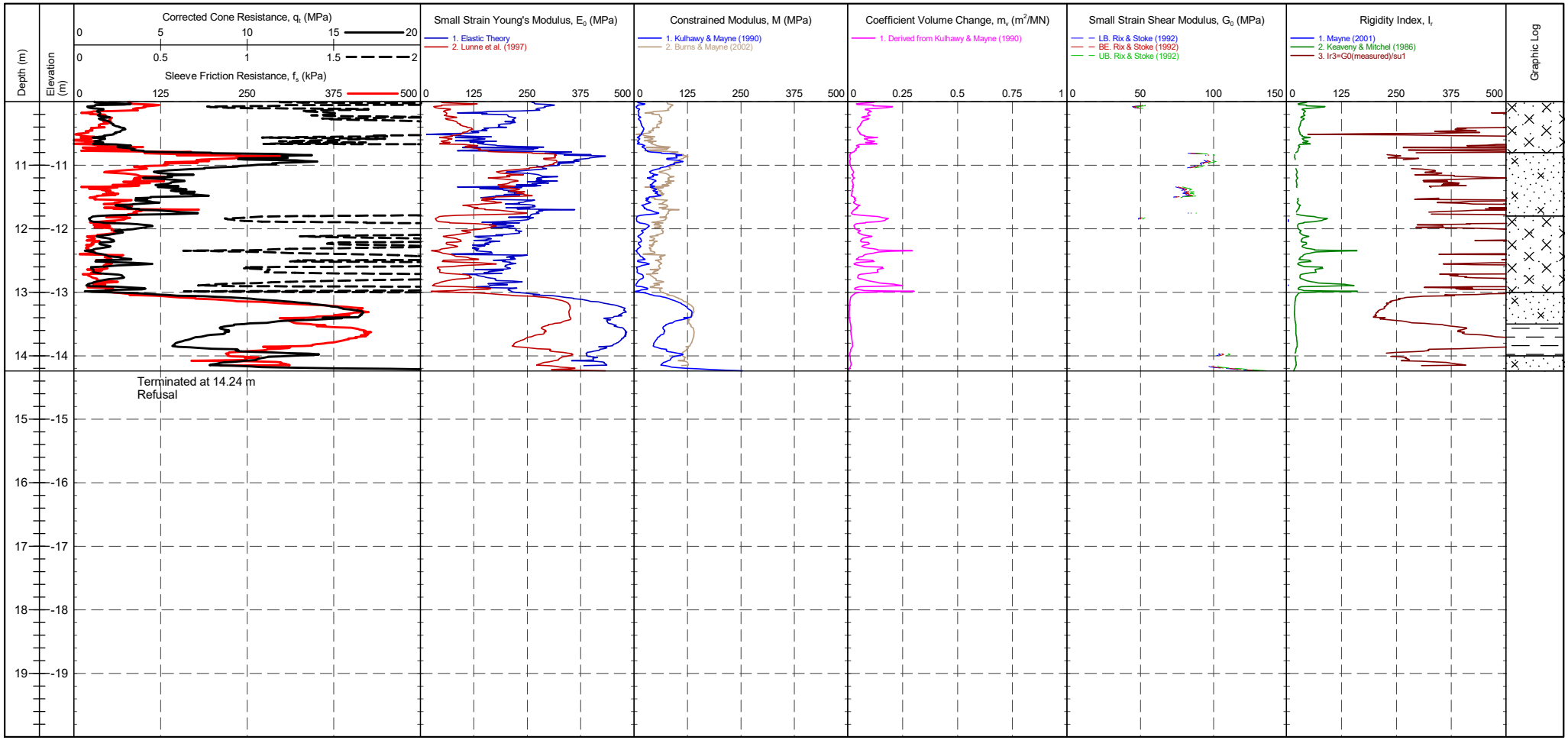
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 05

PointID **CPT106**

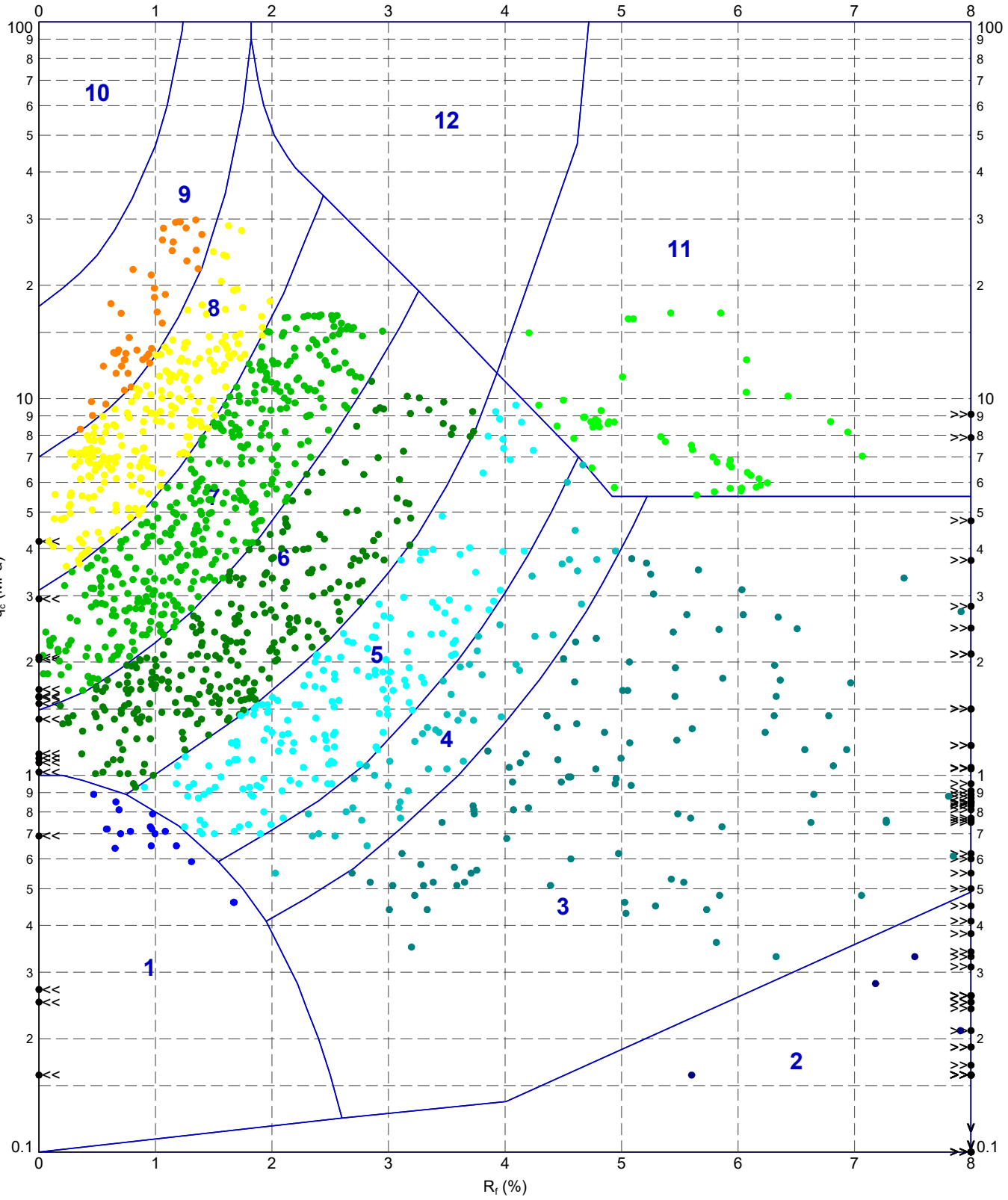
CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	229 mV	238 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	303 mV	353 mV	0.012 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2491 mV	2480 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT106

DRAWN	DATE 02/08/2024	
CHECKED	DATE 02/08/2024	
SCALE Not To Scale		A4
PROJECT No 1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:57 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

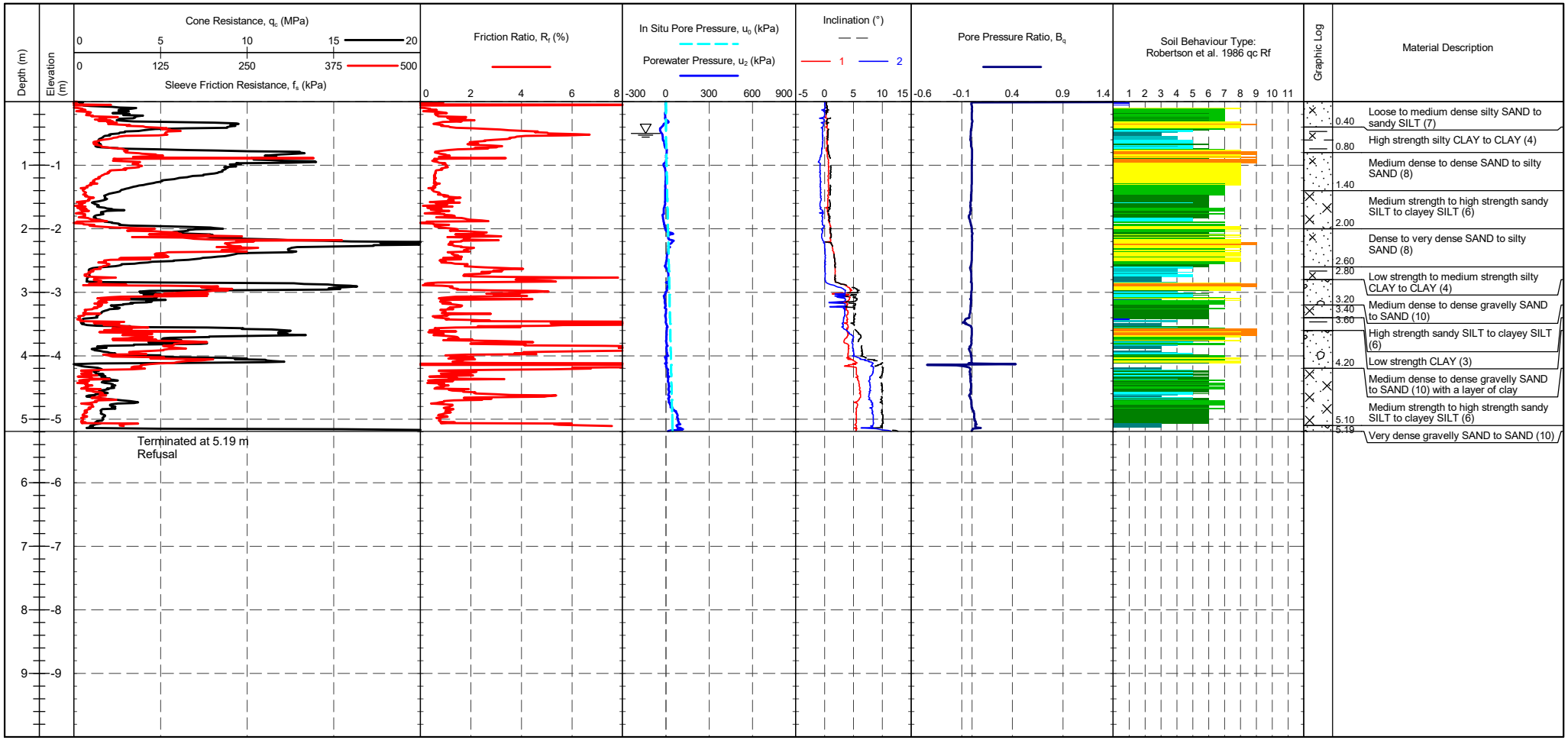
PointID: **CPT107**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	303 mV	0.011 MPa
Sleeve	241 mV	234 mV	-0.005 kPa
Pore Pressure 2	335 mV	313 mV	-0.005 kPa
X-Y Inclinometer	2486 mV	2494 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

CPT LOG 02

Working with:

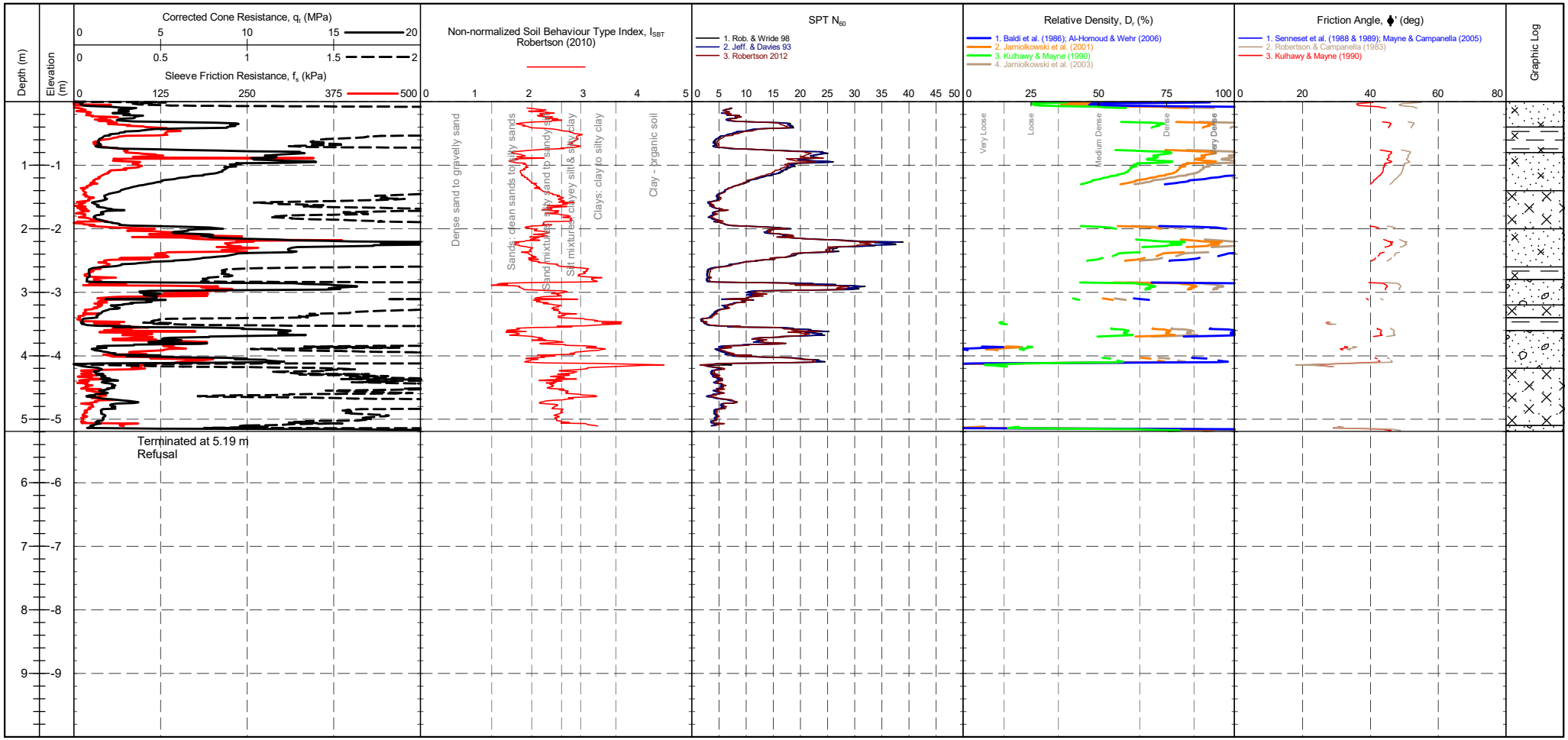
PointID: **CPT107**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145
CONE MODEL	: Subtraction
CONE AREA	: 15cm^2
CONE AREA RATIO	: 0.79
FILTER POSITION	: u2
FILTER TYPE	: HDPE

TEST TYPE	: TE2
APPLICATION CLASS	: 2
RIG	: CPT 025 - Toni
OPERATOR	: R Shepherd
FRICTION REDUCER	: None
WEATHER	: Raining & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	303 mV	0.011 MPa
Sleeve	241 mV	234 mV	-0.005 kPa
Pore Pressure 2	335 mV	313 mV	-0.005 kPa
X-Y Inclinometer	2486 mV	2494 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

Working with:

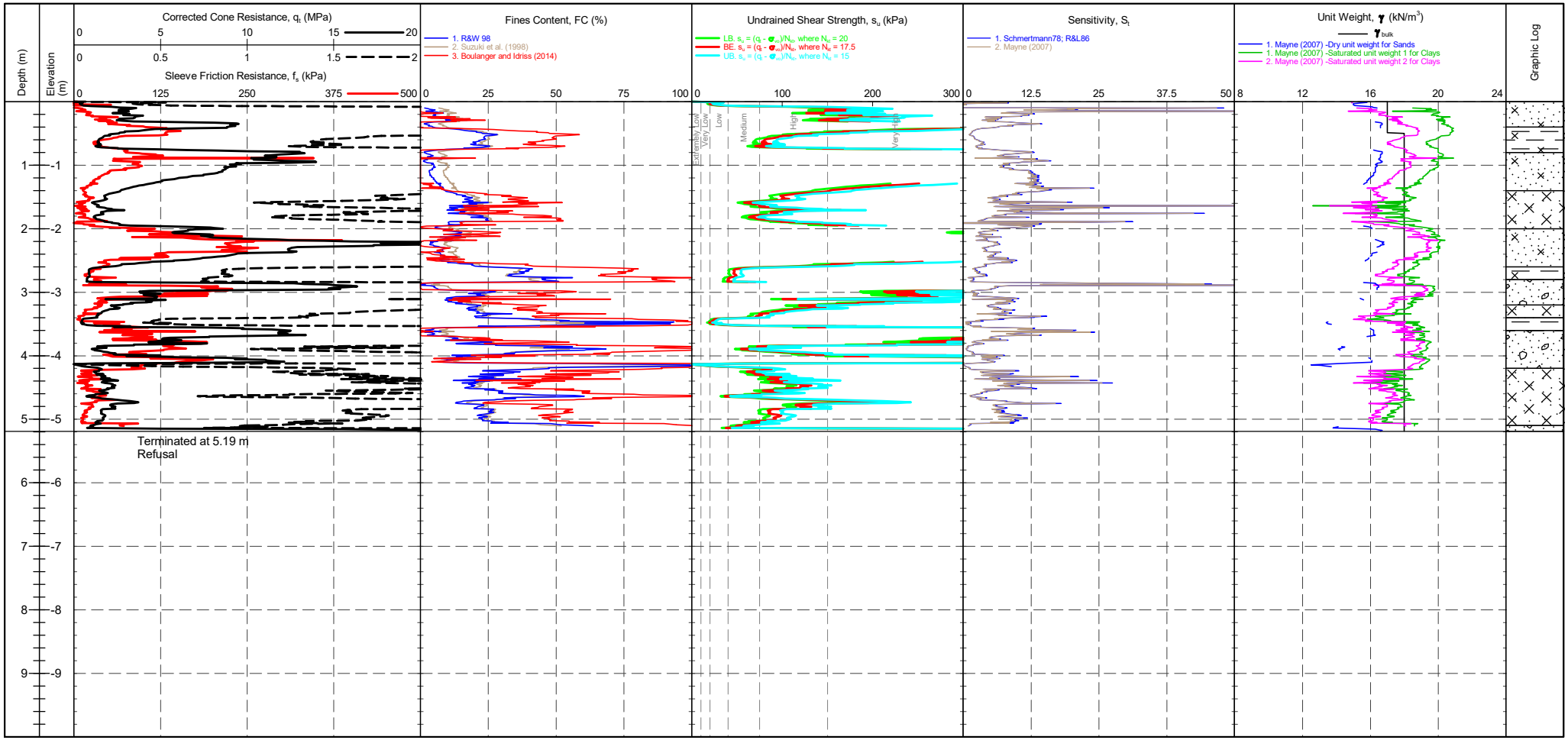
PointID: **CPT107**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	303 mV	0.011 MPa
Sleeve	241 mV	234 mV	-0.005 kPa
Pore Pressure 2	335 mV	313 mV	-0.005 kPa
X-Y Inclinometer	2486 mV	2494 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

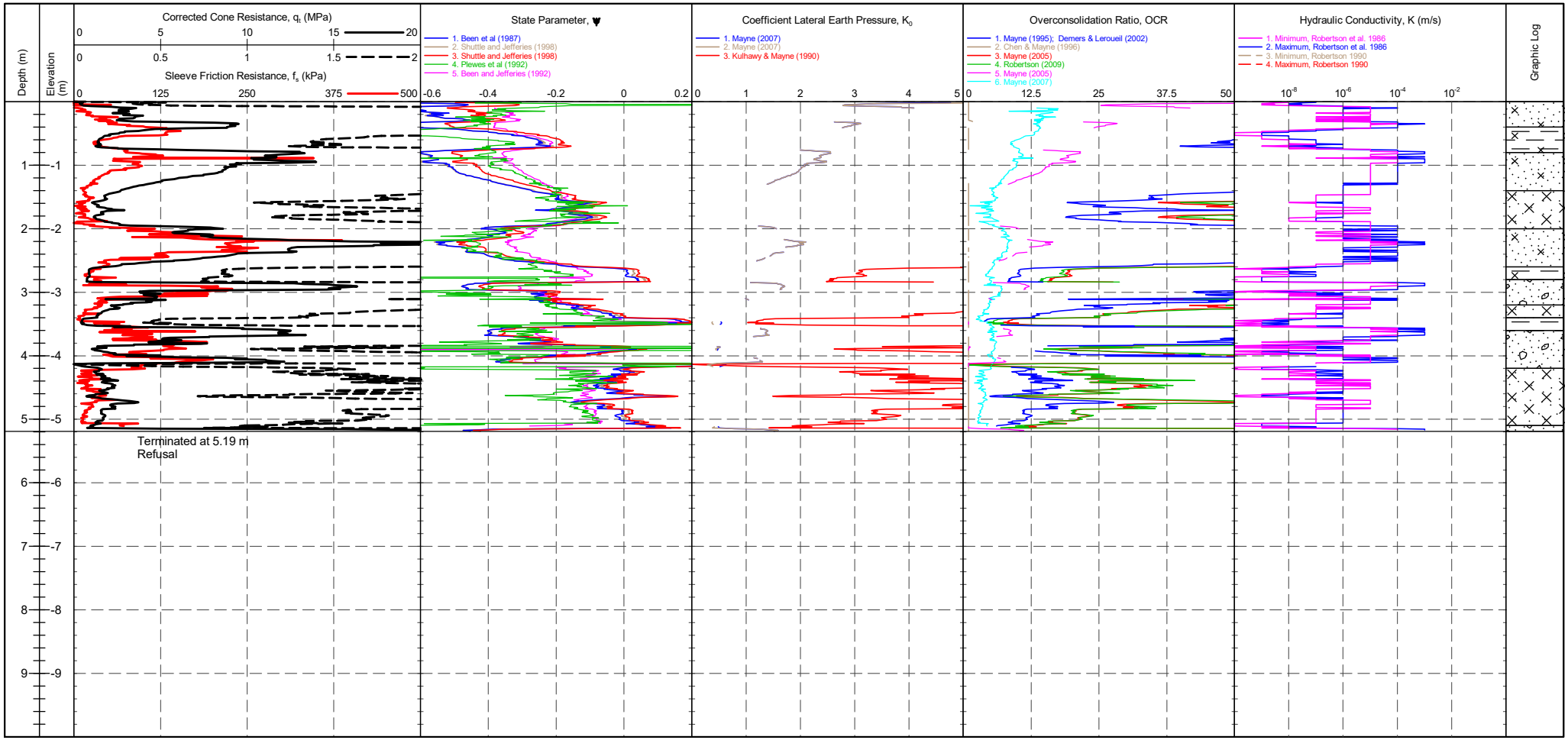
PointID: **CPT107**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	303 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	241 mV	234 mV	-0.005 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	335 mV	313 mV	-0.005 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2486 mV	2494 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with:

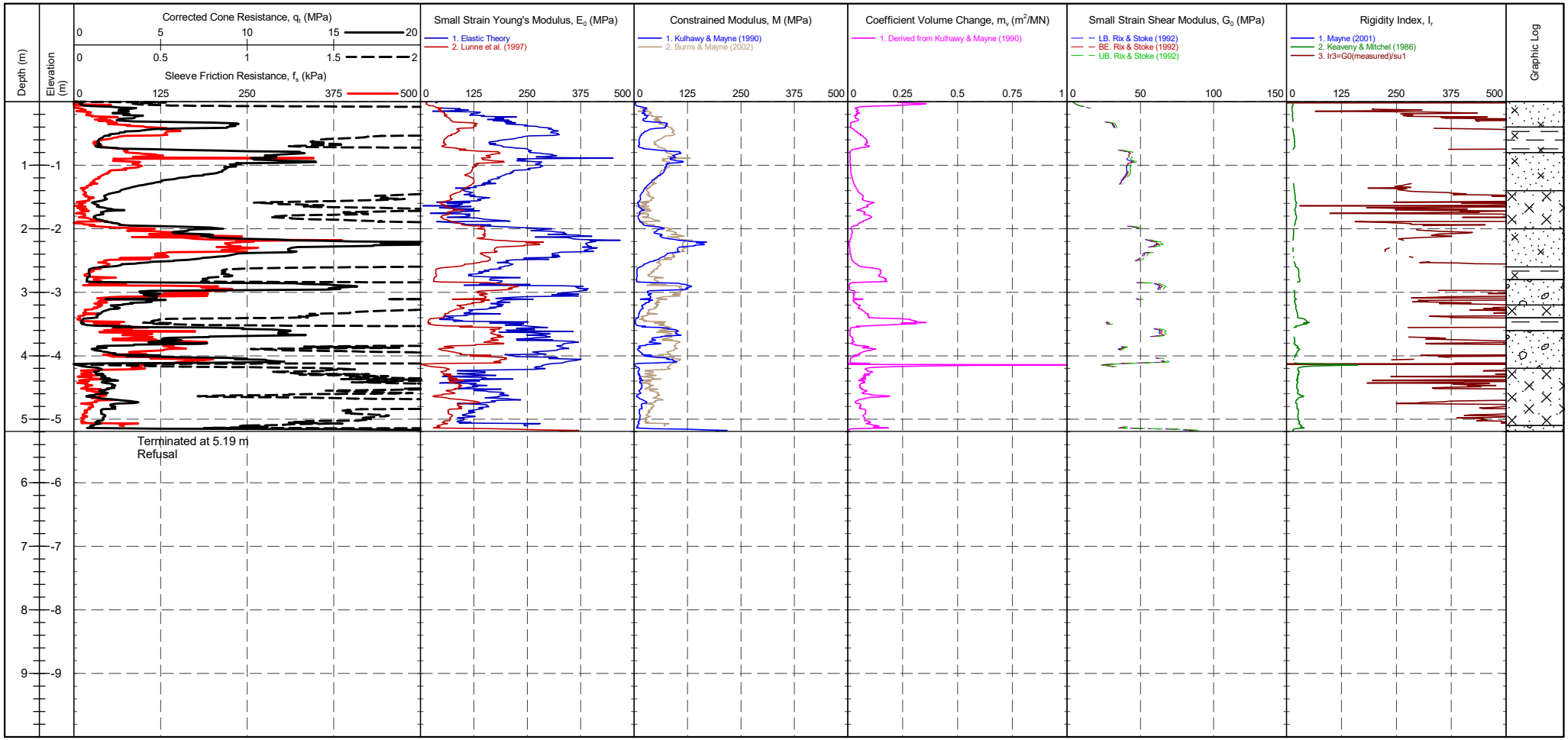
PointID
CPT107

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



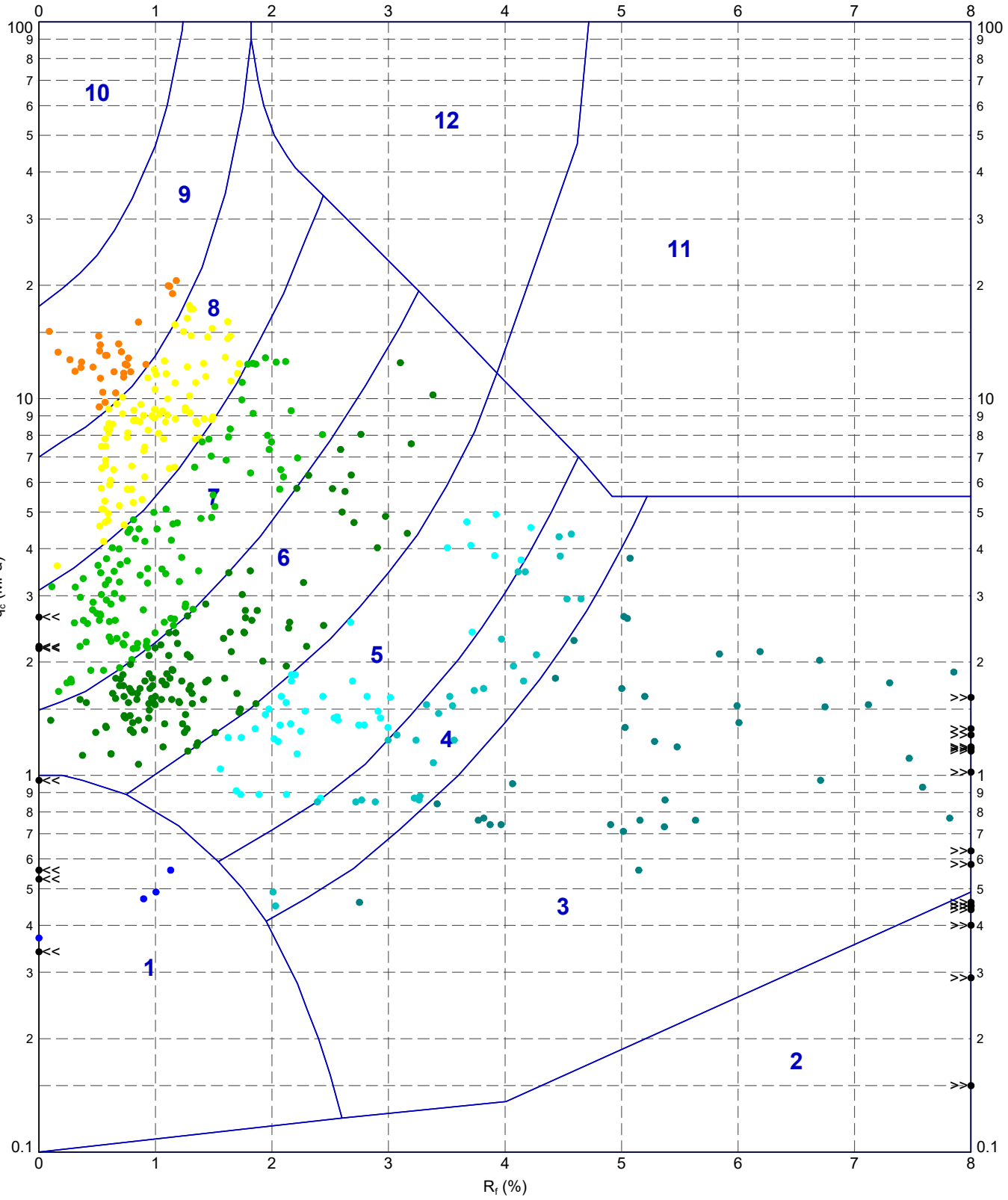
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	303 mV	0.011 MPa
Sleeve	241 mV	234 mV	-0.005 kPa
Pore Pressure 2	335 mV	313 mV	-0.005 kPa
X-Y Inclinometer	2486 mV	2494 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT107

DRAWN	DATE 02/08/2024
CHECKED	DATE 02/08/2024
SCALE Not To Scale	A4
PROJECT No 1240280	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:58 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

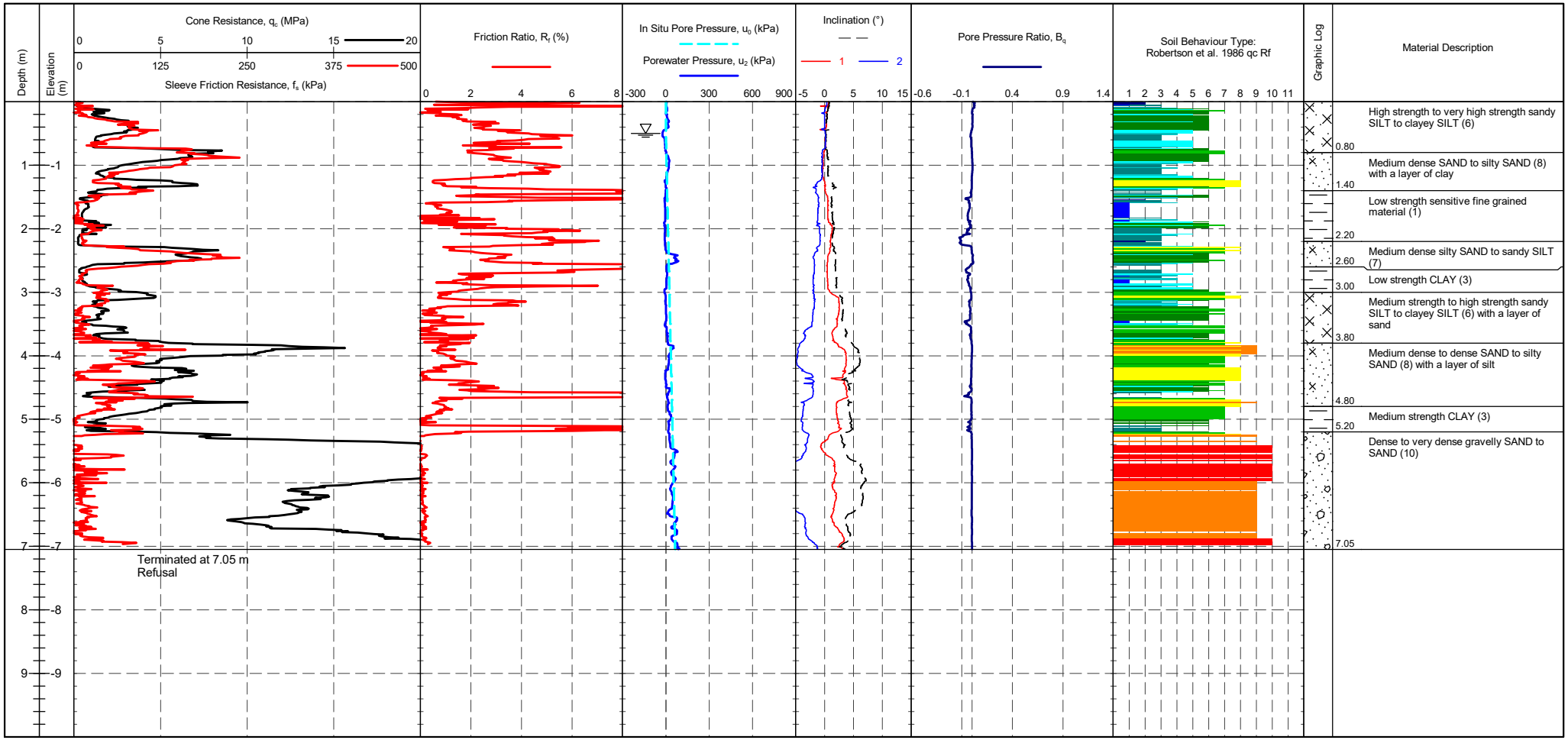
PointID: **CPT108**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	306 mV	0.033 MPa
Sleeve	234 mV	250 mV	0.011 kPa
Pore Pressure 2	305 mV	314 mV	0.002 kPa
X-Y Inclinometer	2494 mV	2504 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

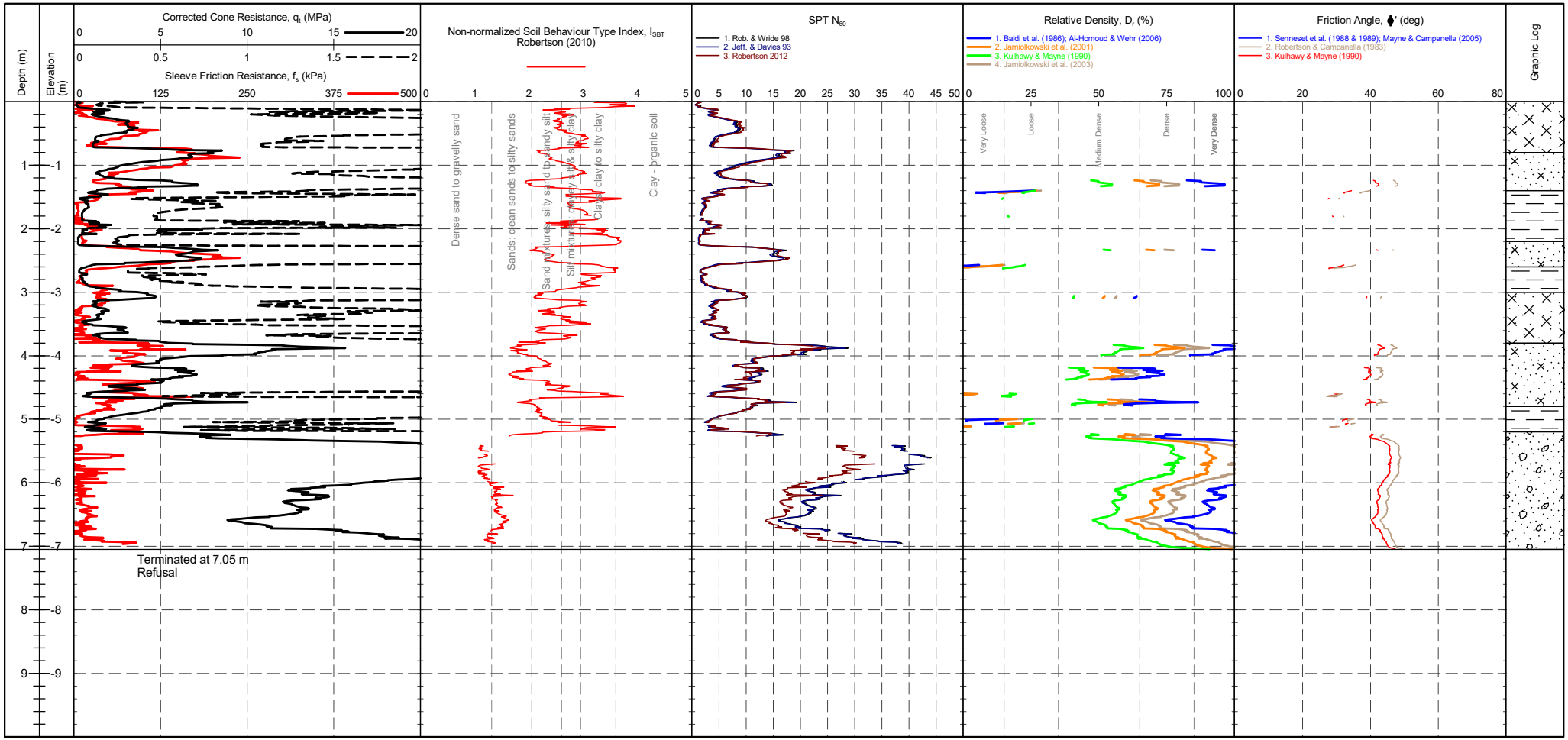
PointID: **CPT108**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145
CONE MODEL	: Subtraction
CONE AREA	: 15cm²
CONE AREA RATIO	: 0.79
FILTER POSITION	: u2
FILTER TYPE	: HDPE

TEST TYPE	: TE2
APPLICATION CLASS	: 2
RIG	: CPT 025 - Toni
OPERATOR	: R Shepherd
FRICTION REDUCER	: None
WEATHER	: Raining & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	306 mV	0.033 MPa
Sleeve	234 mV	250 mV	0.011 kPa
Pore Pressure 2	305 mV	314 mV	0.002 kPa
X-Y Inclinometer	2494 mV	2504 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

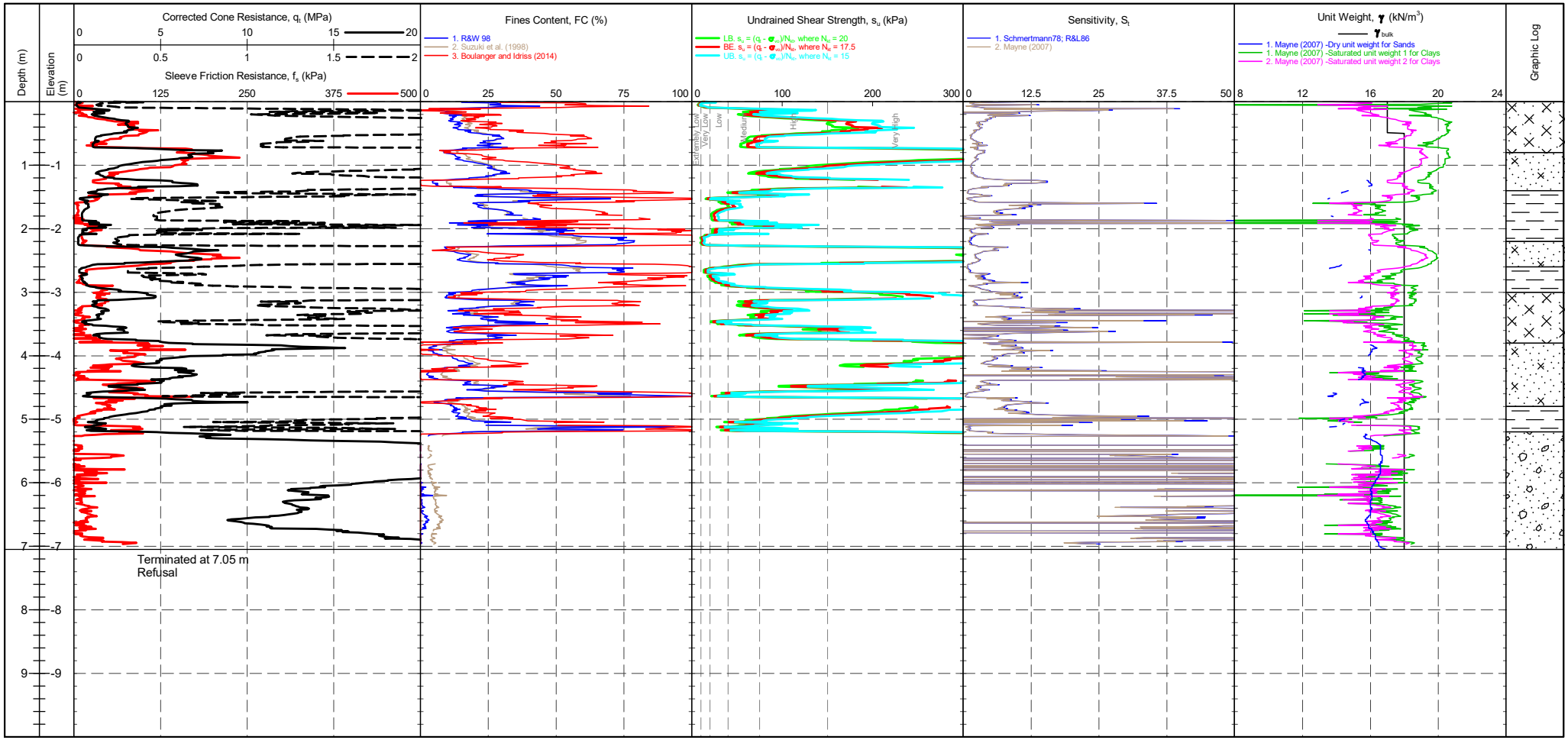
PointID: **CPT108**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	303 mV	306 mV	0.033 MPa
Sleeve	234 mV	250 mV	0.011 kPa
Pore Pressure 2	305 mV	314 mV	0.002 kPa
X-Y Inclinometer	2494 mV	2504 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

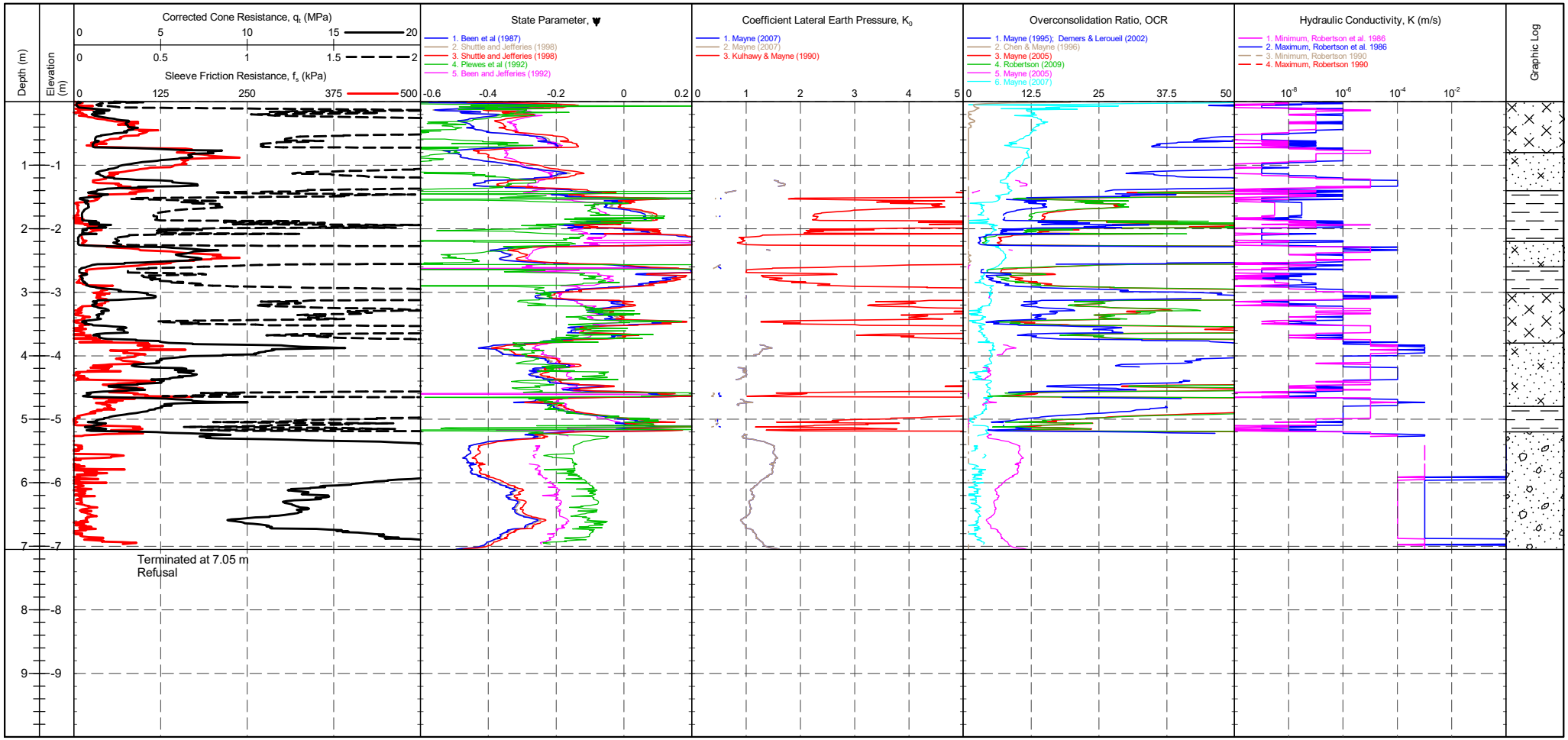
PointID
CPT108

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	303 mV	306 mV	0.033 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	234 mV	250 mV	0.011 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	305 mV	314 mV	0.002 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2494 mV	2504 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

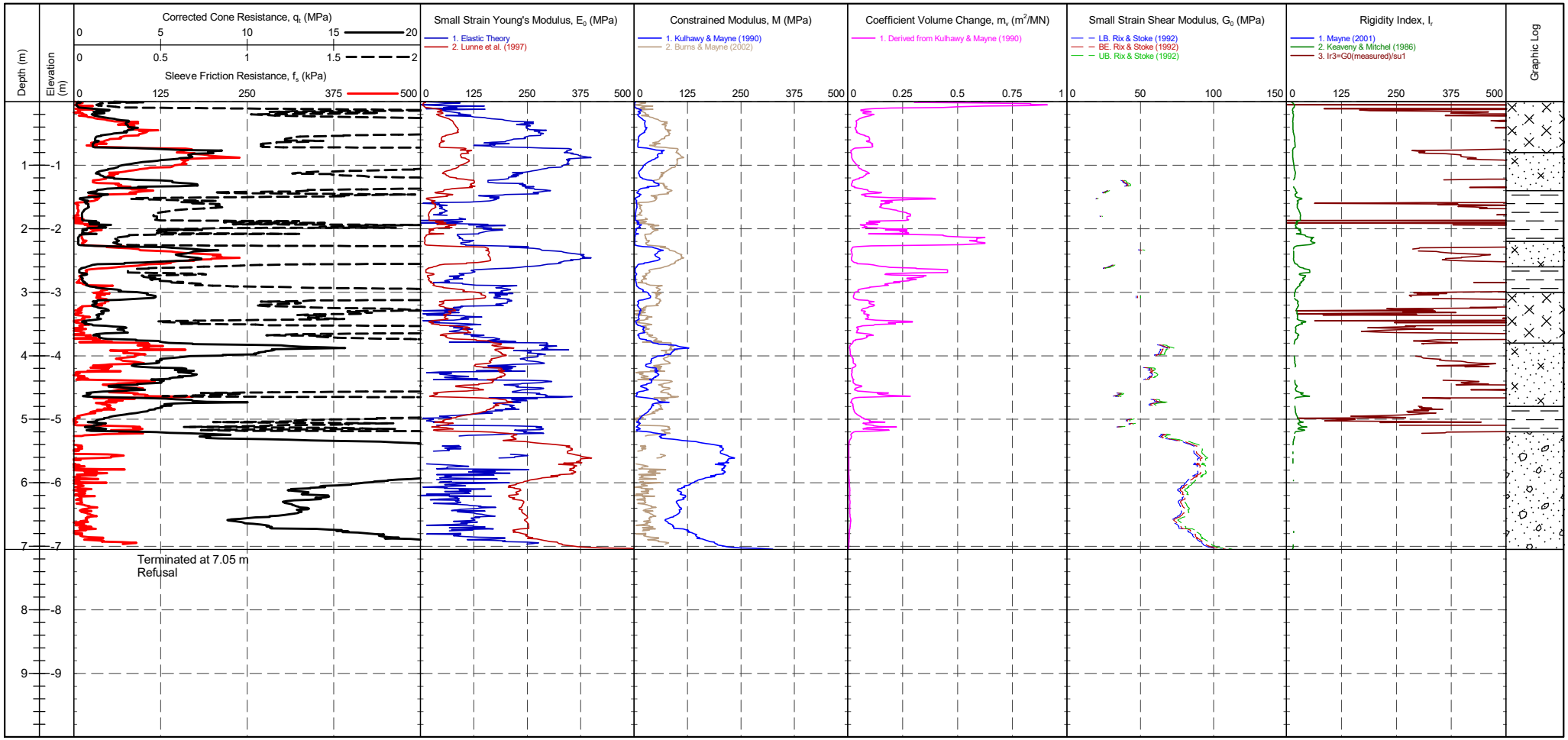
PointID: **CPT108**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



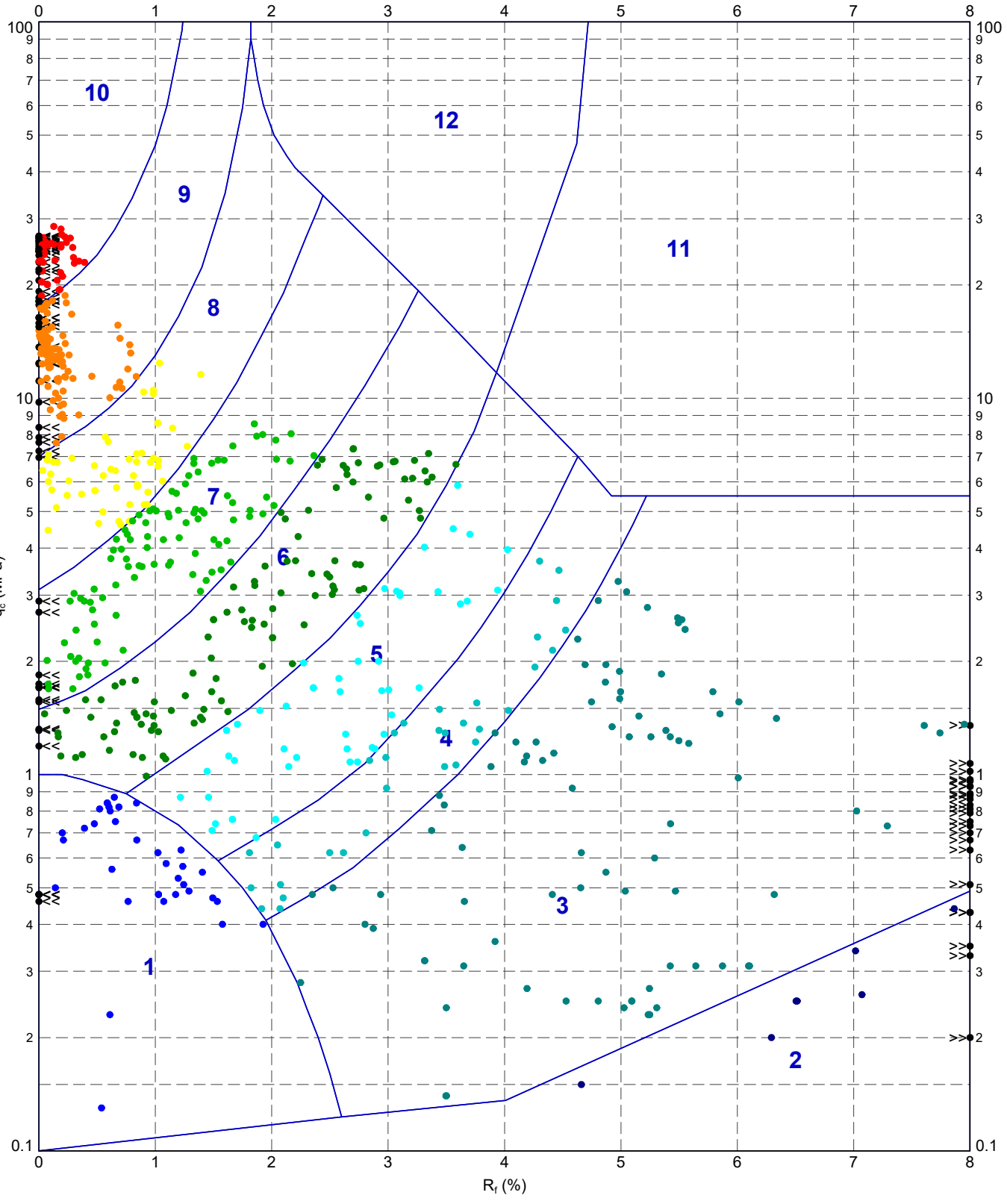
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	306 mV	0.033 MPa
Sleeve	234 mV	250 mV	0.011 kPa
Pore Pressure 2	305 mV	314 mV	0.002 kPa
X-Y Inclinometer	2494 mV	2504 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT108

DRAWN	DATE 02/08/2024
CHECKED	DATE 02/08/2024
SCALE Not To Scale	A4
PROJECT No 1240280	FIGURE No

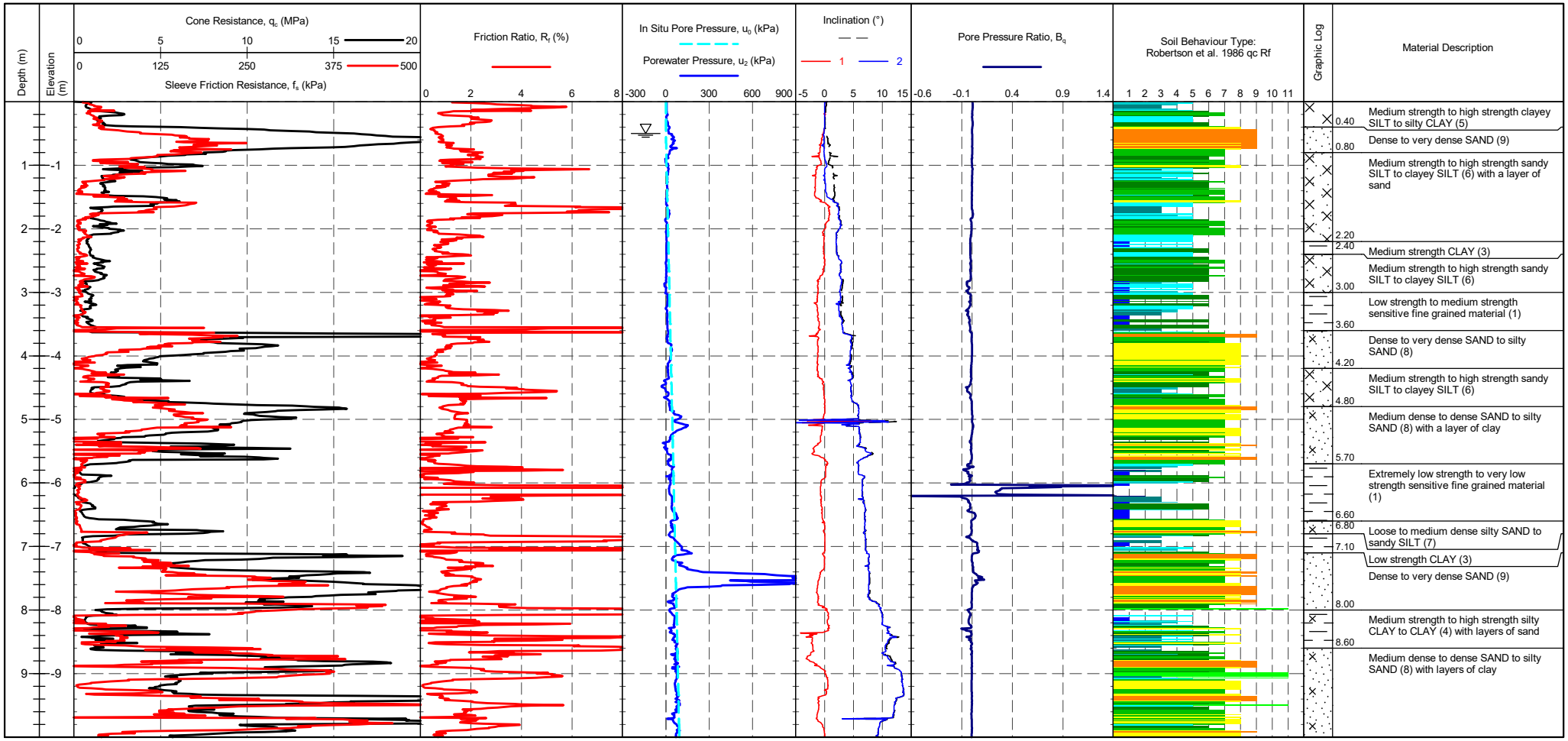
220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 15:59 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prg: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

Working with:

PointID: **CPT109**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	301 mV	-0.022 MPa
Sleeve	247 mV	231 mV	-0.011 kPa
Pore Pressure 2	294 mV	323 mV	0.007 kPa
X-Y Inclinometer	2510 mV	2502 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

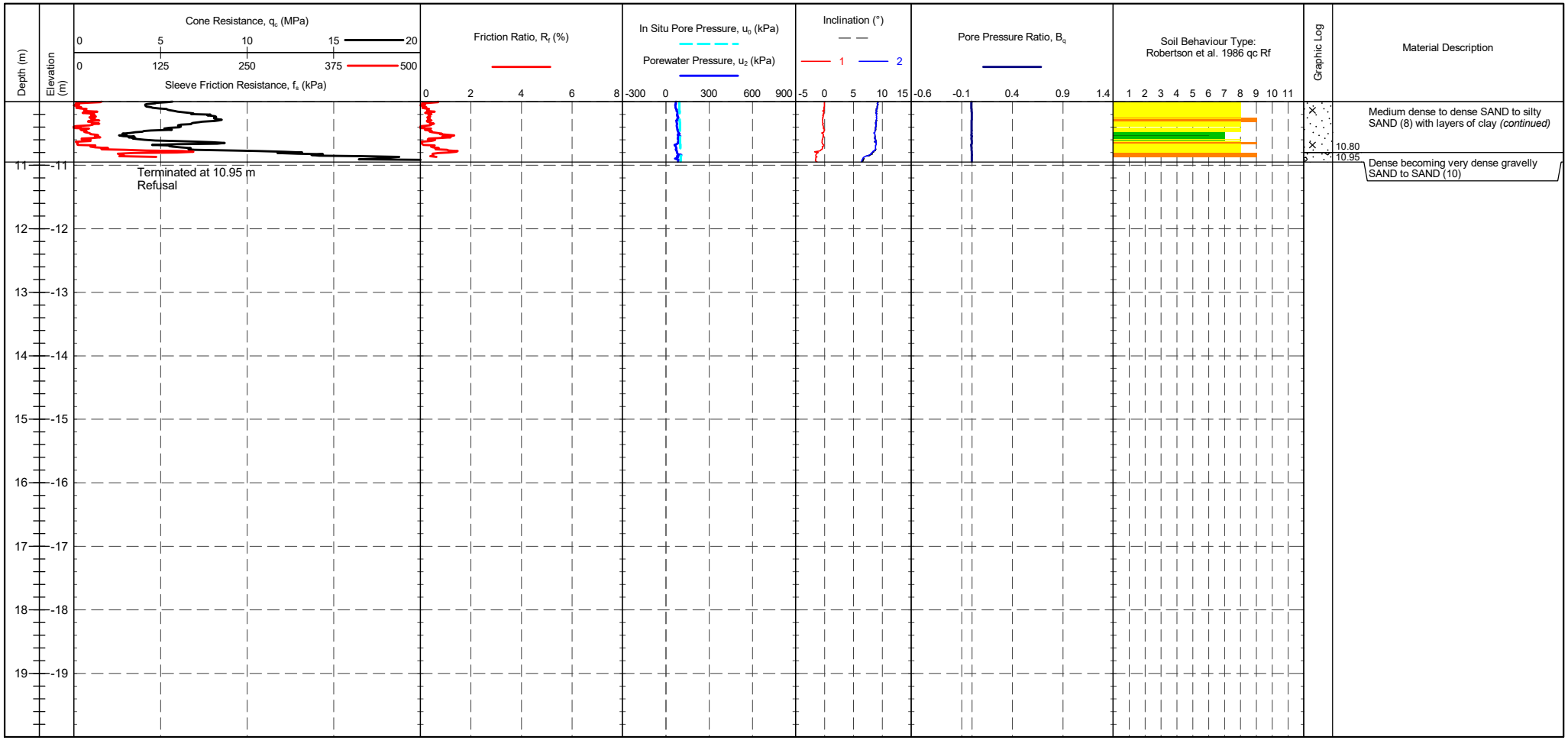
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT109**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	301 mV	-0.022 MPa
Sleeve	247 mV	231 mV	-0.011 kPa
Pore Pressure 2	294 mV	323 mV	0.007 kPa
X-Y Inclinometer	2510 mV	2502 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

Working with:

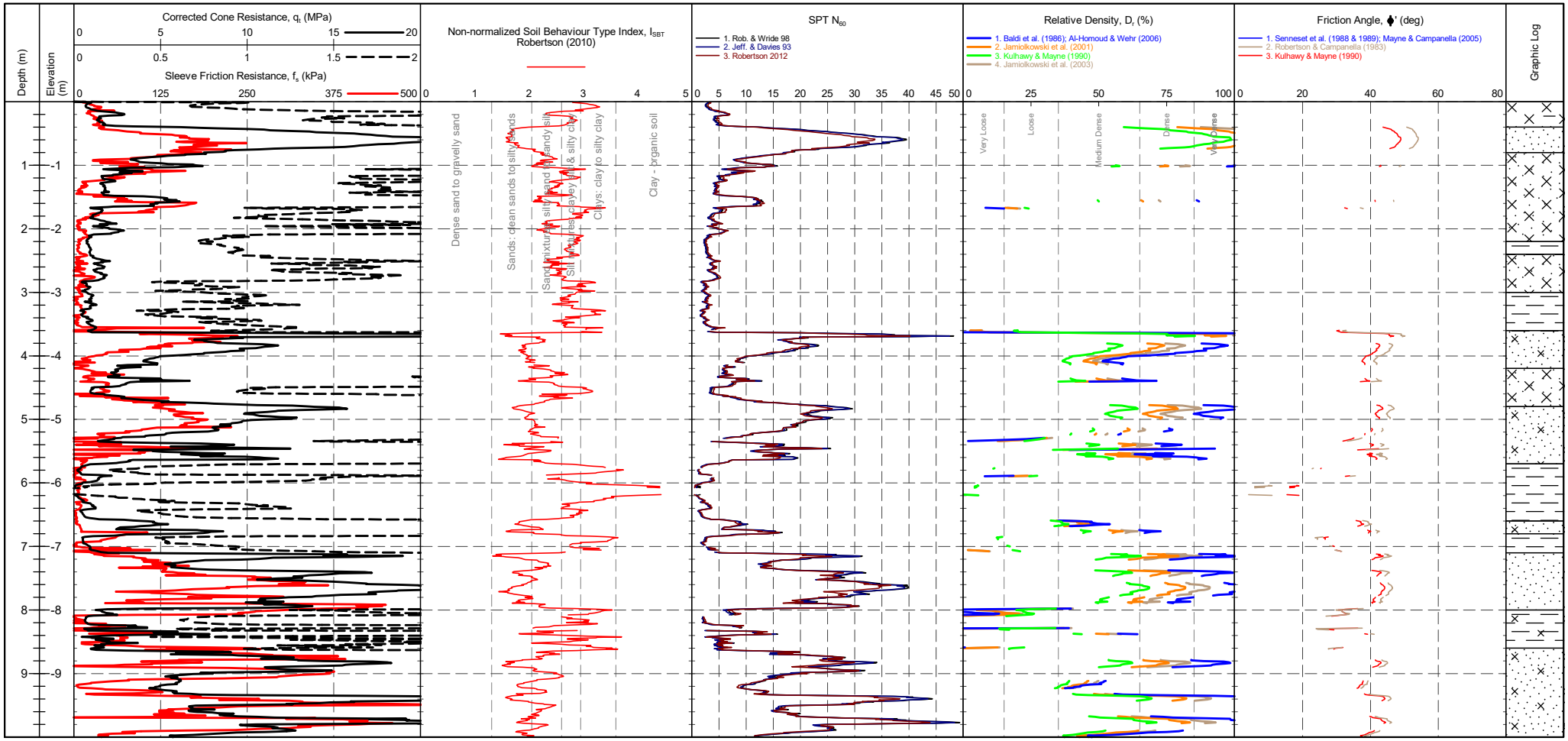
PointID
CPT109

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	301 mV	-0.022 MPa
Sleeve	247 mV	231 mV	-0.011 kPa
Pore Pressure 2	294 mV	323 mV	0.007 kPa
X-Y Inclinometer	2510 mV	2502 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

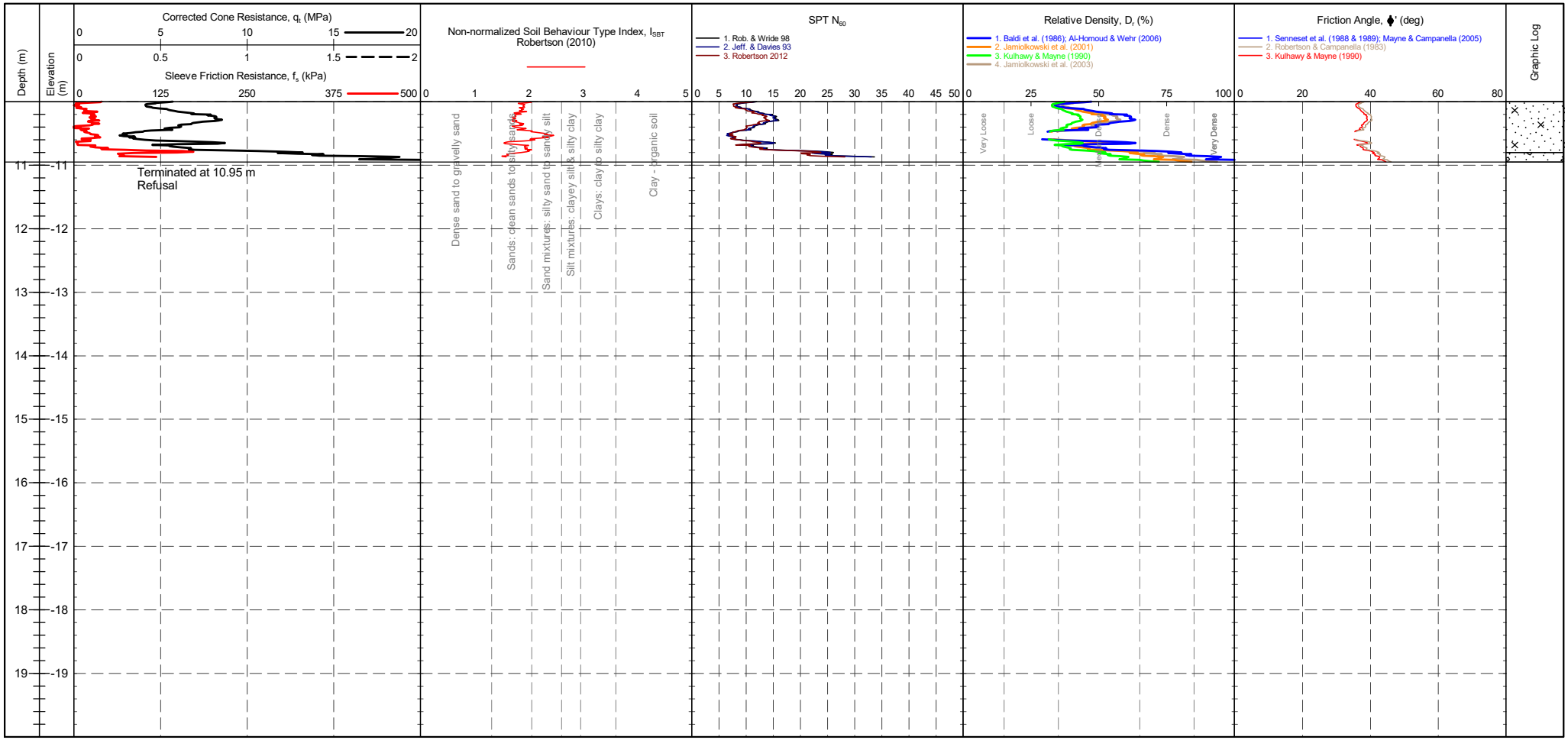
PointID: **CPT109**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	303 mV	301 mV	-0.022 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	247 mV	231 mV	-0.011 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	294 mV	323 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2510 mV	2502 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

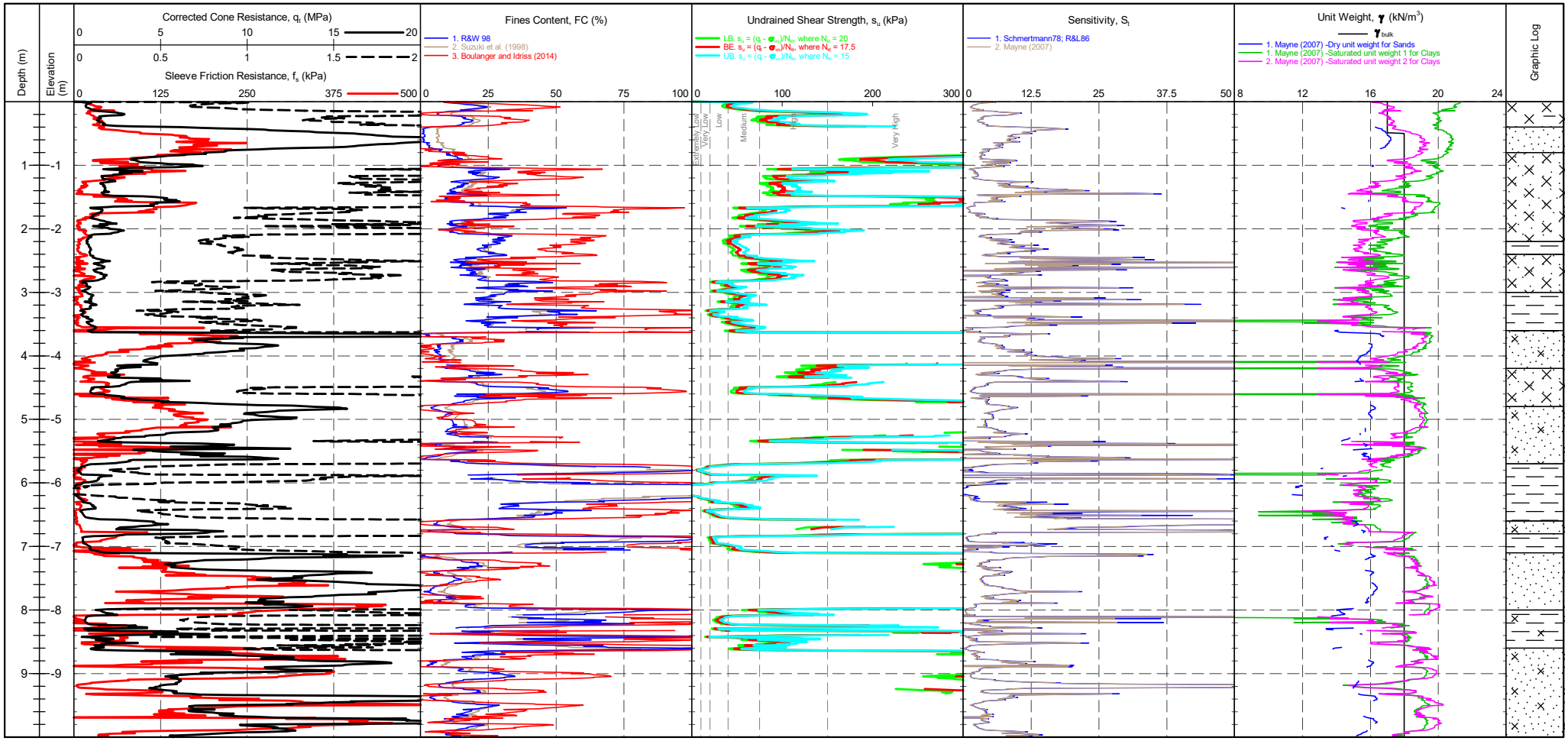
PointID: **CPT109**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	303 mV	301 mV	-0.022 MPa
Sleeve	247 mV	231 mV	-0.011 kPa
Pore Pressure 2	294 mV	323 mV	0.007 kPa
X-Y Inclinometer	2510 mV	2502 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

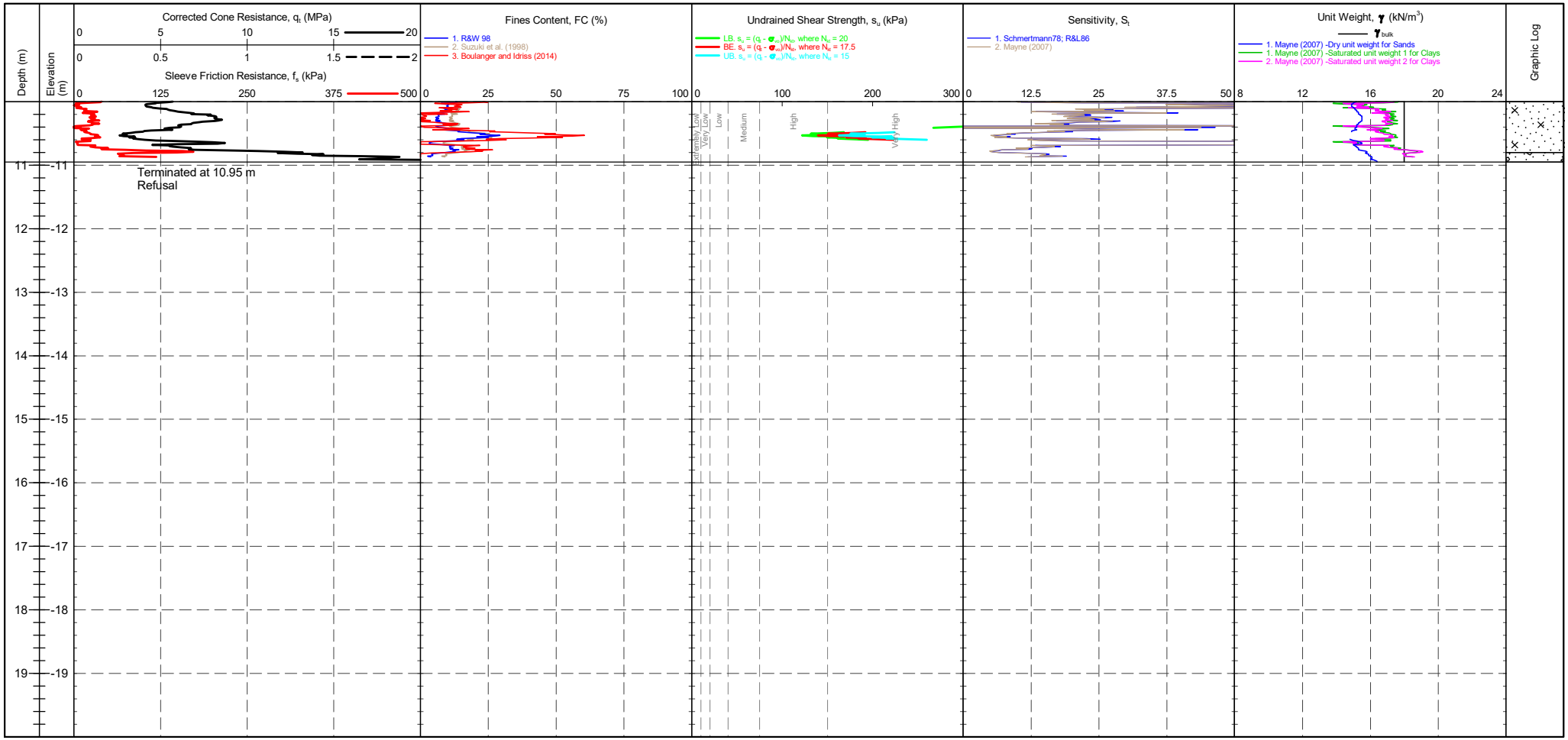
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT109**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	303 mV	301 mV	-0.022 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	247 mV	231 mV	-0.011 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	294 mV	323 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2510 mV	2502 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

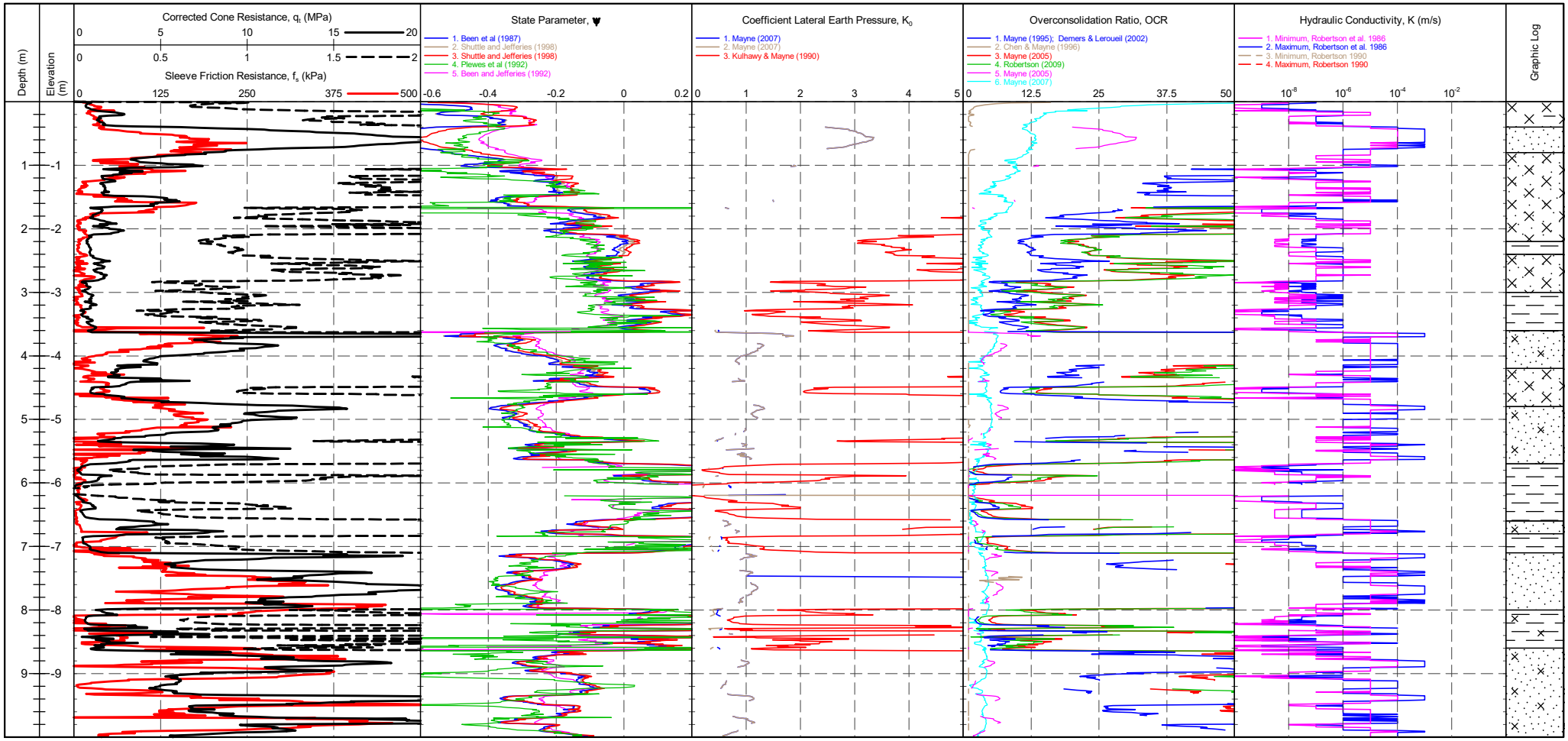
PointID: **CPT109**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145
CONE MODEL	: Subtraction
CONE AREA	: 15cm^2
CONE AREA RATIO	: 0.79
FILTER POSITION	: u2
FILTER TYPE	: HDPE

TEST TYPE	: TE2
APPLICATION CLASS	: 2
RIG	: CPT 025 - Toni
OPERATOR	: R Shepherd
FRICTION REDUCER	: None
WEATHER	: Raining & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	301 mV	-0.022 MPa
Sleeve	247 mV	231 mV	-0.011 kPa
Pore Pressure 2	294 mV	323 mV	0.007 kPa
X-Y Inclinometer	2510 mV	2502 mV	

Groundwater Level

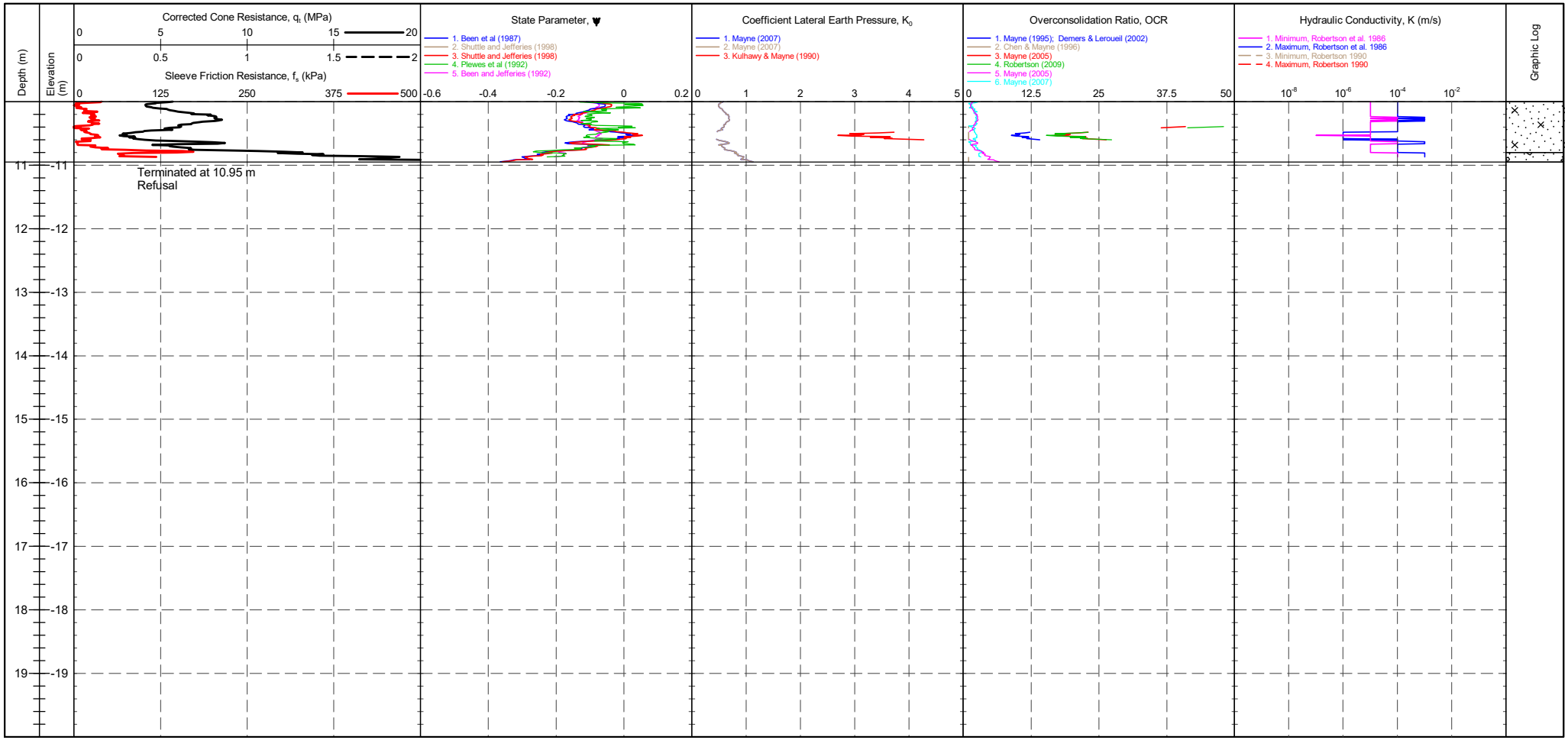
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT109**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	303 mV	301 mV	-0.022 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	247 mV	231 mV	-0.011 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	294 mV	323 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2510 mV	2502 mV	

Groundwater Level

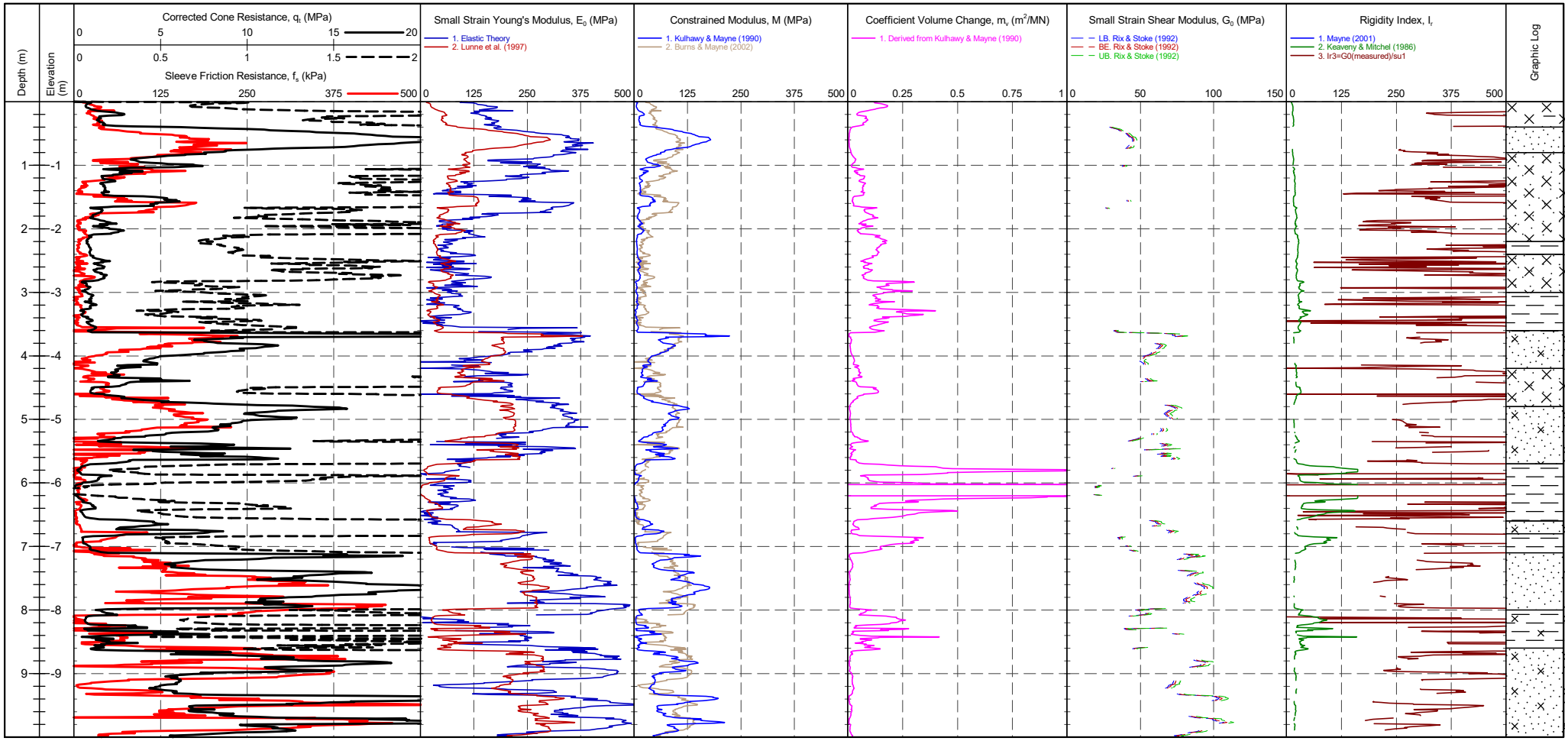
Dissipation Test

CPT LOG 05

Working with:

PointID **CPT109**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	303 mV	301 mV	-0.022 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	247 mV	231 mV	-0.011 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	294 mV	323 mV	0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2510 mV	2502 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

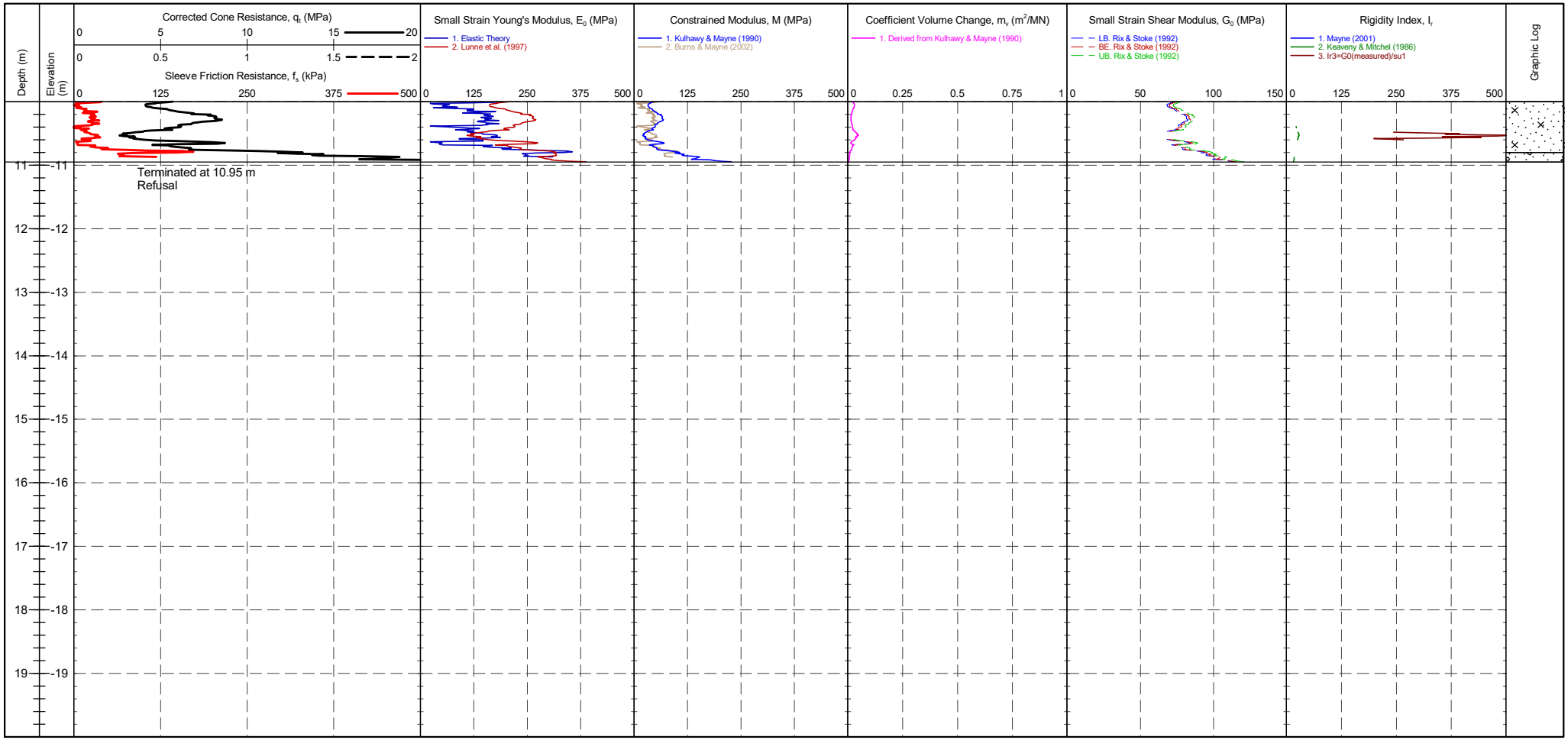
PointID
CPT109

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



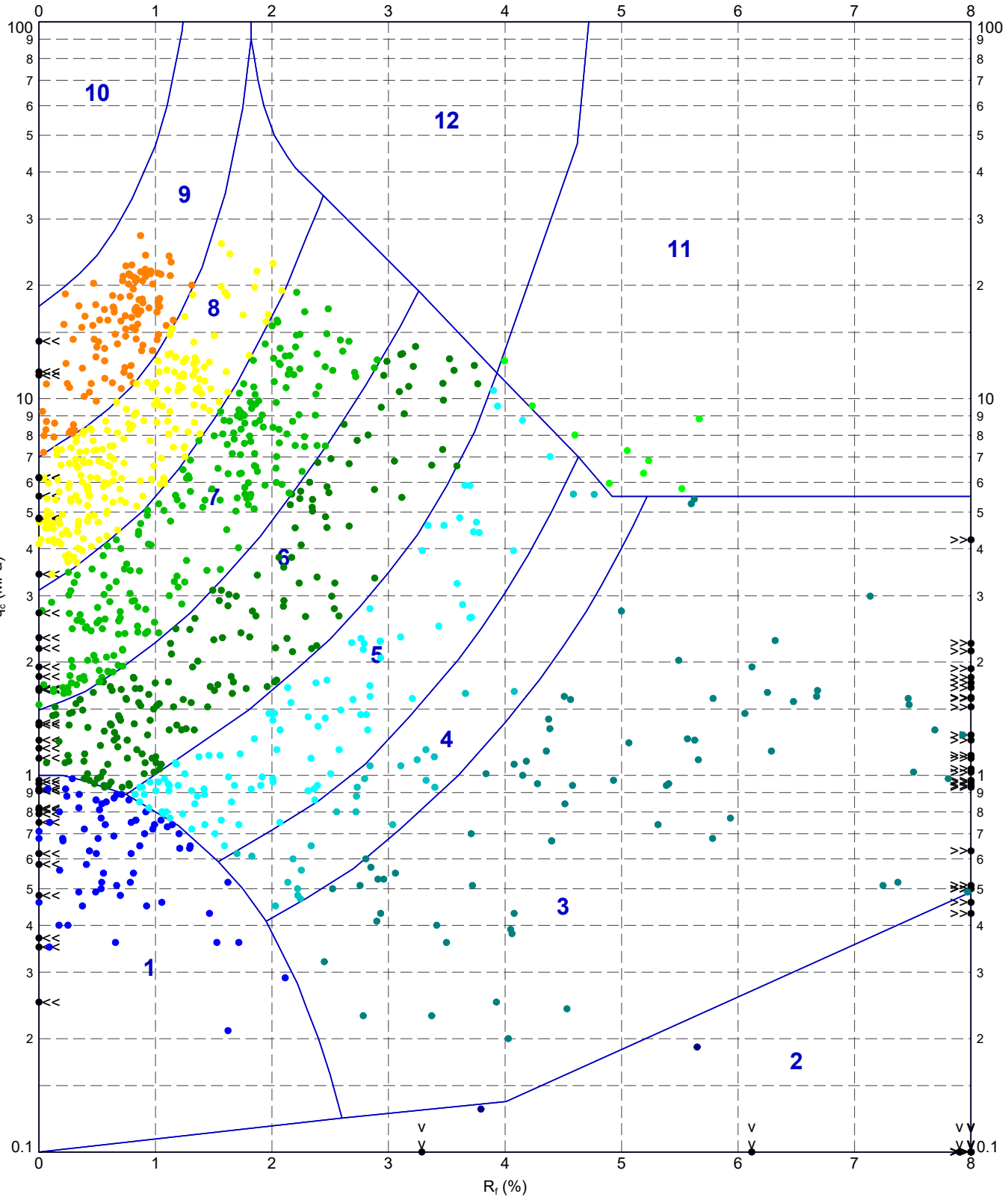
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	303 mV	301 mV	-0.022 MPa
Sleeve	247 mV	231 mV	-0.011 kPa
Pore Pressure 2	294 mV	323 mV	0.007 kPa
X-Y Inclinometer	2510 mV	2502 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT109

DRAWN	DATE 02/08/2024	
CHECKED	DATE 02/08/2024	
SCALE Not To Scale		A4
PROJECT No 1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:01 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

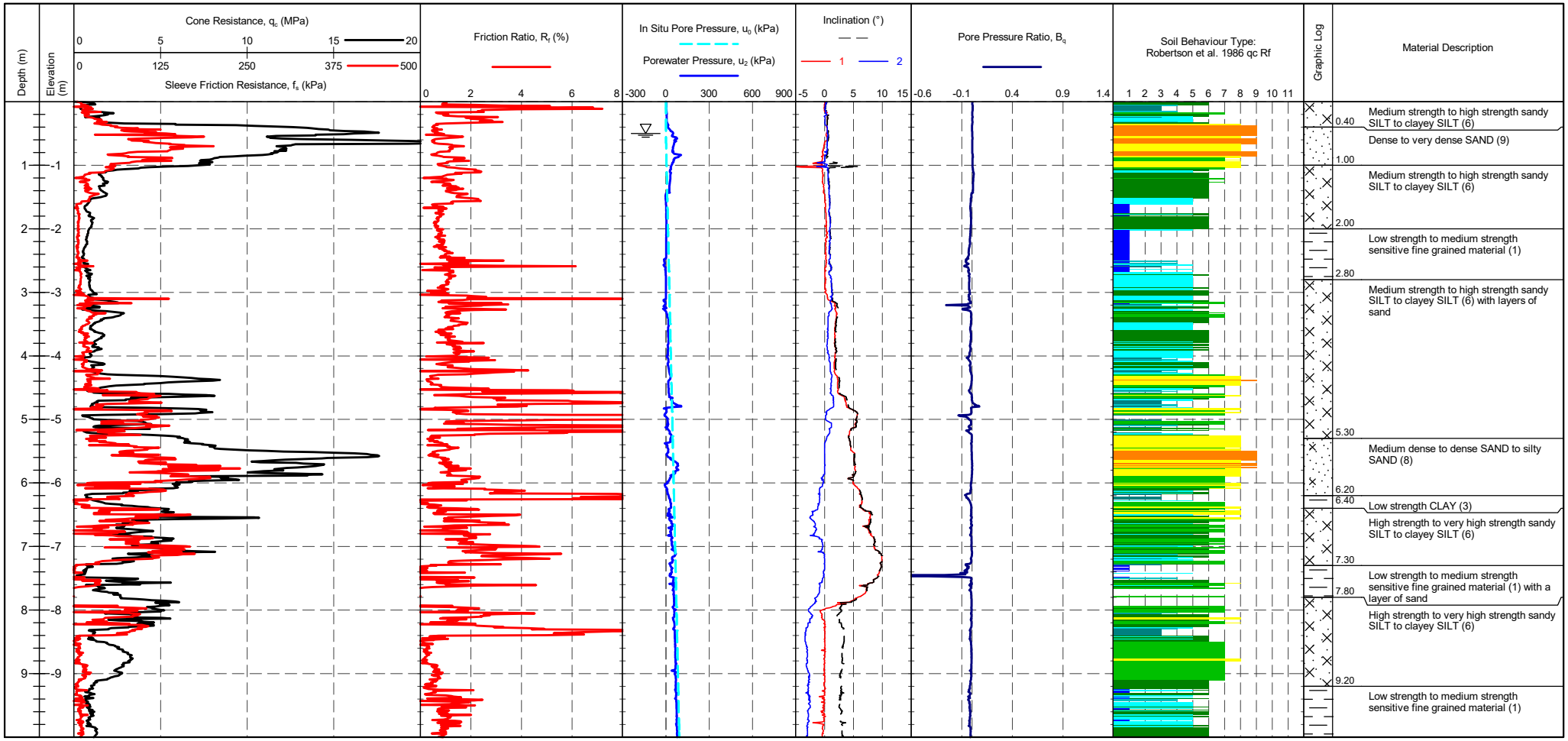
PointID: **CPT110**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	231 mV	238 mV	0.005 kPa
Pore Pressure 2	313 mV	331 mV	0.004 kPa
X-Y Inclinometer	2504 mV	2479 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

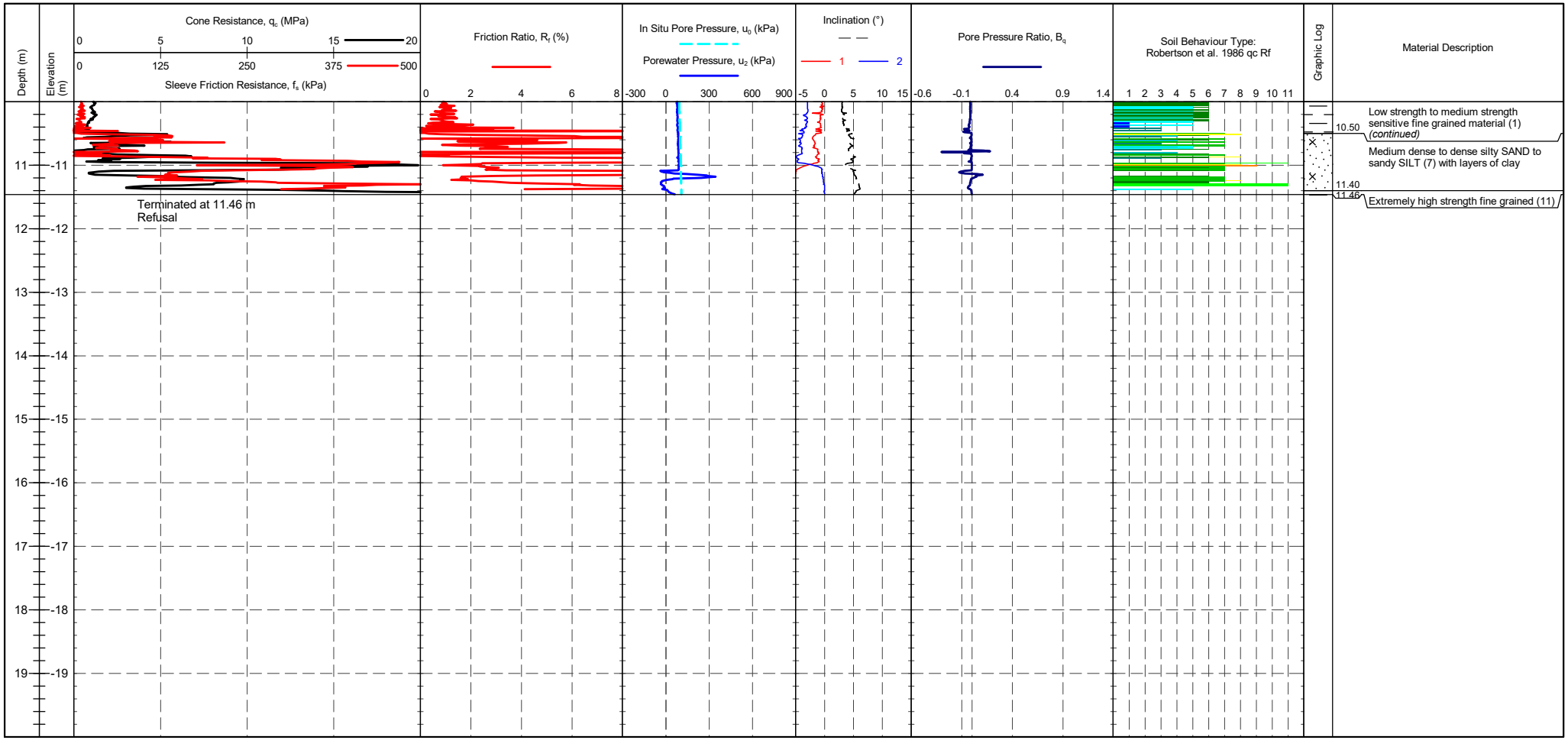
Groundwater Level
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT110**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Raining & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	231 mV	238 mV	0.005 kPa
Pore Pressure 2	313 mV	331 mV	0.004 kPa
X-Y Inclinometer	2504 mV	2479 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

Working with:

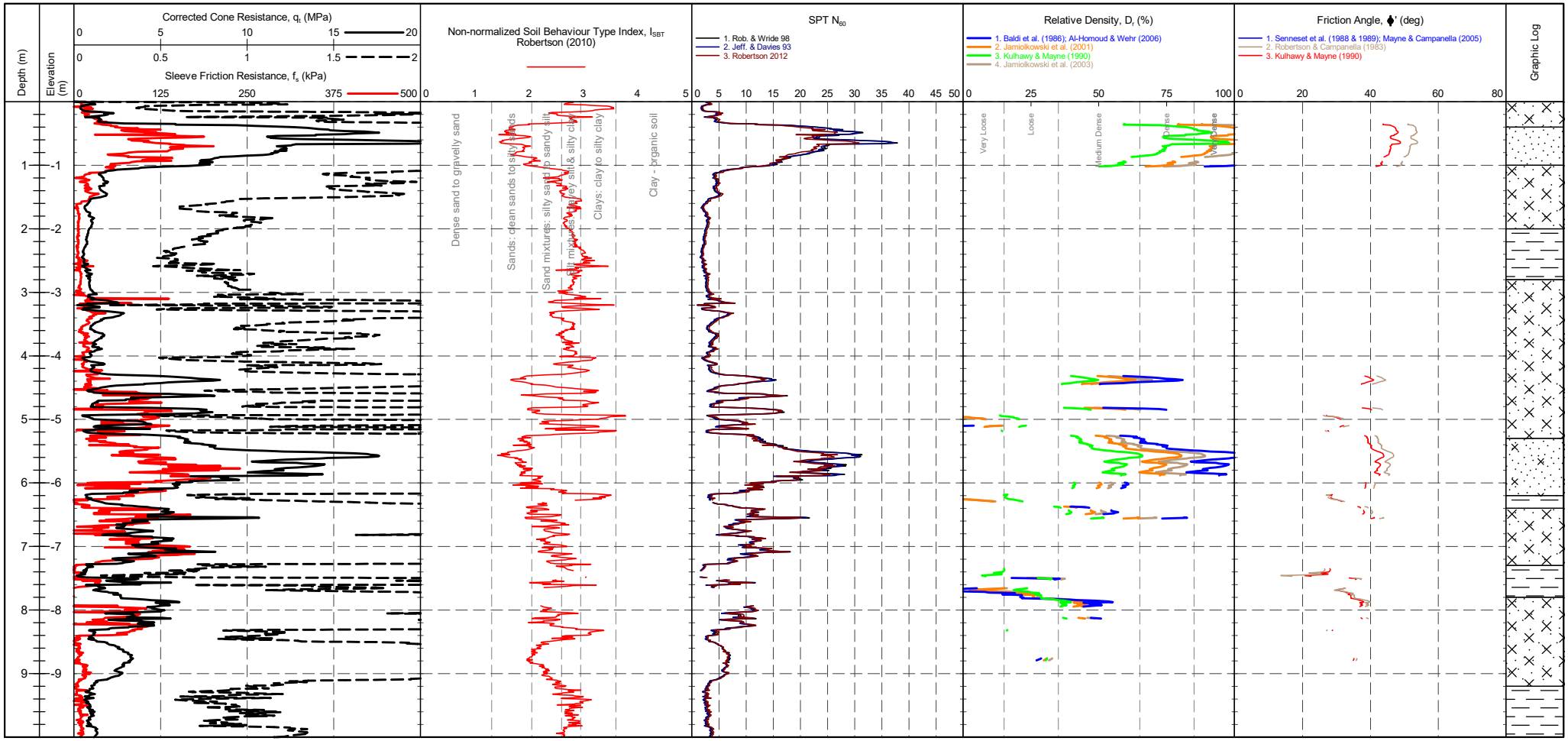
PointID
CPT110

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	231 mV	238 mV	0.005 kPa
Pore Pressure 2	313 mV	331 mV	0.004 kPa
X-Y Inclinometer	2504 mV	2479 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

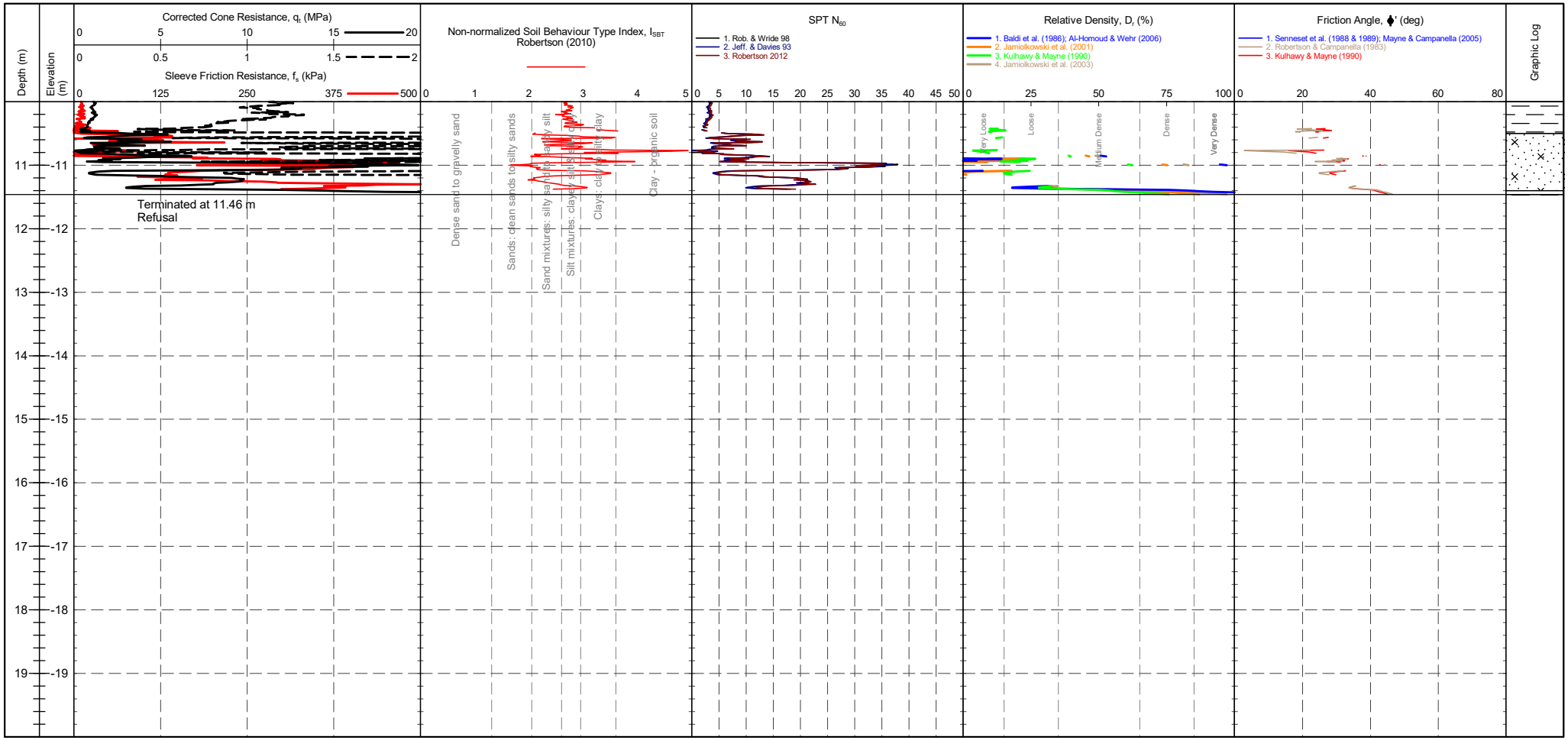
PointID: **CPT110**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145
CONE MODEL	: Subtraction
CONE AREA	: 15cm^2
CONE AREA RATIO	: 0.79
FILTER POSITION	: u2
FILTER TYPE	: HDPE

TEST TYPE	: TE2
APPLICATION CLASS	: 2
RIG	: CPT 025 - Toni
OPERATOR	: R Shepherd
FRICTION REDUCER	: None
WEATHER	: Raining & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	231 mV	238 mV	0.005 kPa
Pore Pressure 2	313 mV	331 mV	0.004 kPa
X-Y Inclinometer	2504 mV	2479 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

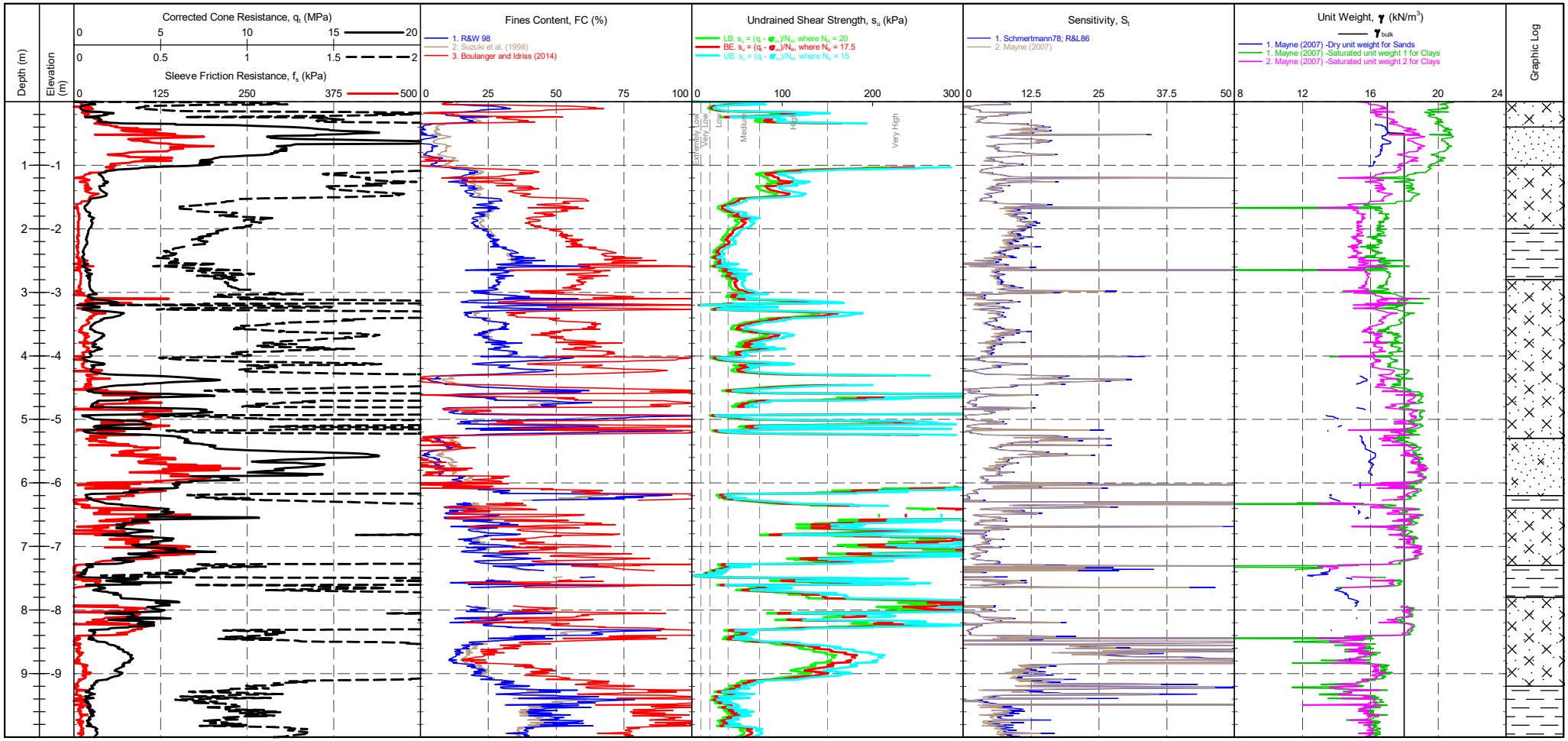
PointID: **CPT110**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	231 mV	238 mV	0.005 kPa
Pore Pressure 2	313 mV	331 mV	0.004 kPa
X-Y Inclinometer	2504 mV	2479 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

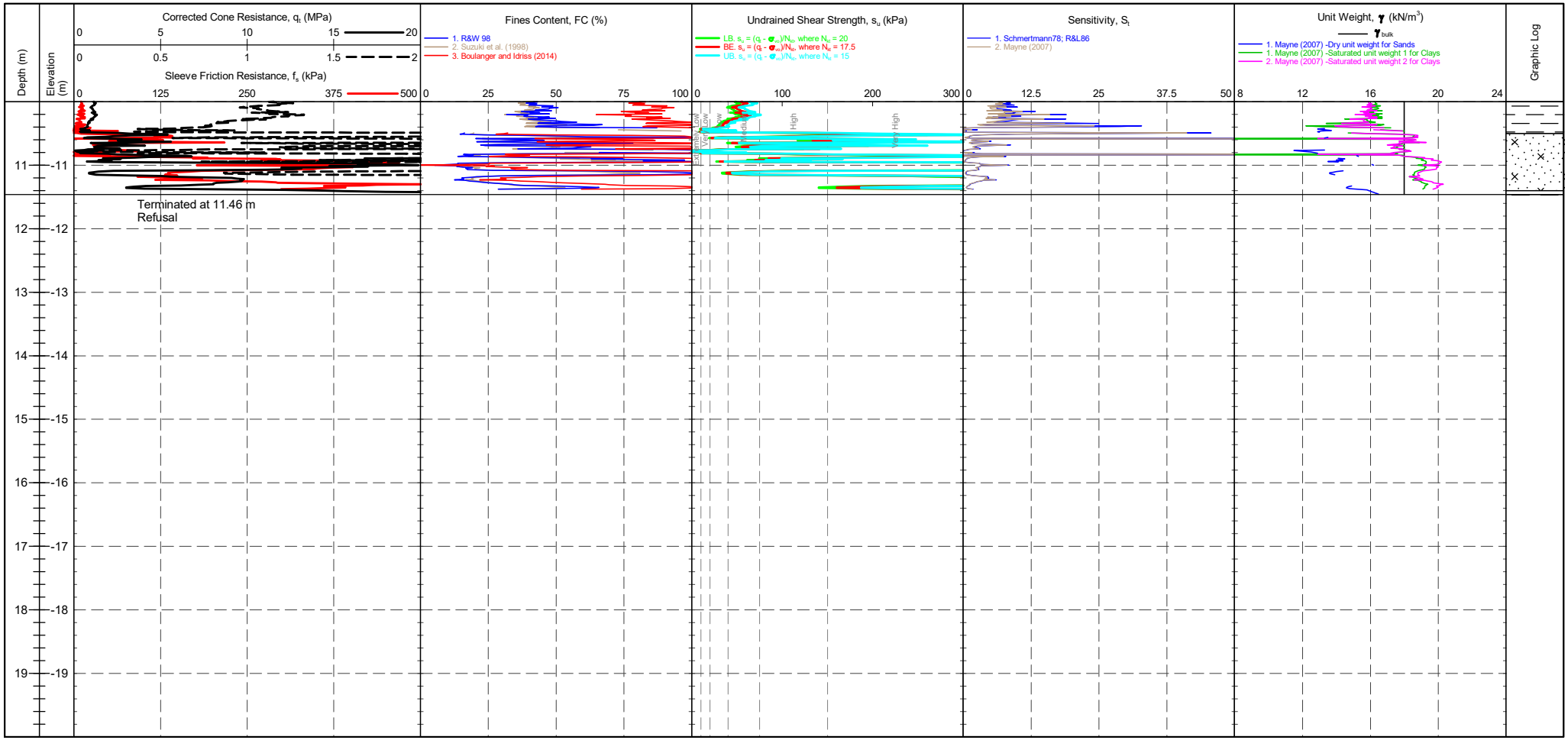
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT110**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	231 mV	238 mV	0.005 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	313 mV	331 mV	0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2504 mV	2479 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

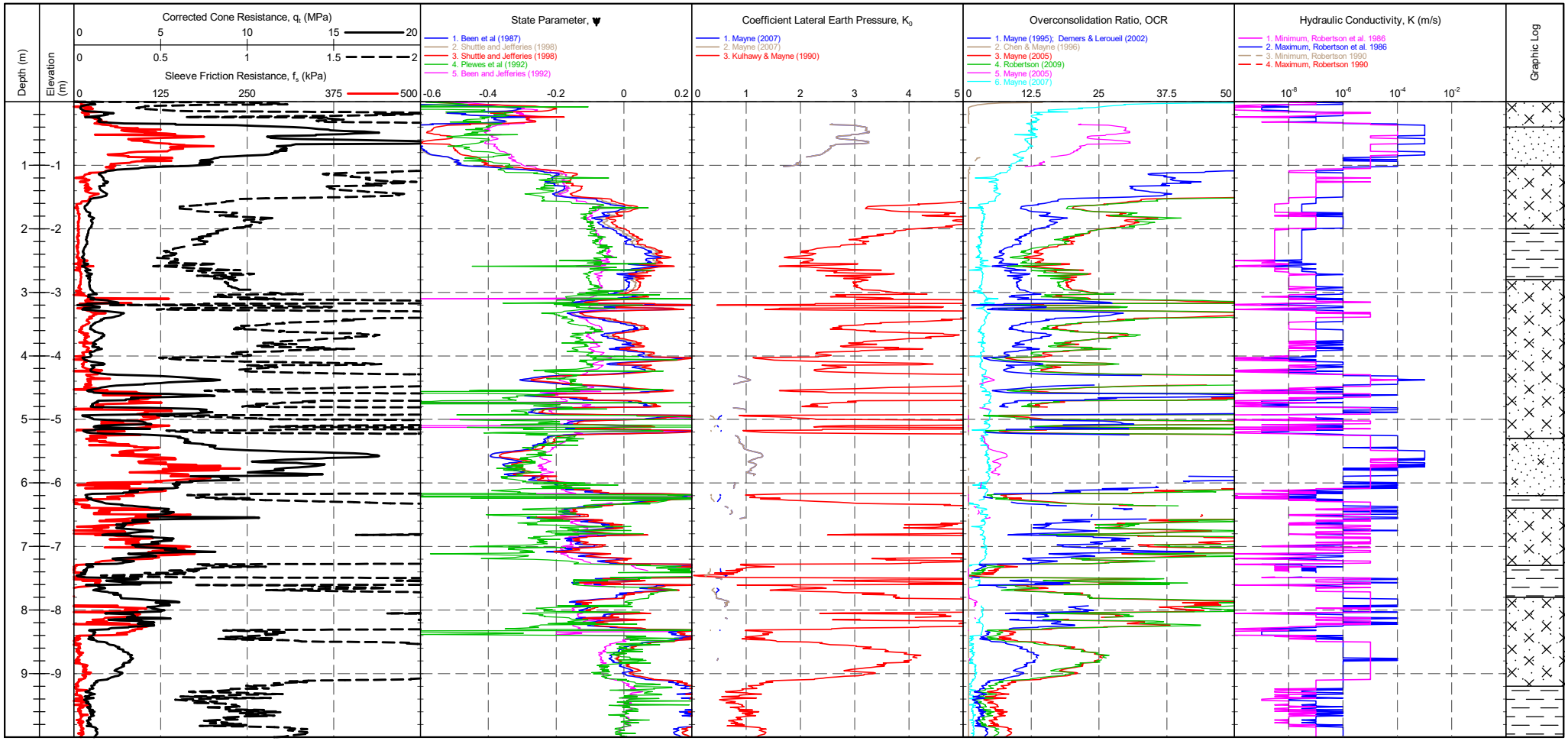
Dissipation Test

CPT LOG 04

Working with:

PointID **CPT110**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	231 mV	238 mV	0.005 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	313 mV	331 mV	0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2504 mV	2479 mV	

Groundwater Level

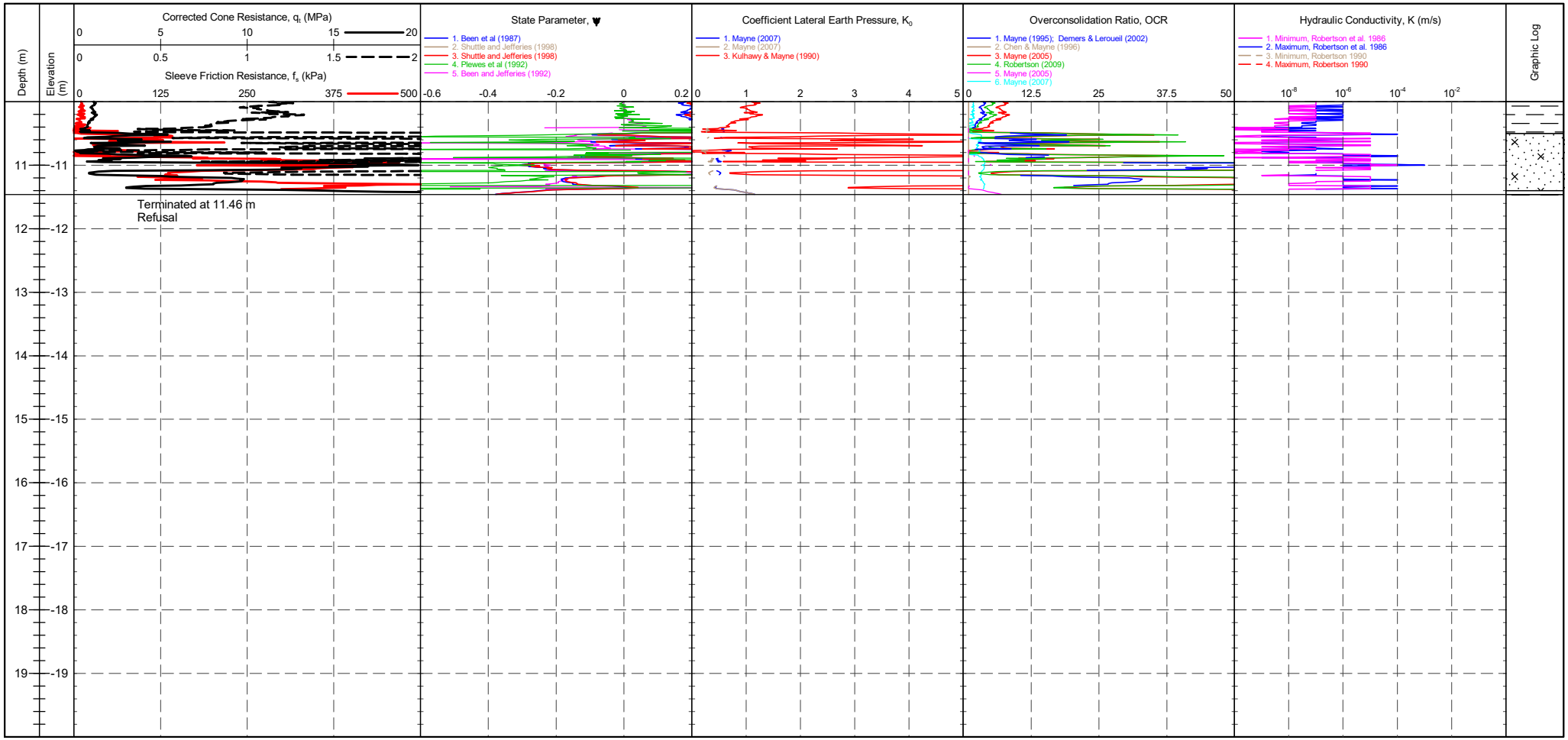
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT110**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	231 mV	238 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	313 mV	331 mV
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2504 mV	2479 mV

Difference
-0.011 MPa
0.005 kPa
0.004 kPa

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

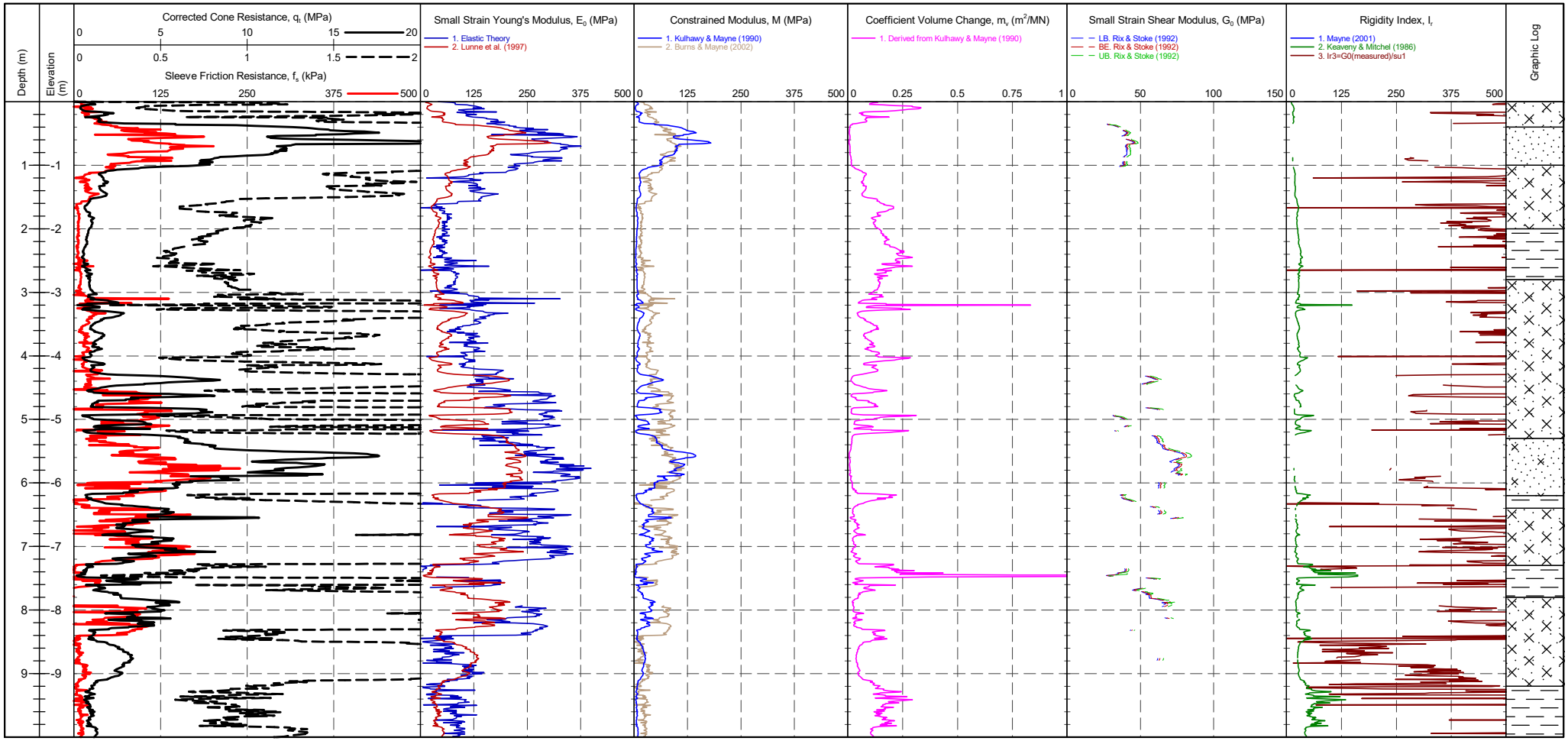
PointID
CPT110

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	231 mV	238 mV	0.005 kPa
Pore Pressure 2	313 mV	331 mV	0.004 kPa
X-Y Inclinometer	2504 mV	2479 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

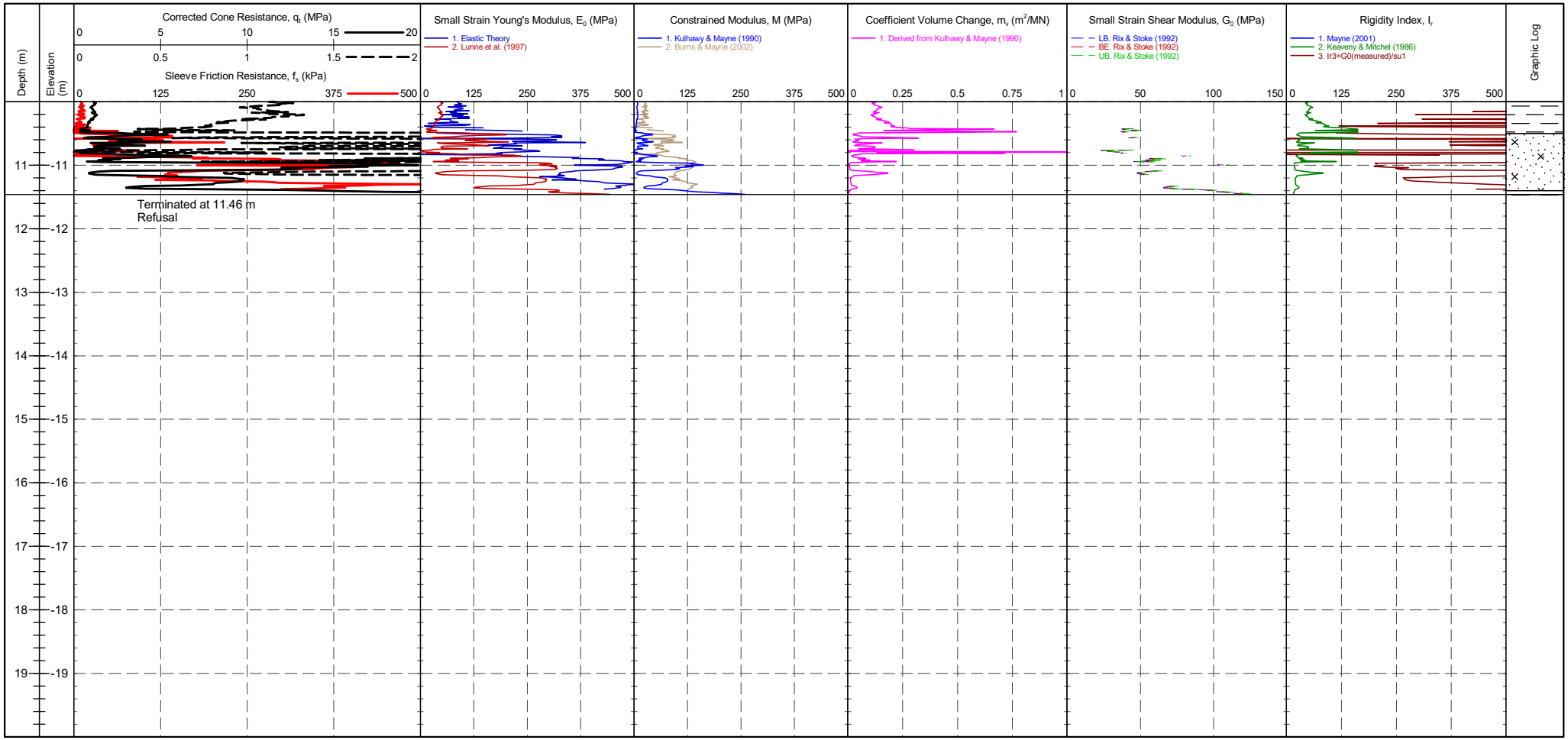
PointID
CPT110

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



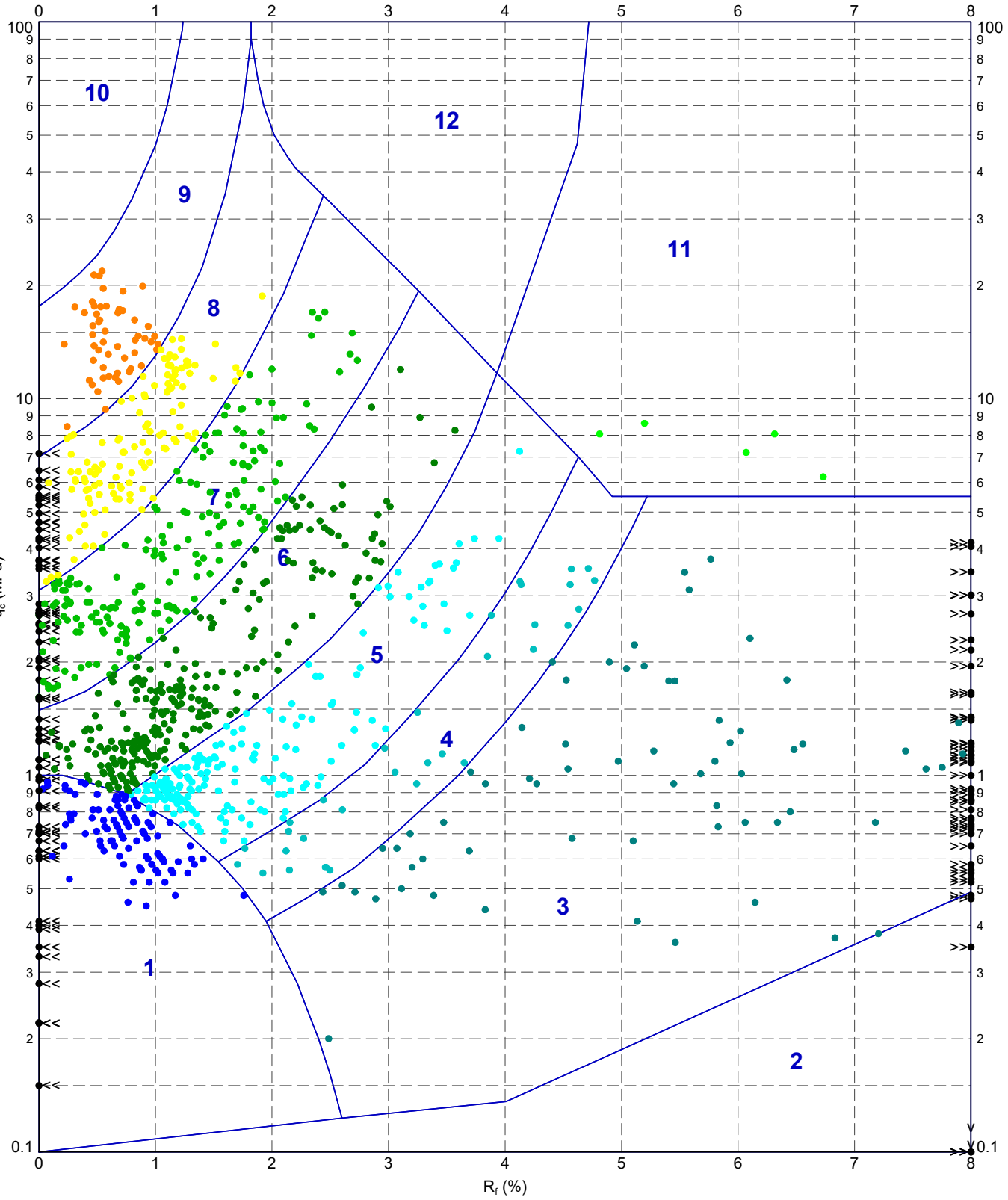
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	231 mV	238 mV	0.005 kPa
Pore Pressure 2	313 mV	331 mV	0.004 kPa
X-Y Inclinometer	2504 mV	2479 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE	E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT110	DRAWN	DATE 02/08/2024
		CHECKED	DATE 02/08/2024
		SCALE Not To Scale	A4
		PROJECT No 1240280	FIGURE No

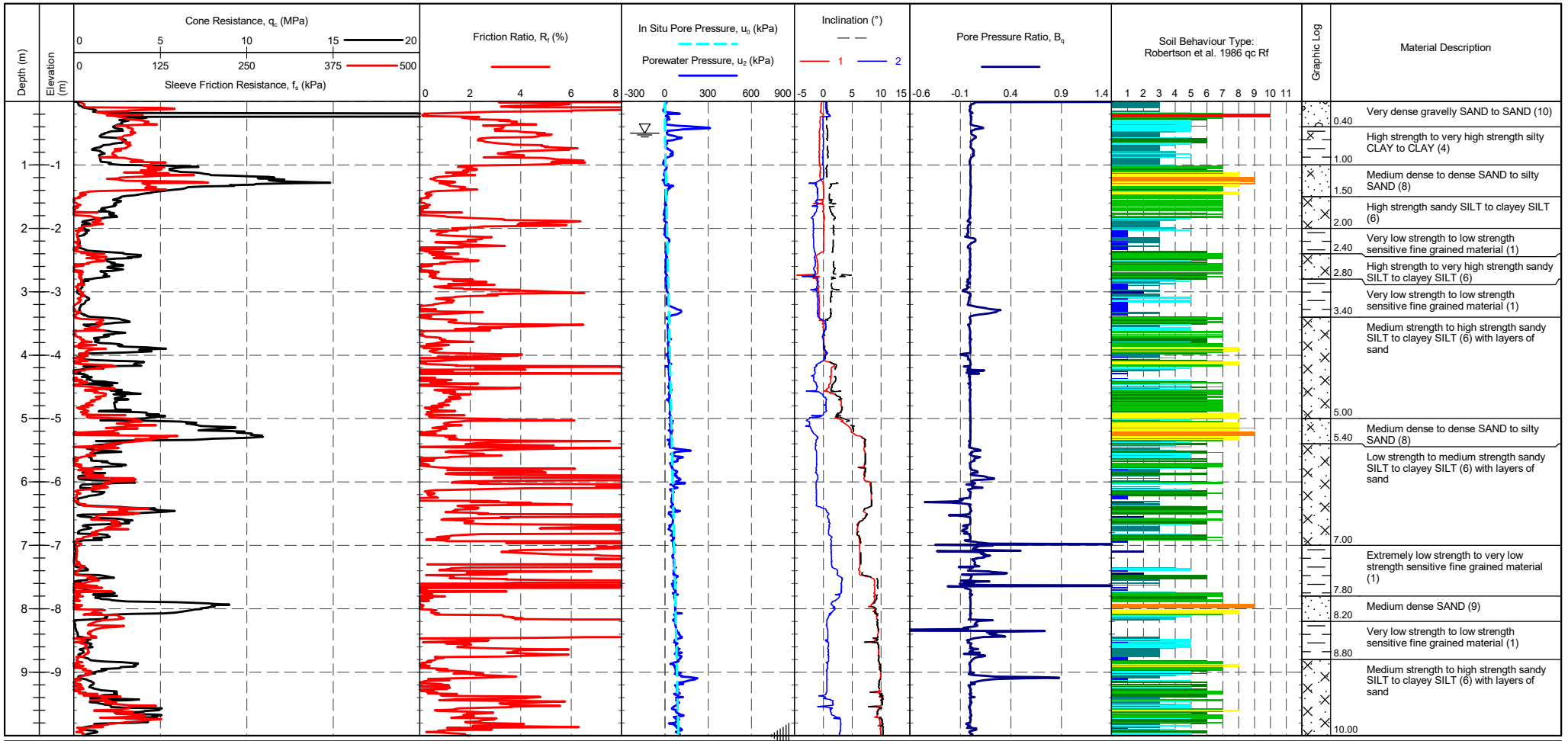
220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:03 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

PointID: **CPT111**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Sunny & Hot		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	300 mV	300 mV	0 MPa
Sleeve	254 mV	241 mV	-0.009 kPa
Pore Pressure 2	273 mV	394 mV	0.028 kPa
X-Y Inclinometer	2468 mV	2481 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

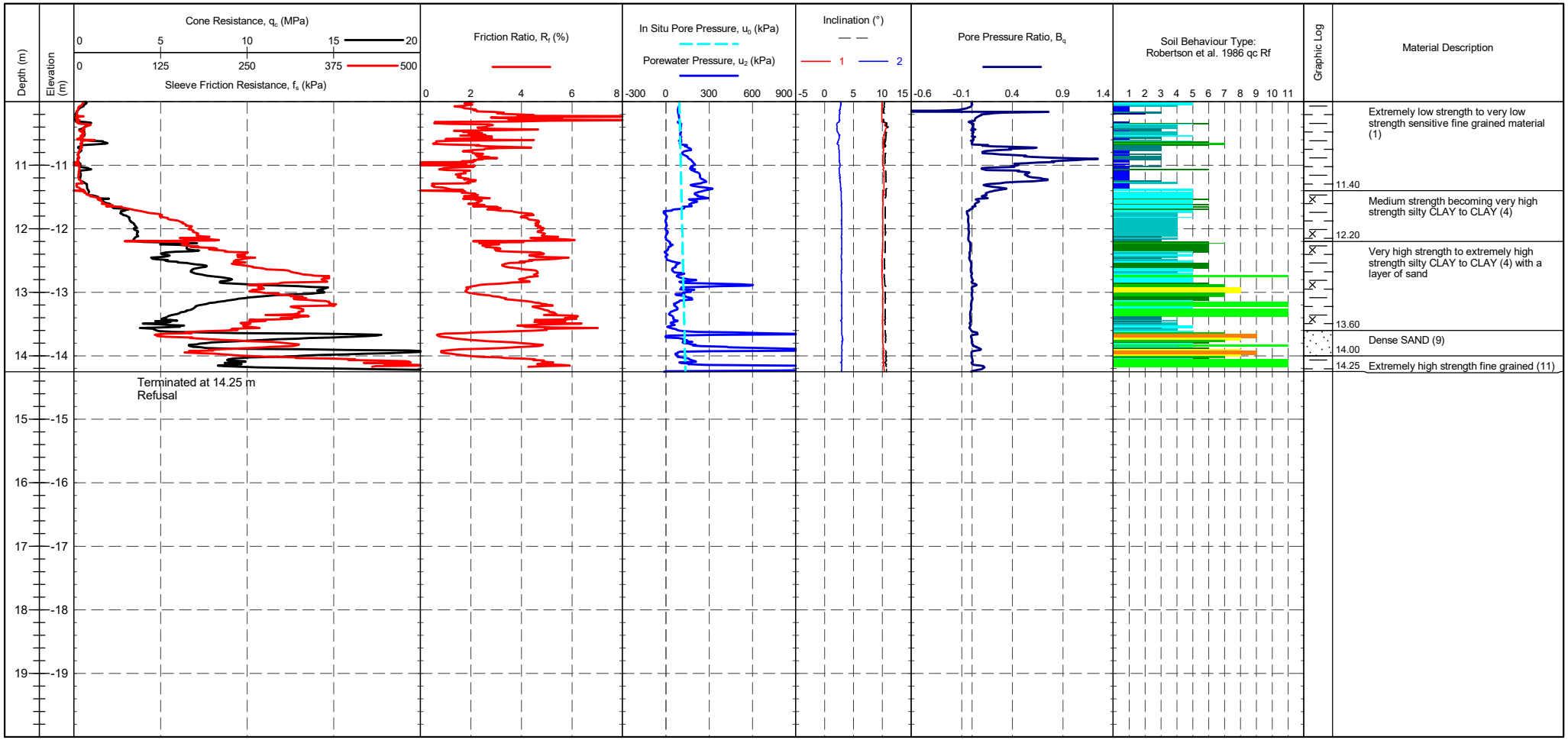
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT111**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	300 mV	300 mV	0 MPa
Sleeve	254 mV	241 mV	-0.009 kPa
Pore Pressure 2	273 mV	394 mV	0.028 kPa
X-Y Inclinometer	2468 mV	2481 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

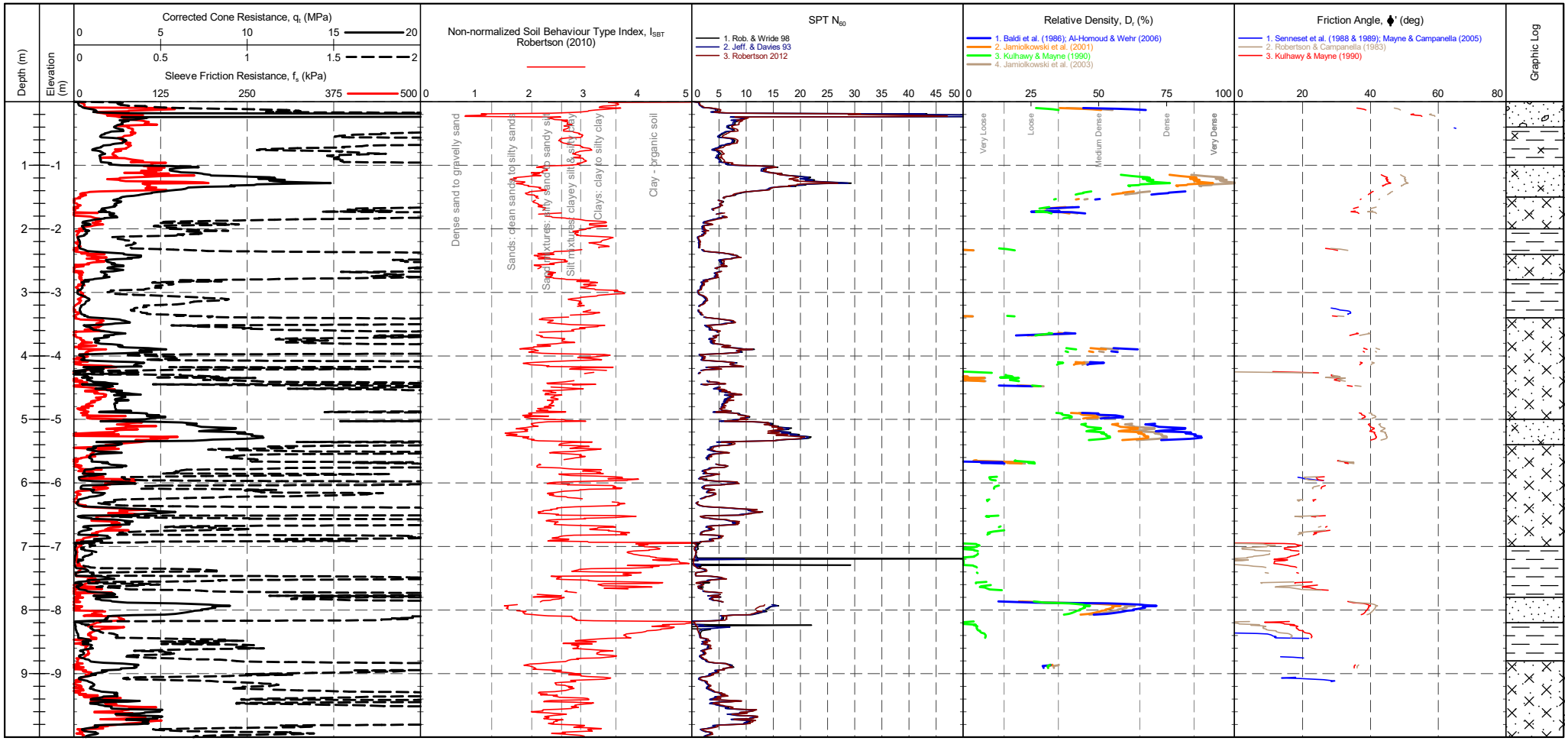
Dissipation Test

CPT LOG 02

Working with:

PointID: **CPT111**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	300 mV	300 mV
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	254 mV	241 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	273 mV	394 mV
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2468 mV	2481 mV

Difference
0 MPa
-0.009 kPa
0.028 kPa

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

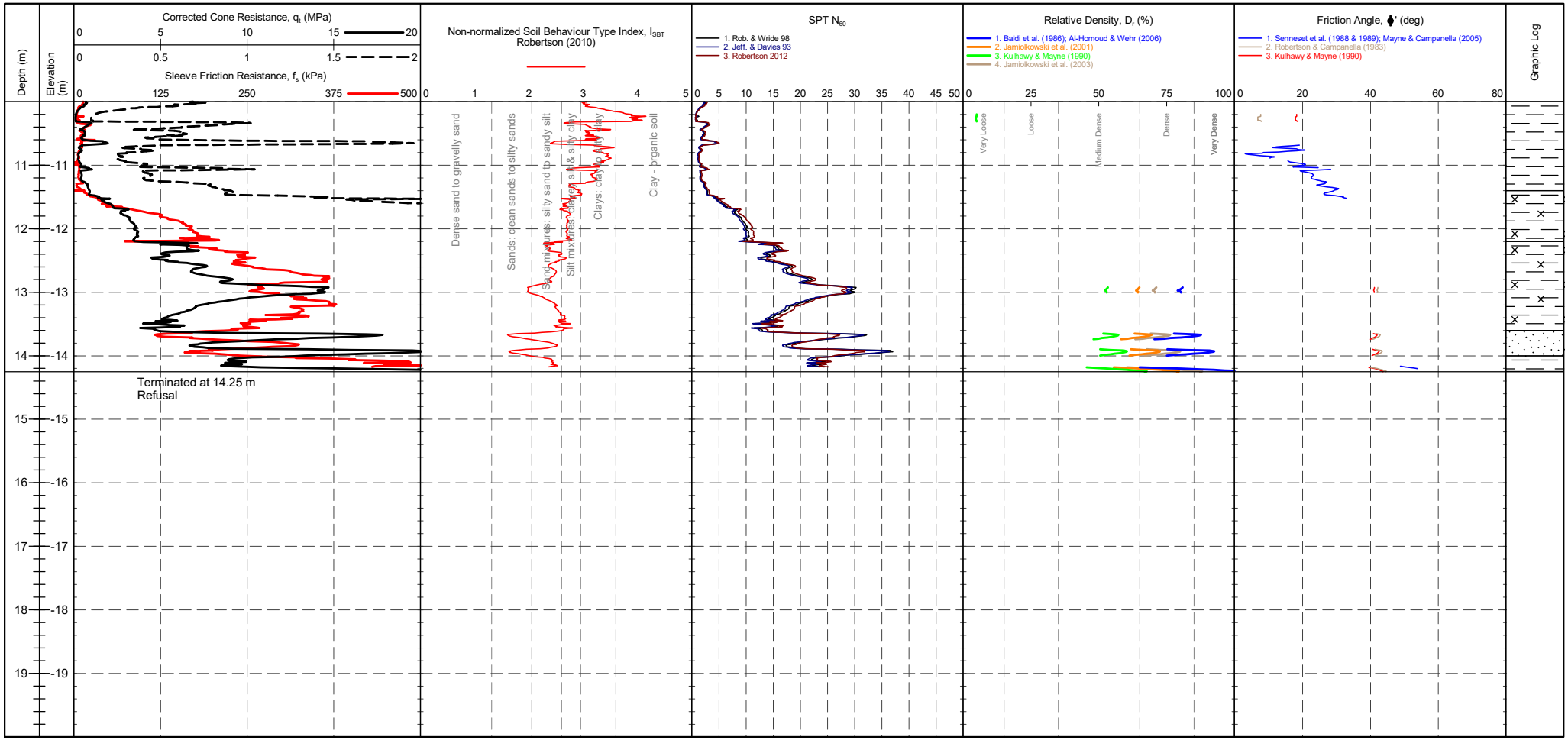
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 02

PointID: **CPT111**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	300 mV	300 mV
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	254 mV	241 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	273 mV	394 mV
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2468 mV	2481 mV

Transducer	Difference
Tip	0 MPa
Sleeve	-0.009 kPa
Pore Pressure 2	0.028 kPa

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

Working with:

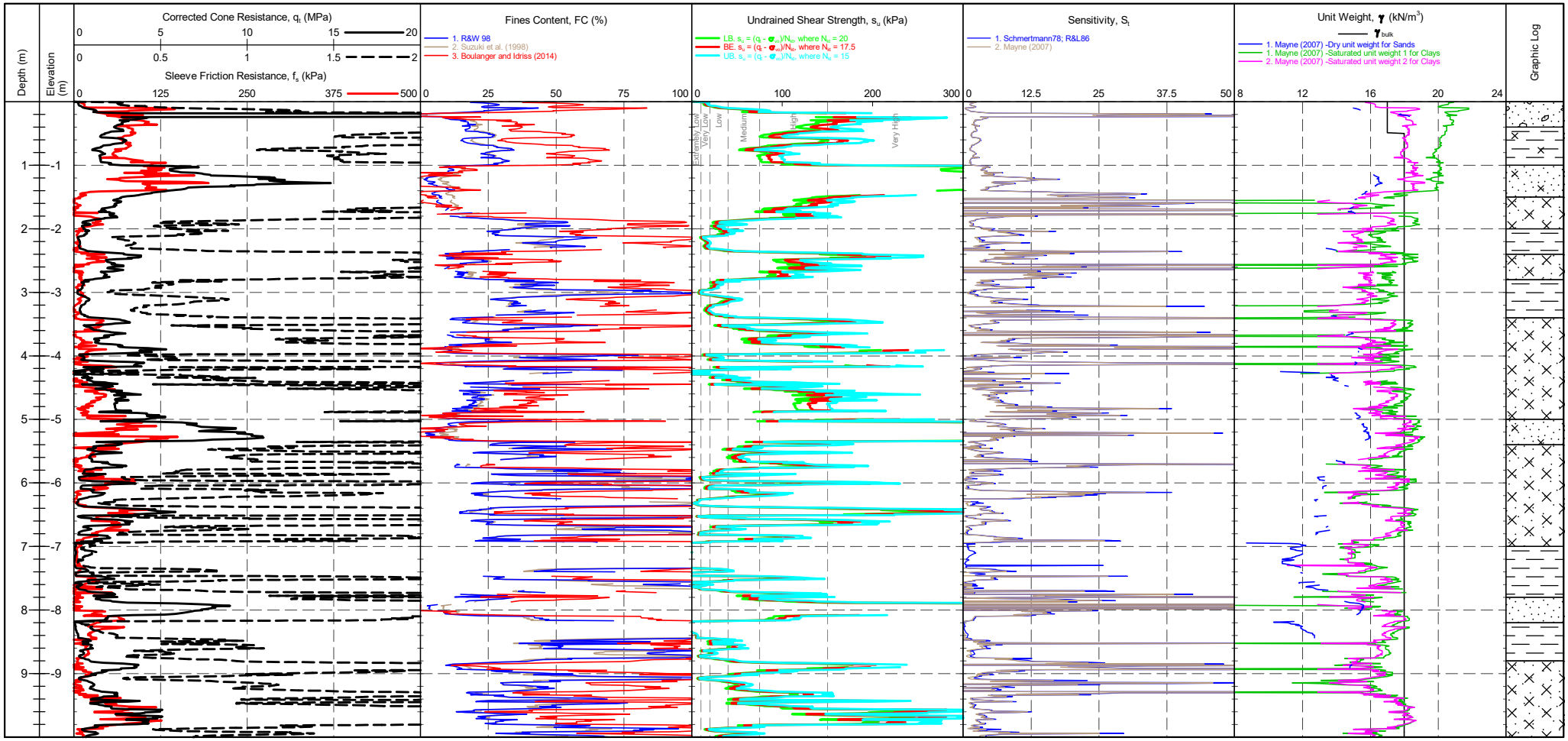
PointID **CPT111**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer	300 mV	300 mV	0 MPa
Tip	254 mV	241 mV	-0.009 kPa
Sleeve	273 mV	394 mV	0.028 kPa
Pore Pressure 2	2468 mV	2481 mV	
X-Y Inclinometer			

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

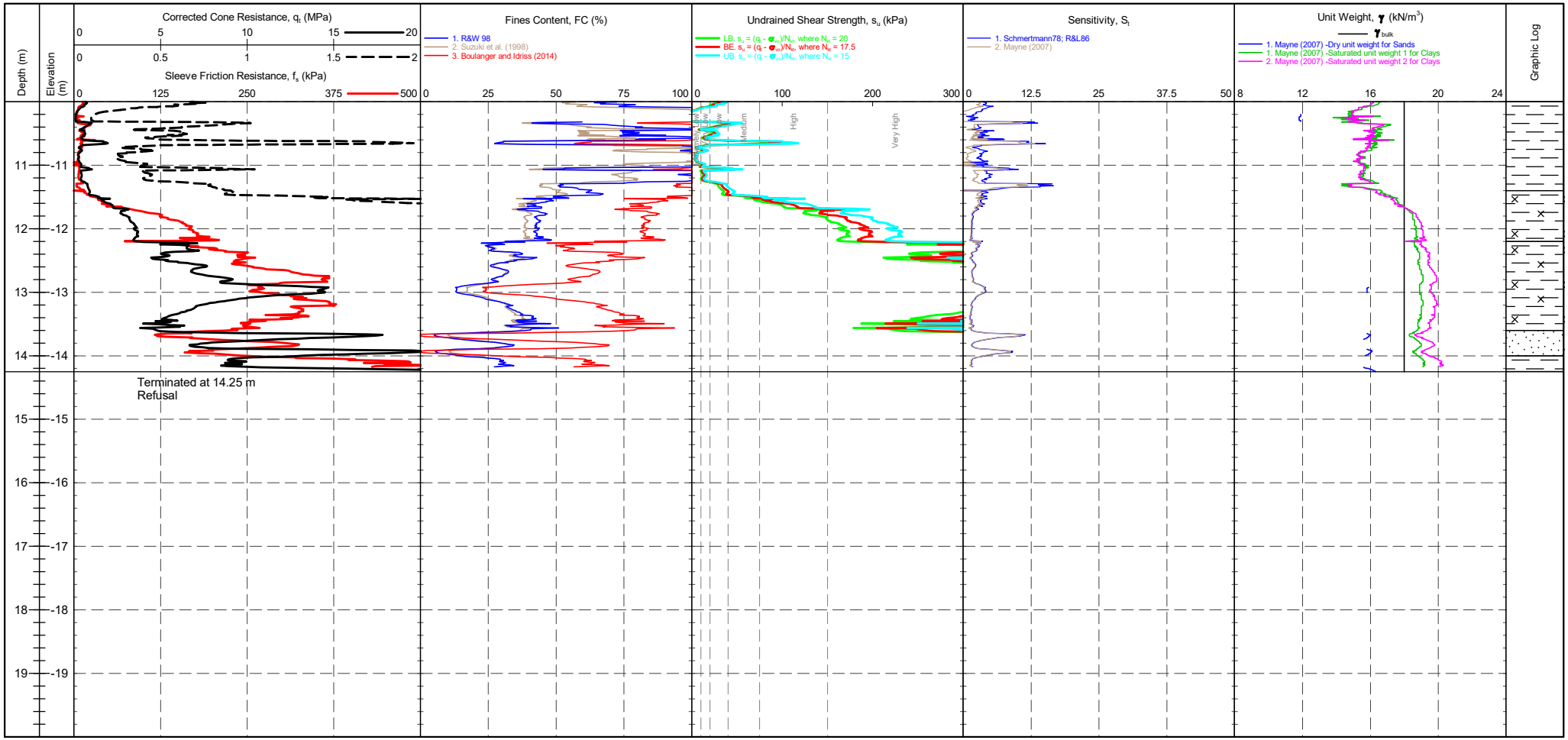
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT111**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	300 mV	300 mV
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	254 mV	241 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	273 mV	394 mV
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2468 mV	2481 mV

Difference
0 MPa
-0.009 kPa
0.028 kPa

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

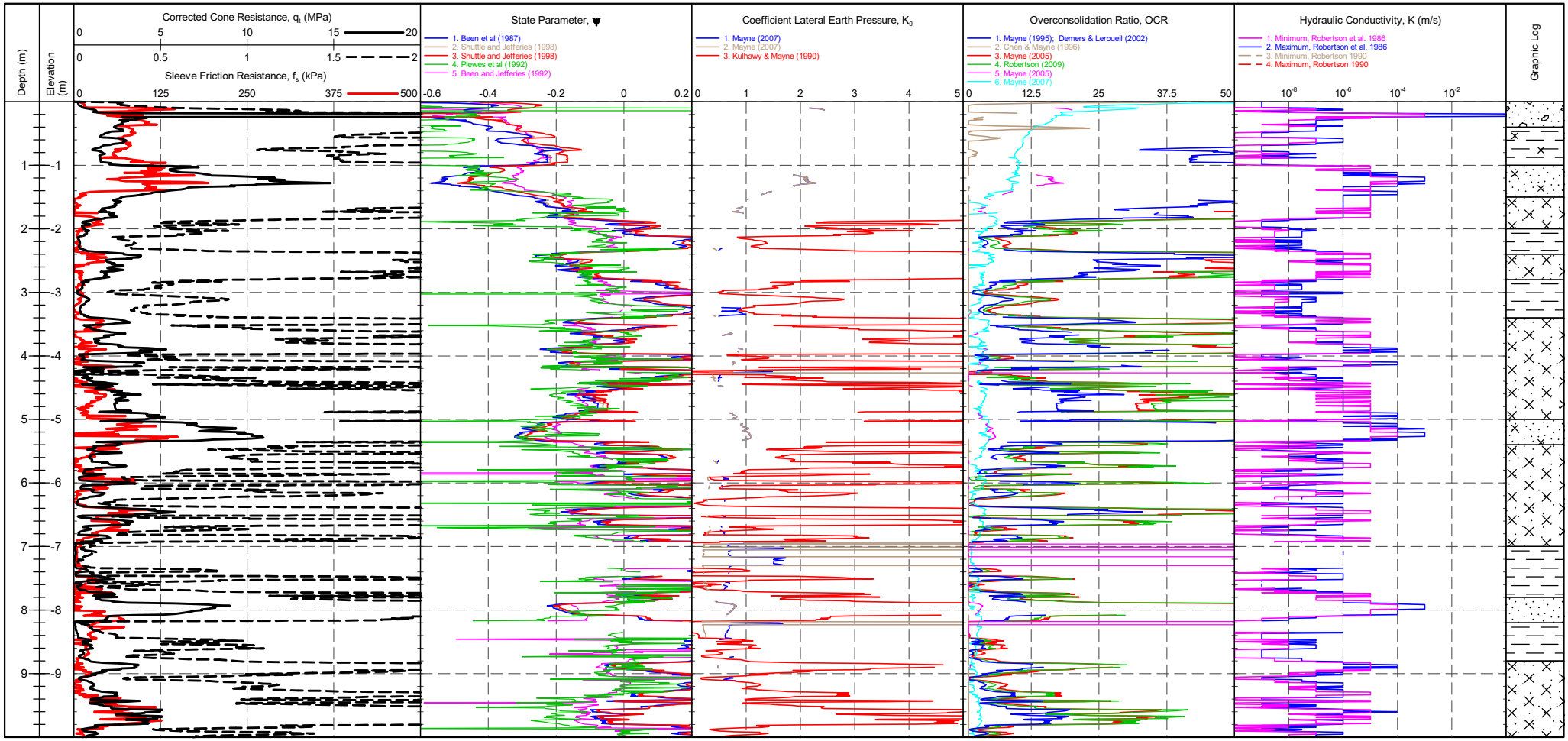
PointID: **CPT111**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	300 mV	300 mV	0 MPa
Sleeve	254 mV	241 mV	-0.009 kPa
Pore Pressure 2	273 mV	394 mV	0.028 kPa
X-Y Inclinometer	2468 mV	2481 mV	

Groundwater Level

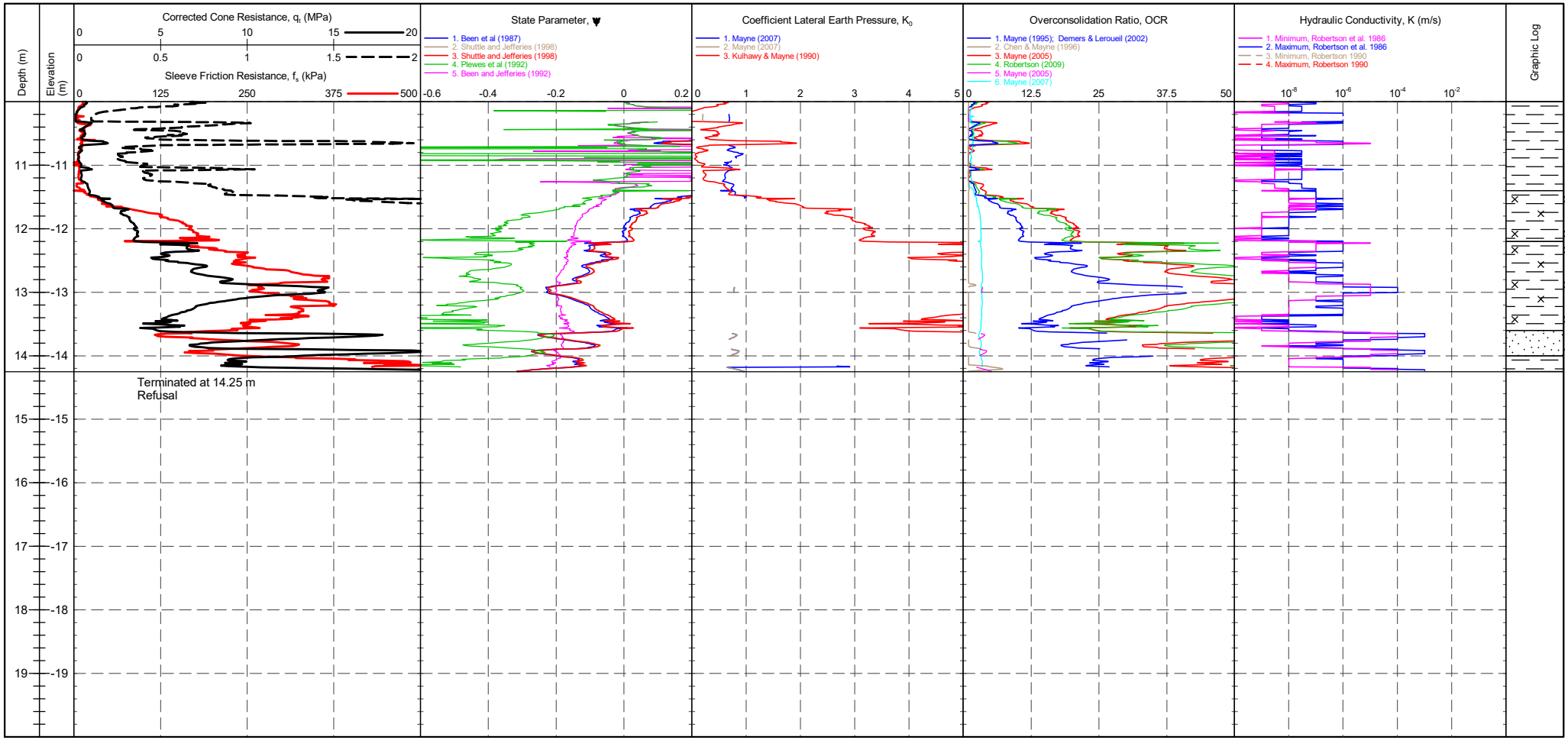
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT111**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 15/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	300 mV	300 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	254 mV	241 mV	-0.009 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	273 mV	394 mV	0.028 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2468 mV	2481 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with:

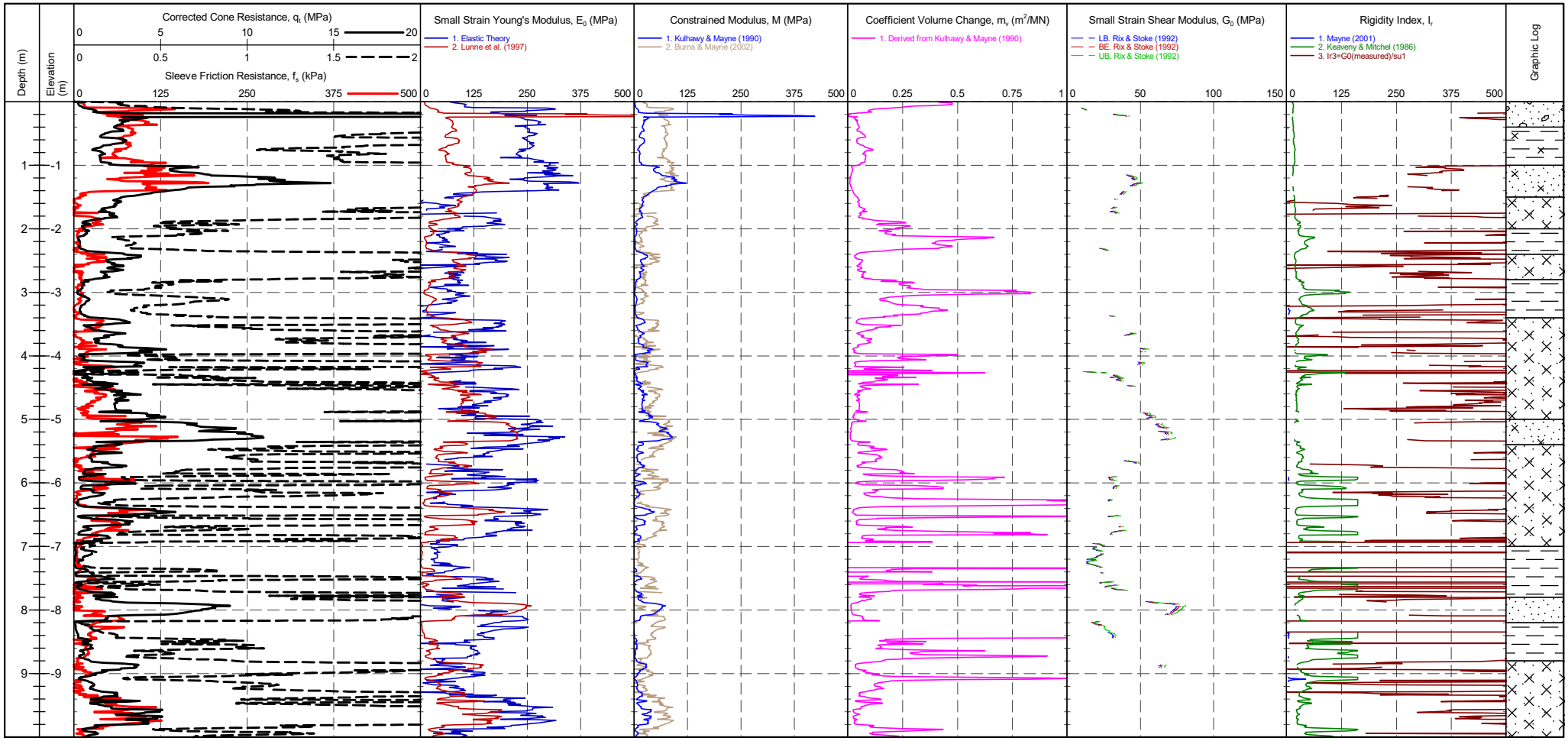
PointID
CPT111

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre / Post / Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	300 mV / 300 mV / 0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	254 mV / 241 mV / -0.009 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	273 mV / 394 mV / 0.028 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2468 mV / 2481 mV

Groundwater Level

Dissipation Test

CPT LOG 05

Working with:

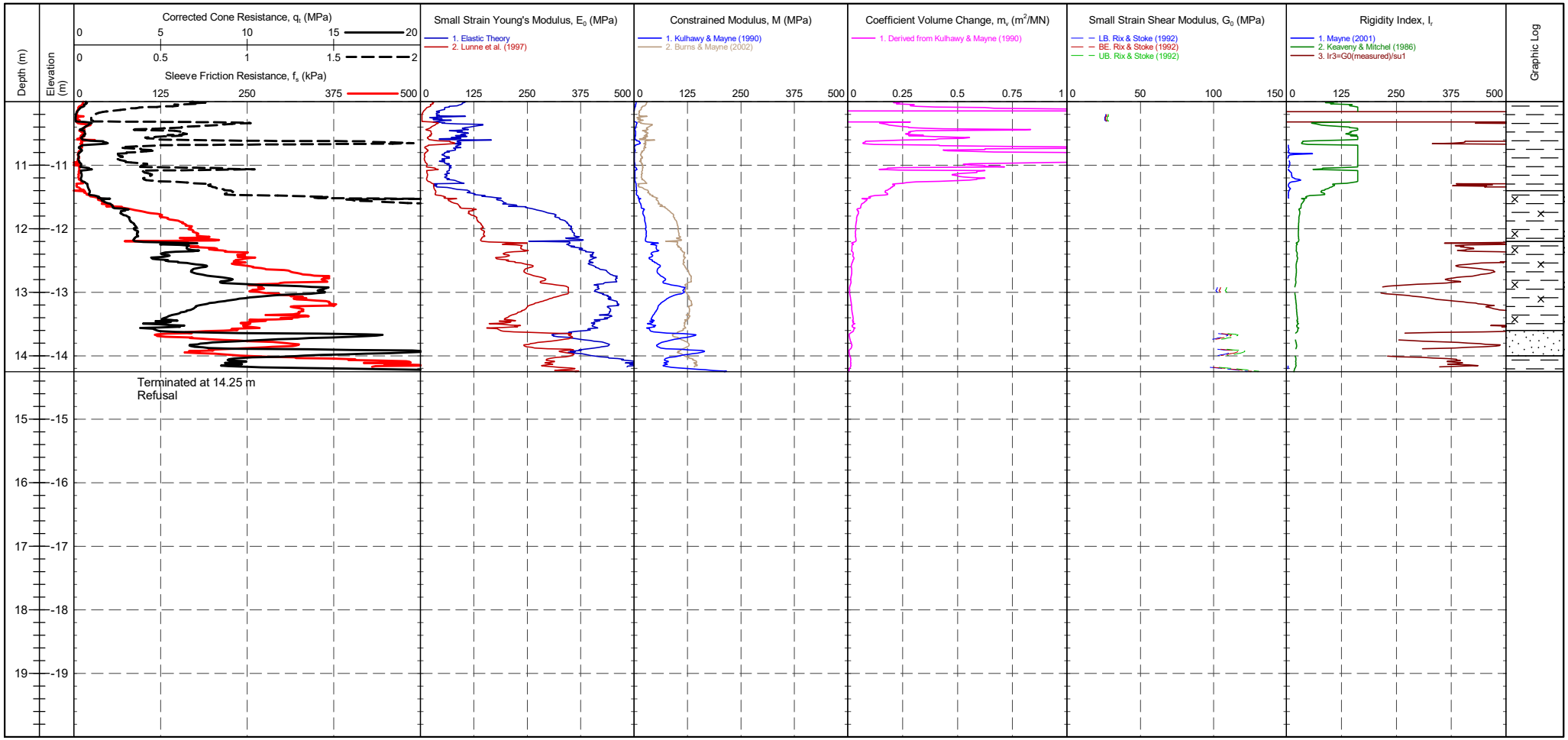
PointID
CPT111

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022

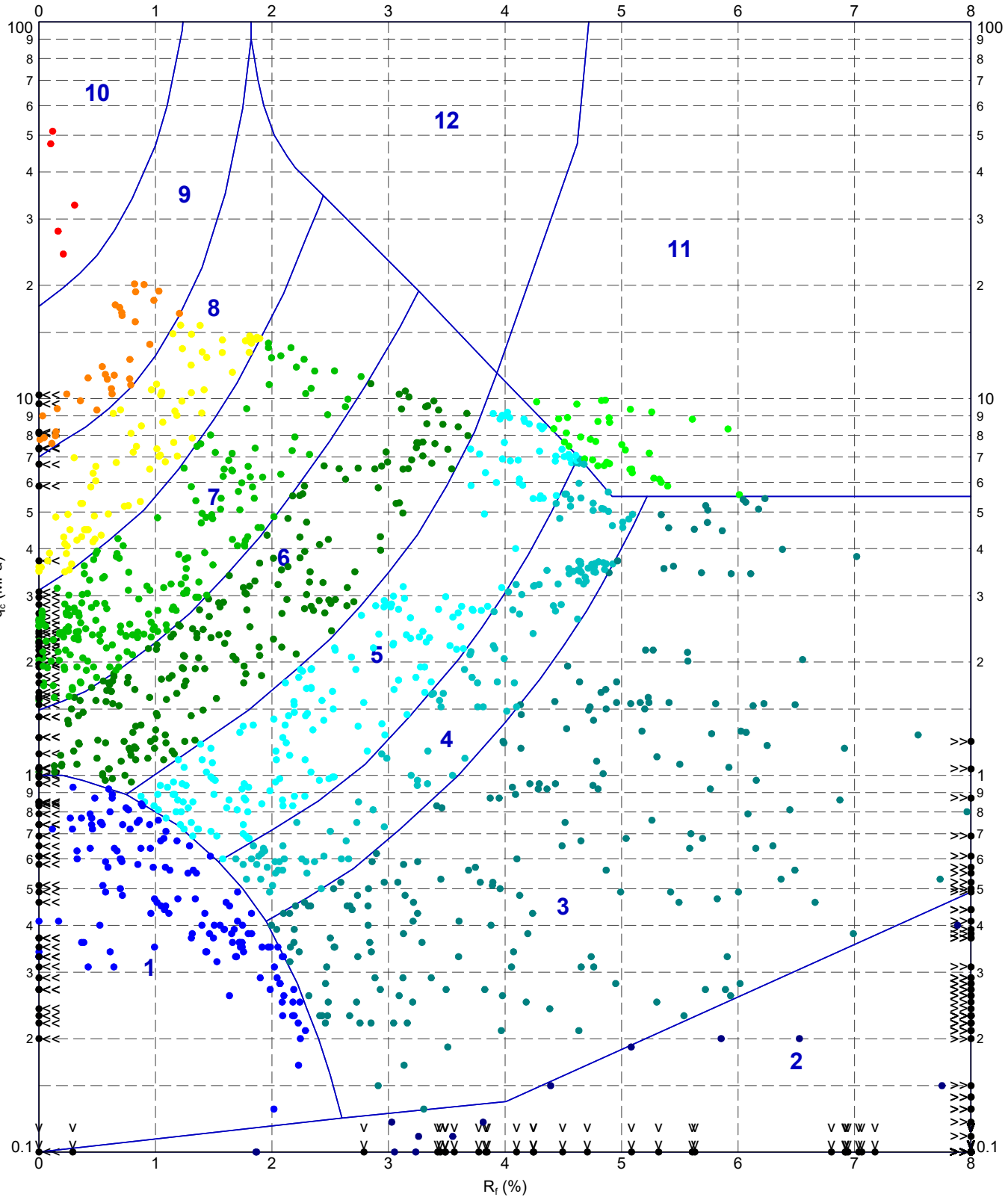


CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

Transducer	Pre	Post	Difference
Tip	300 mV	300 mV	0 MPa
Sleeve	254 mV	241 mV	-0.009 kPa
Pore Pressure 2	273 mV	394 mV	0.028 kPa
X-Y Inclinometer	2468 mV	2481 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material	4 - Silty CLAY to CLAY	7 - Silty SAND to sandy SILT	10 - Gravelly SAND to SAND
2 - Organic material	5 - Clayey SILT to silty CLAY	8 - SAND to silty SAND	11 - Very stiff fine grained
3 - CLAY	6 - Sandy SILT to clayey SILT	9 - SAND	12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT111

DRAWN	DATE 02/08/2024	
CHECKED	DATE 02/08/2024	
SCALE Not To Scale		A4
PROJECT No 1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:04 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prg: In Situ SI 2.02.0 2017-07-10

DISSIPATION TEST

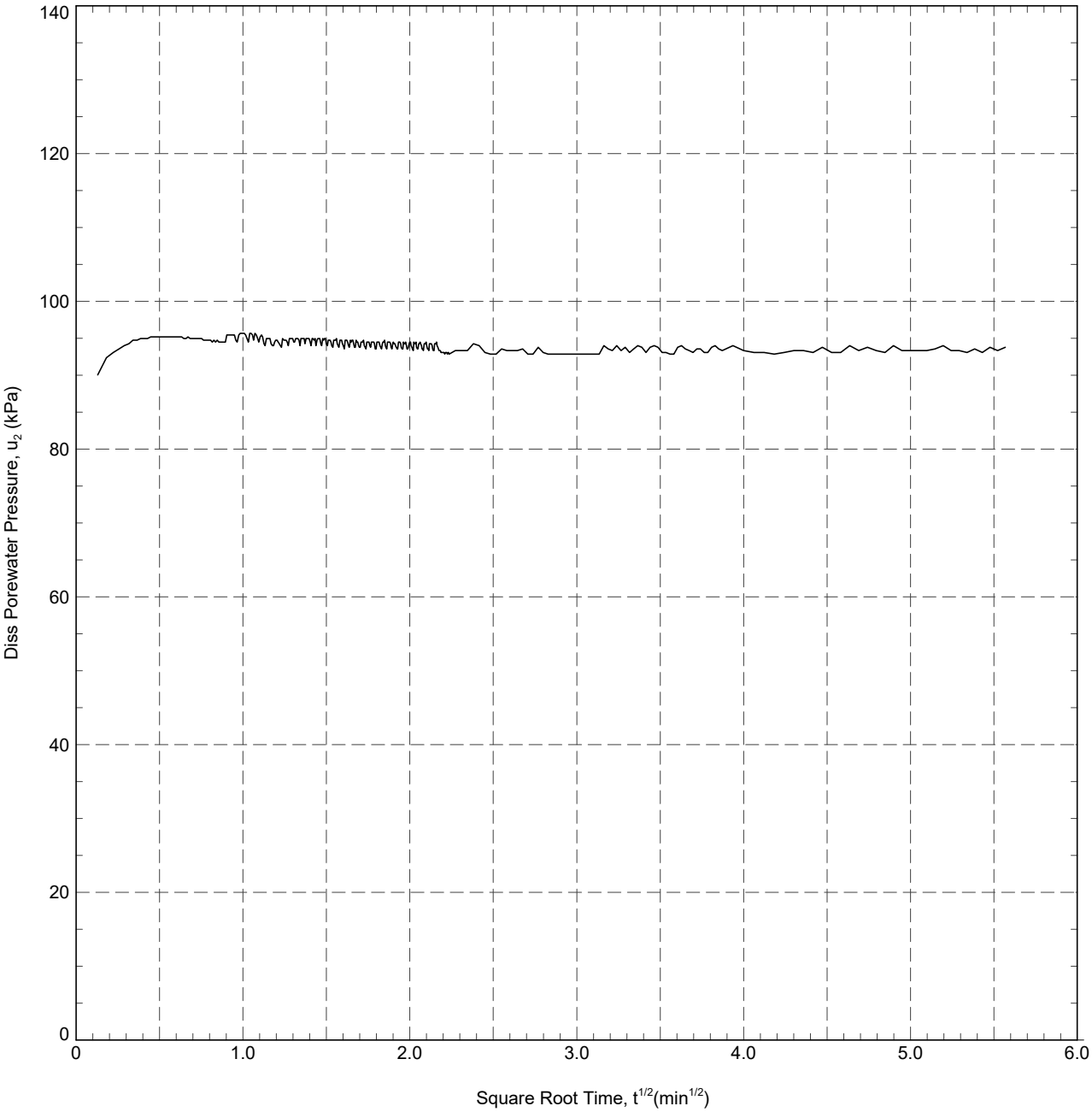
IN SITU SITE INVESTIGATION

Working with: e3p

Test ID

CPT111 - 10.00 m

CLIENT	: E3P	AREA	: Ryebank Fields Chorlton	SHEET	: 1 OF 1
ENGINEER	: Georgia Calvert	EASTING	: 0.0 m	STATUS	: Final
PROJECT	: Ryebank Fields	NORTHING	: 0.0 m	DATE	: 15/07/24
LOCATION	: Chorlton	COORD. SYS.:			
PROJECT No.	: 1240280	ELEVATION	: 0.00 m		



Final Pore Pressure: 93.8 kPa

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	23/07/2024
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	23/07/2024
CONE ID	: S15-CFIP.2145	APPROVED BY	: DW	DATE:	23/07/2024
OPERATOR	: RS				

REMARK
T50 not reached.

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:04 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

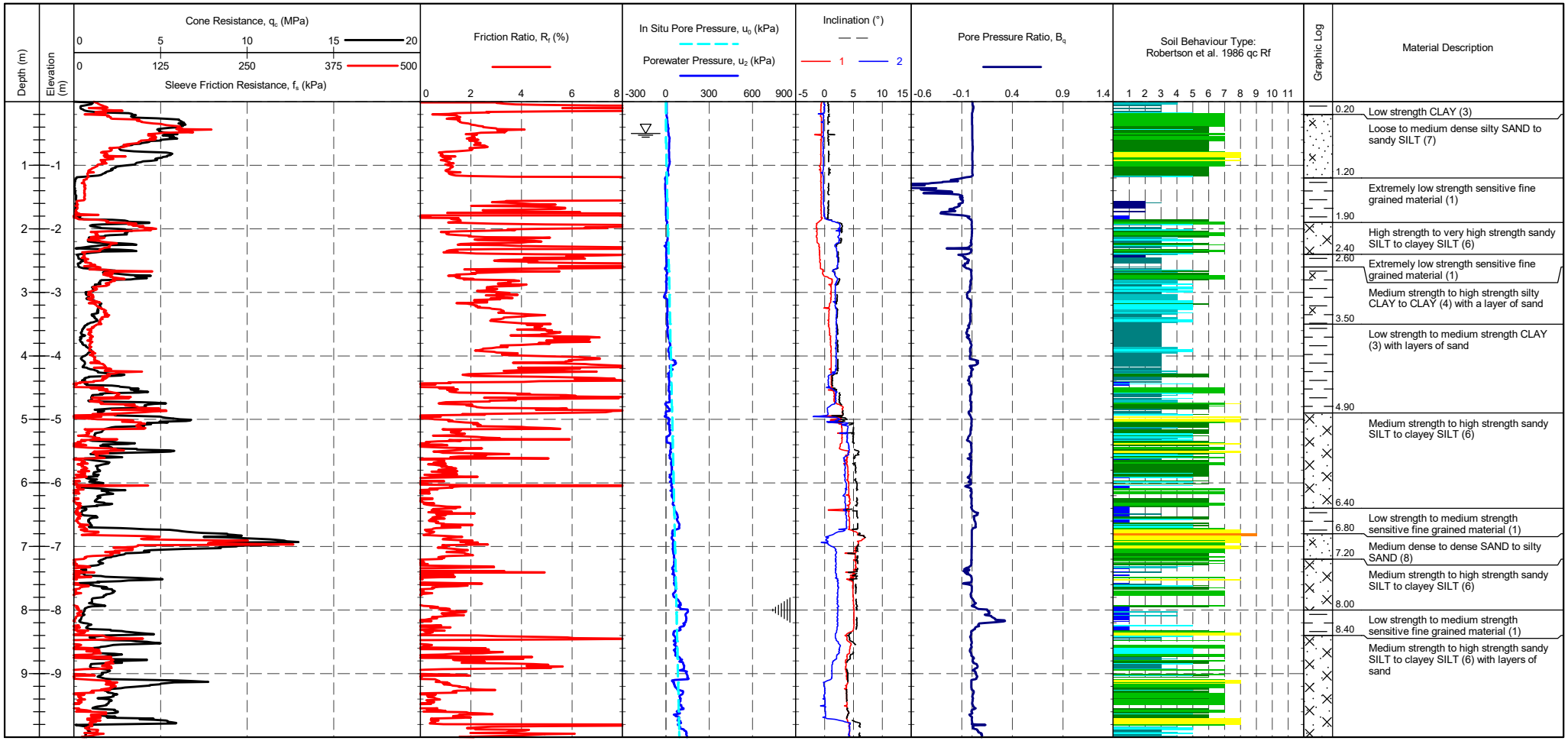
PointID: **CPT112**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CALIBRATION DATE	: 31/10/2023	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	267 mV	262 mV	-0.057 MPa
Sleeve	135 mV	95 mV	-0.03 kPa
Pore Pressure 2	251 mV	317 mV	0.017 kPa
X-Y Inclinometer	2395 mV	2387 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

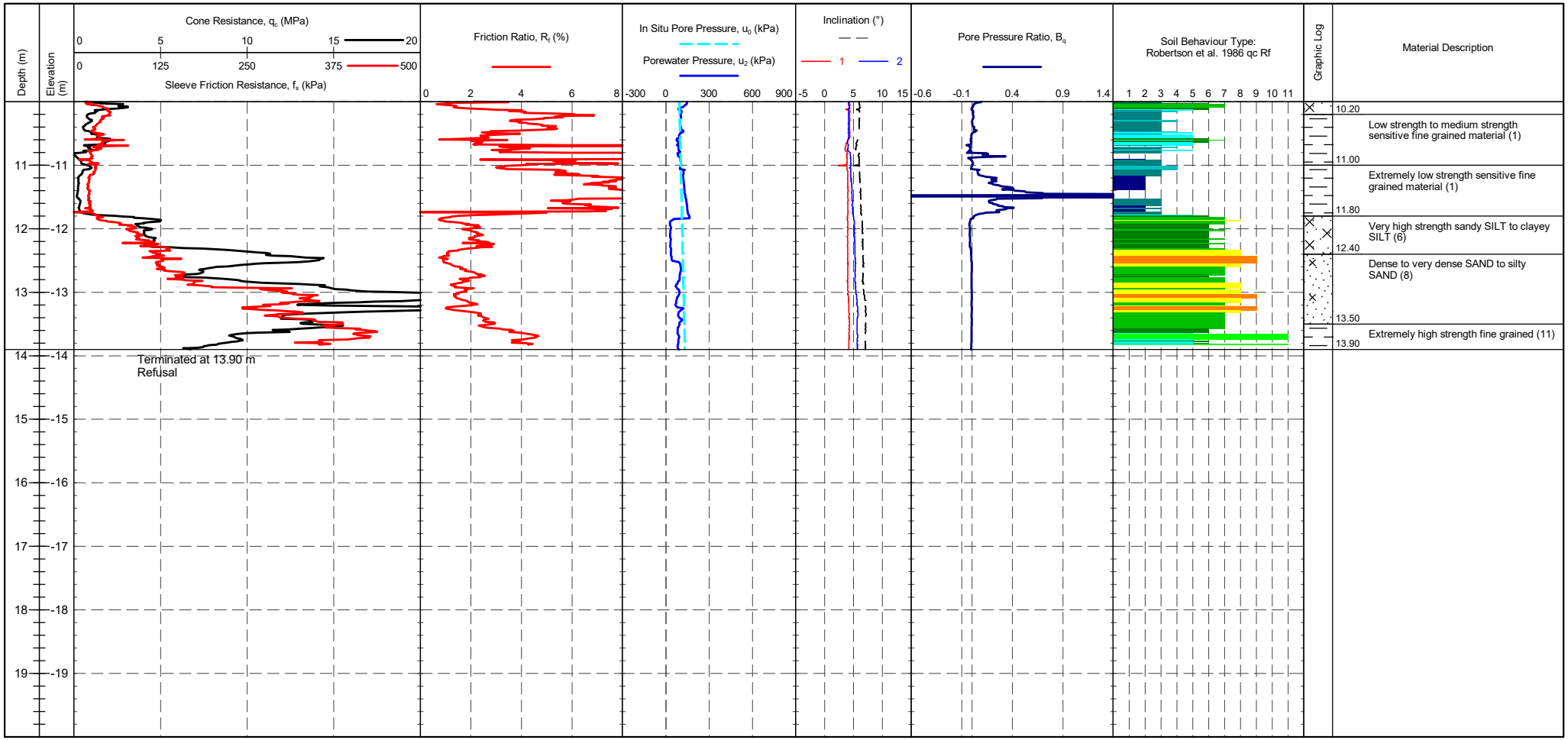
Groundwater Level
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT112**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CALIBRATION DATE	: 31/10/2023	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	267 mV	262 mV	-0.057 MPa
Sleeve	135 mV	95 mV	-0.03 kPa
Pore Pressure 2	251 mV	317 mV	0.017 kPa
X-Y Inclinometer	2395 mV	2387 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

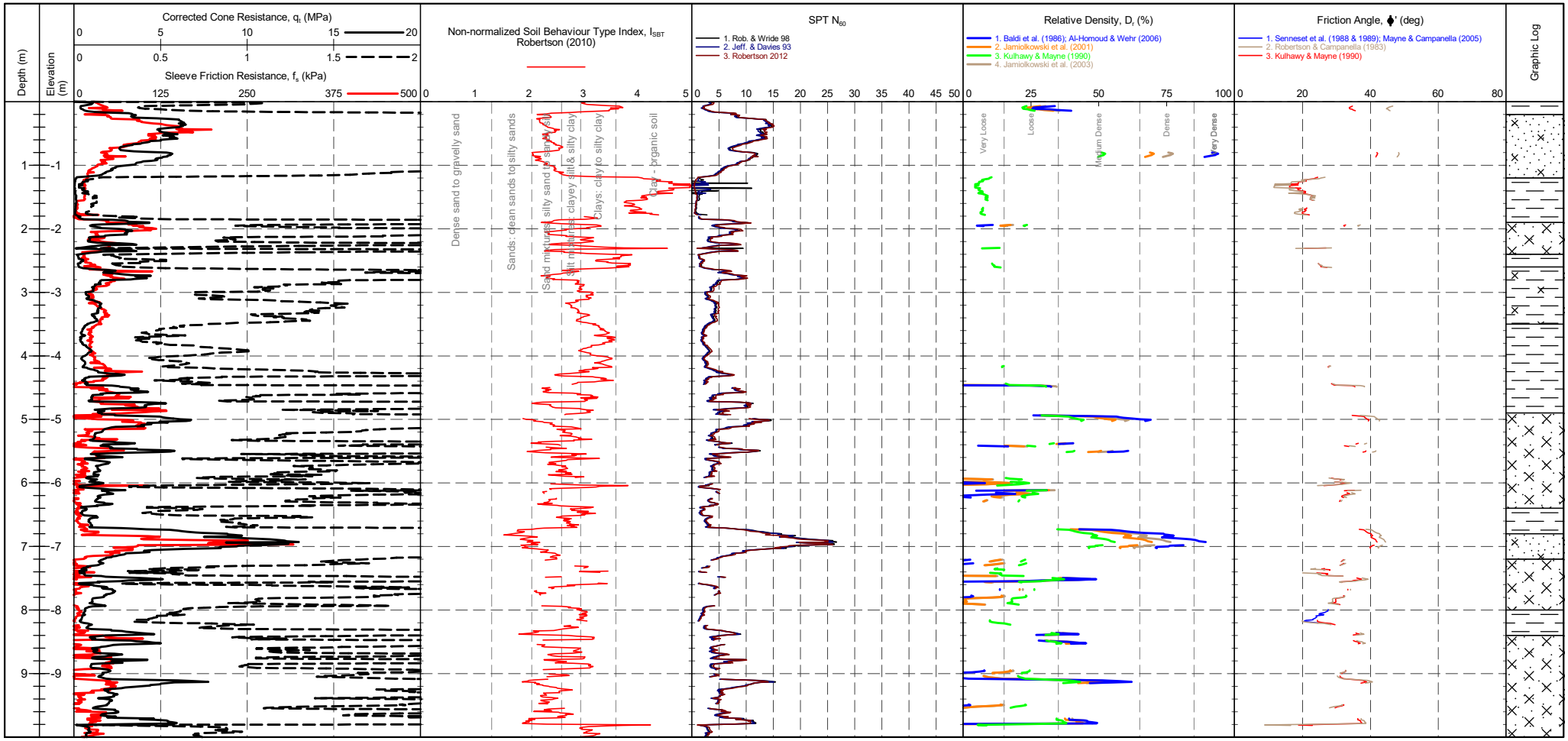
PointID
CPT112

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	267 mV	262 mV	-0.057 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	135 mV	95 mV	-0.03 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	251 mV	317 mV	0.017 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2395 mV	2387 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

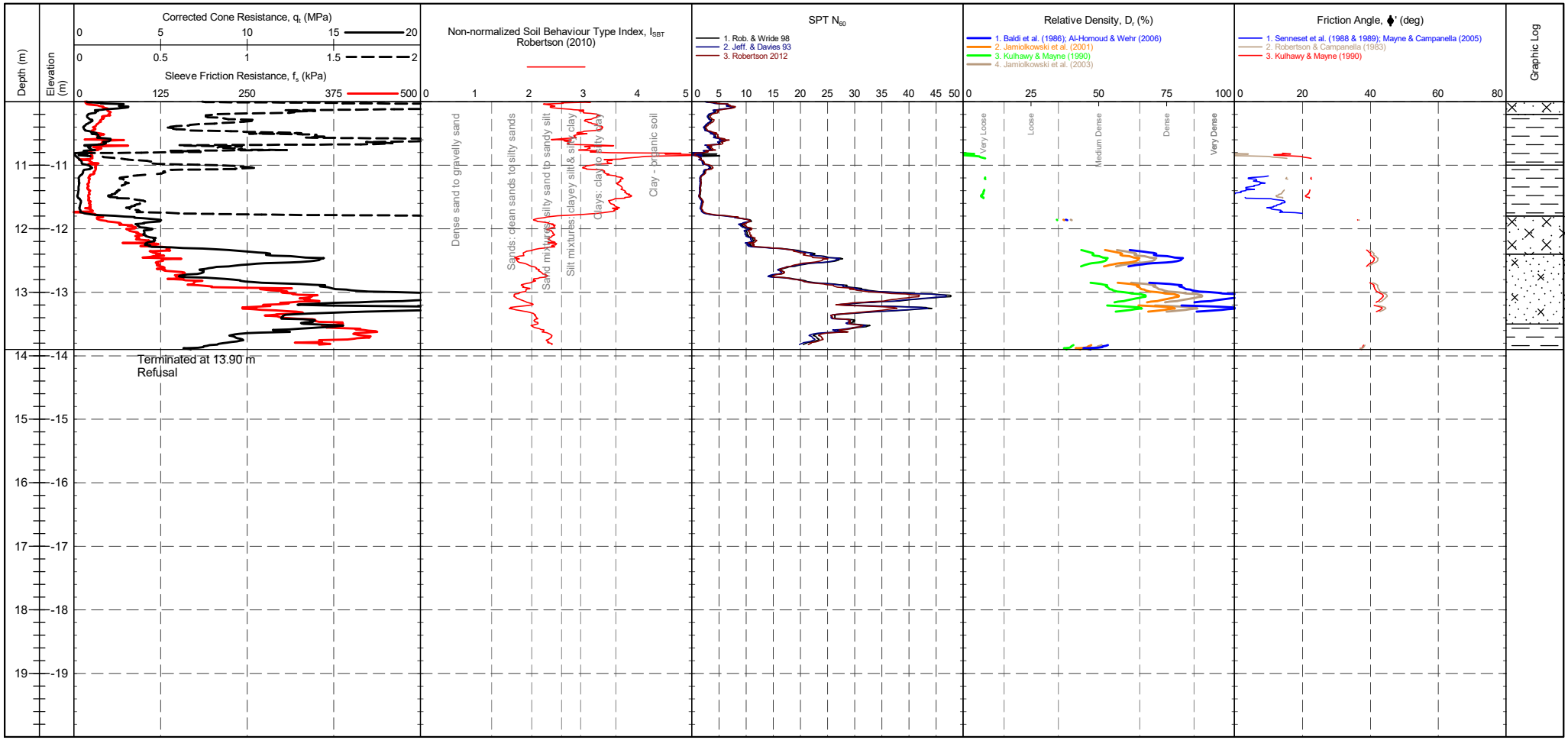
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 02

PointID: **CPT112**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	267 mV	262 mV	-0.057 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	135 mV	95 mV	-0.03 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	251 mV	317 mV	0.017 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2395 mV	2387 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

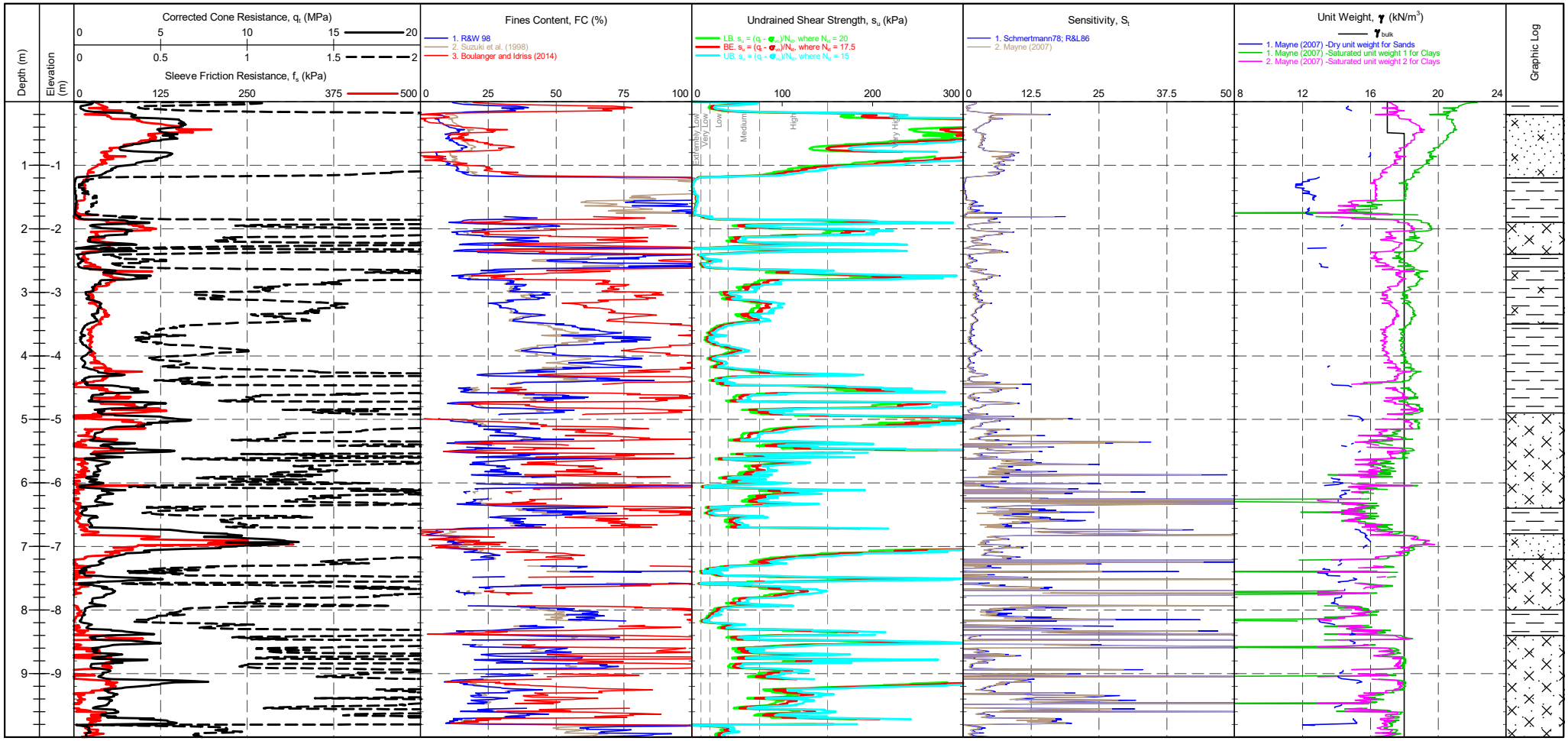
PointID: **CPT112**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	267 mV	262 mV	-0.057 MPa
Sleeve	135 mV	95 mV	-0.03 kPa
Pore Pressure 2	251 mV	317 mV	0.017 kPa
X-Y Inclinometer	2395 mV	2387 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

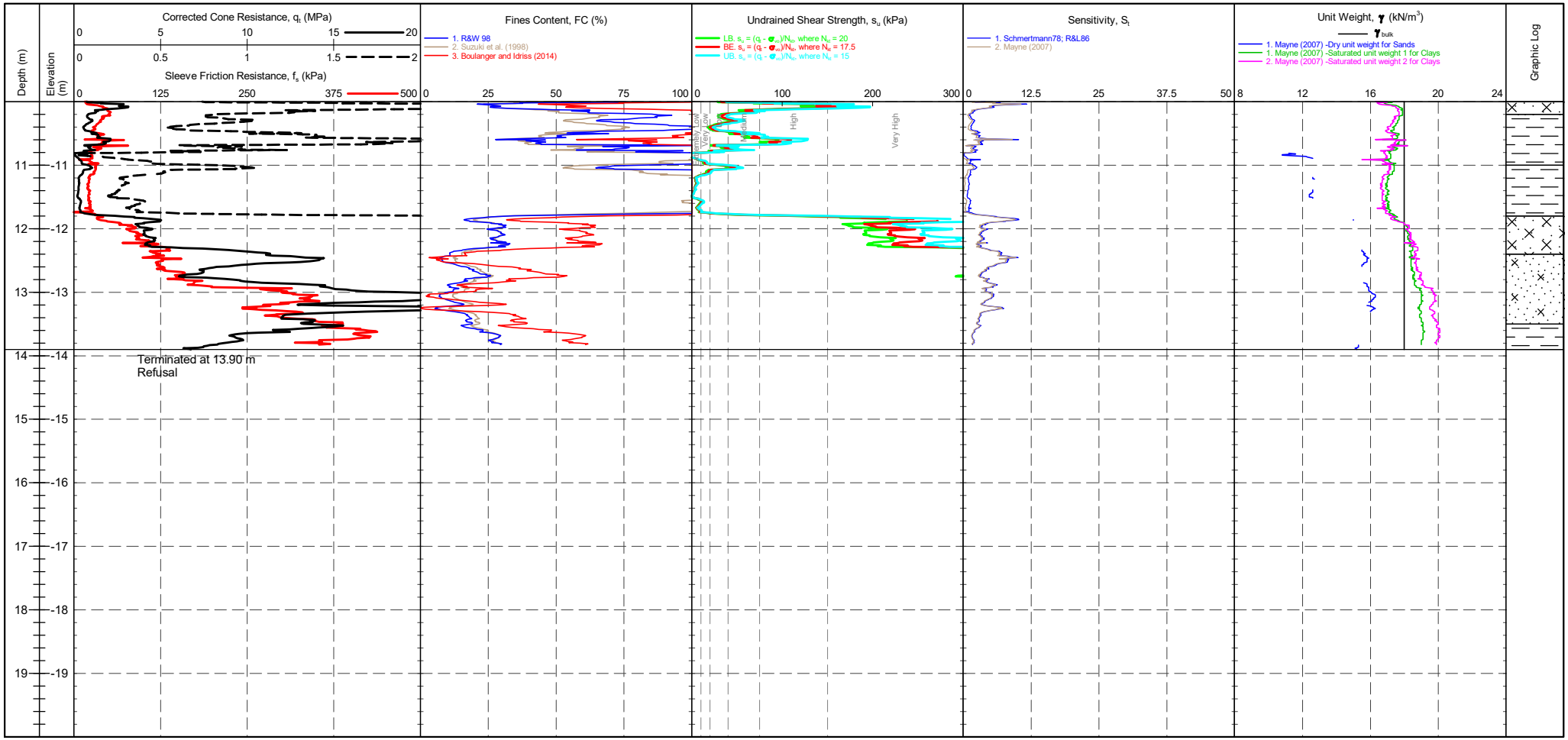
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT112**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	267 mV	262 mV	-0.057 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	135 mV	95 mV	-0.03 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	251 mV	317 mV	0.017 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2395 mV	2387 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

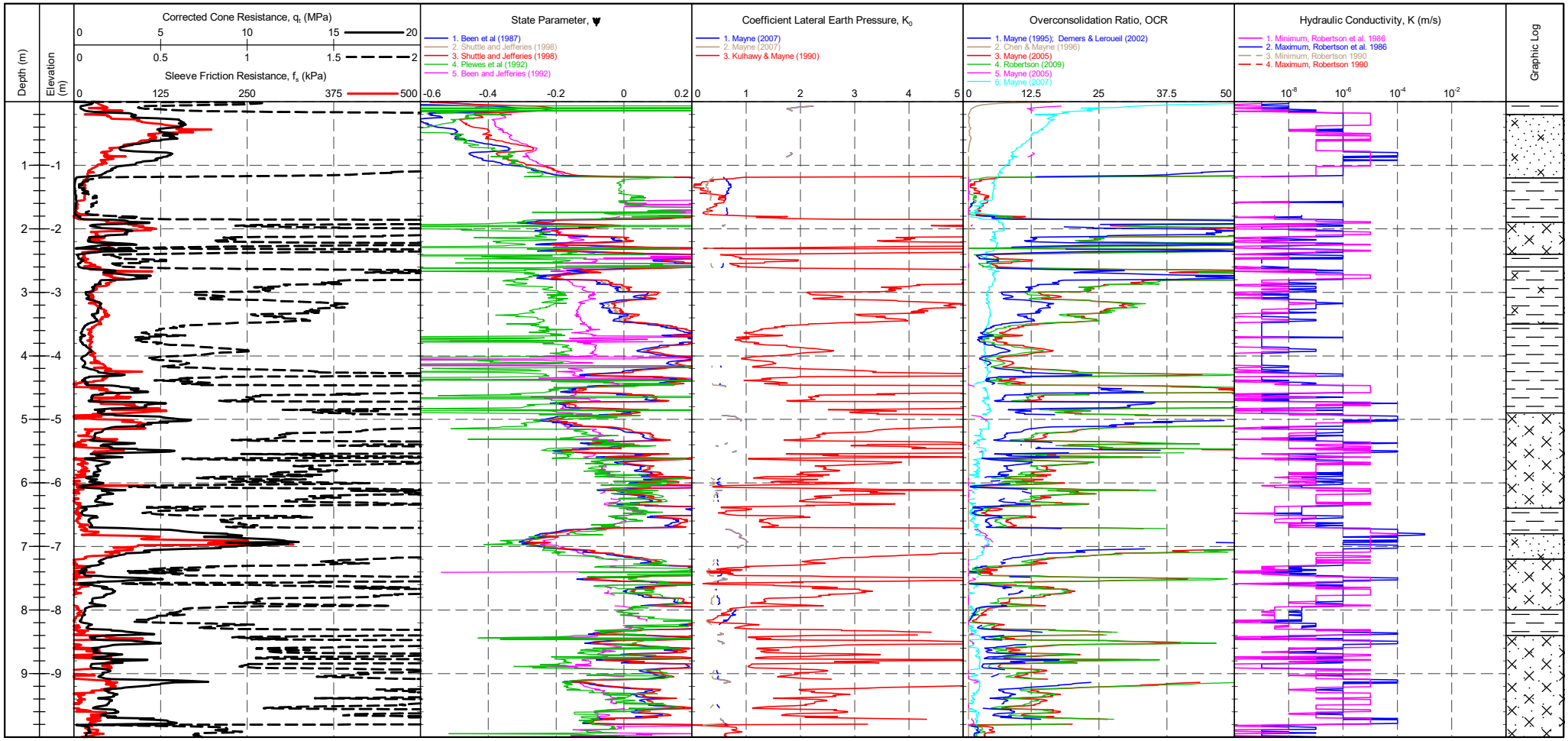
PointID
CPT112

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	267 mV	262 mV	-0.057 MPa
Sleeve	135 mV	95 mV	-0.03 kPa
Pore Pressure 2	251 mV	317 mV	0.017 kPa
X-Y Inclinometer	2395 mV	2387 mV	

Groundwater Level

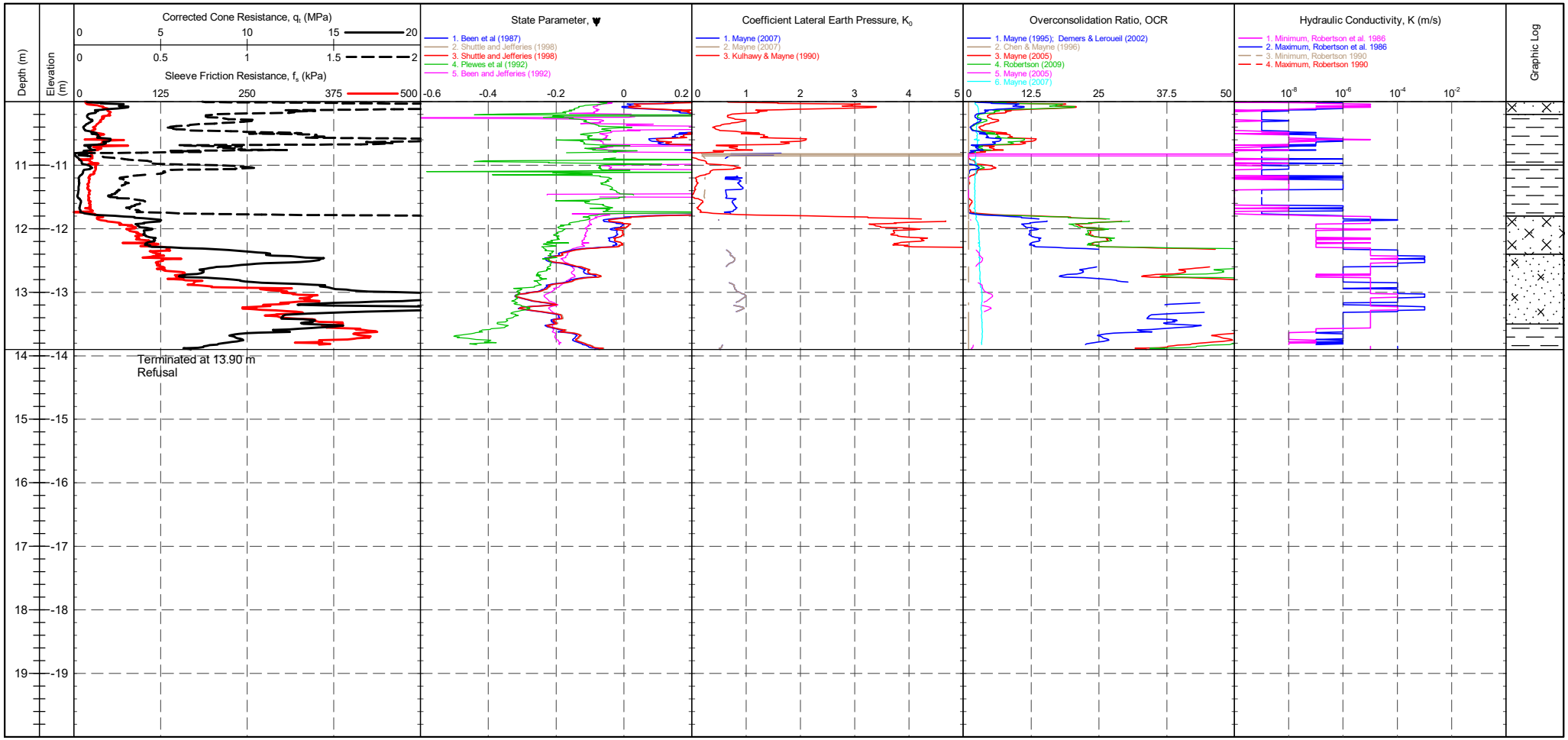
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID **CPT112**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 15/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	267 mV	262 mV	-0.057 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	135 mV	95 mV	-0.03 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	251 mV	317 mV	0.017 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2395 mV	2387 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

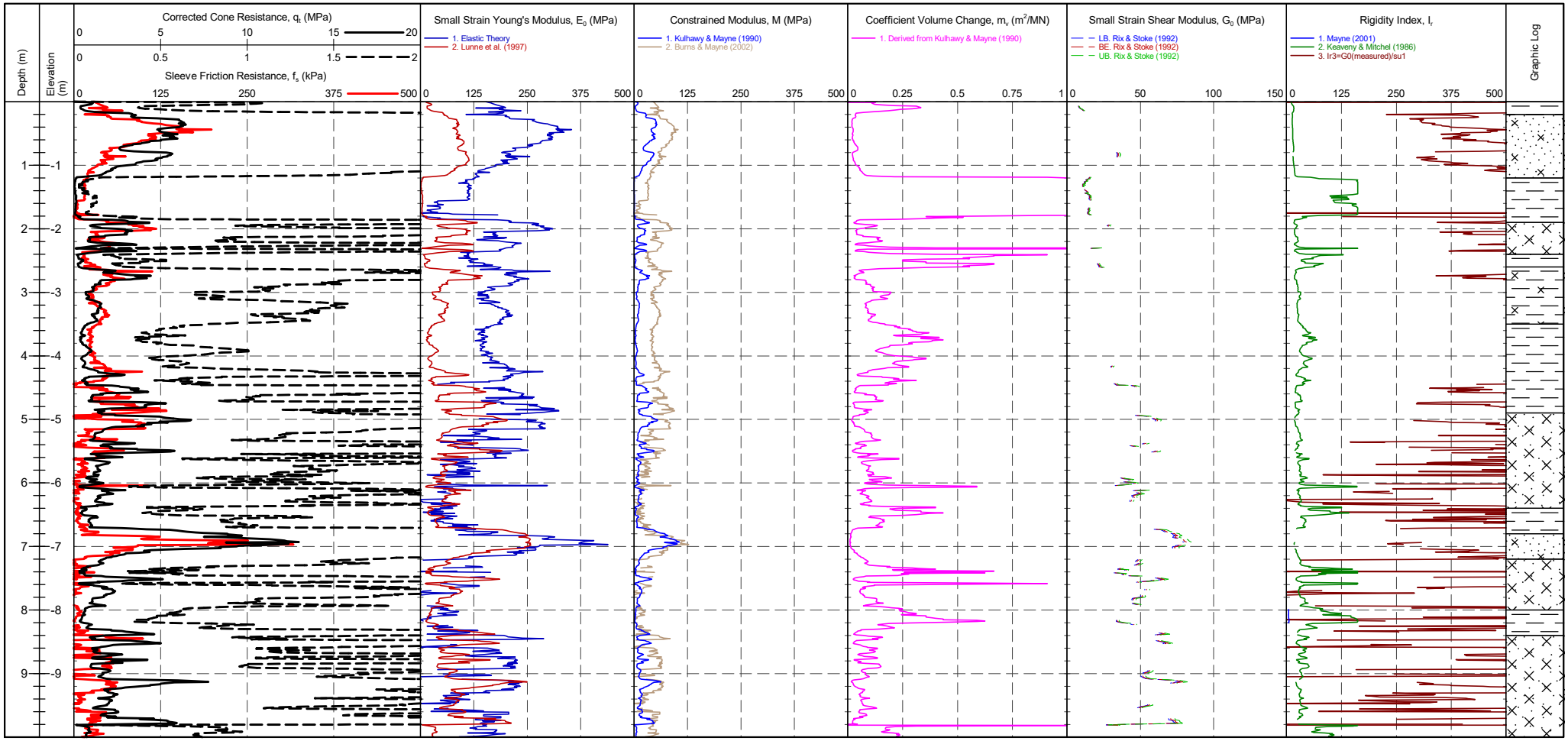
PointID: **CPT112**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	267 mV	262 mV	-0.057 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	135 mV	95 mV	-0.03 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	251 mV	317 mV	0.017 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2395 mV	2387 mV	

Groundwater Level

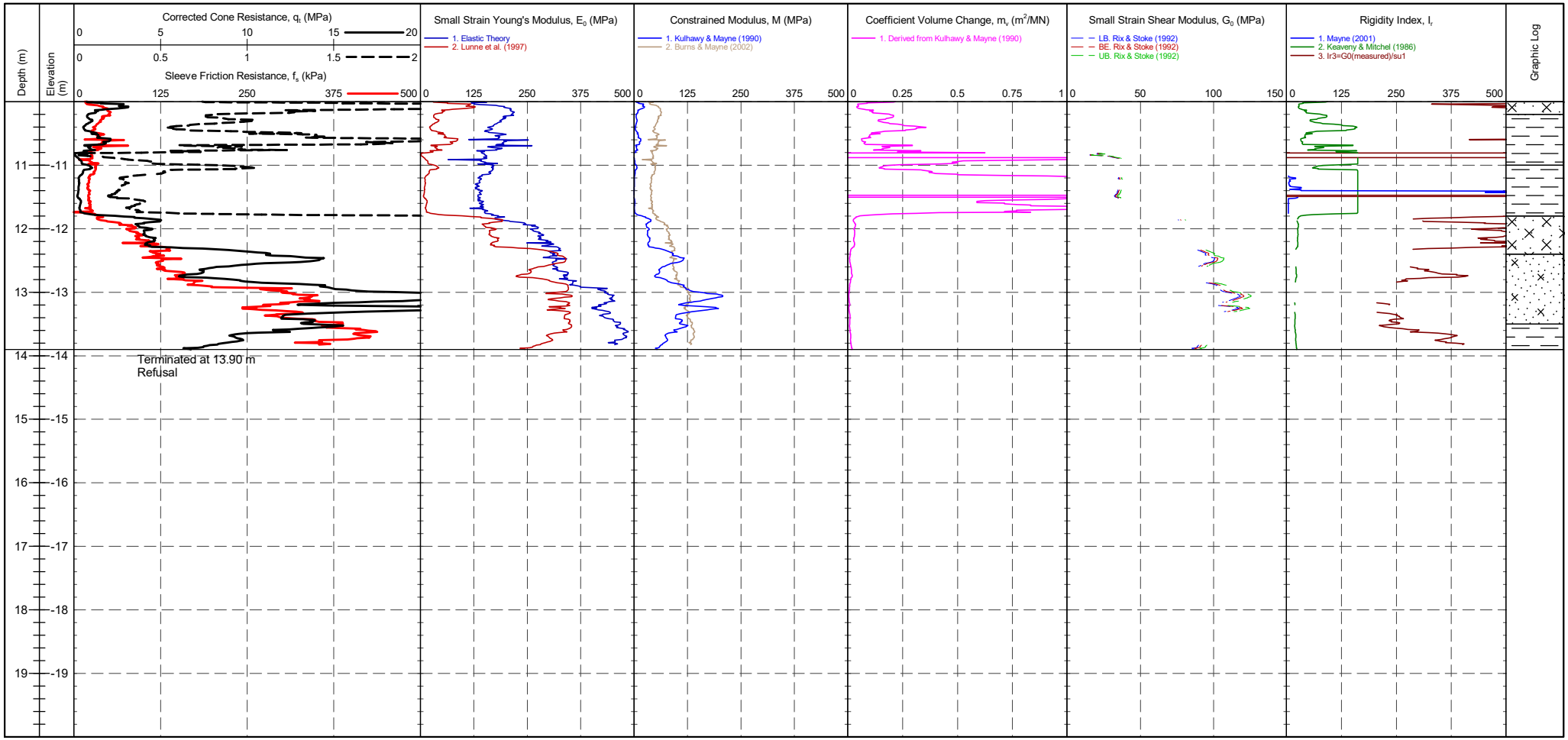
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 05

PointID: **CPT112**

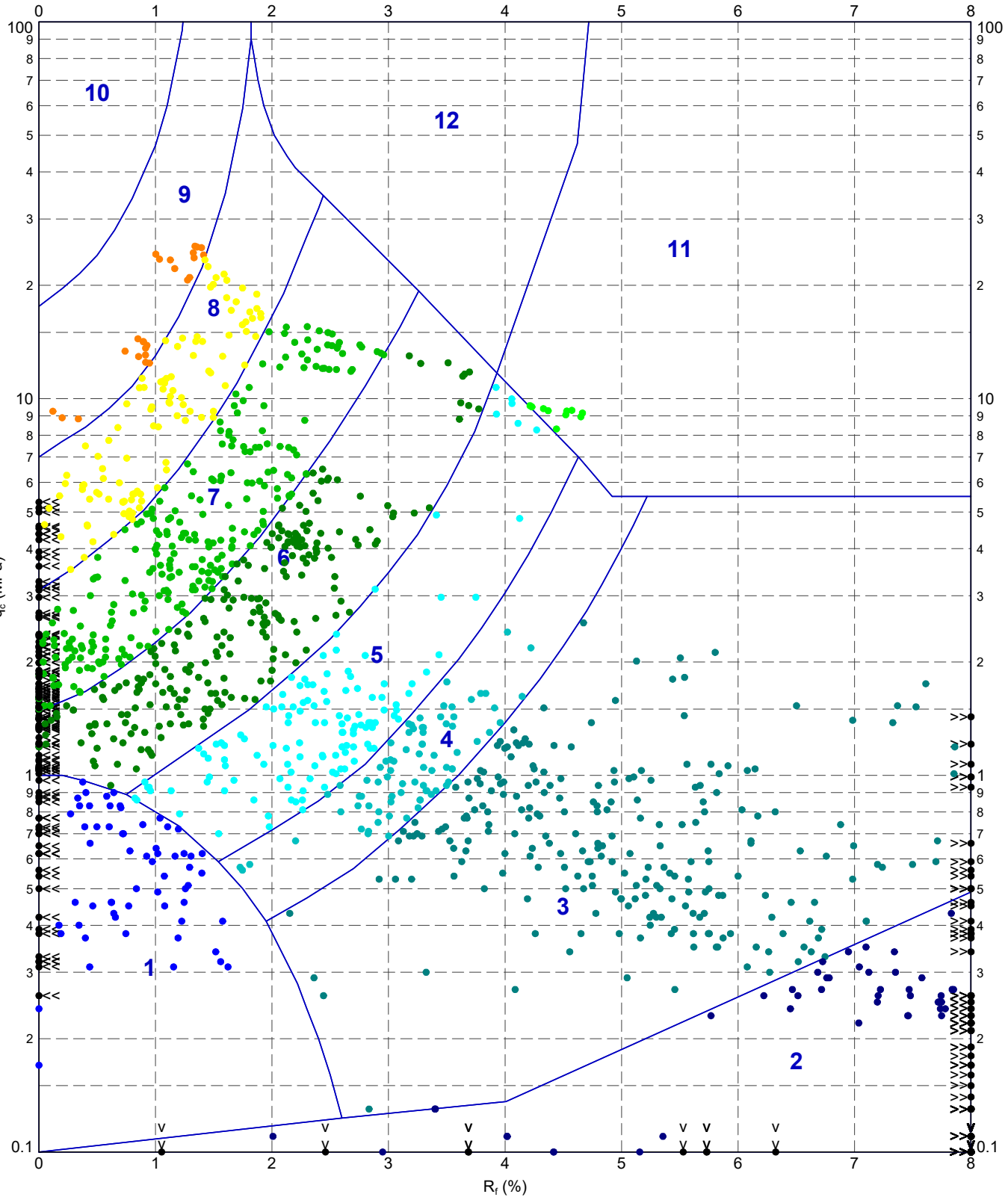
CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post / Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	267 mV	262 mV / -0.057 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	135 mV	95 mV / -0.03 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	251 mV	317 mV / 0.017 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2395 mV	2387 mV

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE	E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT112	DRAWN	DATE 02/08/2024
		CHECKED	DATE 02/08/2024
		SCALE Not To Scale	A4
		PROJECT No 1240280	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:15 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

DISSIPATION TEST

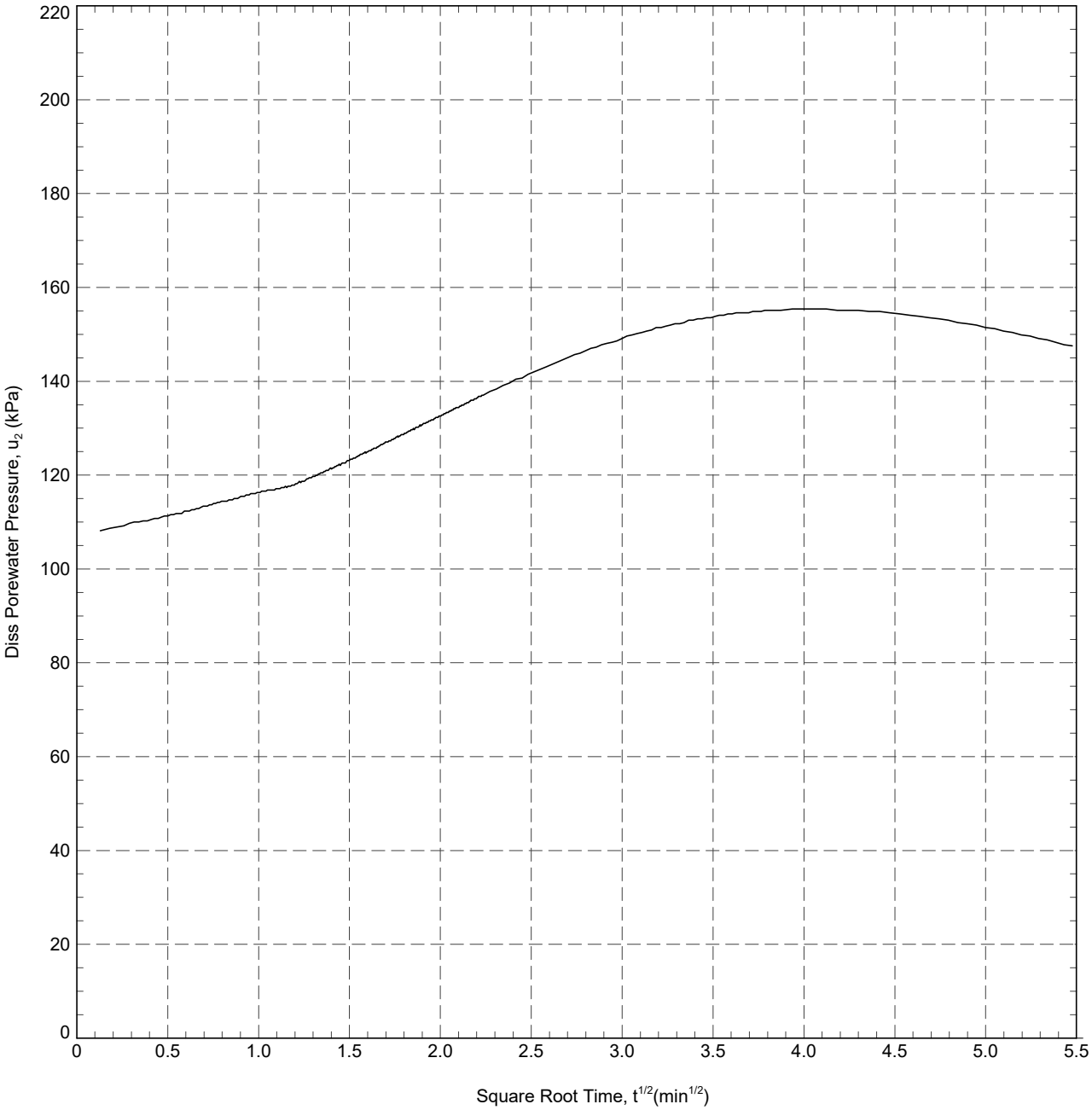
IN SITU SITE INVESTIGATION

Working with: e3p

Test ID

CPT112 - 8.00 m

CLIENT	: E3P	AREA	: Ryebank Fields Chorlton	SHEET	: 1 OF 1
ENGINEER	: Georgia Calvert	EASTING	: 0.0 m	STATUS	: Final
PROJECT	: Ryebank Fields	NORTHING	: 0.0 m	DATE	: 15/07/24
LOCATION	: Chorlton	COORD. SYS.:			
PROJECT No.	: 1240280	ELEVATION	: 0.00 m		



Final Pore Pressure: 147.5 kPa

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	23/07/2024
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	23/07/2024
CONE ID	: S15-CFIP.1983	APPROVED BY	: DW	DATE:	23/07/2024
OPERATOR	: RS				

REMARK
T50 not reached.

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:16 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

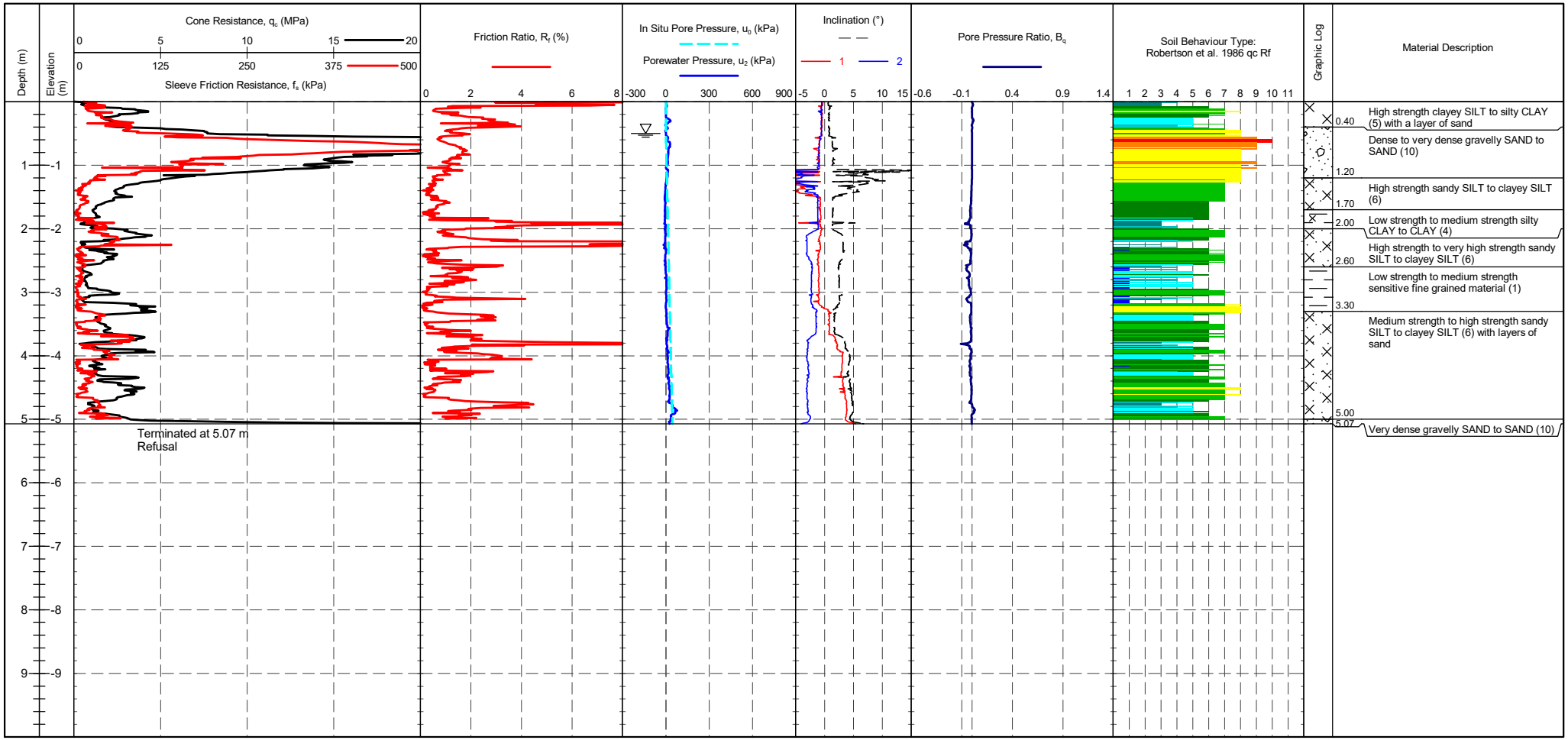
PointID: **CPT113A**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CALIBRATION DATE	: 31/10/2023	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	275 mV	273 mV	-0.023 MPa
Sleeve	227 mV	228 mV	0.001 kPa
Pore Pressure 2	240 mV	251 mV	0.003 kPa
X-Y Inclinometer	2400 mV	2426 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

CPT LOG 02

Working with:

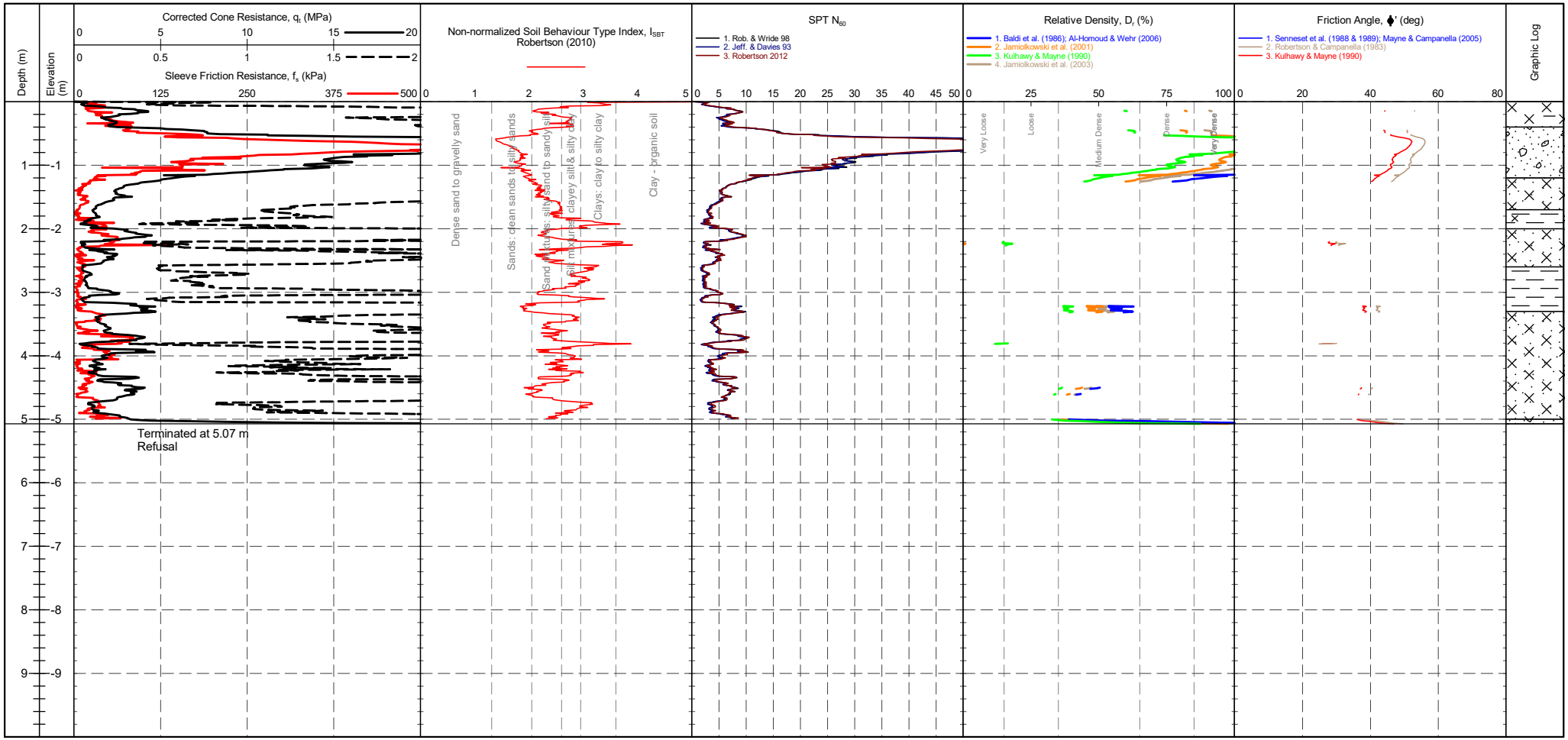
PointID
CPT113A

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	275 mV	273 mV	-0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	227 mV	228 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	240 mV	251 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2400 mV	2426 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

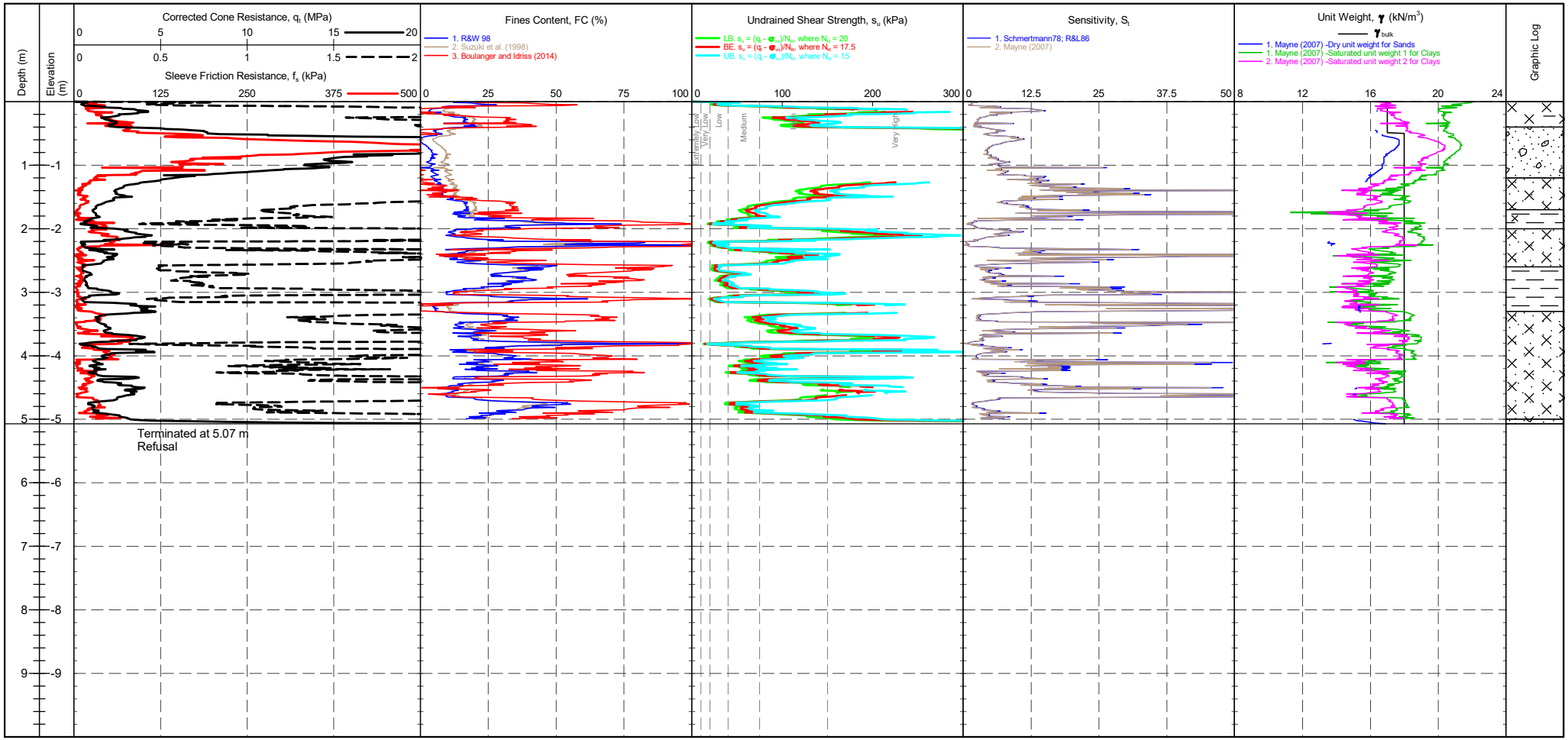
PointID: **CPT113A**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer	275 mV	273 mV	-0.023 MPa
Tip	227 mV	228 mV	0.001 kPa
Sleeve	240 mV	251 mV	0.003 kPa
Pore Pressure 2	2400 mV	2426 mV	
X-Y Inclinometer			

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

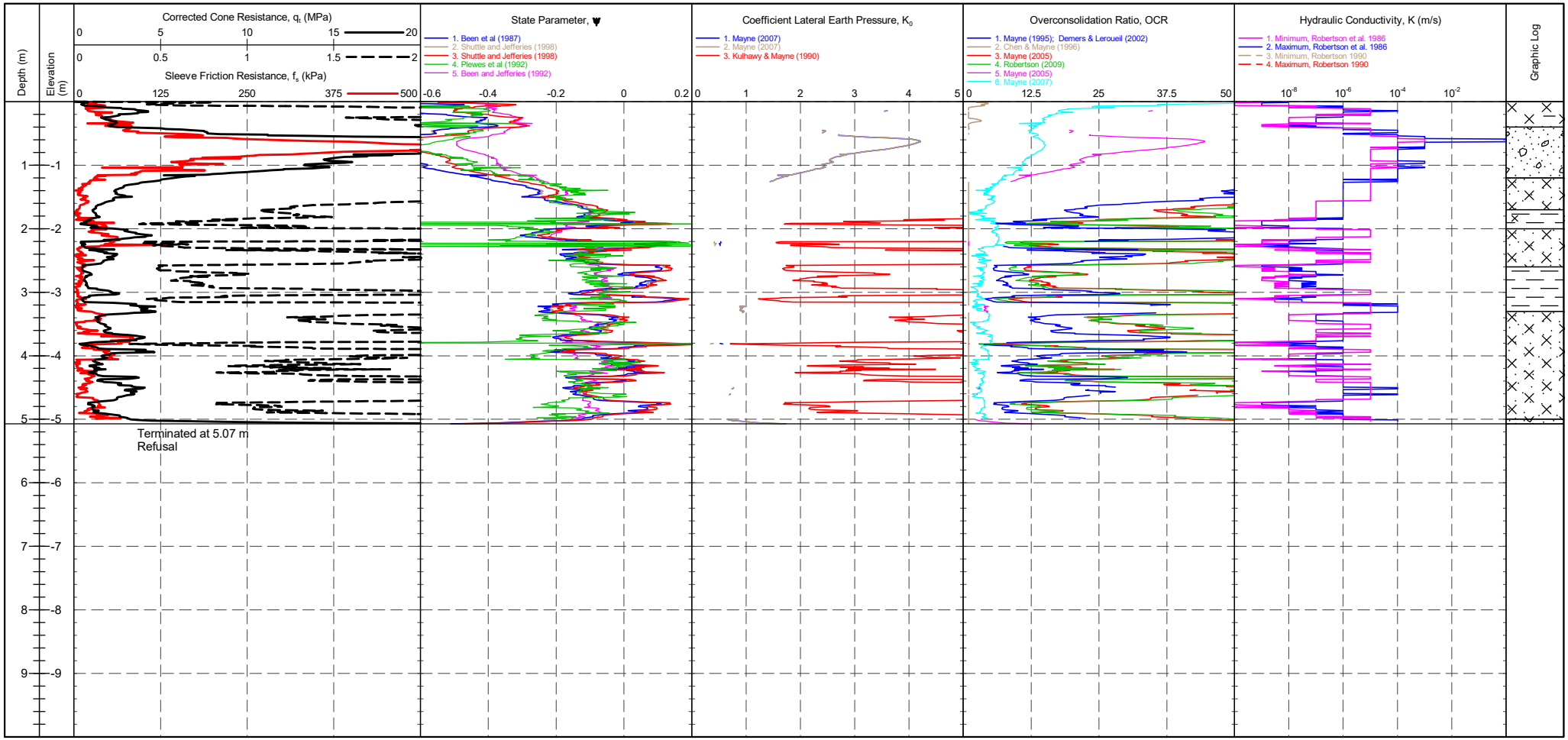
PointID: **CPT113A**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	275 mV	273 mV	-0.023 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	227 mV	228 mV	0.001 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	240 mV	251 mV	0.003 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2400 mV	2426 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with:

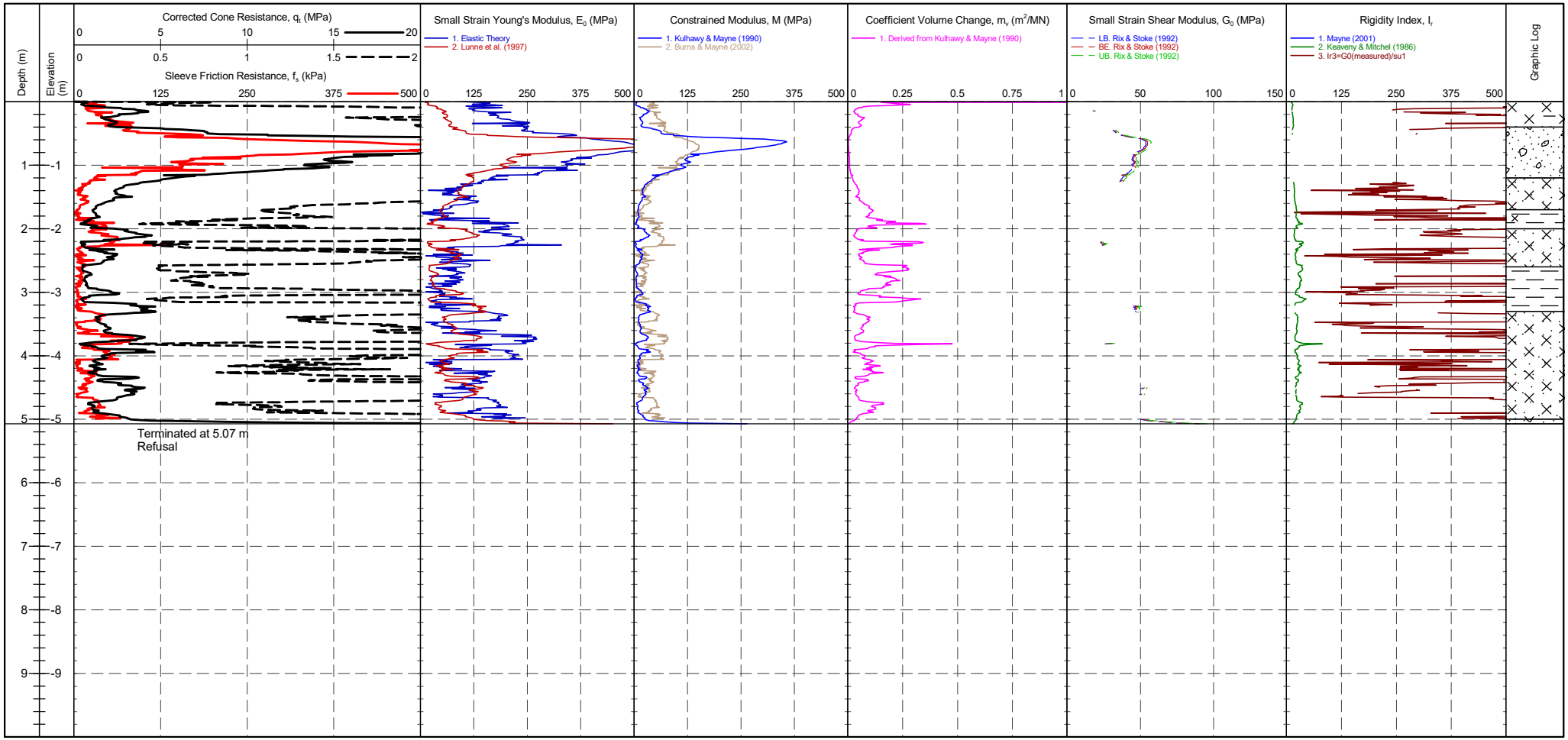
PointID
CPT113A

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022

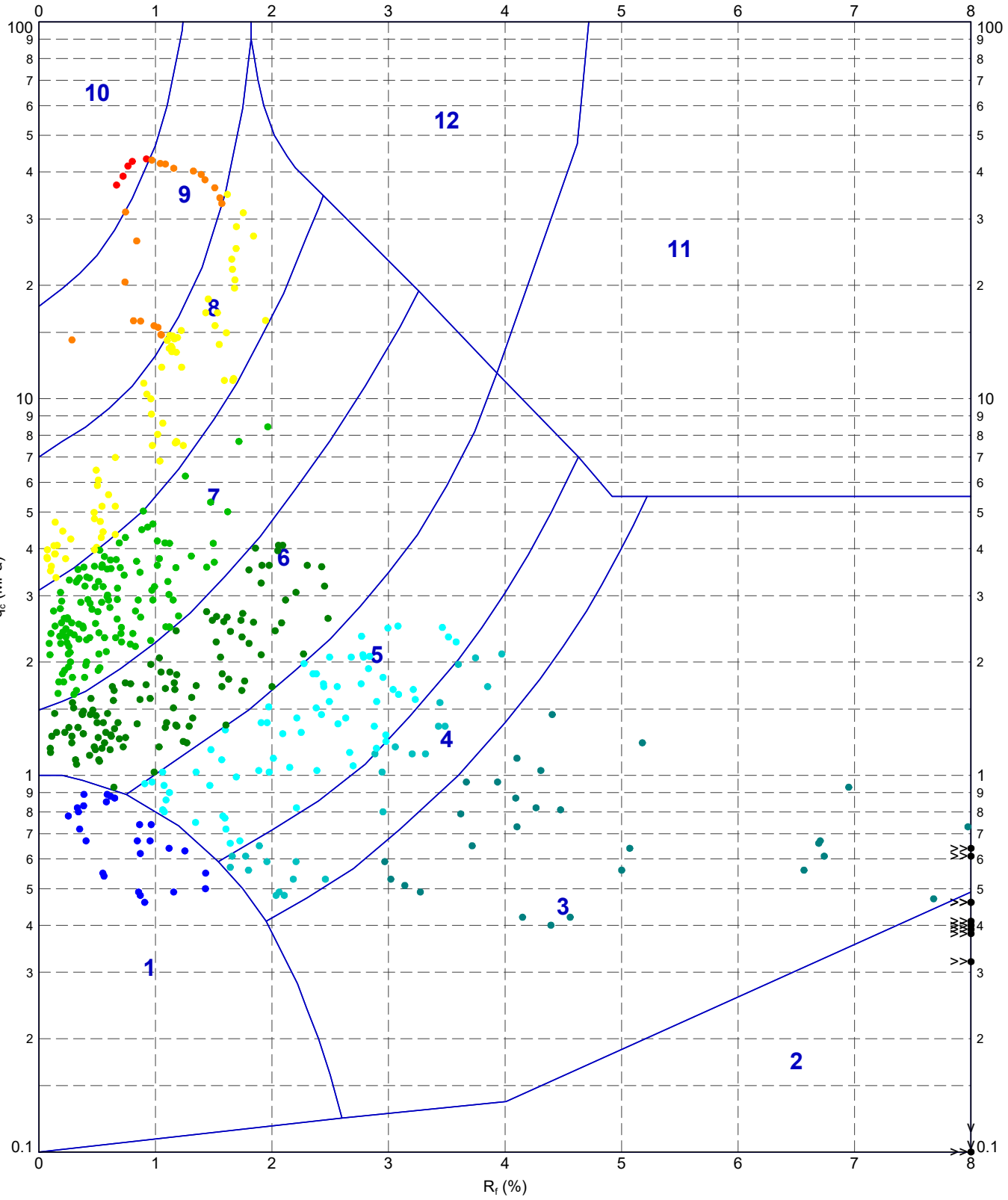


CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

Transducer	Pre	Post	Difference
Tip	275 mV	273 mV	-0.023 MPa
Sleeve	227 mV	228 mV	0.001 kPa
Pore Pressure 2	240 mV	251 mV	0.003 kPa
X-Y Inclinometer	2400 mV	2426 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE: E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT113A	DRAWN	DATE 02/08/2024	
	CHECKED	DATE 02/08/2024	
	SCALE Not To Scale		A4
	PROJECT No 1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:05 10.03.00.09 DatgeLab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

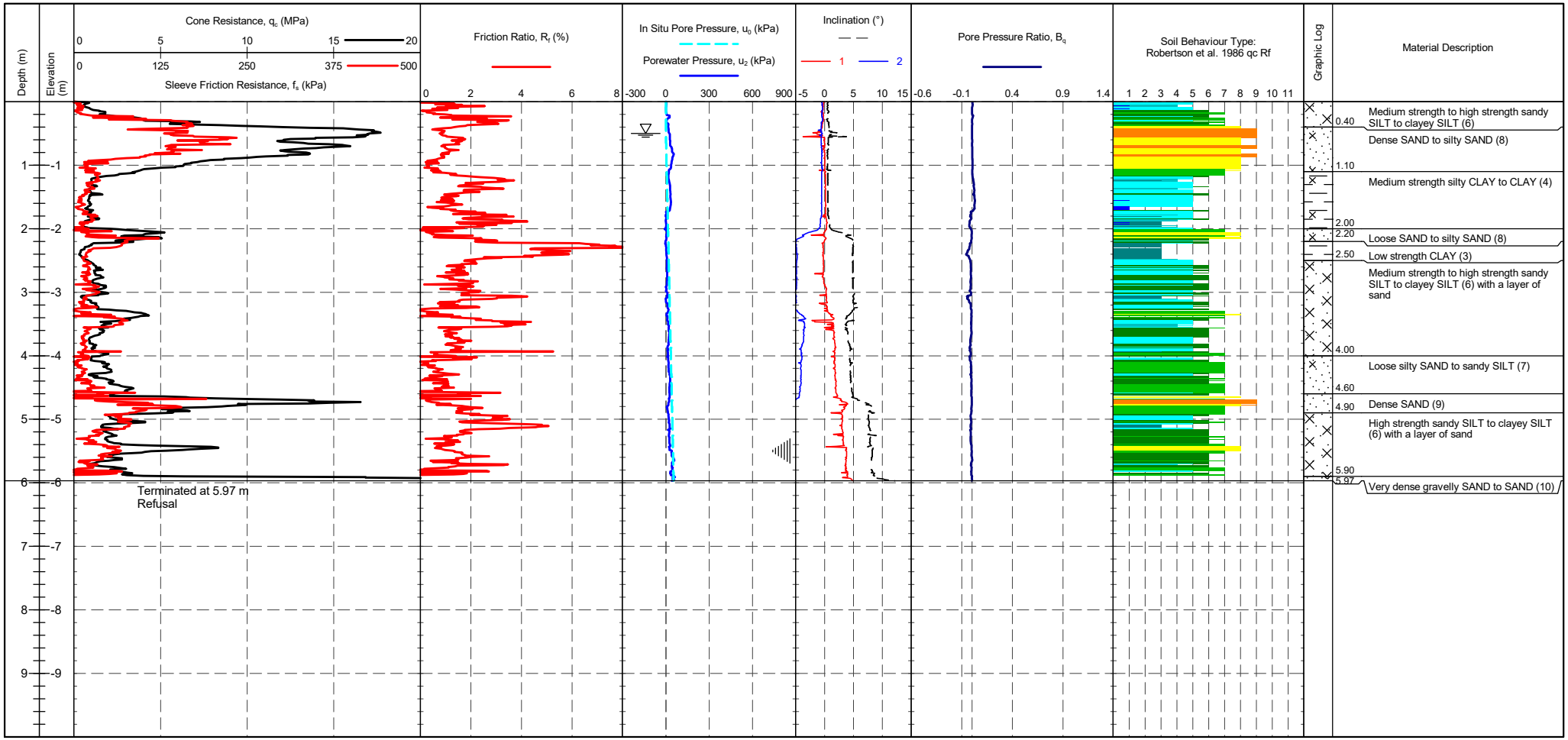
PointID: **CPT113B**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CALIBRATION DATE	: 31/10/2023	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	275 mV	275 mV	0 MPa
Sleeve	220 mV	195 mV	-0.018 kPa
Pore Pressure 2	235 mV	256 mV	0.006 kPa
X-Y Inclinometer	2408 mV	2416 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level
Dissipation Test

CPT LOG 02

Working with:

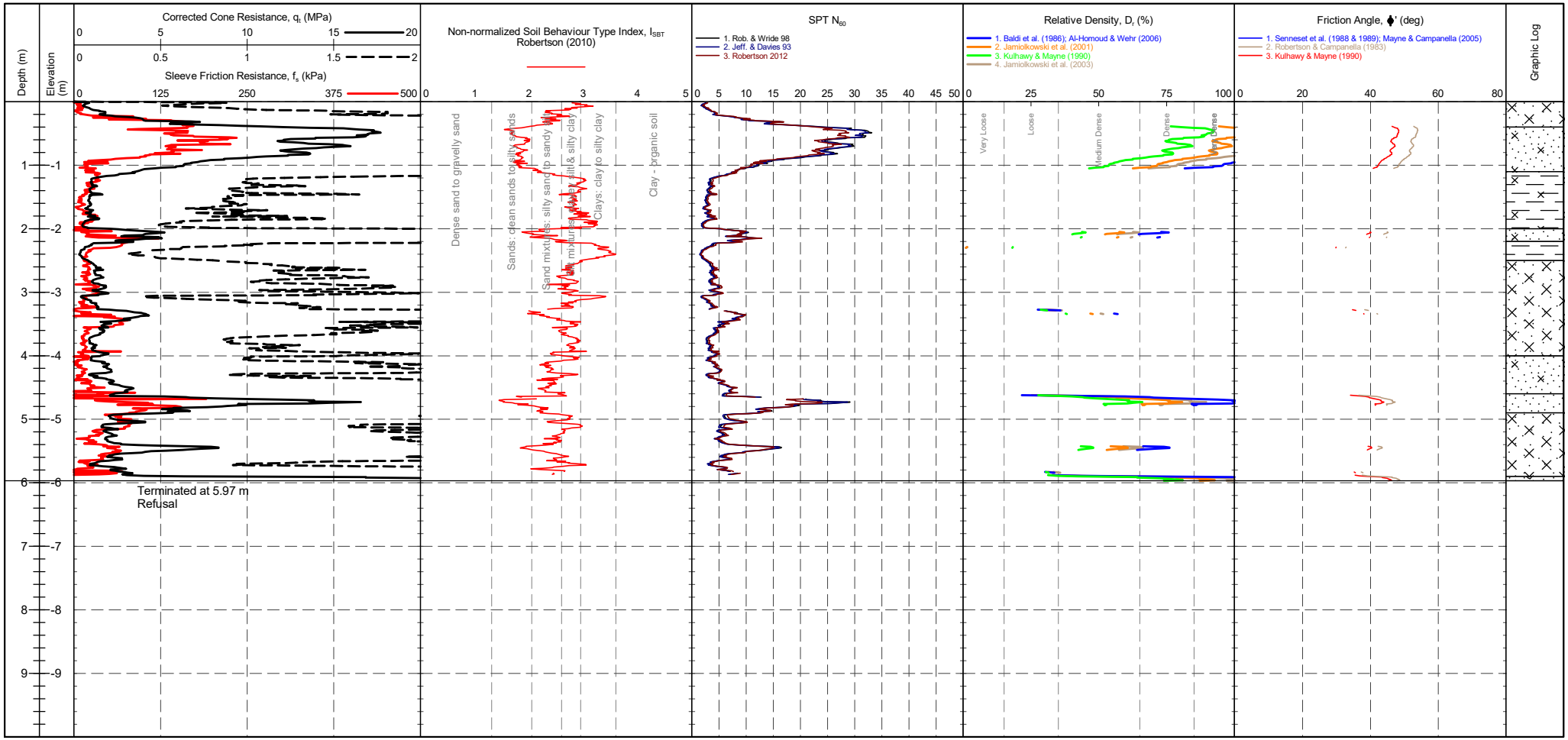
PointID
CPT113B

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	275 mV	275 mV	0 MPa
Sleeve	220 mV	195 mV	-0.018 kPa
Pore Pressure 2	235 mV	256 mV	0.006 kPa
X-Y Inclinometer	2408 mV	2416 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

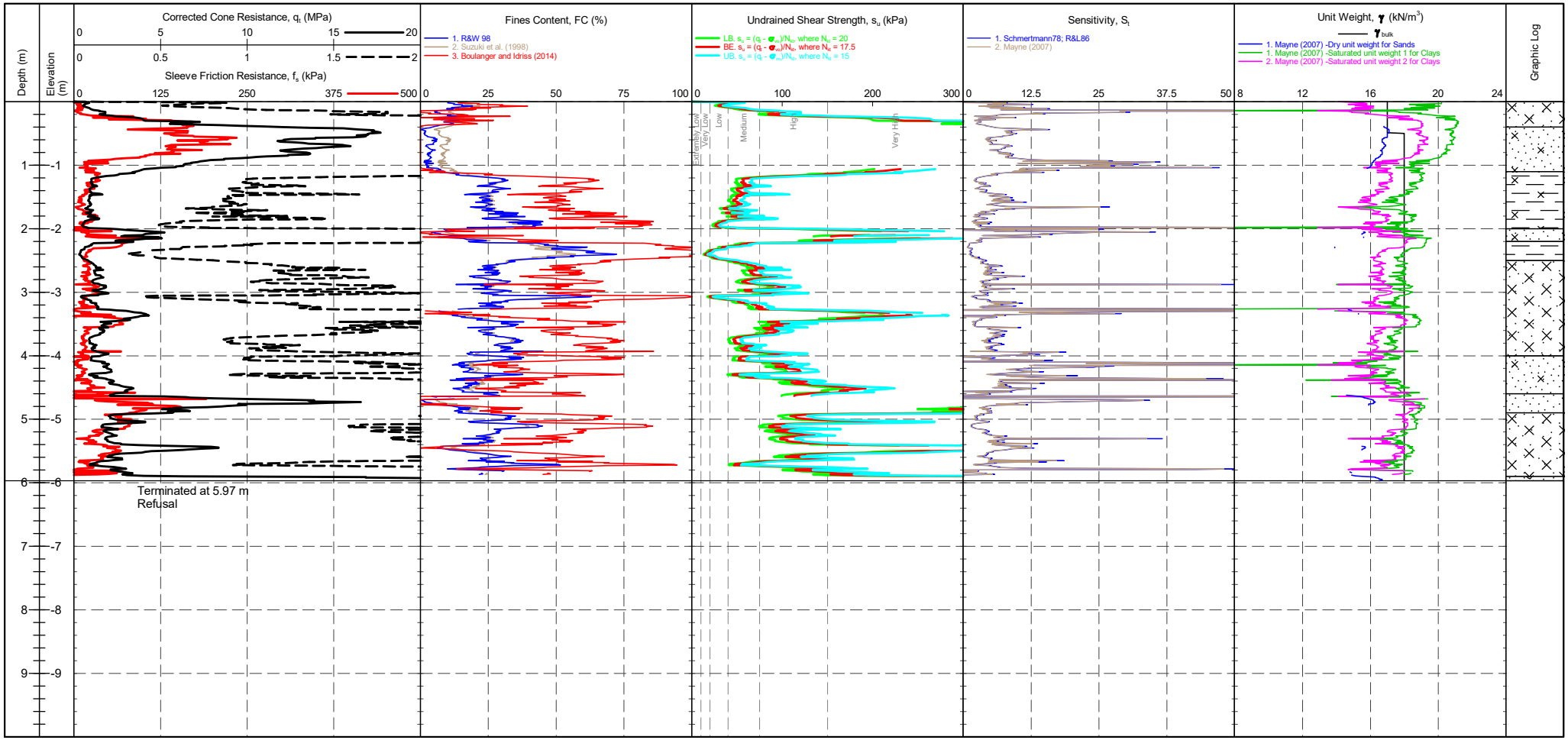
Dissipation Test

CPT LOG 03

Working with:

PointID: **CPT113B**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 1
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on inclination.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	275 mV	275 mV	0 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	220 mV	195 mV	-0.018 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	235 mV	256 mV	0.006 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2408 mV	2416 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

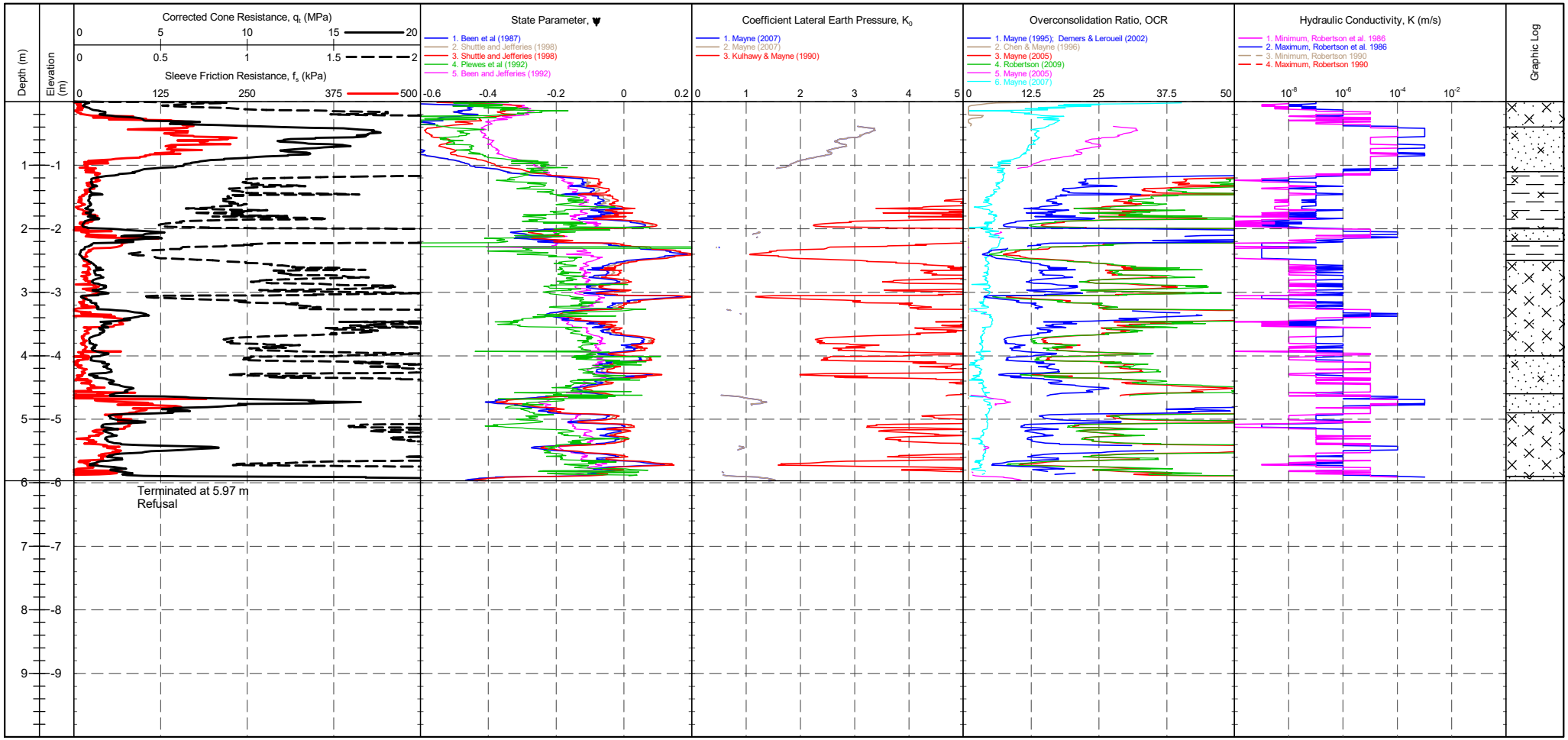
PointID: **CPT113B**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

Transducer	Pre	Post	Difference
Tip	275 mV	275 mV	0 MPa
Sleeve	220 mV	195 mV	-0.018 kPa
Pore Pressure 2	235 mV	256 mV	0.006 kPa
X-Y Inclinometer	2408 mV	2416 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

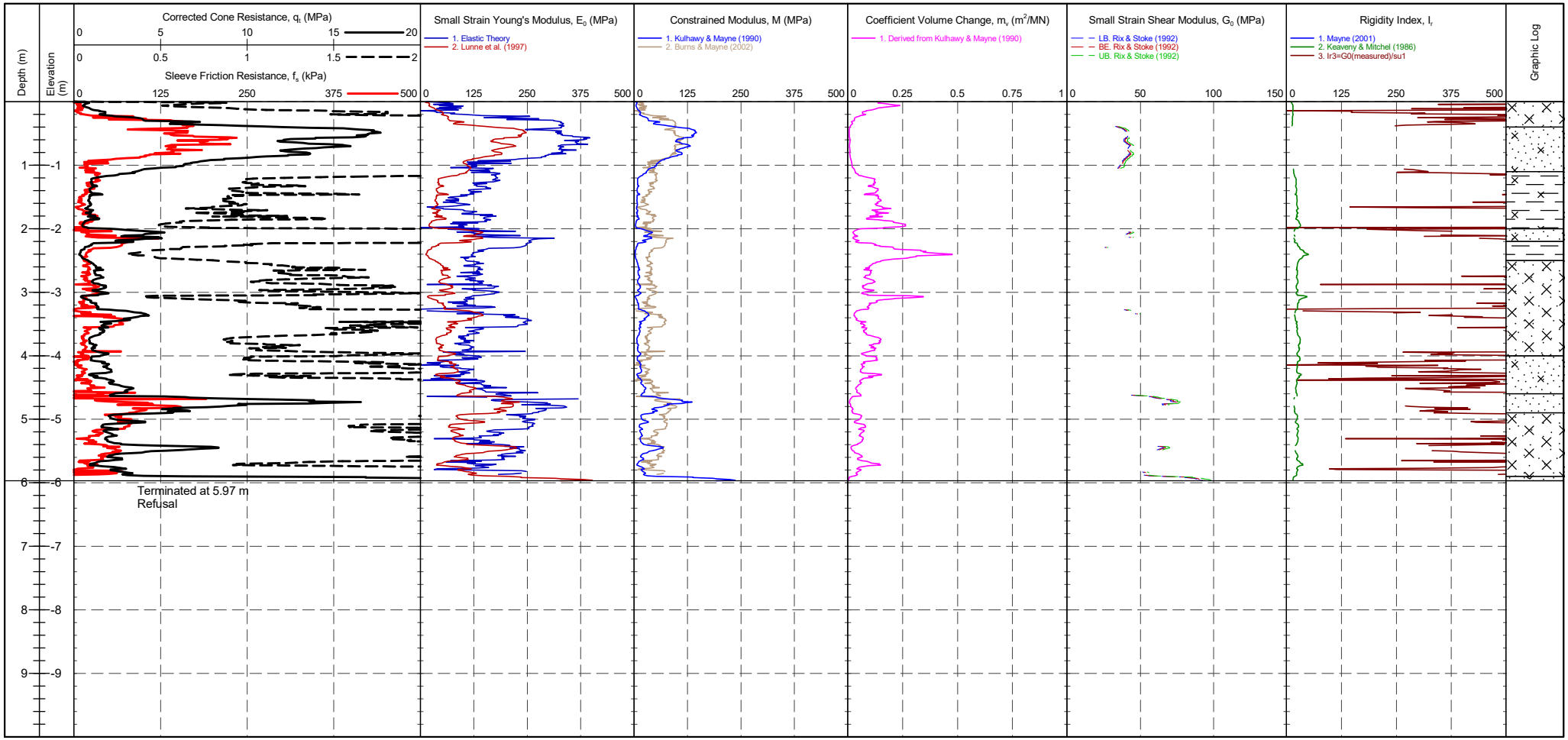
PointID
CPT113B

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022

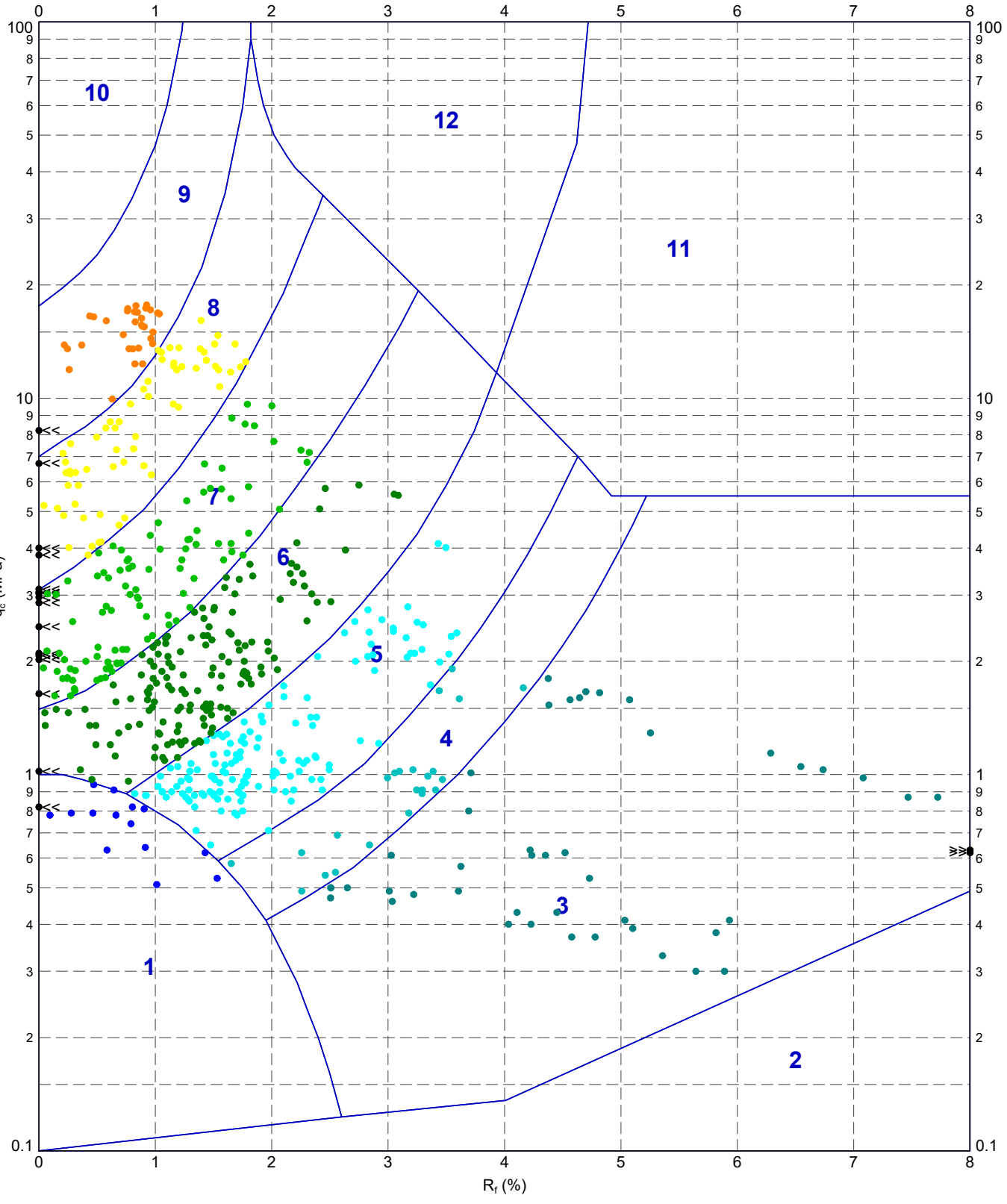


CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

Transducer	Pre	Post	Difference
Tip	275 mV	275 mV	0 MPa
Sleeve	220 mV	195 mV	-0.018 kPa
Pore Pressure 2	235 mV	256 mV	0.006 kPa
X-Y Inclinometer	2408 mV	2416 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT113B

DRAWN	DATE 02/08/2024
CHECKED	DATE 02/08/2024
SCALE Not To Scale	A4
PROJECT No 1240280	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:06 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prg: In Situ SI 2.02.0 2017-07-10

DISSIPATION TEST

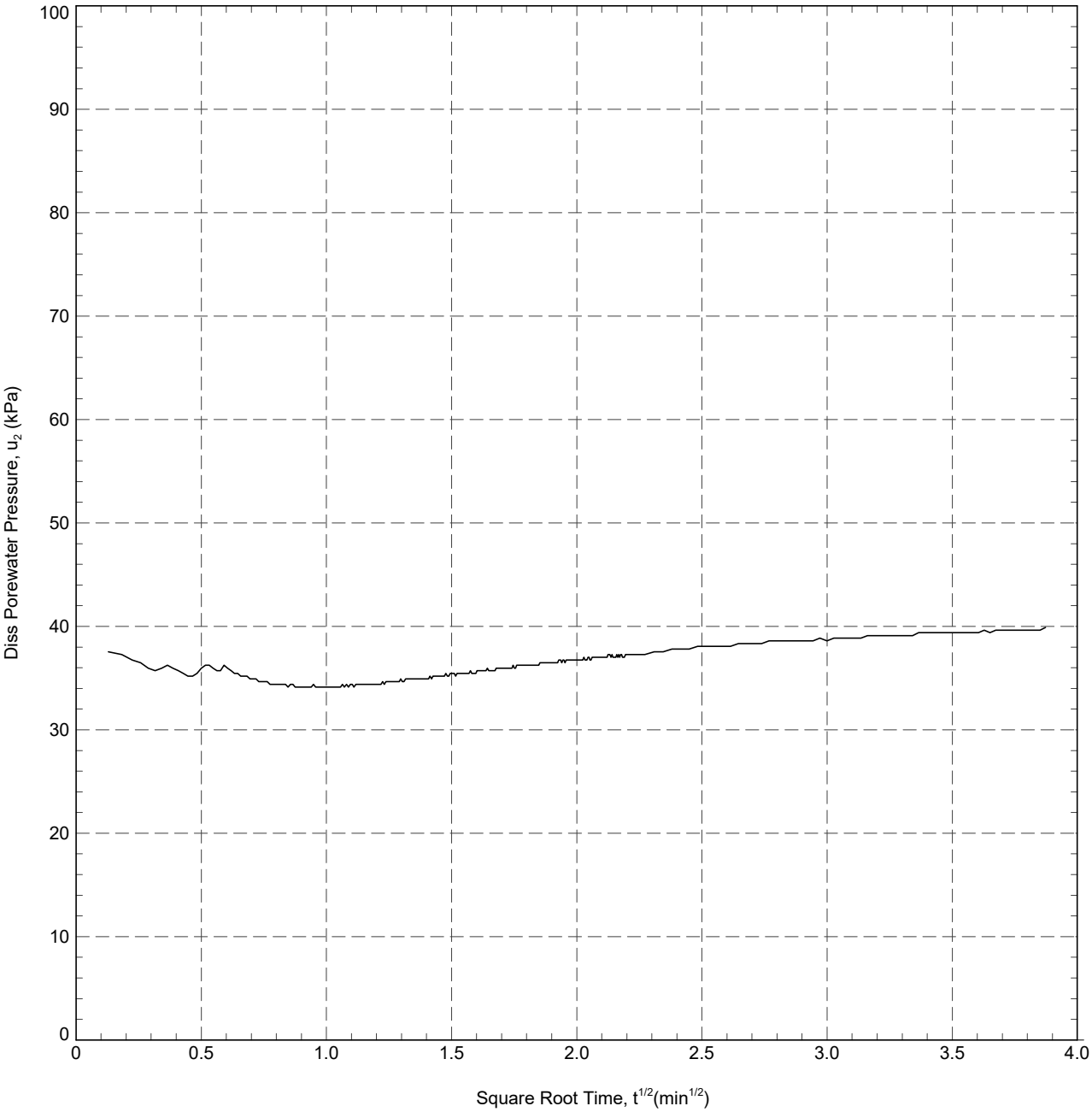
IN SITU SITE INVESTIGATION

Working with: e3p

Test ID

CPT113B - 5.50 m

CLIENT	: E3P	AREA	: Ryebank Fields Chorlton	SHEET	: 1 OF 1
ENGINEER	: Georgia Calvert	EASTING	: 0.0 m	STATUS	: Final
PROJECT	: Ryebank Fields	NORTHING	: 0.0 m	DATE	: 15/07/24
LOCATION	: Chorlton	COORD. SYS.:			
PROJECT No.	: 1240280	ELEVATION	: 0.00 m		



Final Pore Pressure: 39.9 kPa

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	23/07/2024
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	23/07/2024
CONE ID	: S15-CFIP.1983	APPROVED BY	: DW	DATE:	23/07/2024
OPERATOR	: RS				

REMARK
T50 not reached.

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:06 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

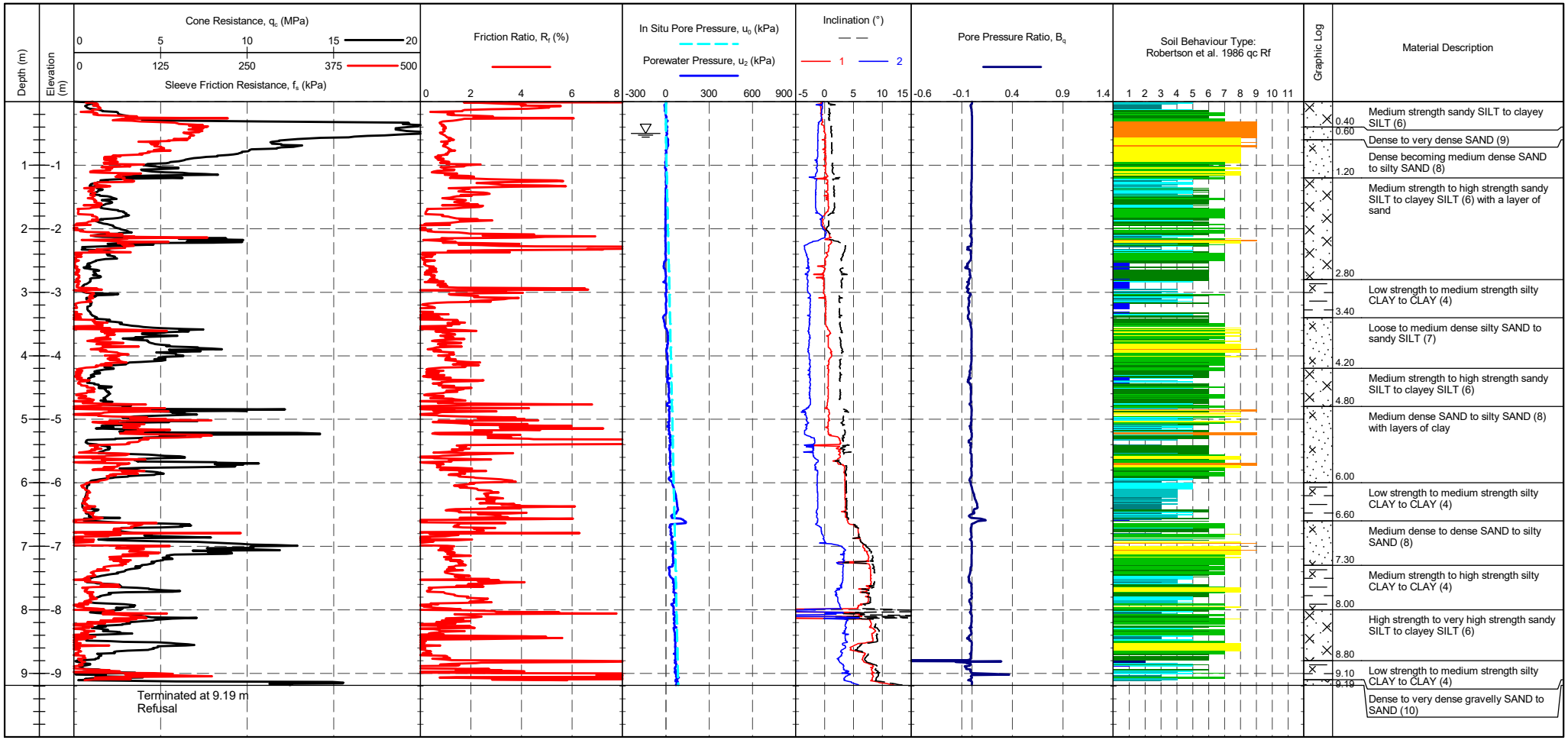
PointID: **CPT113C**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CALIBRATION DATE	: 31/10/2023	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	263 mV	266 mV	0.034 MPa
Sleeve	146 mV	155 mV	0.007 kPa
Pore Pressure 2	245 mV	283 mV	0.01 kPa
X-Y Inclinometer	2381 mV	2400 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

Working with:

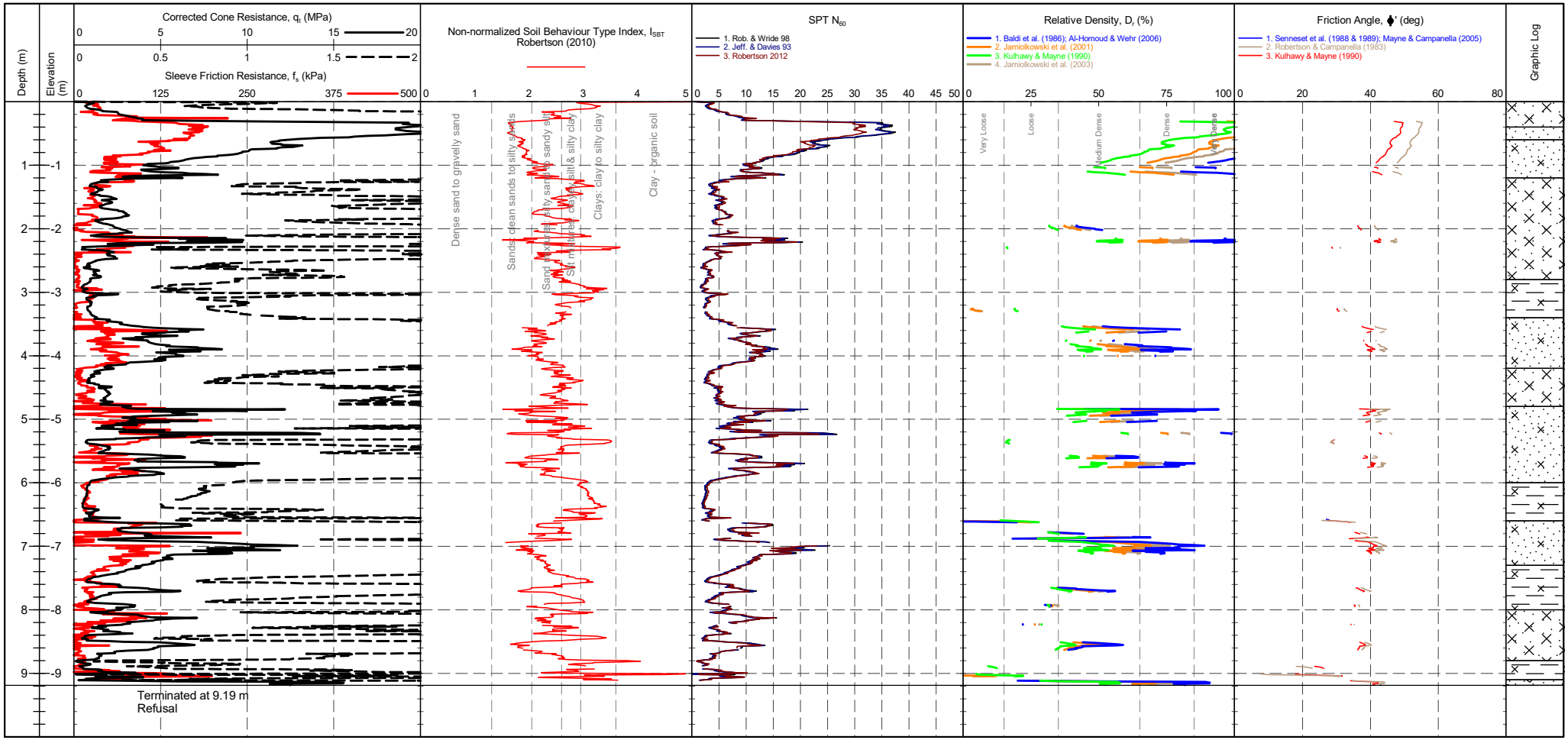
PointID: **CPT113C**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	263 mV	266 mV	0.034 MPa
Sleeve	146 mV	155 mV	0.007 kPa
Pore Pressure 2	245 mV	283 mV	0.01 kPa
X-Y Inclinometer	2381 mV	2400 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

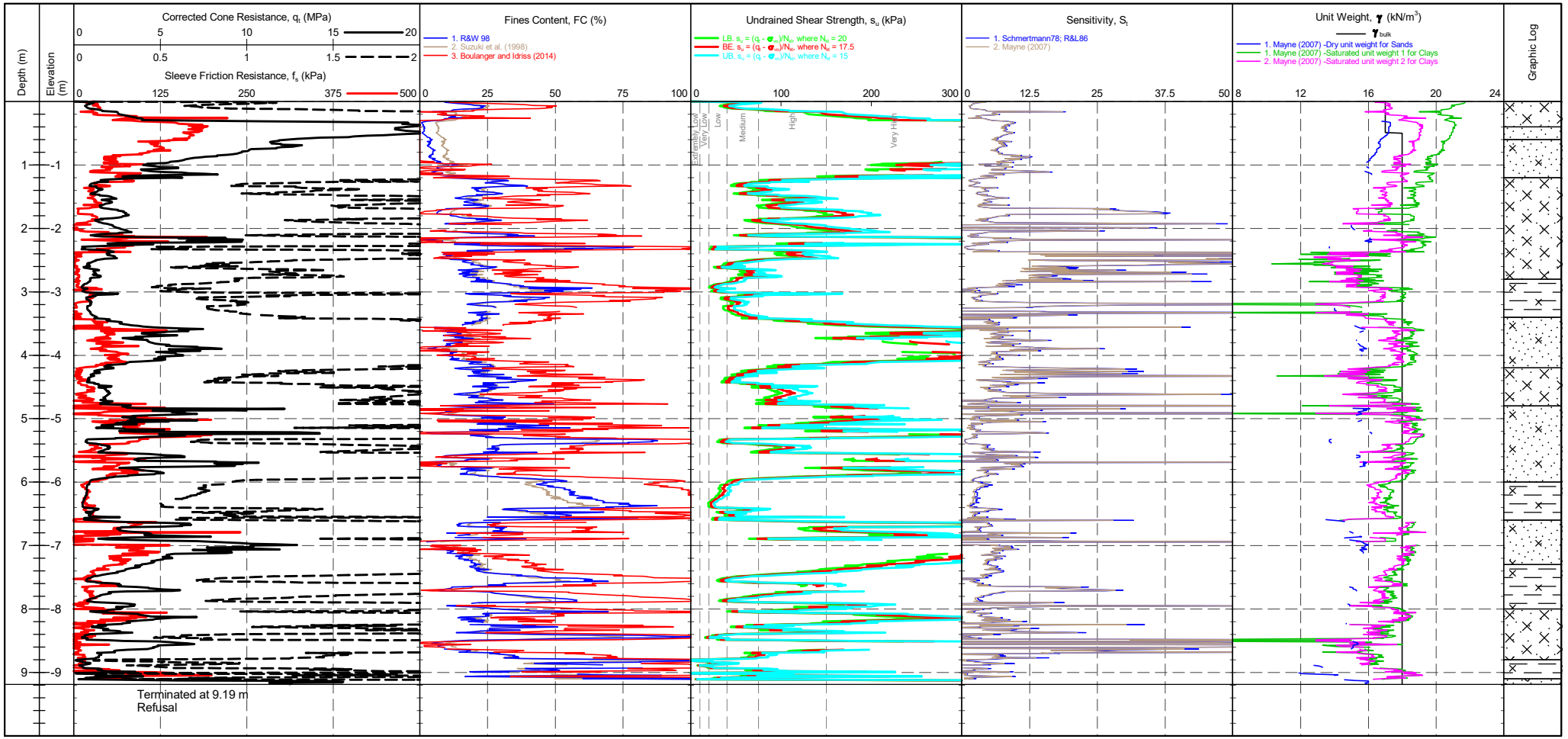
PointID: **CPT113C**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	263 mV	266 mV	0.034 MPa
Sleeve	146 mV	155 mV	0.007 kPa
Pore Pressure 2	245 mV	283 mV	0.01 kPa
X-Y Inclinometer	2381 mV	2400 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

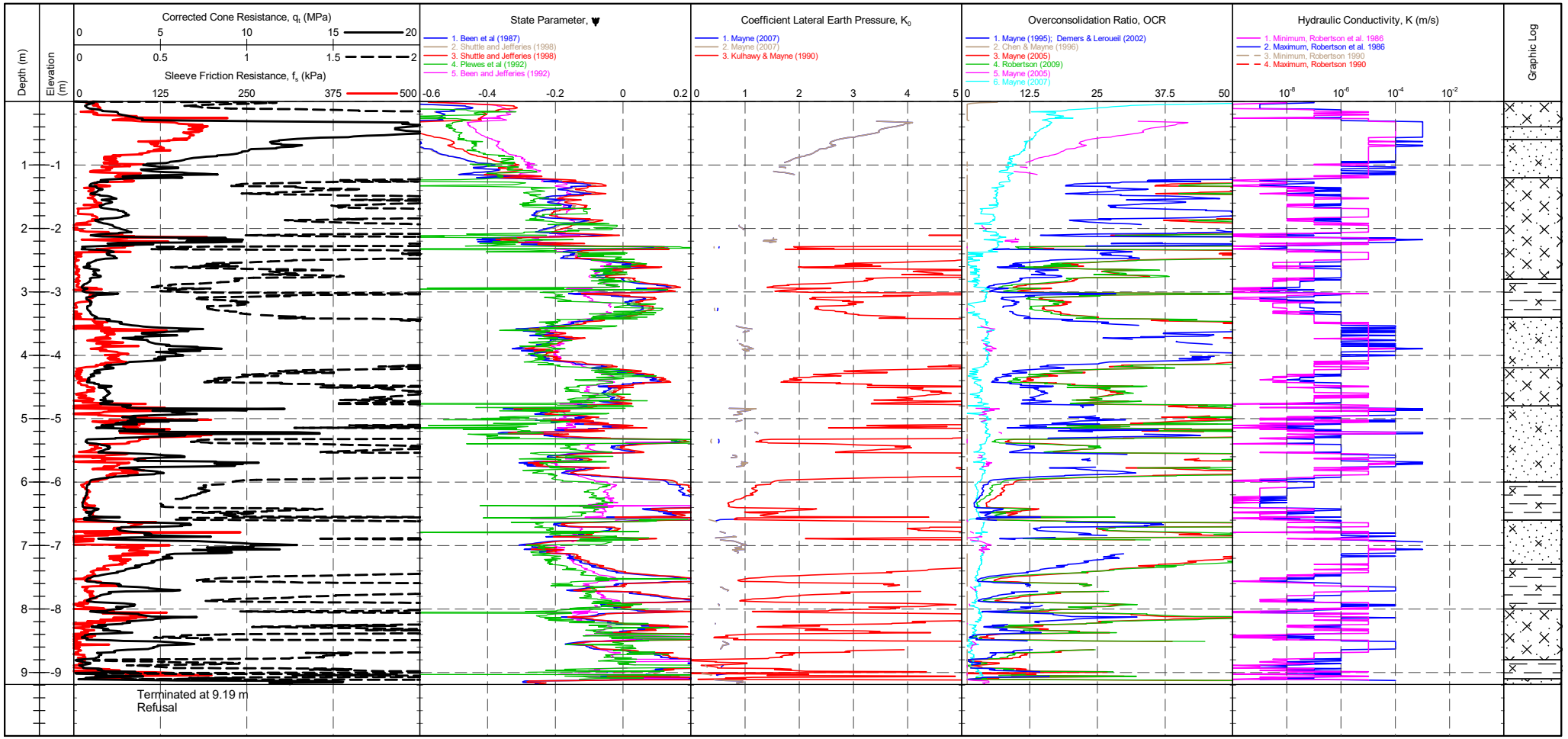
PointID: **CPT113C**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	263 mV	266 mV	0.034 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	146 mV	155 mV	0.007 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	245 mV	283 mV	0.01 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2381 mV	2400 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

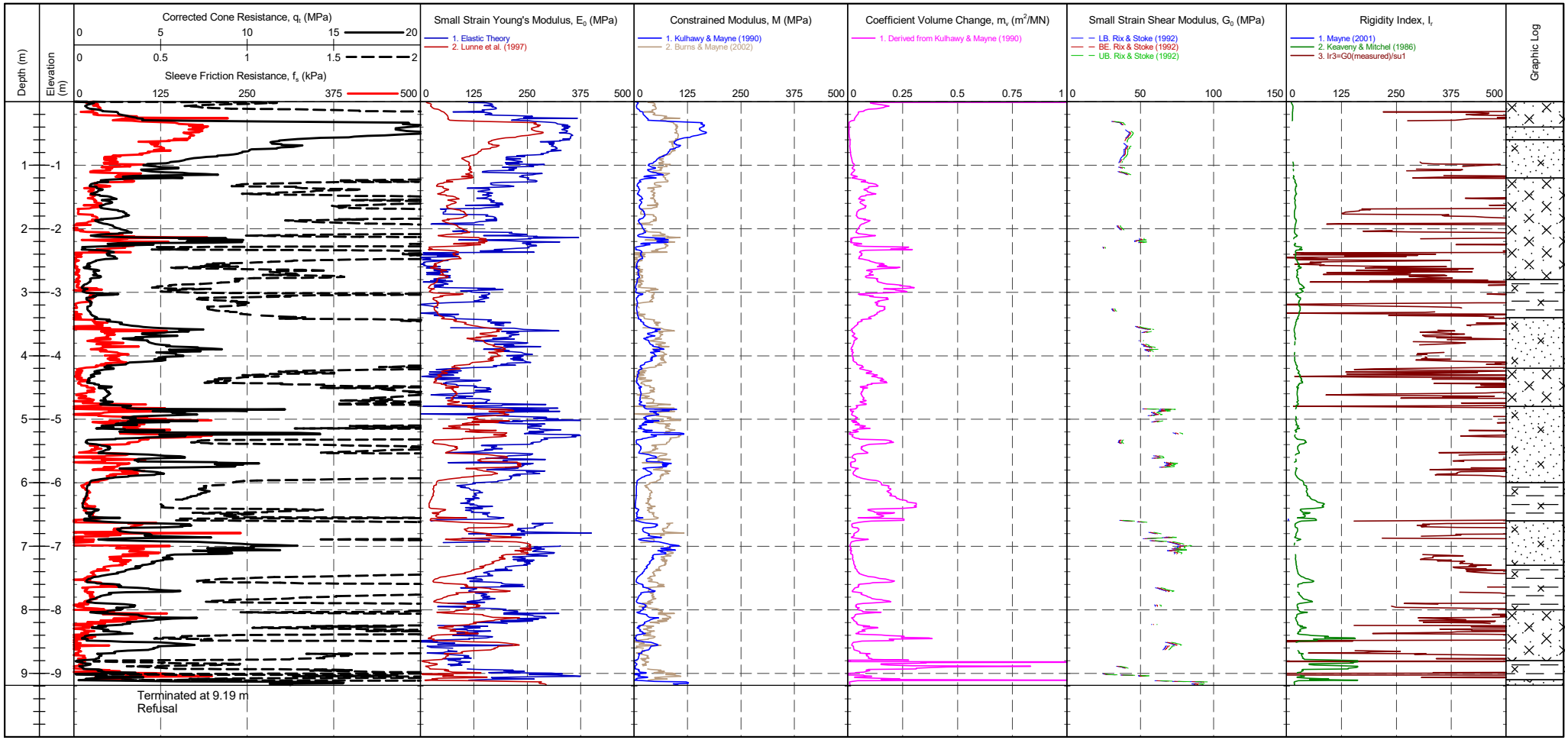
PointID: **CPT113C**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on inclination.

SHEET : 1 OF 1
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



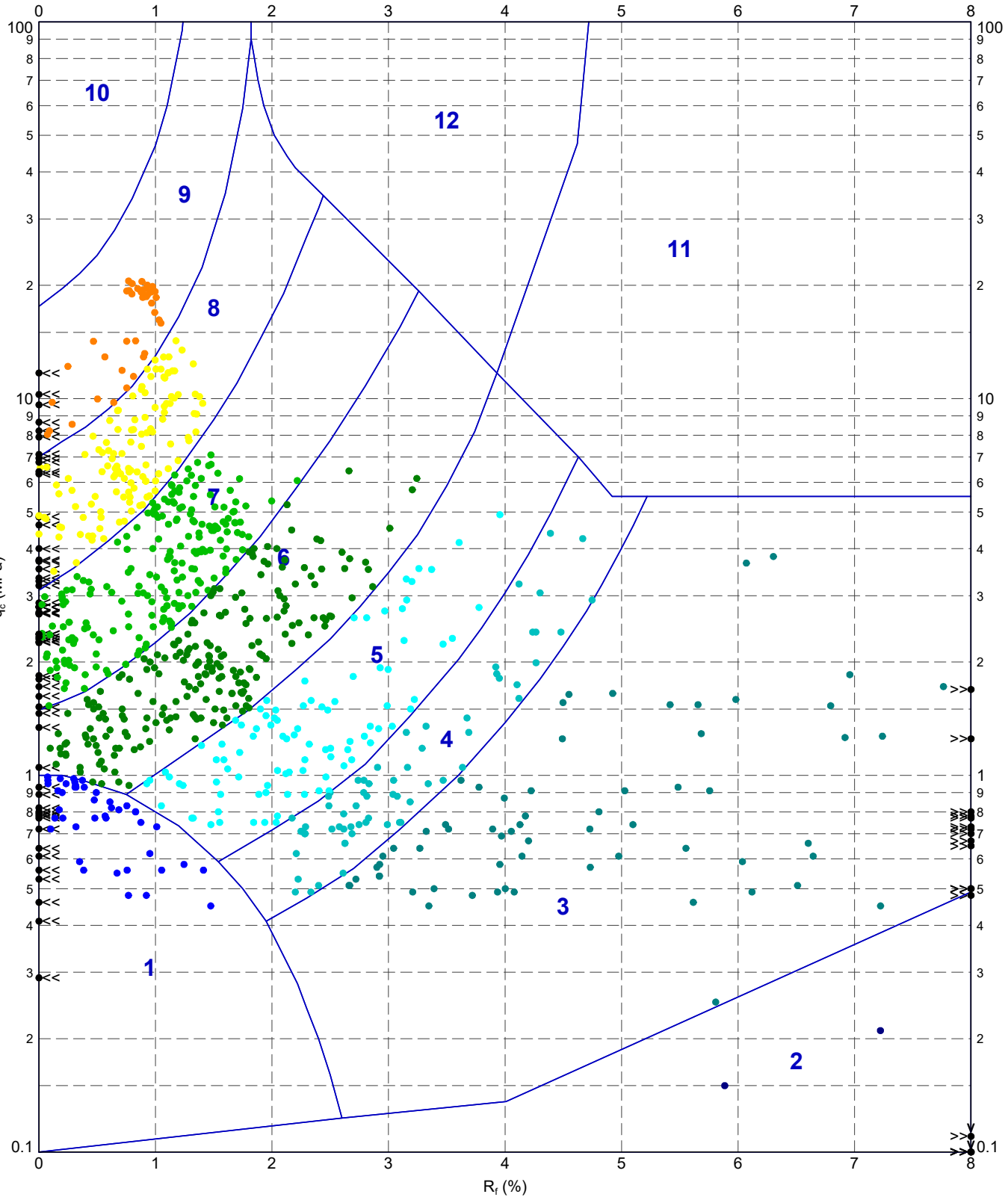
CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	263 mV	266 mV	0.034 MPa
Sleeve	146 mV	155 mV	0.007 kPa
Pore Pressure 2	245 mV	283 mV	0.01 kPa
X-Y Inclinometer	2381 mV	2400 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE: E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT113C	DRAWN	DATE 02/08/2024	
	CHECKED	DATE 02/08/2024	
	SCALE Not To Scale		A4
	PROJECT No 1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:08 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

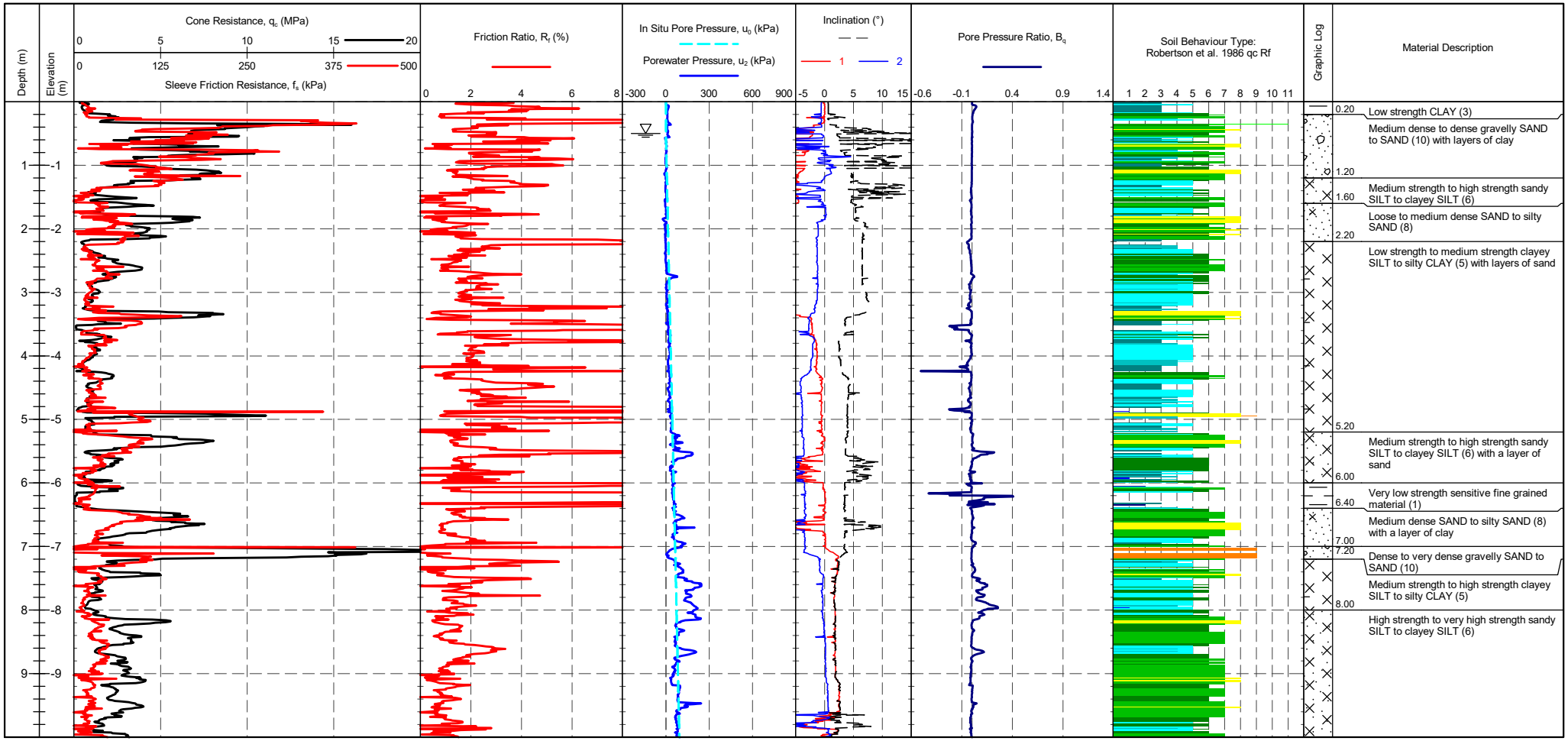
PointID: **CPT114**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CALIBRATION DATE	: 31/10/2023	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	278 mV	277 mV	-0.011 MPa
Sleeve	221 mV	229 mV	0.006 kPa
Pore Pressure 2	230 mV	246 mV	0.004 kPa
X-Y Inclinometer	2388 mV	2409 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

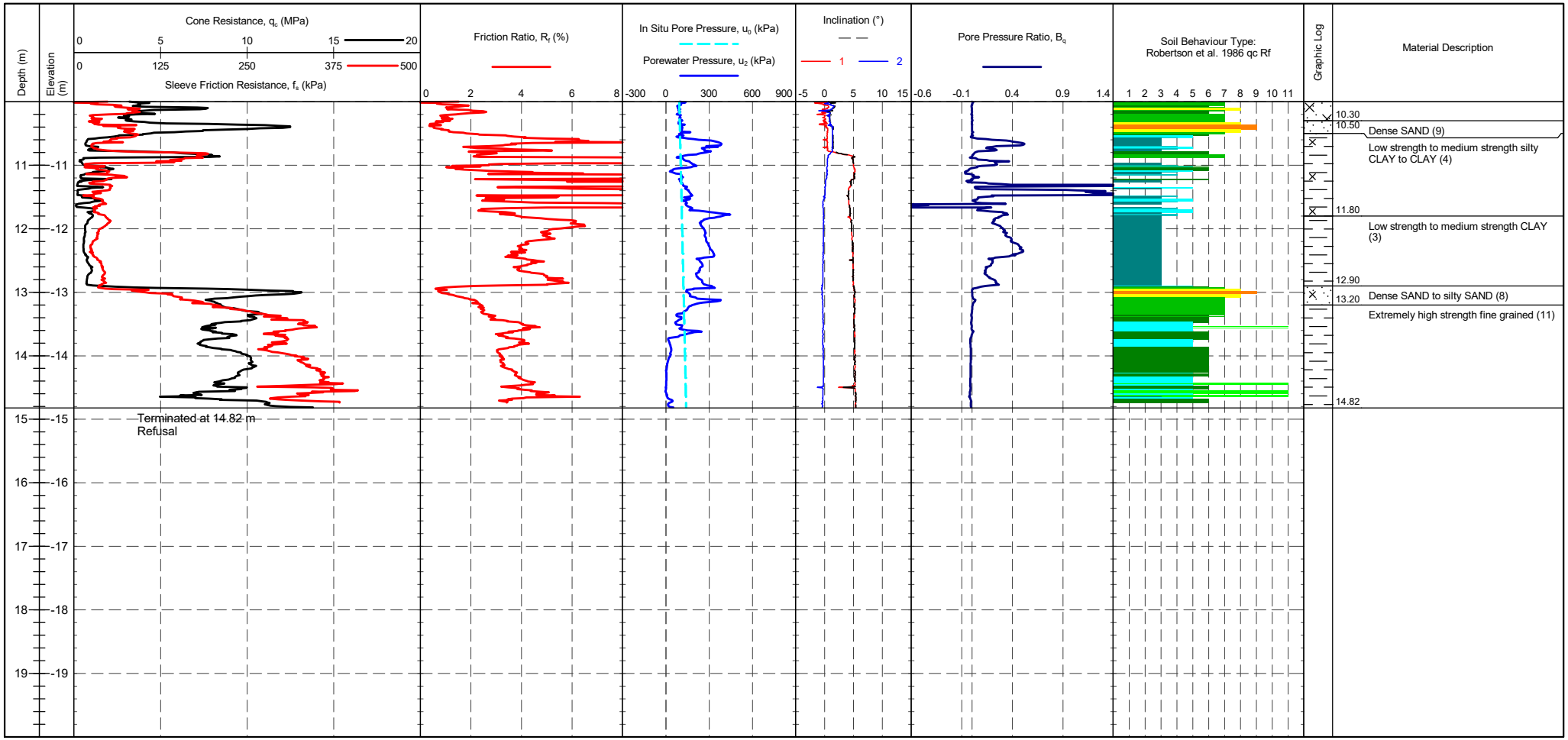
Groundwater Level
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT114**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2
CALIBRATION DATE	: 31/10/2023	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Sunny & Hot
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	278 mV	277 mV	-0.011 MPa
Sleeve	221 mV	229 mV	0.006 kPa
Pore Pressure 2	230 mV	246 mV	0.004 kPa
X-Y Inclinometer	2388 mV	2409 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

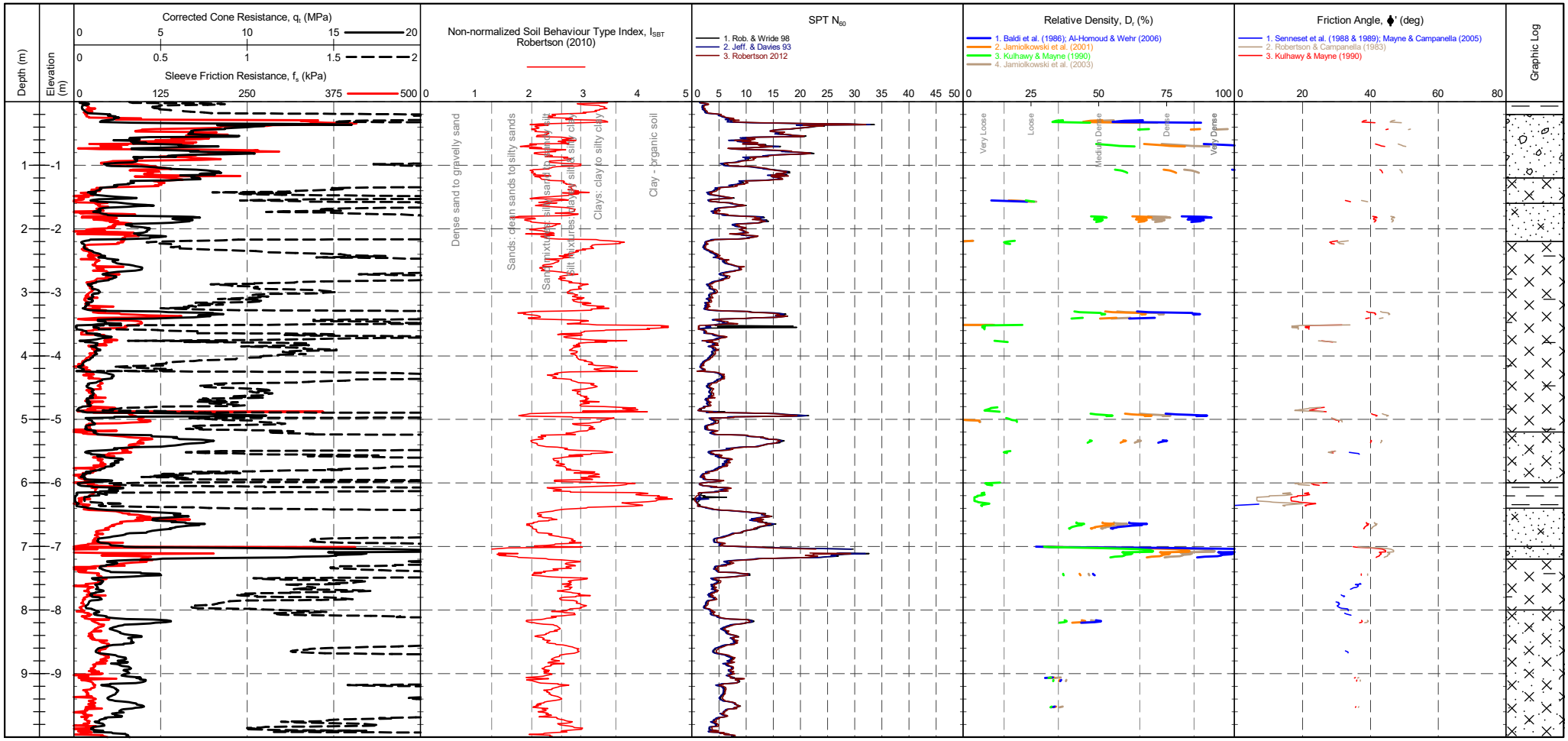
PointID
CPT114

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	278 mV	277 mV	-0.011 MPa
Sleeve	221 mV	229 mV	0.006 kPa
Pore Pressure 2	230 mV	246 mV	0.004 kPa
X-Y Inclinometer	2388 mV	2409 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

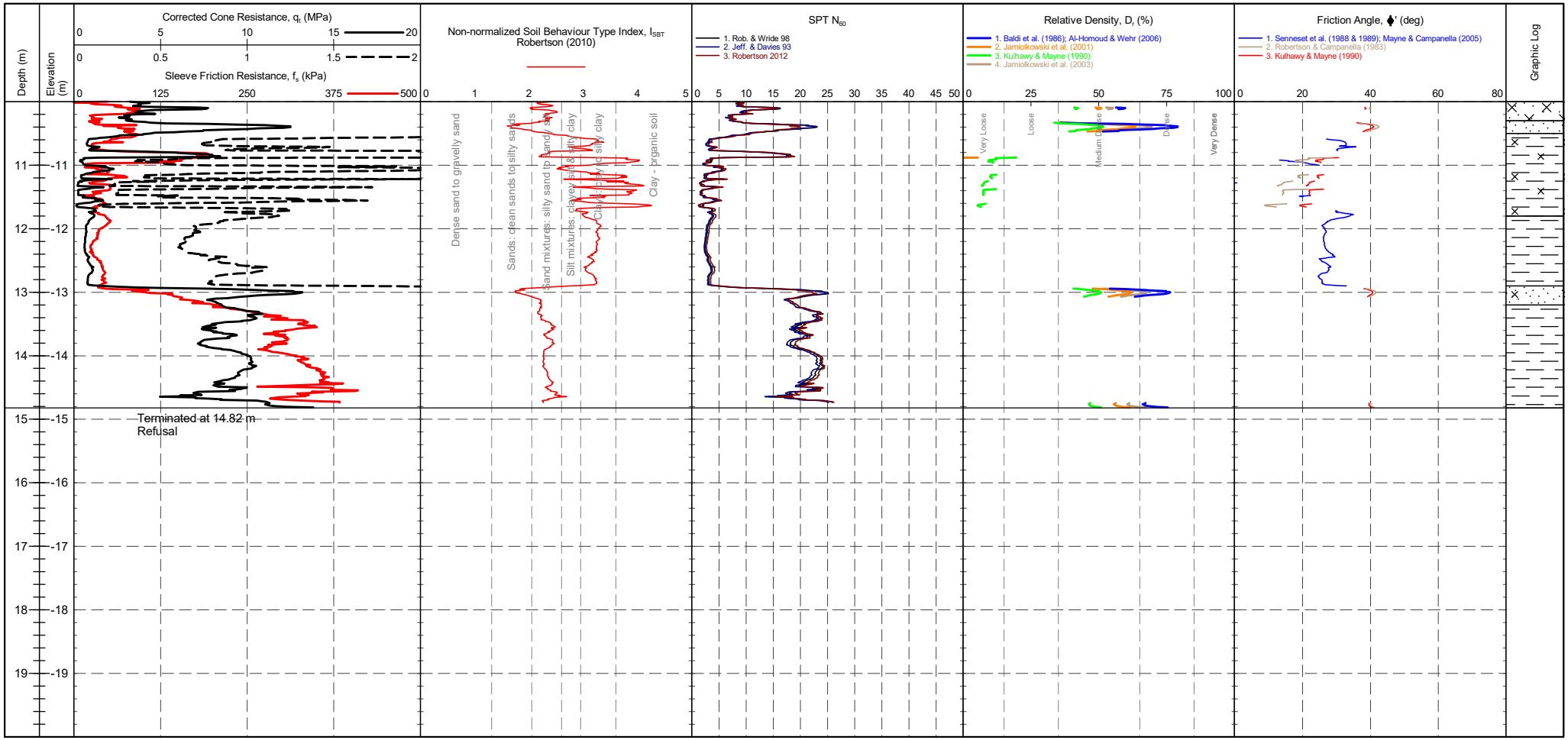
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 02

PointID: **CPT114**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	278 mV	277 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	221 mV	229 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	230 mV	246 mV	0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2388 mV	2409 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic	Description	SPT N value, NSPT	Description	Relative Density Dr (%)
Clays	2.95-3.60	Very Loose	0 - 4	Very Loose	0 - 15
Silt mixtures	2.60-2.95	Loose	4 - 10	Loose	15 - 35
Sand mixtures	2.05-2.60	Medium Dense	10 - 30	Medium Dense	35 - 65
Sands	1.31-2.05	Dense	30 - 50	Dense	65 - 85
Gravelly sand	<1.31	Very Dense	>50	Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

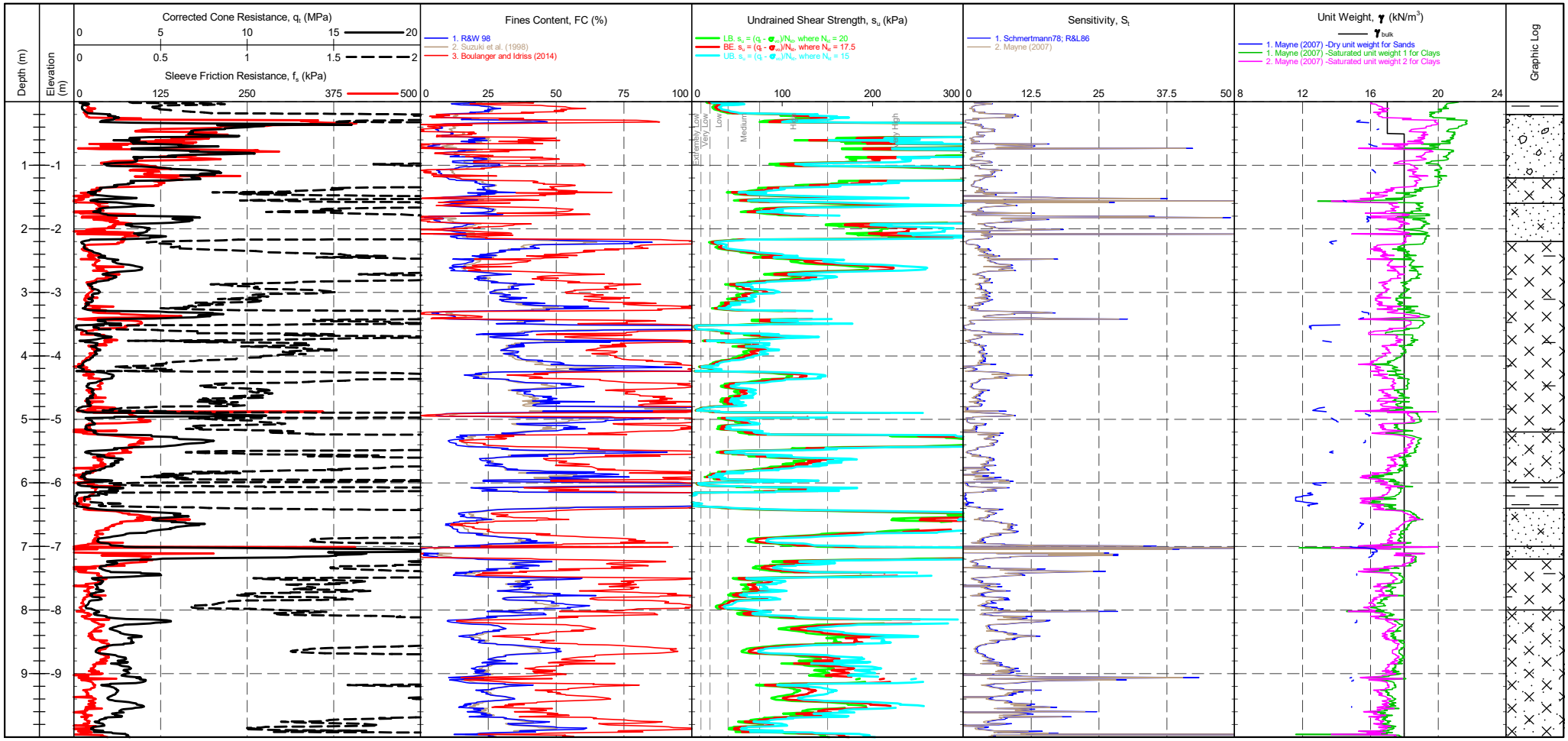
PointID: **CPT114**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	278 mV	277 mV	-0.011 MPa
Sleeve	221 mV	229 mV	0.006 kPa
Pore Pressure 2	230 mV	246 mV	0.004 kPa
X-Y Inclinometer	2388 mV	2409 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

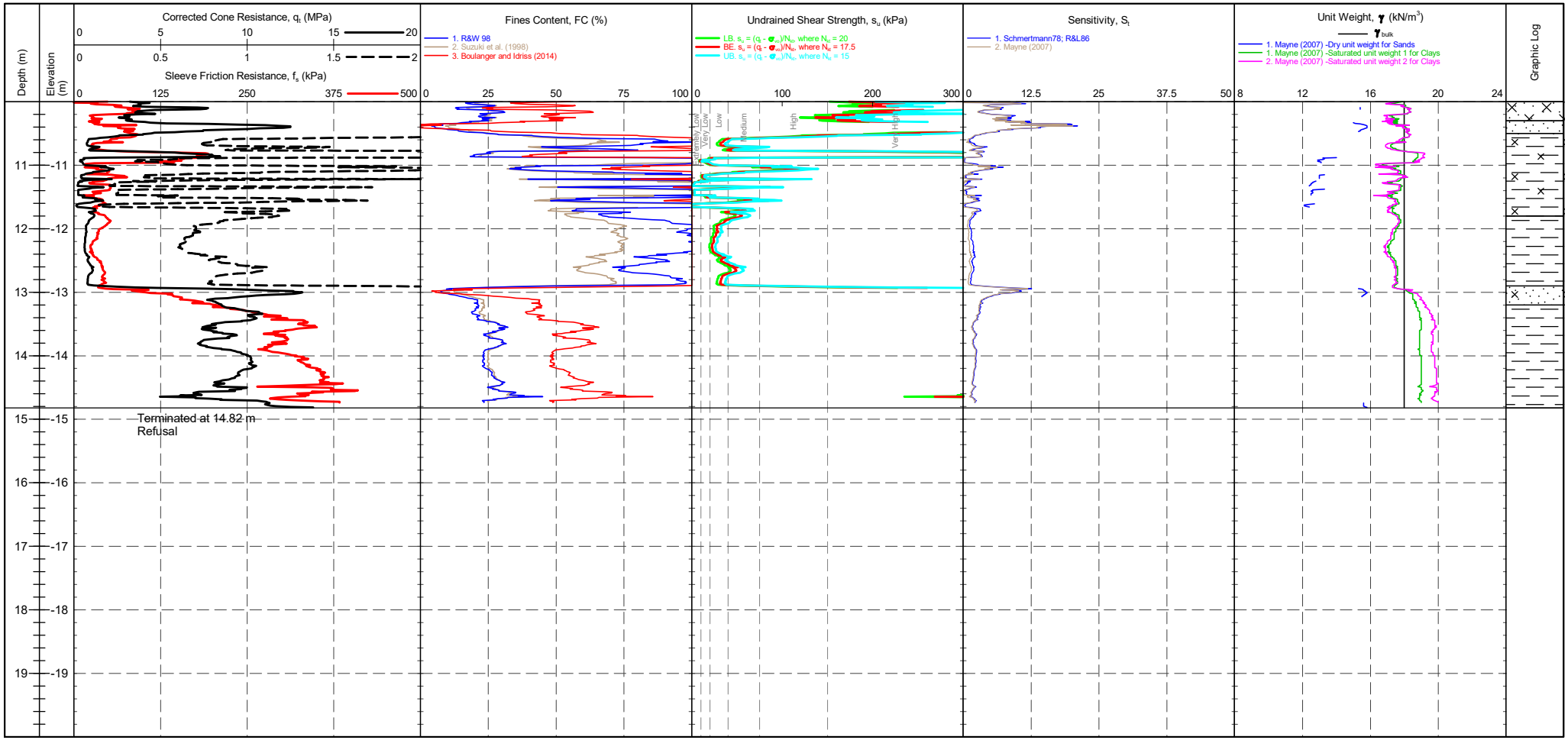
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT114**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	278 mV	277 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	221 mV	229 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	230 mV	246 mV	0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2388 mV	2409 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

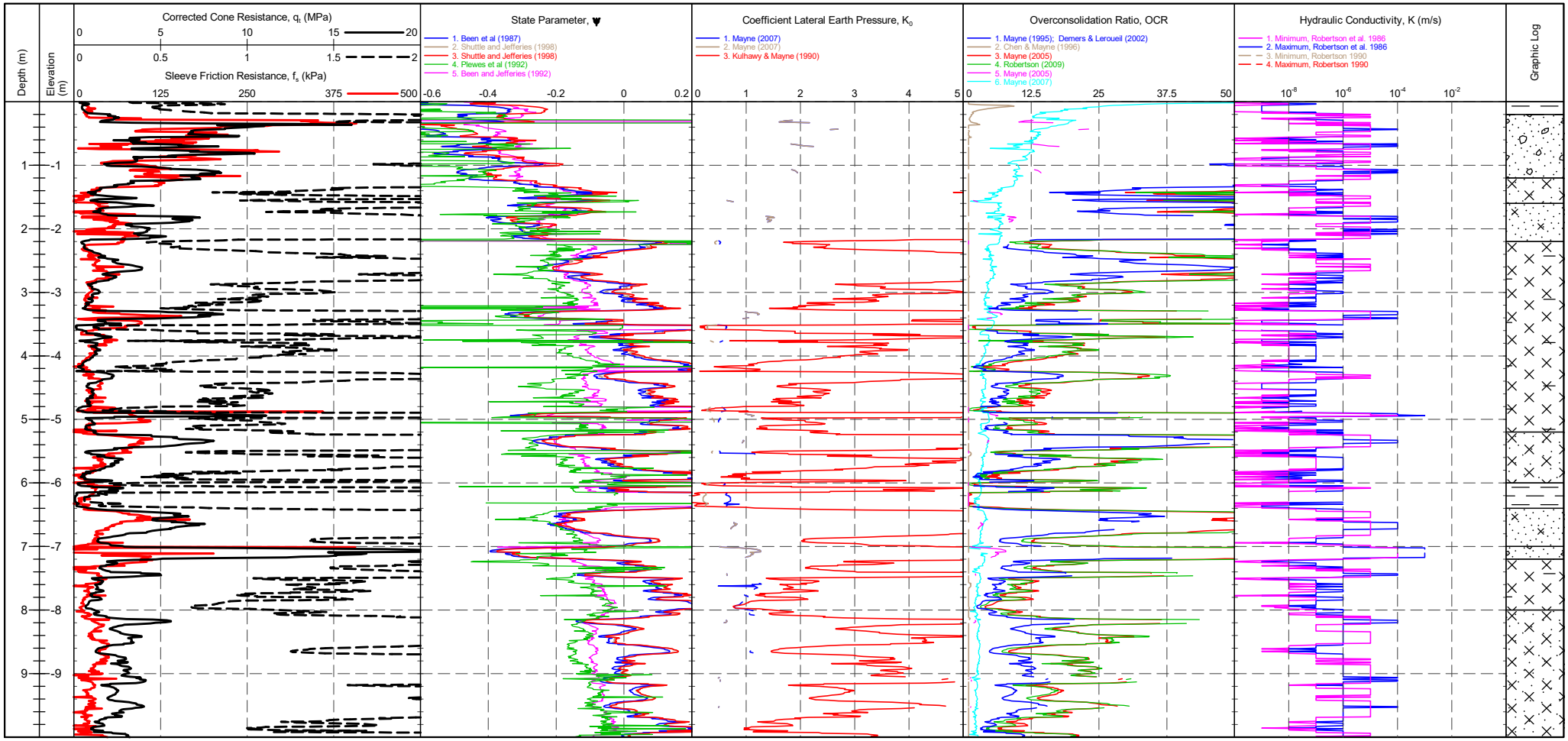
Dissipation Test

CPT LOG 04

Working with:

PointID **CPT114**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 1 OF 2 STATUS : Final TEST DATE : 15/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	278 mV	277 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	221 mV	229 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	230 mV	246 mV	0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2388 mV	2409 mV	

Groundwater Level

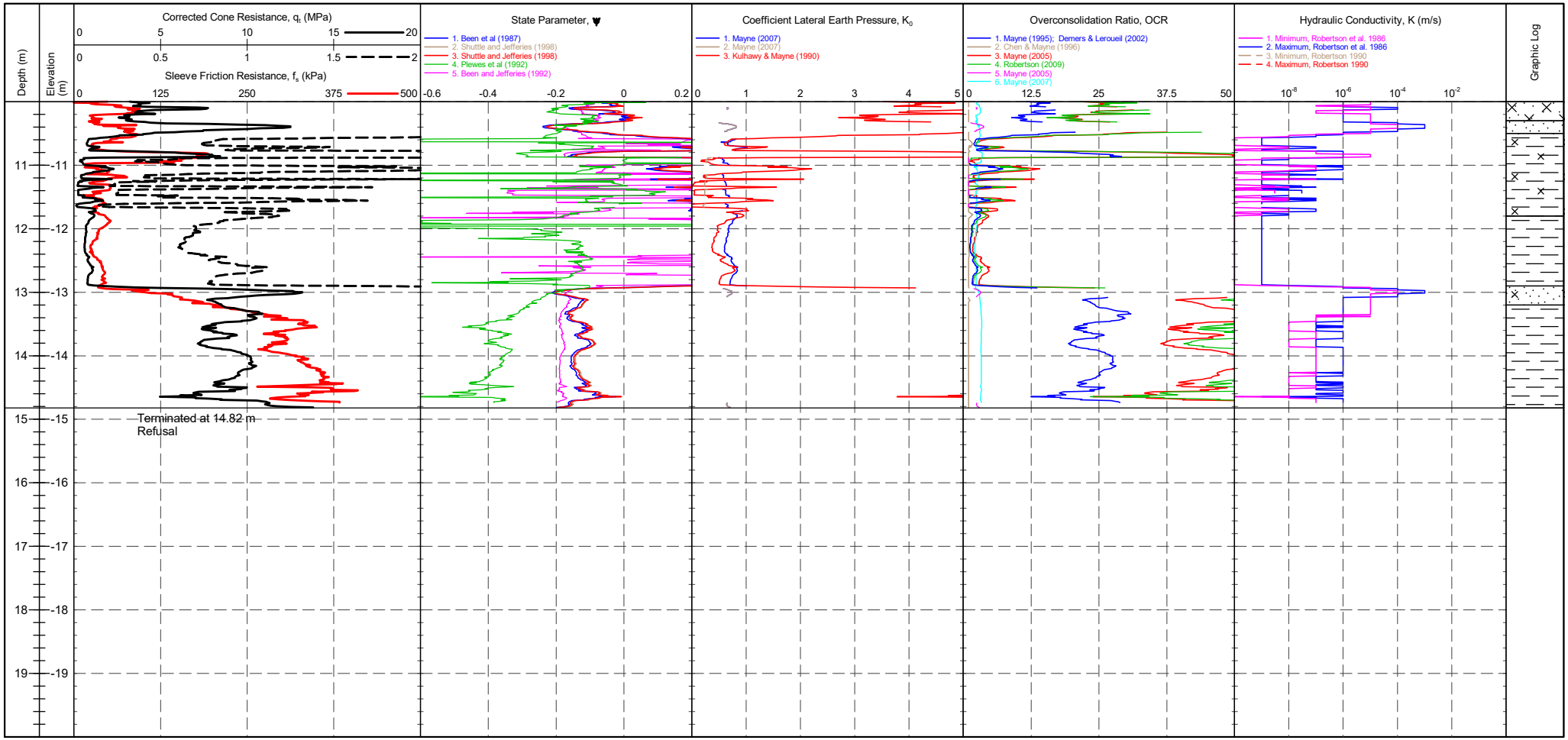
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT114**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 15/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	278 mV	277 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	221 mV	229 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	230 mV	246 mV	0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2388 mV	2409 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

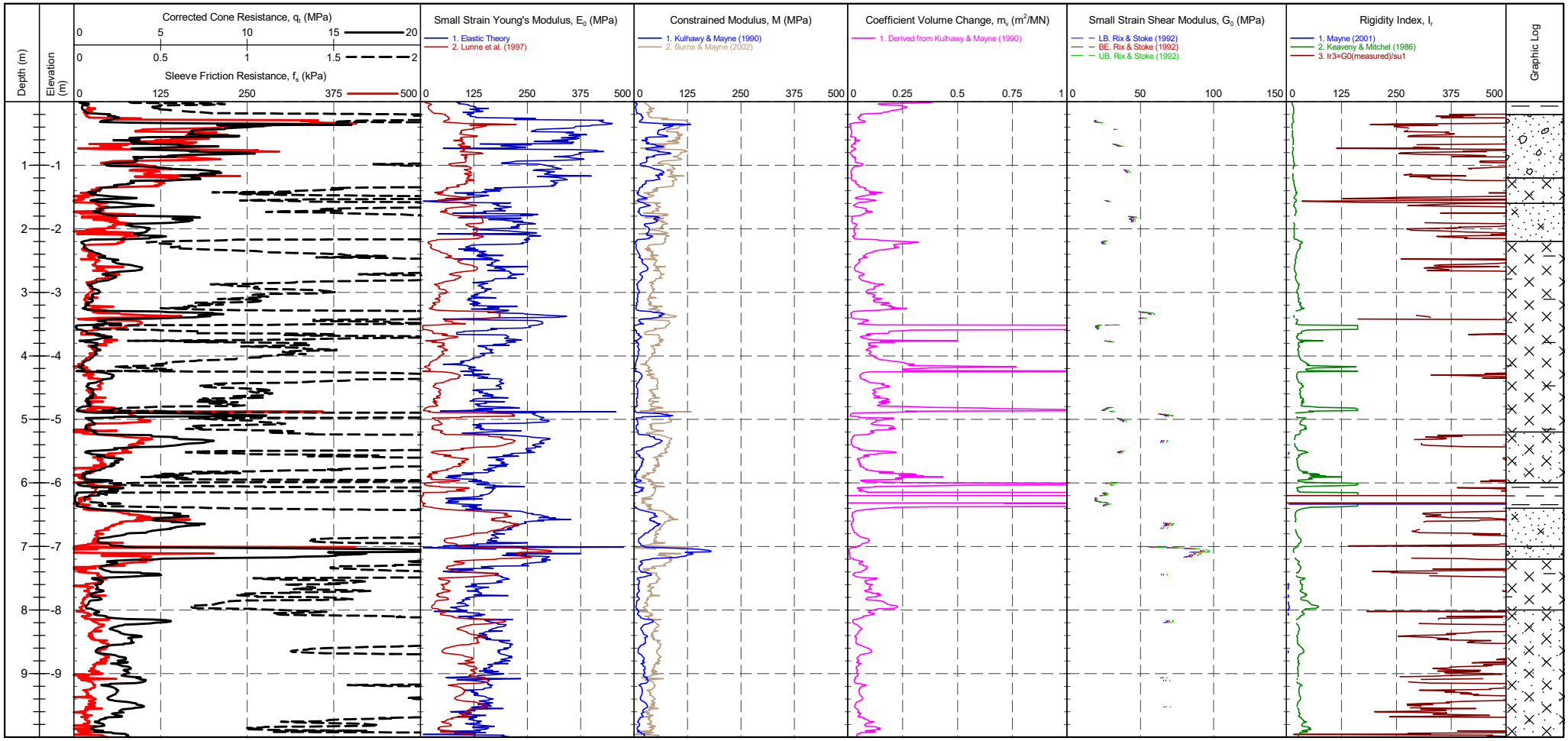
PointID
CPT114

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 15/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	278 mV	277 mV	-0.011 MPa
Sleeve	221 mV	229 mV	0.006 kPa
Pore Pressure 2	230 mV	246 mV	0.004 kPa
X-Y Inclinometer	2388 mV	2409 mV	

Groundwater Level

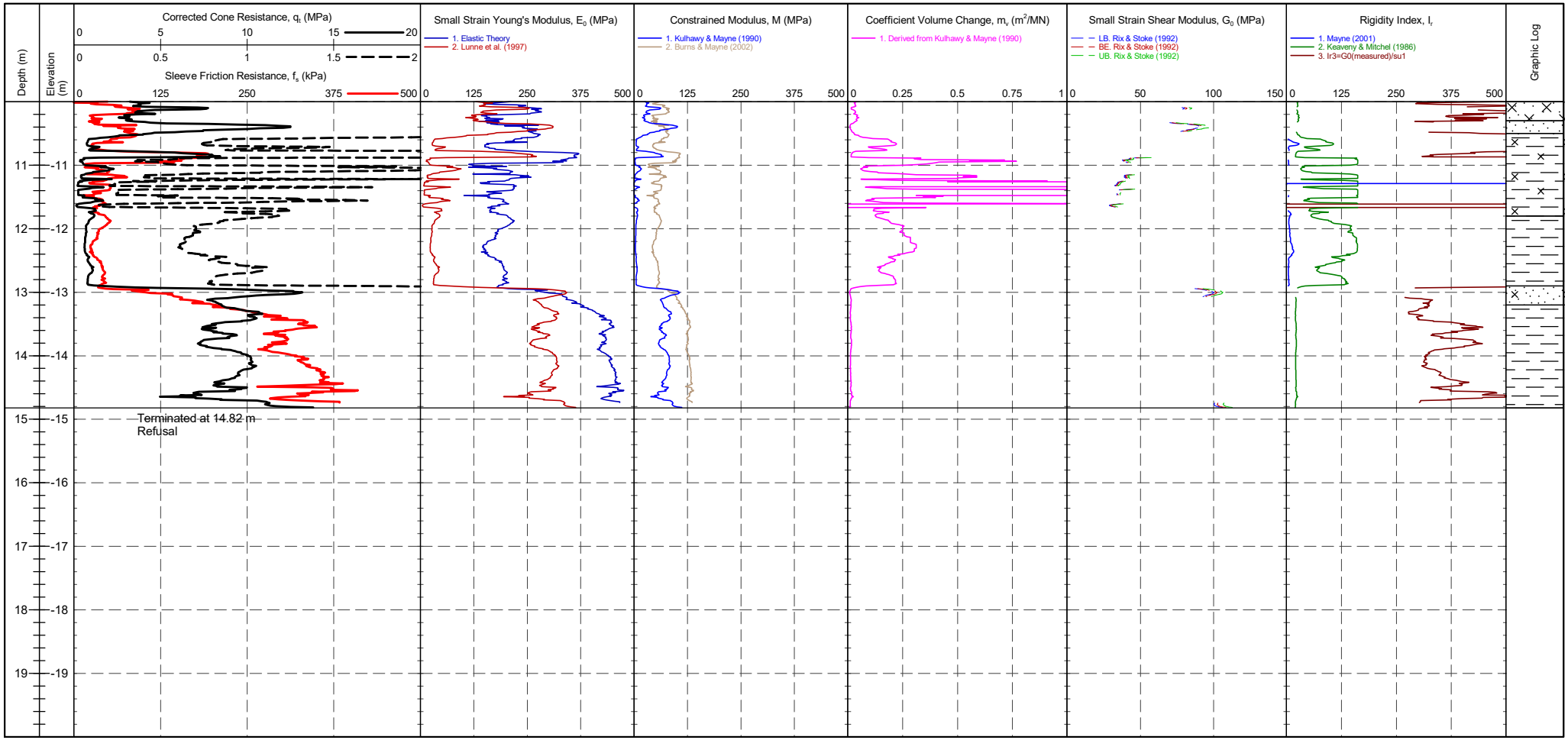
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 05

PointID: **CPT114**

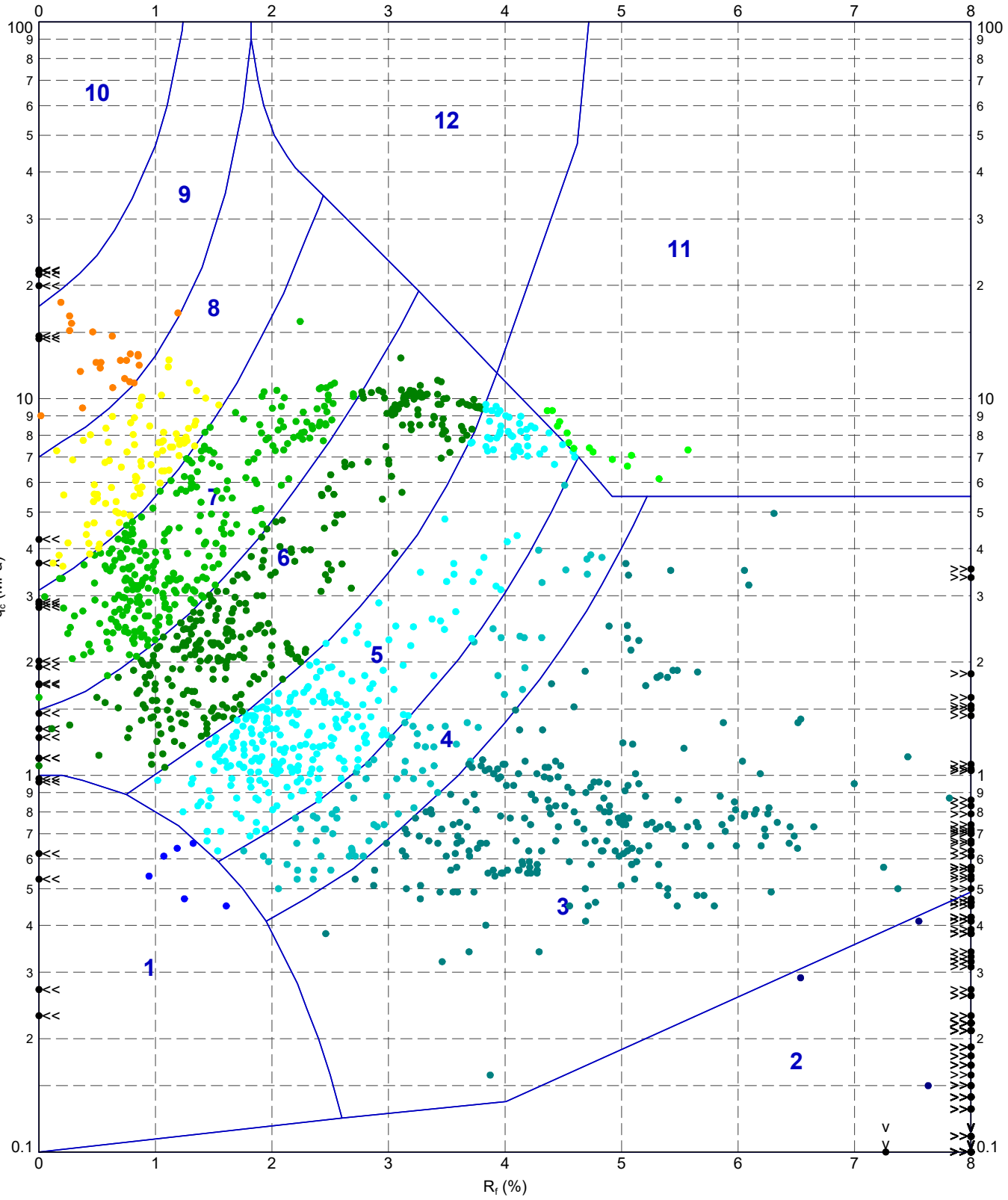
CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 15/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.1983	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	278 mV	277 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	221 mV	229 mV	0.006 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	230 mV	246 mV	0.004 kPa
FILTER TYPE	: HDPE	WEATHER	: Sunny & Hot	X-Y Inclinometer	2388 mV	2409 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE: E3P Georgia Calvert Chorlton Ryebank Fields Robertson et al. 1986 q_c vs. R_f - CPT114	DRAWN	DATE 02/08/2024	
	CHECKED	DATE 02/08/2024	
	SCALE Not To Scale		A4
	PROJECT No 1240280	FIGURE No	

220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:09 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prg: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

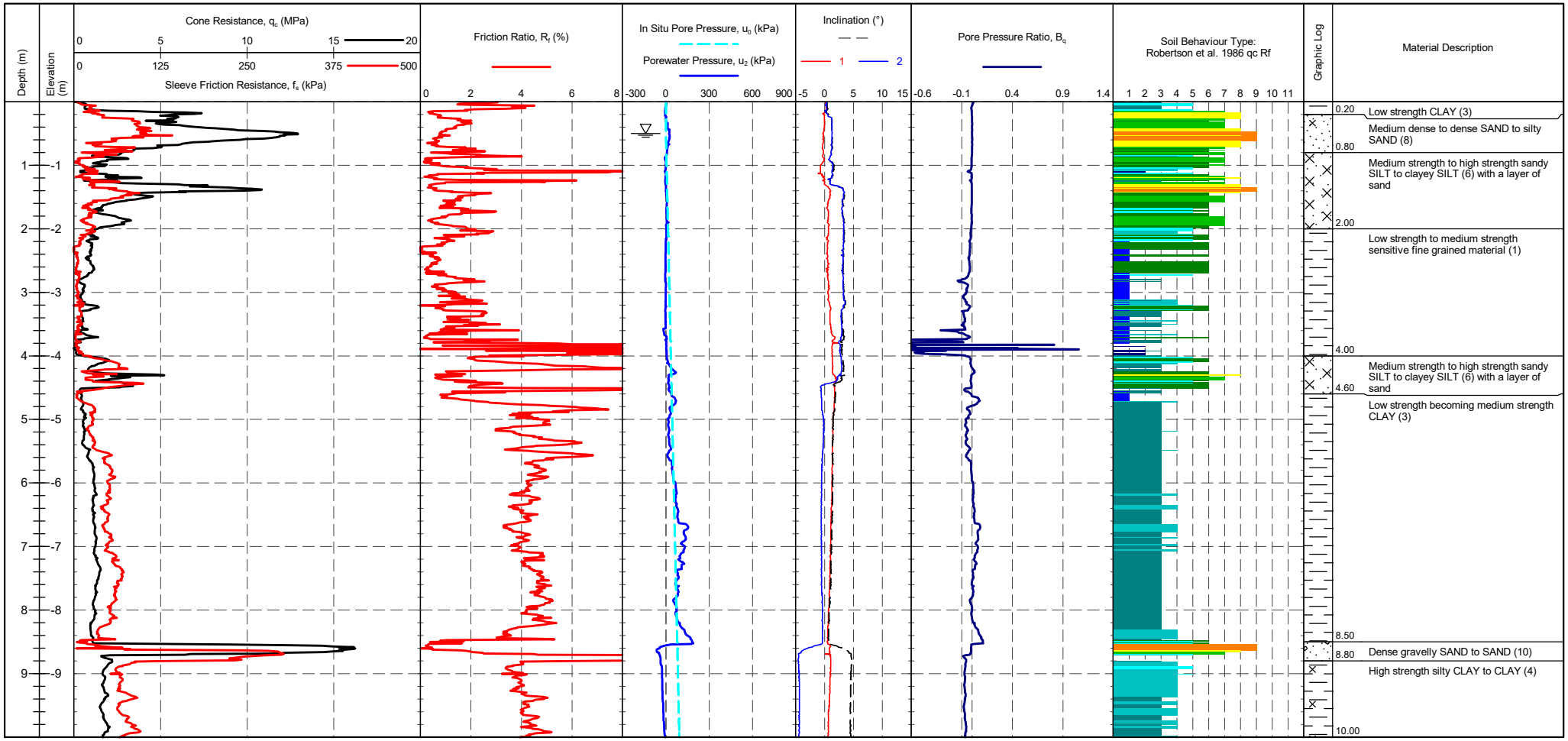
PointID: **CPT115**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni
CONE AREA	: 15cm²	OPERATOR	: R Shepherd
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None
FILTER POSITION	: u2	WEATHER	: Raining & Mild
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

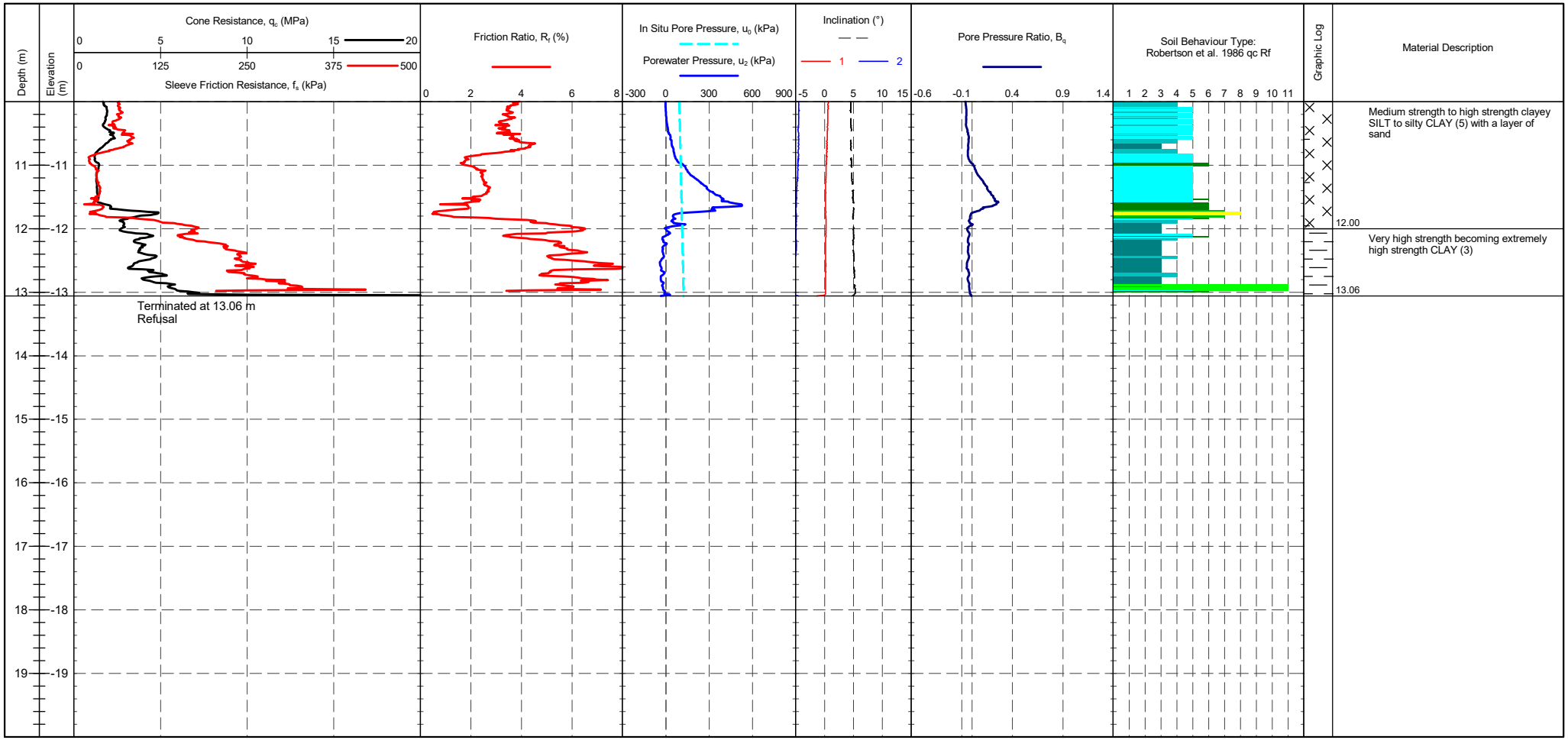
Groundwater Level
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT115**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2				
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2				
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni				
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd				
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None				
FILTER POSITION	: u2	WEATHER	: Raining & Mild				
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.				

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

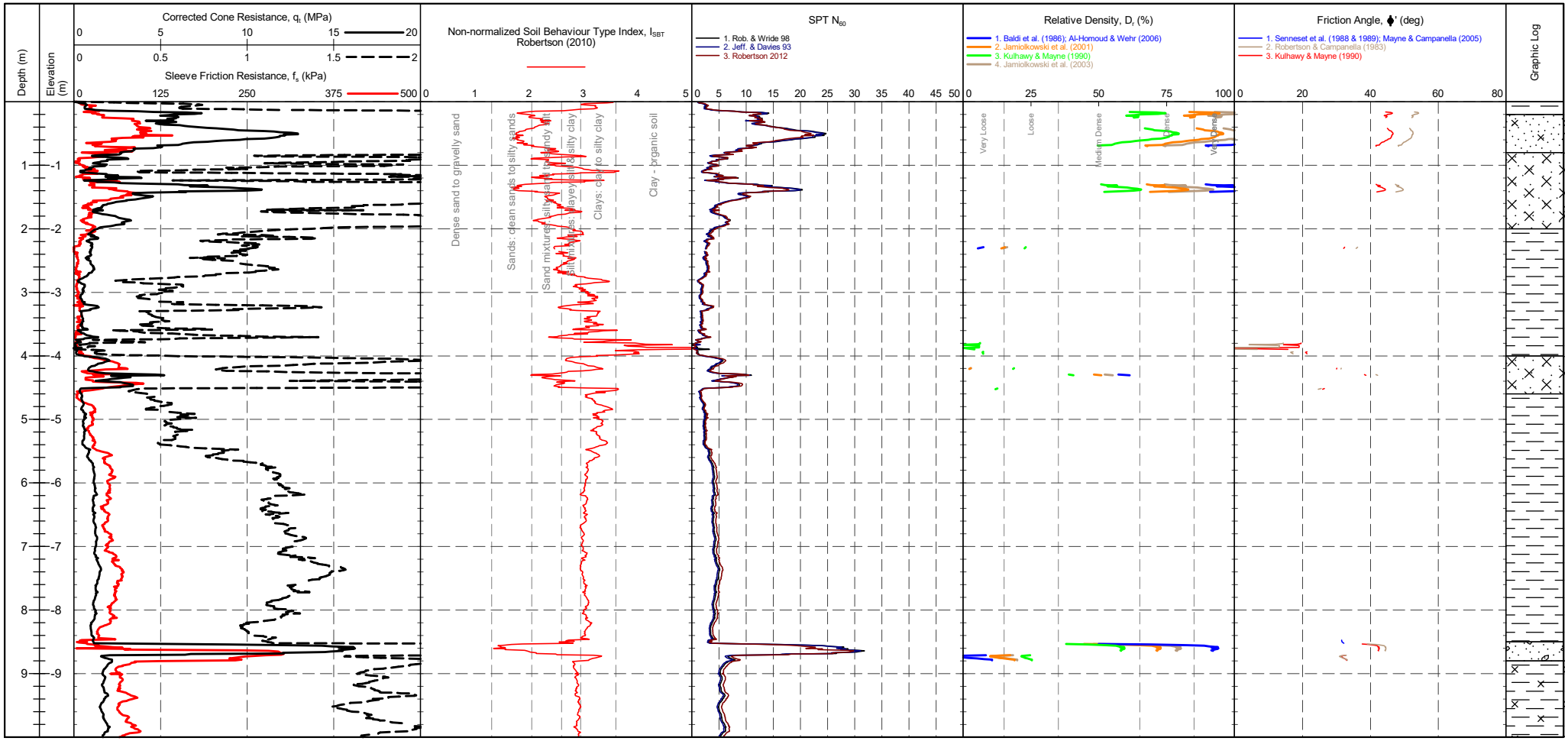
PointID
CPT115

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 02

[redacted] Working with: [redacted]

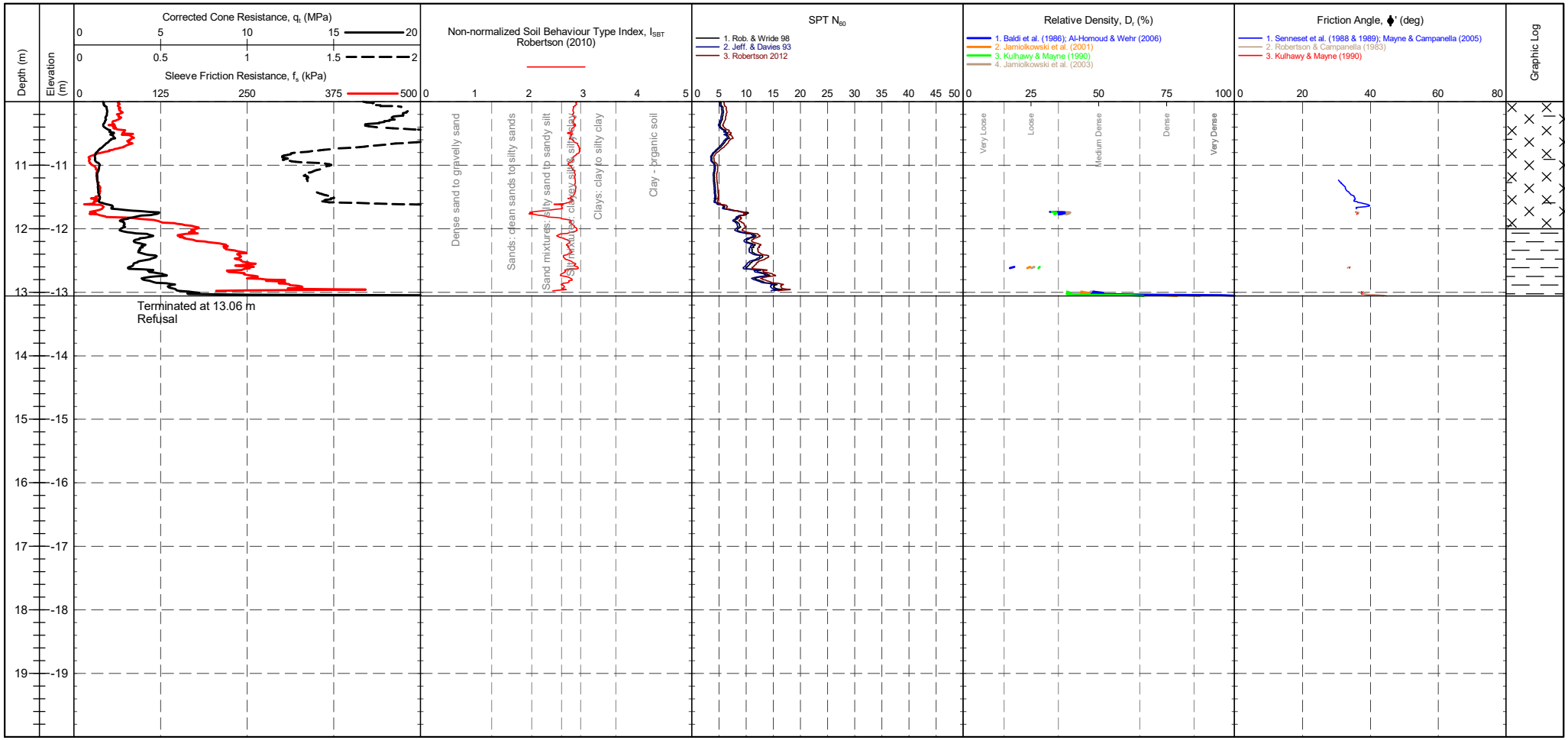
PointID: **CPT115**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

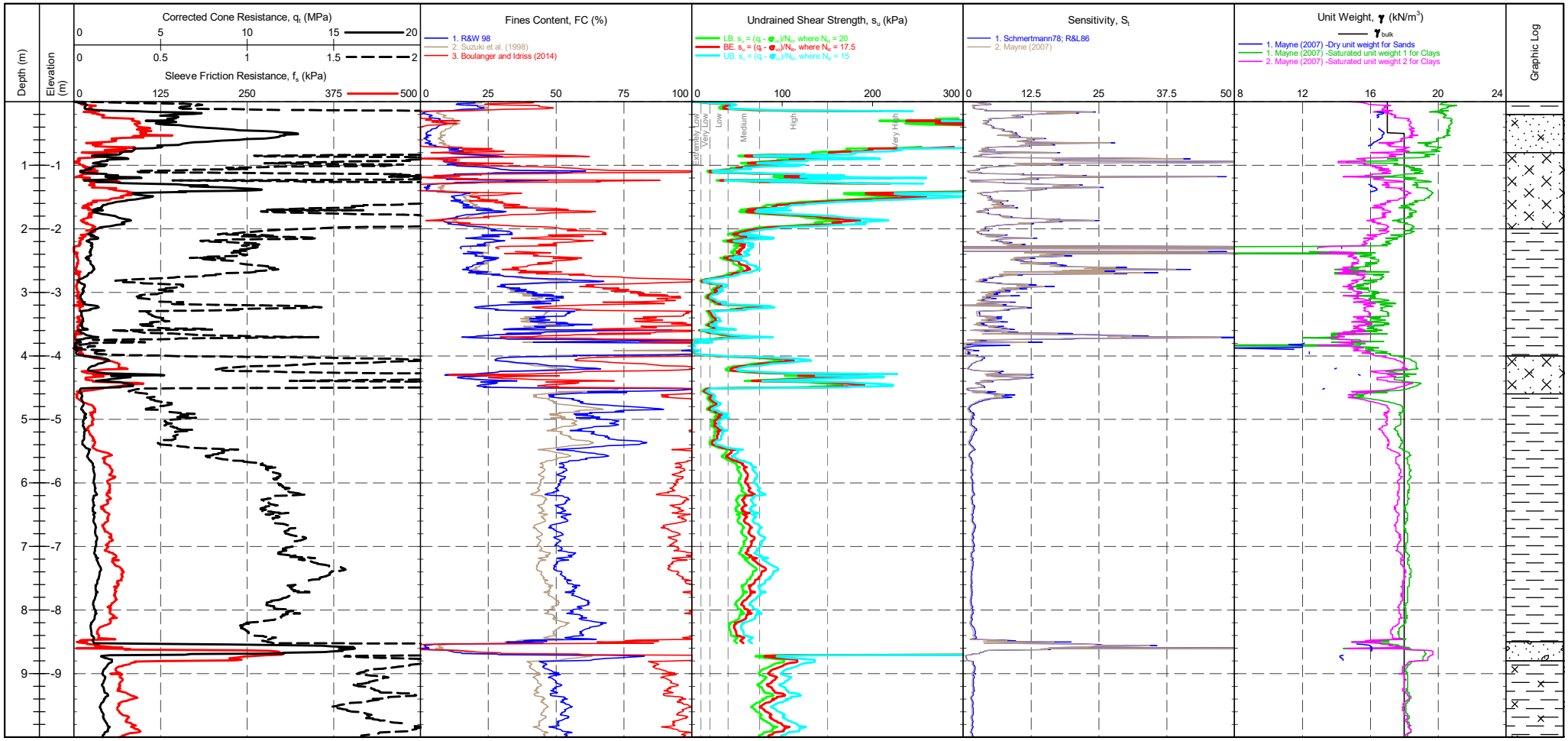
PointID: **CPT115**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd
FILTER POSITION	: u2	FRICTION REDUCER	: None
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

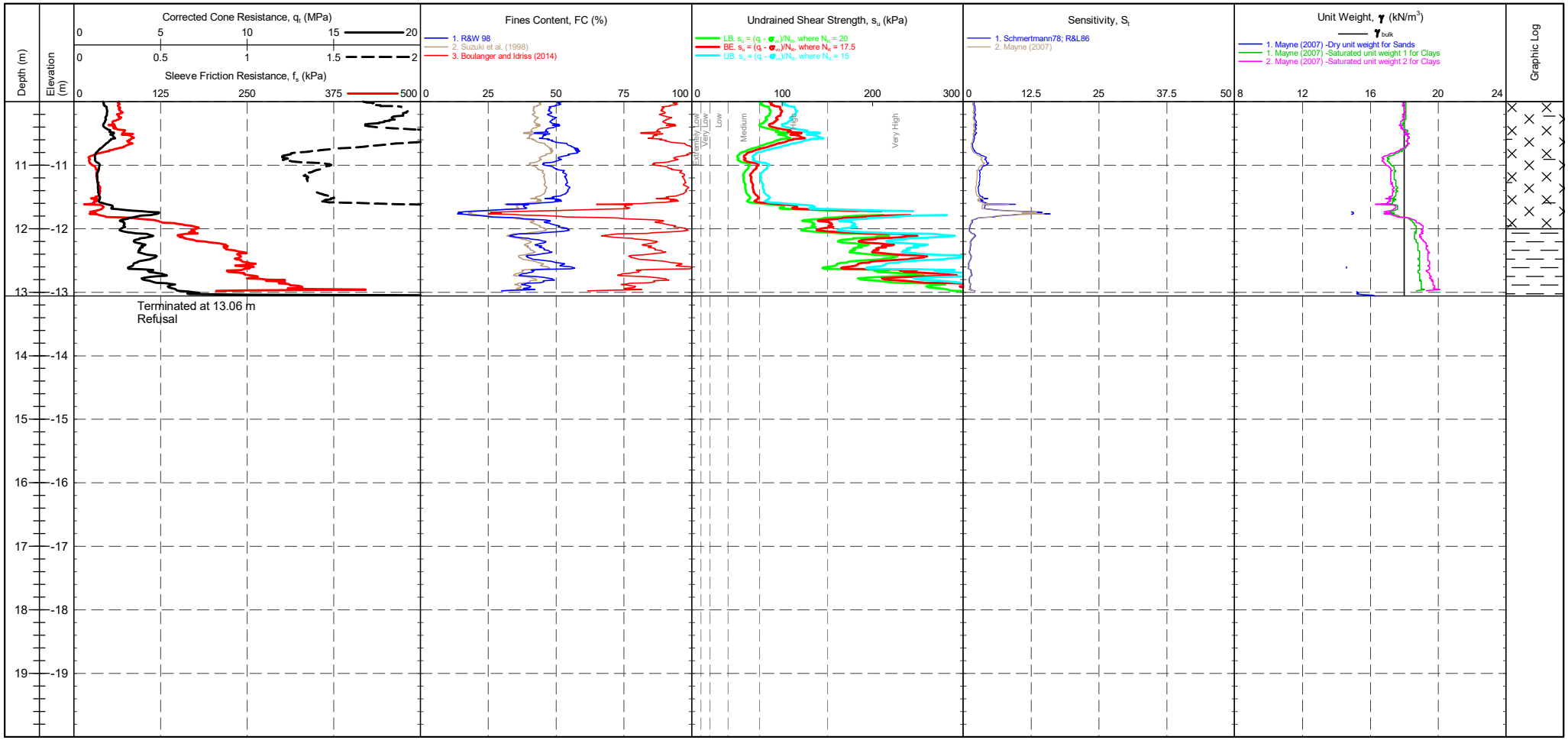
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT115**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test refused on total pressure.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	229 mV	229 mV	0 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	317 mV	288 mV	-0.007 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2502 mV	2496 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)	Term based on measurement	su (kPa)
Extremely low strength	<10	Medium strength	40-75
Very low strength	10-20	High strength	75-150
Low strength	20-40	Very high strength	150-300
		Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

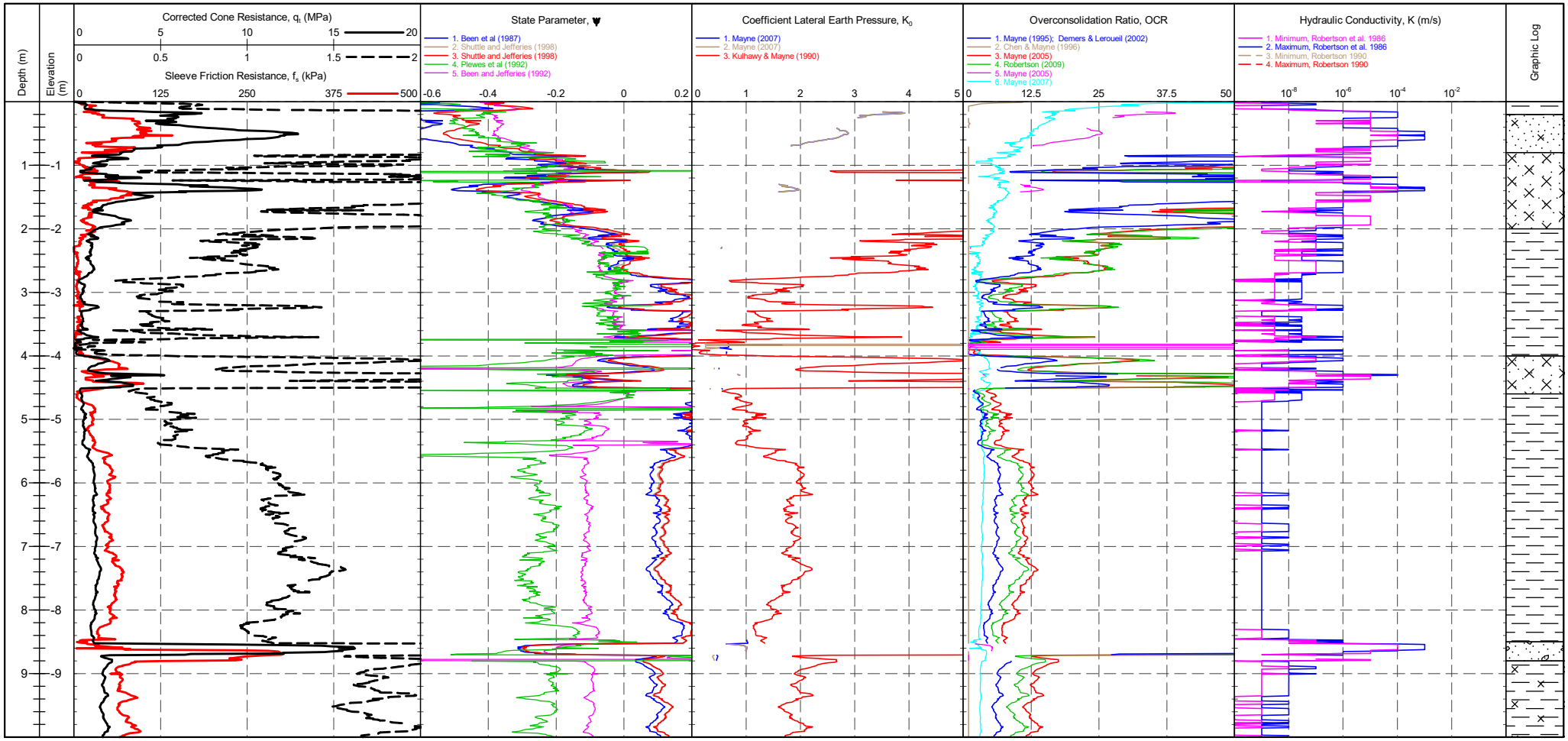
PointID: **CPT115**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	
FILTER POSITION	: u2	FRICTION REDUCER	: None	
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

Groundwater Level

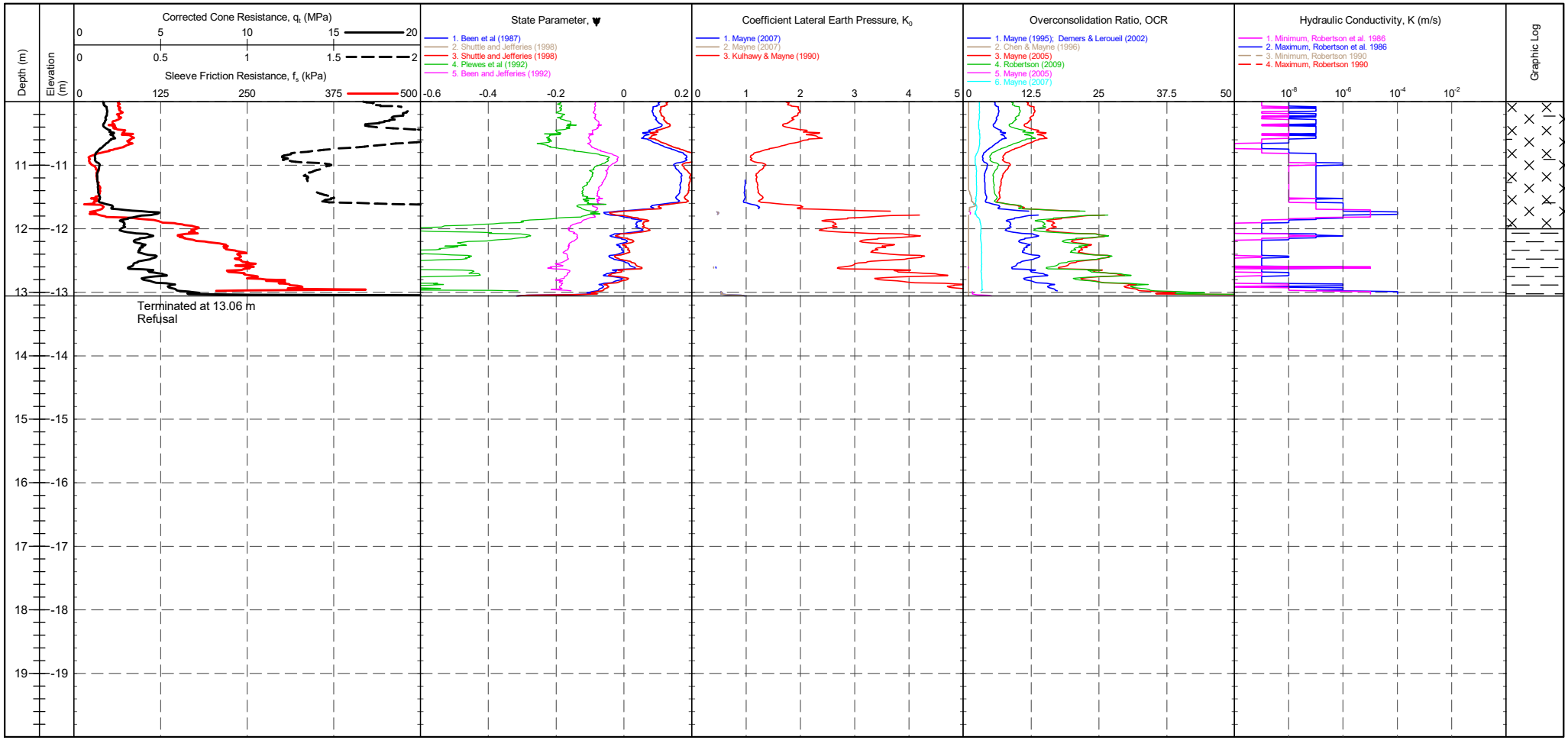
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT115**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test refused on total pressure.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



				CPTU ZERO VALUES			
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	Transducer	Pre	Post	Difference
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Tip	302 mV	301 mV	-0.011 MPa
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Sleeve	229 mV	229 mV	0 kPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Pore Pressure 2	317 mV	288 mV	-0.007 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	X-Y Inclinometer	2502 mV	2496 mV	
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild				

Groundwater Level

Dissipation Test

CPT LOG 05

[redacted] Working with: [redacted]

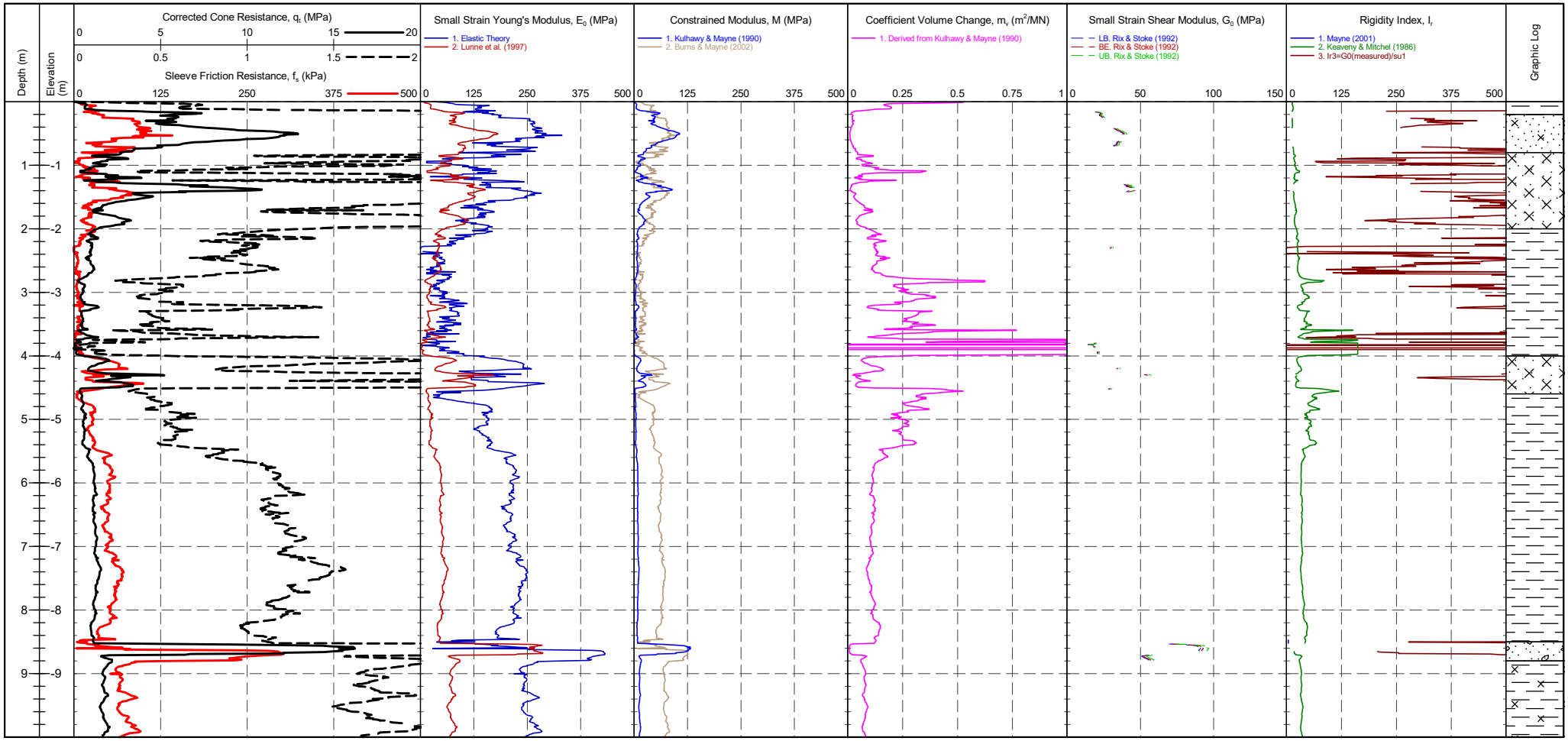
PointID: **CPT115**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with:

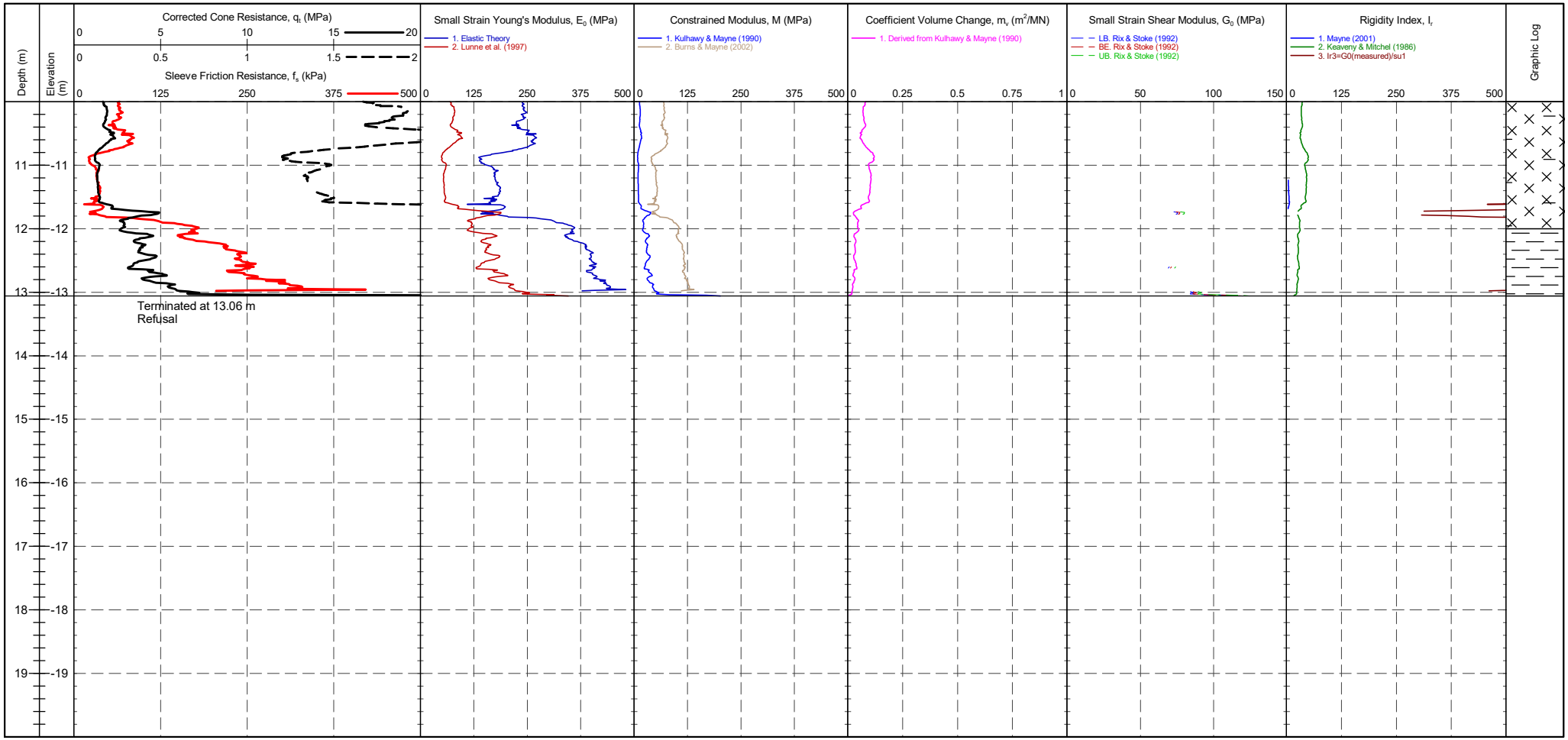
PointID
CPT115

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test refused on total pressure.

SHEET : 2 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



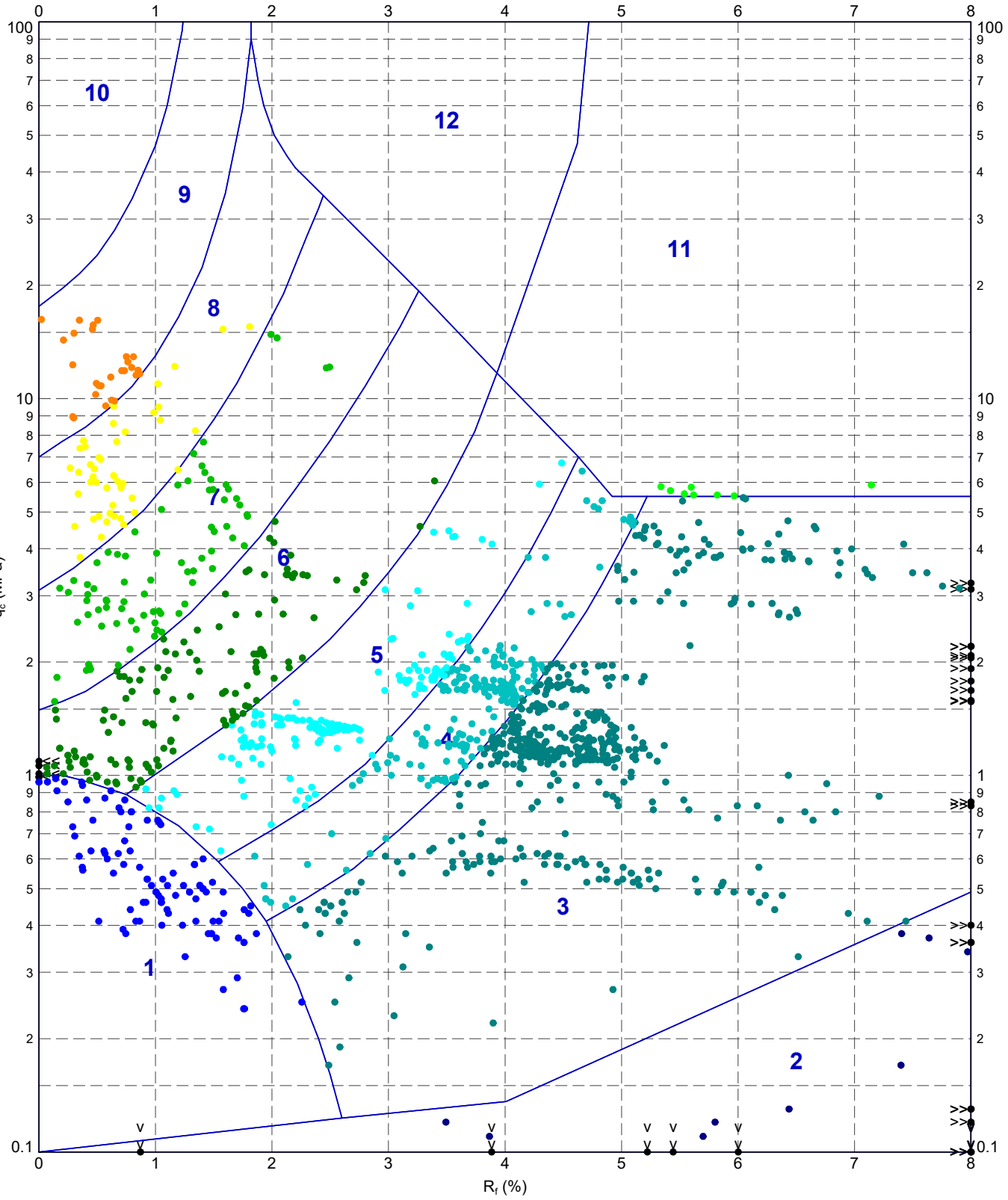
CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	302 mV	301 mV	-0.011 MPa
Sleeve	229 mV	229 mV	0 kPa
Pore Pressure 2	317 mV	288 mV	-0.007 kPa
X-Y Inclinometer	2502 mV	2496 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT115

DRAWN	DATE 02/08/2024
CHECKED	DATE 02/08/2024
SCALE Not To Scale	A4
PROJECT No 1240280	FIGURE No

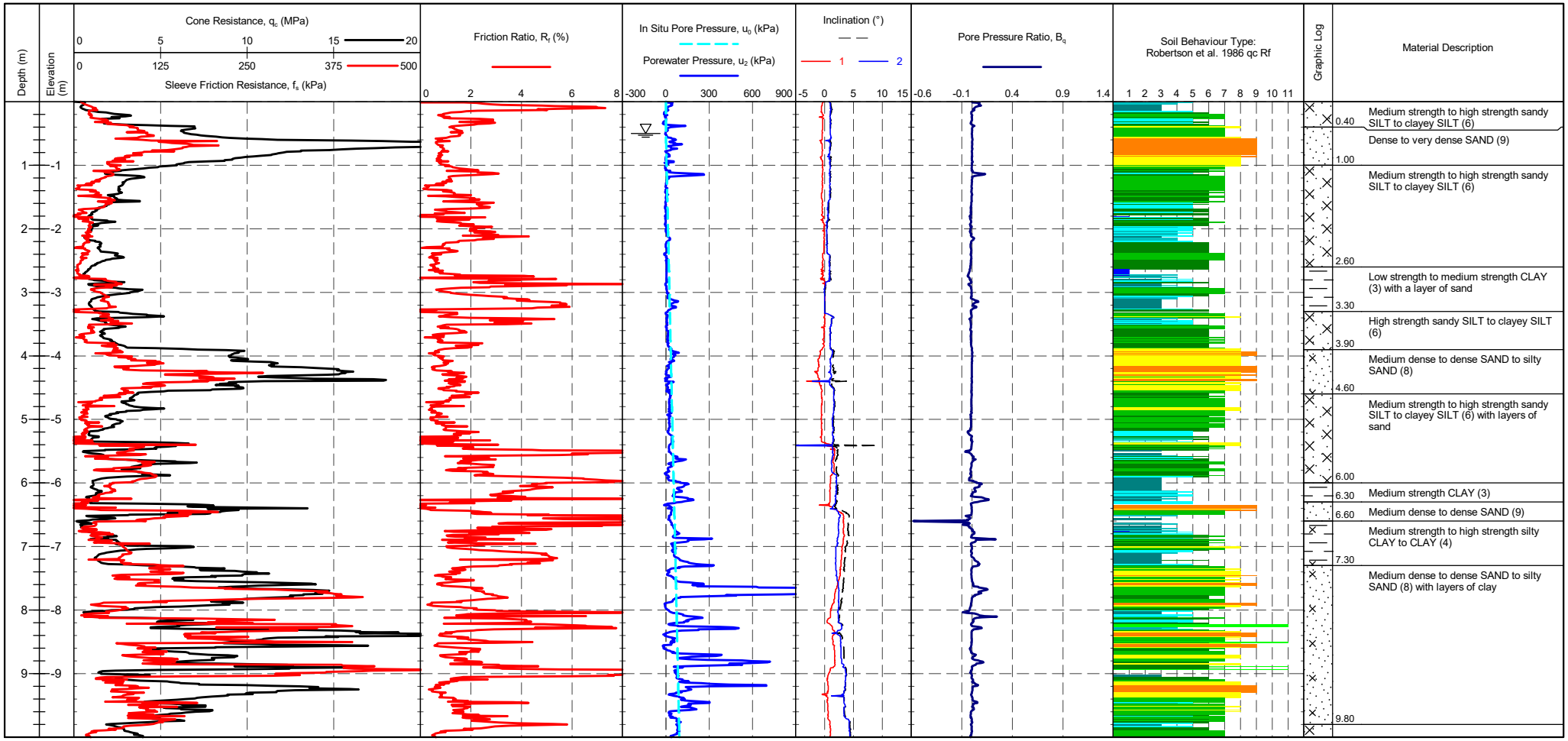
220629-ADVANCED REPORT INSITUSI 2.02.1.UB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:11 10.03.00.09 DatgeLab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

CPT LOG 01

[redacted] Working with: [redacted]

PointID: **CPT116**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 1 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID : S15-CFIP.2145	TEST TYPE : TE2		
CALIBRATION DATE : 21/03/2024	APPLICATION CLASS : 2		
CONE MODEL : Subtraction	RIG : CPT 025 - Toni		
CONE AREA : 15cm²	OPERATOR : R Shepherd		
CONE AREA RATIO : 0.79	FRICTION REDUCER : None		
FILTER POSITION : u2	WEATHER : Raining & Mild		
FILTER TYPE : HDPE	GROUNDWATER DEPTH : Assumed for calculation purposes		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	299 mV	300 mV	0.011 MPa
Sleeve	245 mV	240 mV	-0.004 kPa
Pore Pressure 2	281 mV	321 mV	0.009 kPa
X-Y Inclinometer	2476 mV	2484 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

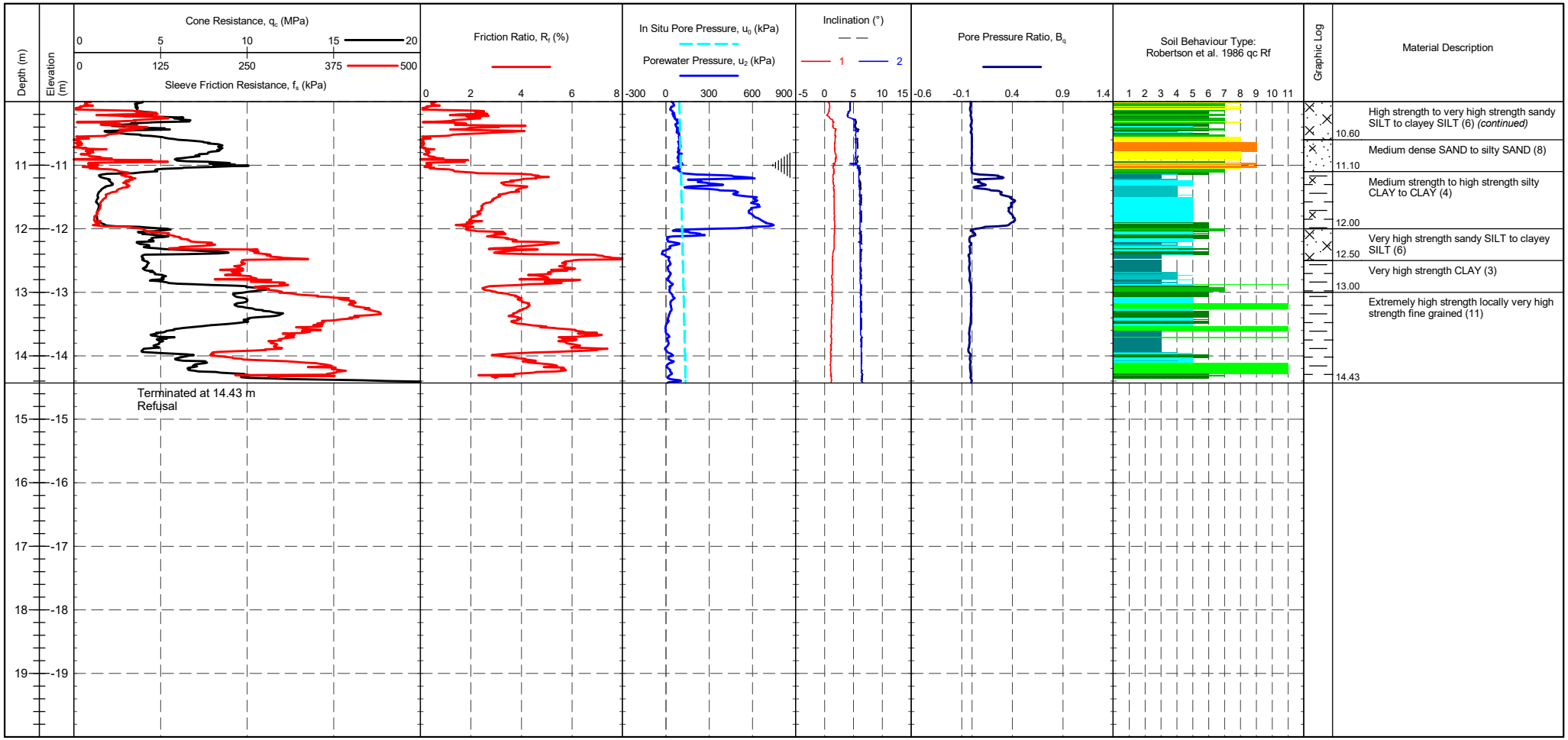
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 01

PointID: **CPT116**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CALIBRATION DATE	: 21/03/2024	APPLICATION CLASS	: 2		
CONE MODEL	: Subtraction	RIG	: CPT 025 - Toni		
CONE AREA	: 15cm^2	OPERATOR	: R Shepherd		
CONE AREA RATIO	: 0.79	FRICTION REDUCER	: None		
FILTER POSITION	: u2	WEATHER	: Raining & Mild		
FILTER TYPE	: HDPE	GROUNDWATER DEPTH	: Assumed for calculation purposes.		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	299 mV	300 mV	0.011 MPa
Sleeve	245 mV	240 mV	-0.004 kPa
Pore Pressure 2	281 mV	321 mV	0.009 kPa
X-Y Inclinometer	2476 mV	2484 mV	

METHOD: Robertson et al. 1986 qc Rf

1 - Sensitive fine grained material
2 - Organic material
3 - CLAY
4 - Silty CLAY to CLAY
5 - Clayey SILT to silty CLAY
6 - Sandy SILT to clayey SILT
7 - Silty SAND to sandy SILT
8 - SAND to silty SAND
9 - SAND
10 - Gravelly SAND to SAND
11 - Very stiff fine grained
12 - SAND to clayey SAND

Groundwater Level

Dissipation Test

CPT LOG 02

Working with:

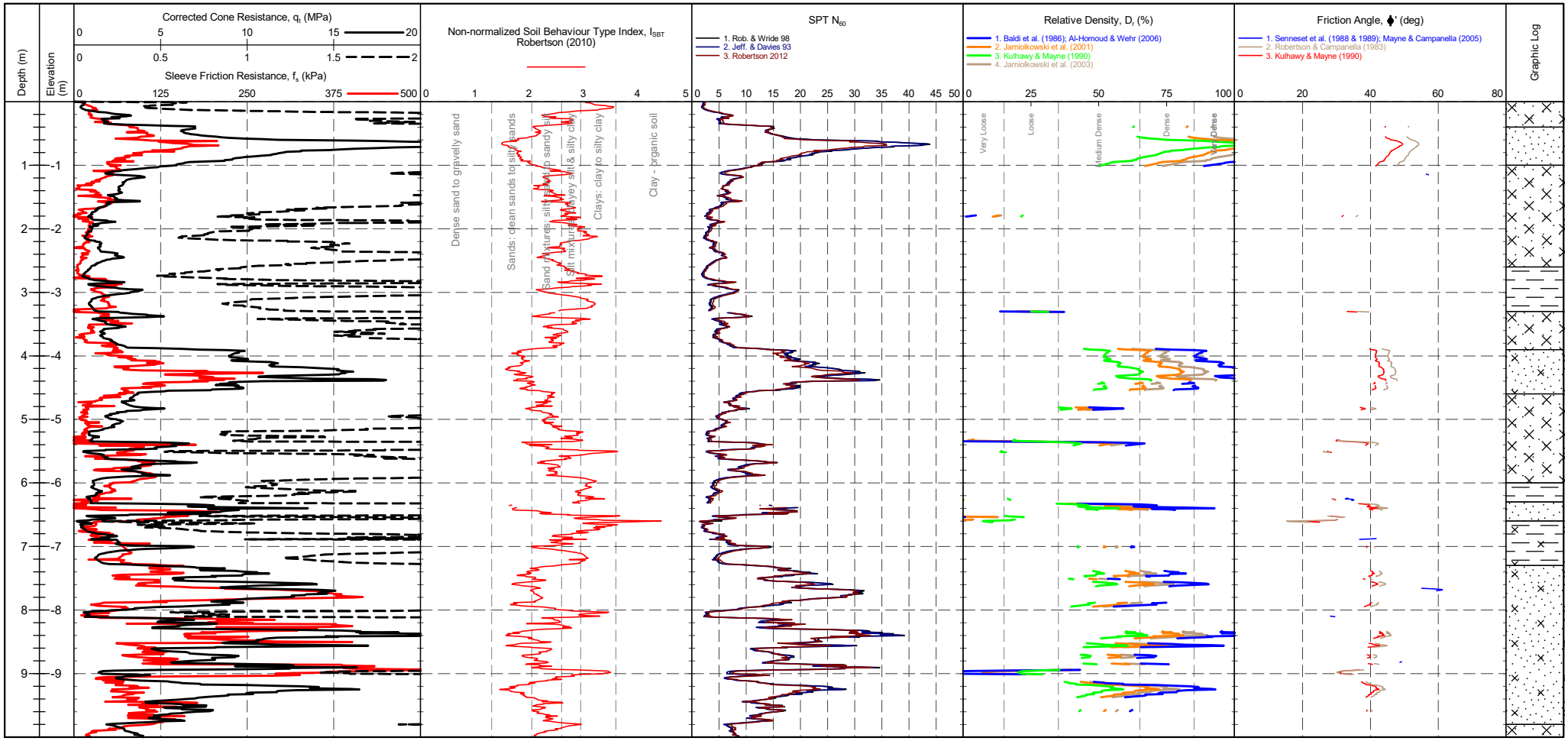
PointID
CPT116

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	299 mV	300 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	245 mV	240 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	281 mV	321 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2484 mV	

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

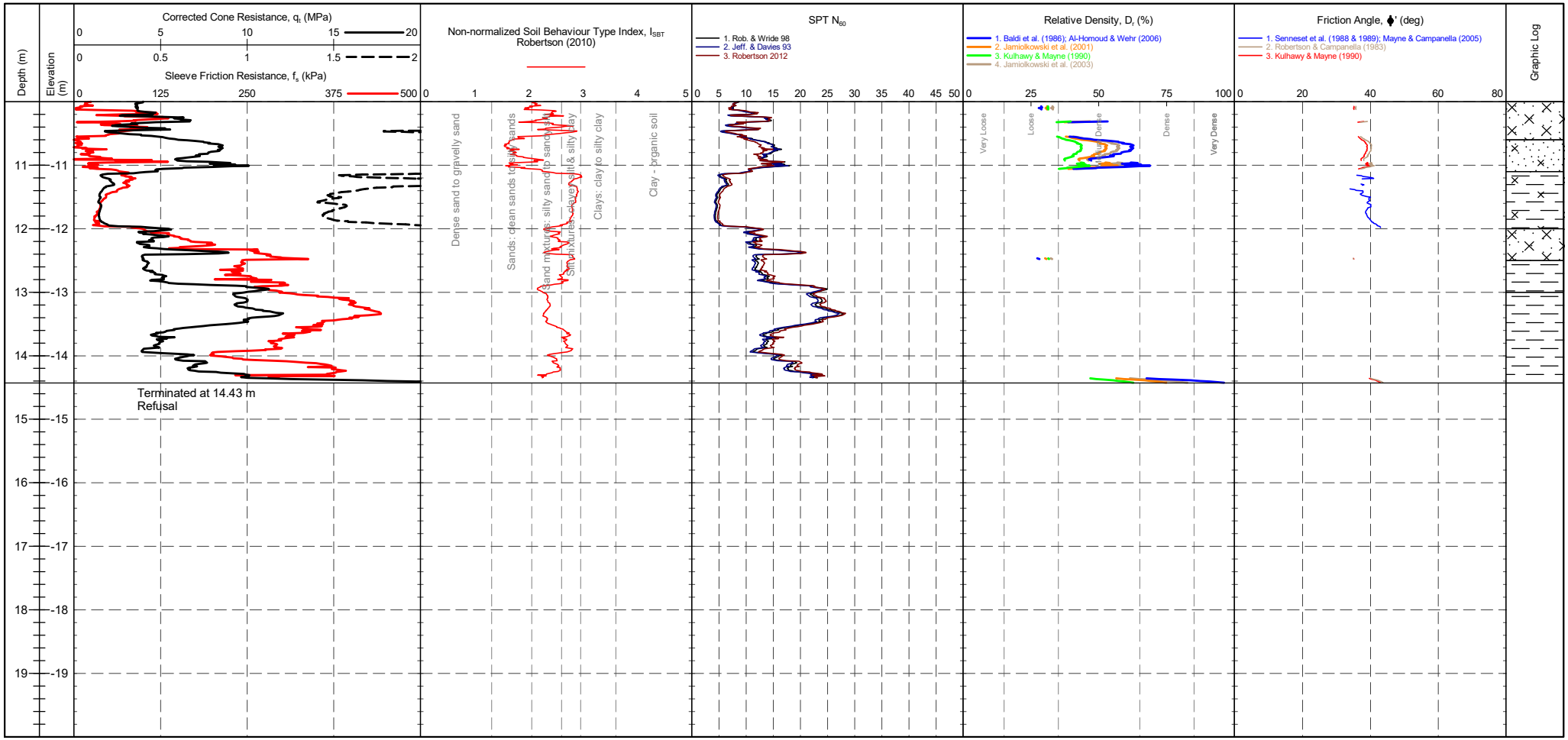
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 02

PointID: **CPT116**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni	Tip	299 mV	300 mV
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	245 mV	240 mV
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	281 mV	321 mV
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2484 mV

Transducer	Difference
Tip	0.011 MPa
Sleeve	-0.004 kPa
Pore Pressure 2	0.009 kPa

GRANULAR SOILS (Sands & Gravels) Robertson et al. 1986 Zones 7-10 and Zone 12

Description	SBT Index, Ic
Clays	2.95-3.60
Silt mixtures	2.60-2.95
Sand mixtures	2.05-2.60
Sands	1.31-2.05
Gravelly sand	<1.31

Description	SPT N value, NSPT
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

Description	Relative Density Dr (%)
Very Loose	0 - 15
Loose	15 - 35
Medium Dense	35 - 65
Dense	65 - 85
Very Dense	>85

Groundwater Level

Dissipation Test

CPT LOG 03

[redacted] Working with: [redacted]

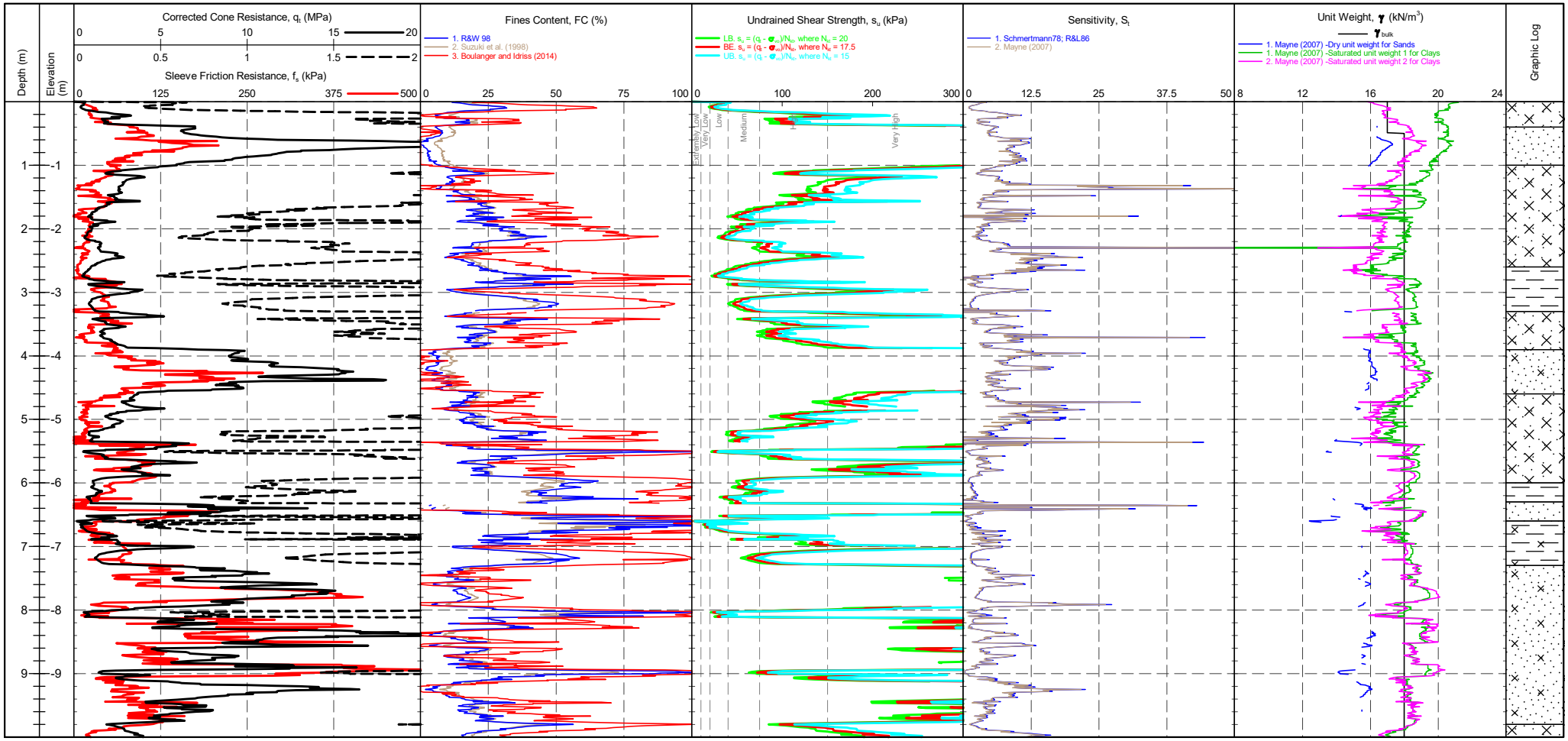
PointID: **CPT116**

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

	Pre	Post	Difference
Transducer			
Tip	299 mV	300 mV	0.011 MPa
Sleeve	245 mV	240 mV	-0.004 kPa
Pore Pressure 2	281 mV	321 mV	0.009 kPa
X-Y Inclinometer	2476 mV	2484 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40

Term based on measurement	su (kPa)
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

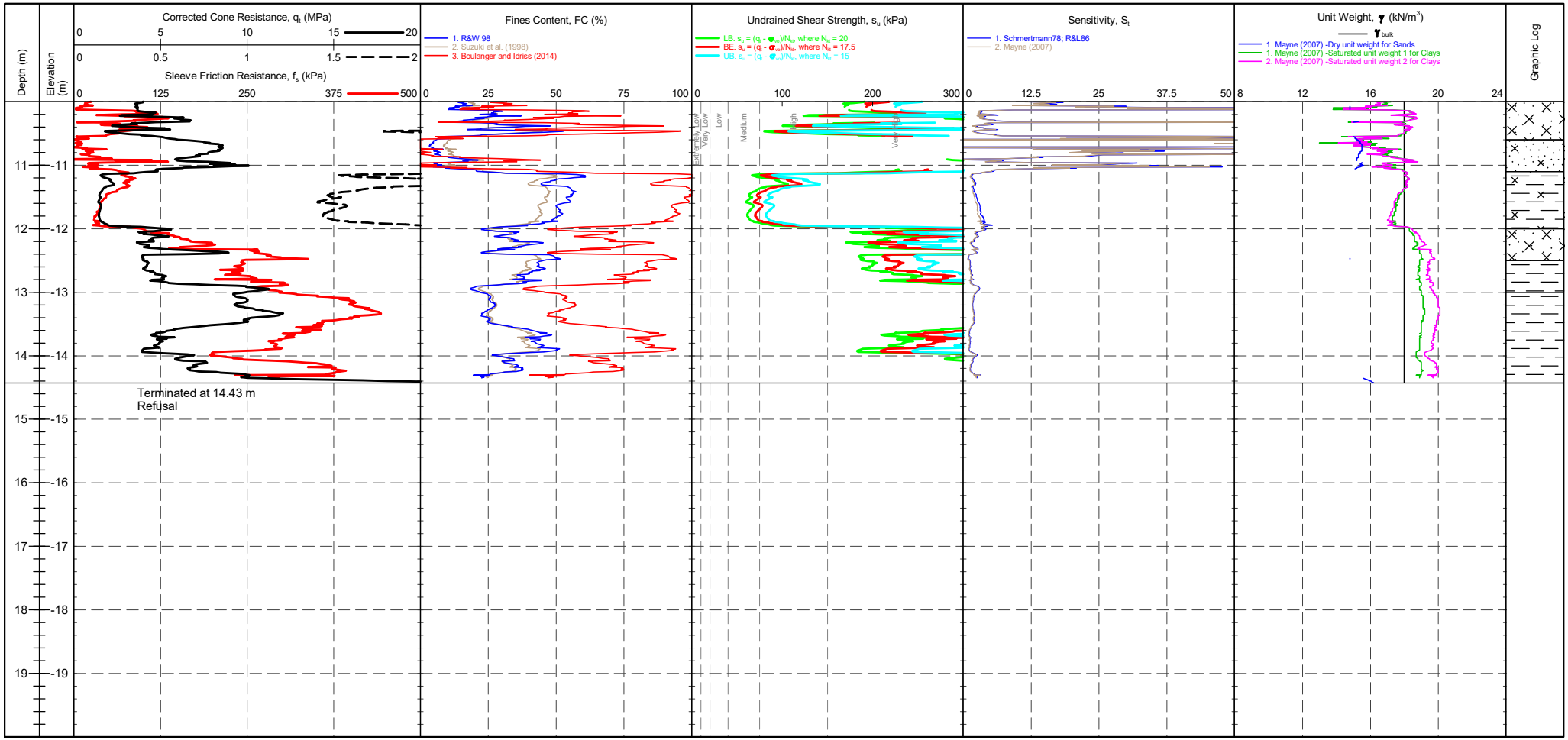
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 03

PointID: **CPT116**

CLIENT : E3P PROJECT : Ryebank Fields LOCATION : Chorlton PROJECT No. : 1240280	EASTING : 0.000 m NORTHING : 0.000 m ELEVATION : 0.000 m OD CHECKED BY : DW TERMINATION REASON : Refusal	Remark: Test stopped due to buckling rods.	SHEET : 2 OF 2 STATUS : Final TEST DATE : 16/07/2024 PLOT DATE : 02/08/2024 METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	299 mV	300 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	245 mV	240 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	281 mV	321 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2484 mV	

COHESIVE SOILS (Clays & Silts) Robertson et al. 1986 Zones 1-6 and Zone 11

Term based on measurement	su (kPa)
Extremely low strength	<10
Very low strength	10-20
Low strength	20-40
Medium strength	40-75
High strength	75-150
Very high strength	150-300
Extremely high strength	>300

Groundwater Level

Dissipation Test

CPT LOG 04

[redacted] Working with: [redacted]

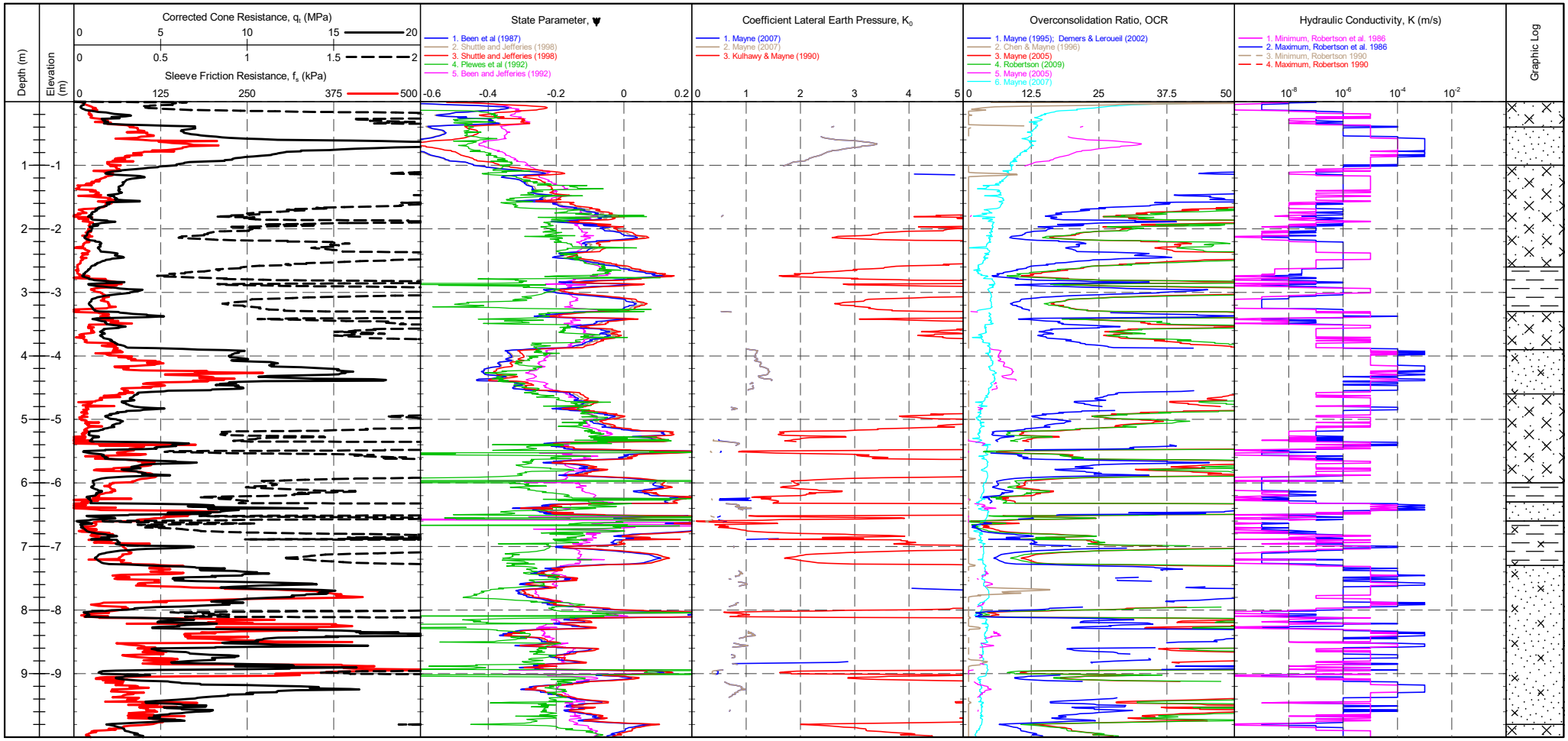
PointID
CPT116

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm²	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	299 mV	300 mV	0.011 MPa
Sleeve	245 mV	240 mV	-0.004 kPa
Pore Pressure 2	281 mV	321 mV	0.009 kPa
X-Y Inclinometer	2476 mV	2484 mV	

Groundwater Level

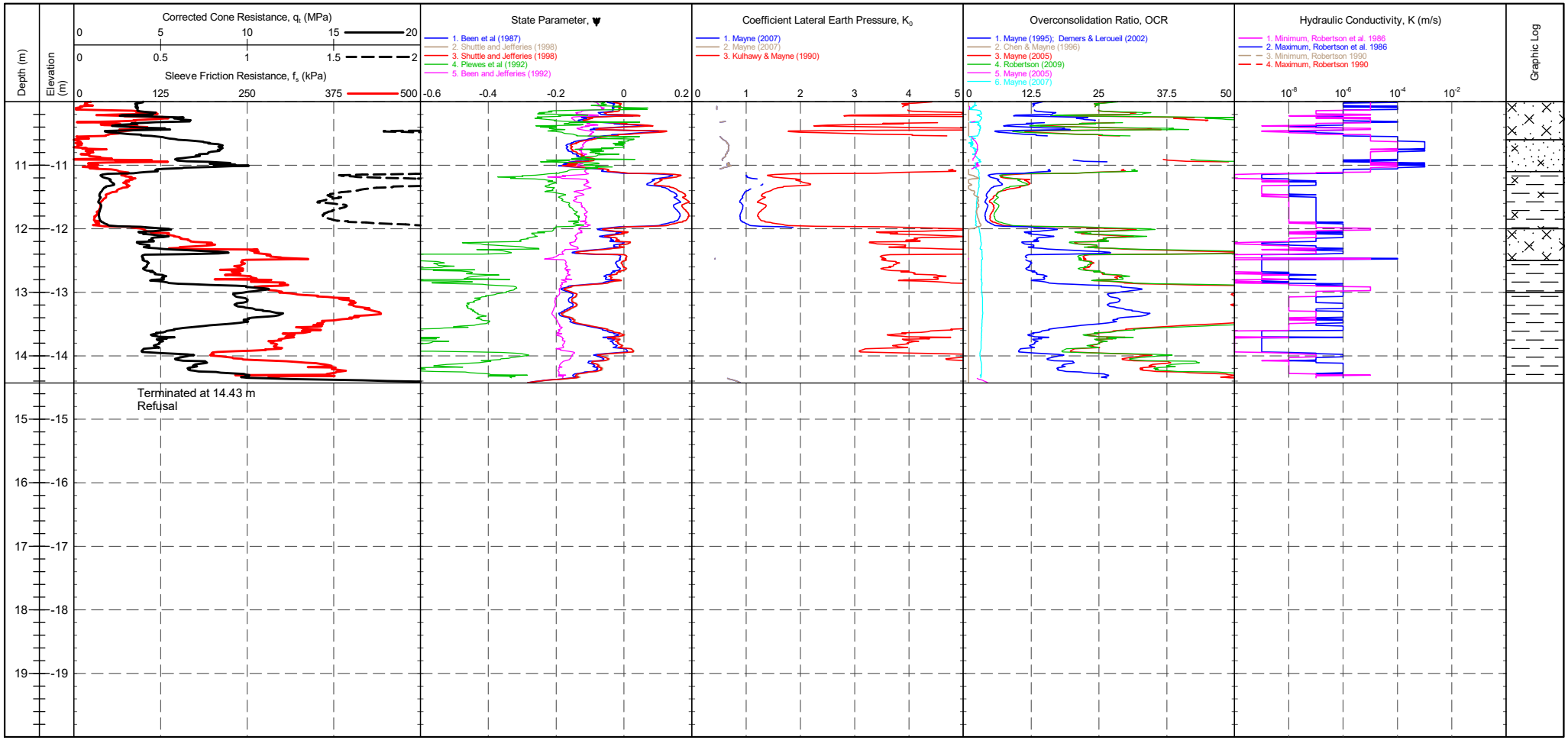
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 04

PointID: **CPT116**

CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	299 mV	300 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	245 mV	240 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	281 mV	321 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2484 mV	

Groundwater Level

Dissipation Test

CPT LOG 05

Working with:

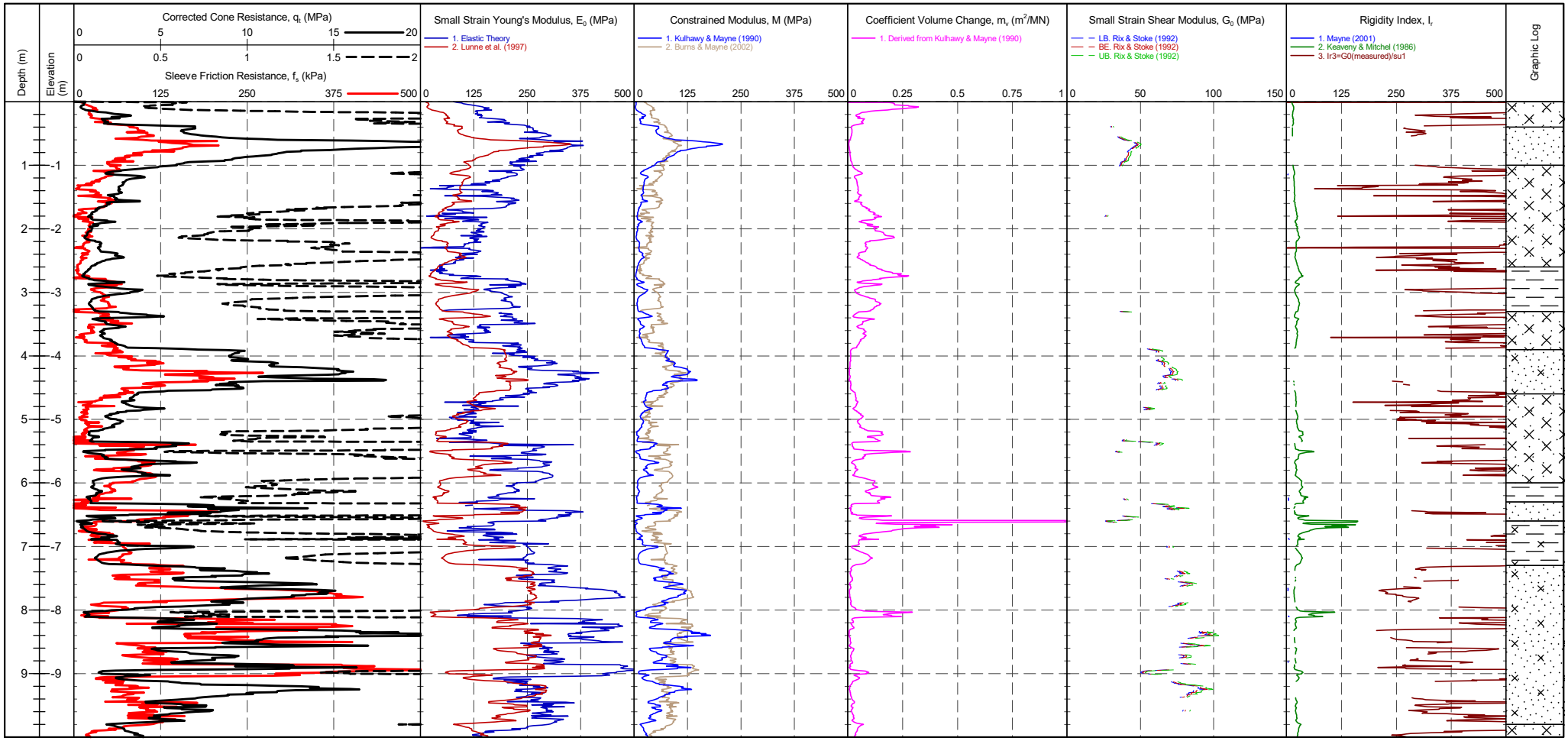
PointID
CPT116

CLIENT : E3P
PROJECT : Ryebank Fields
LOCATION : Chorlton
PROJECT No. : 1240280

EASTING : 0.000 m
NORTHING : 0.000 m
ELEVATION : 0.000 m OD
CHECKED BY : DW
TERMINATION REASON : Refusal

Remark:
Test stopped due to buckling rods.

SHEET : 1 OF 2
STATUS : Final
TEST DATE : 16/07/2024
PLOT DATE : 02/08/2024
METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2		
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2		
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni		
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd		
FILTER POSITION	: u2	FRICTION REDUCER	: None		
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild		

CPTU ZERO VALUES

Transducer	Pre	Post	Difference
Tip	299 mV	300 mV	0.011 MPa
Sleeve	245 mV	240 mV	-0.004 kPa
Pore Pressure 2	281 mV	321 mV	0.009 kPa
X-Y Inclinometer	2476 mV	2484 mV	

Groundwater Level

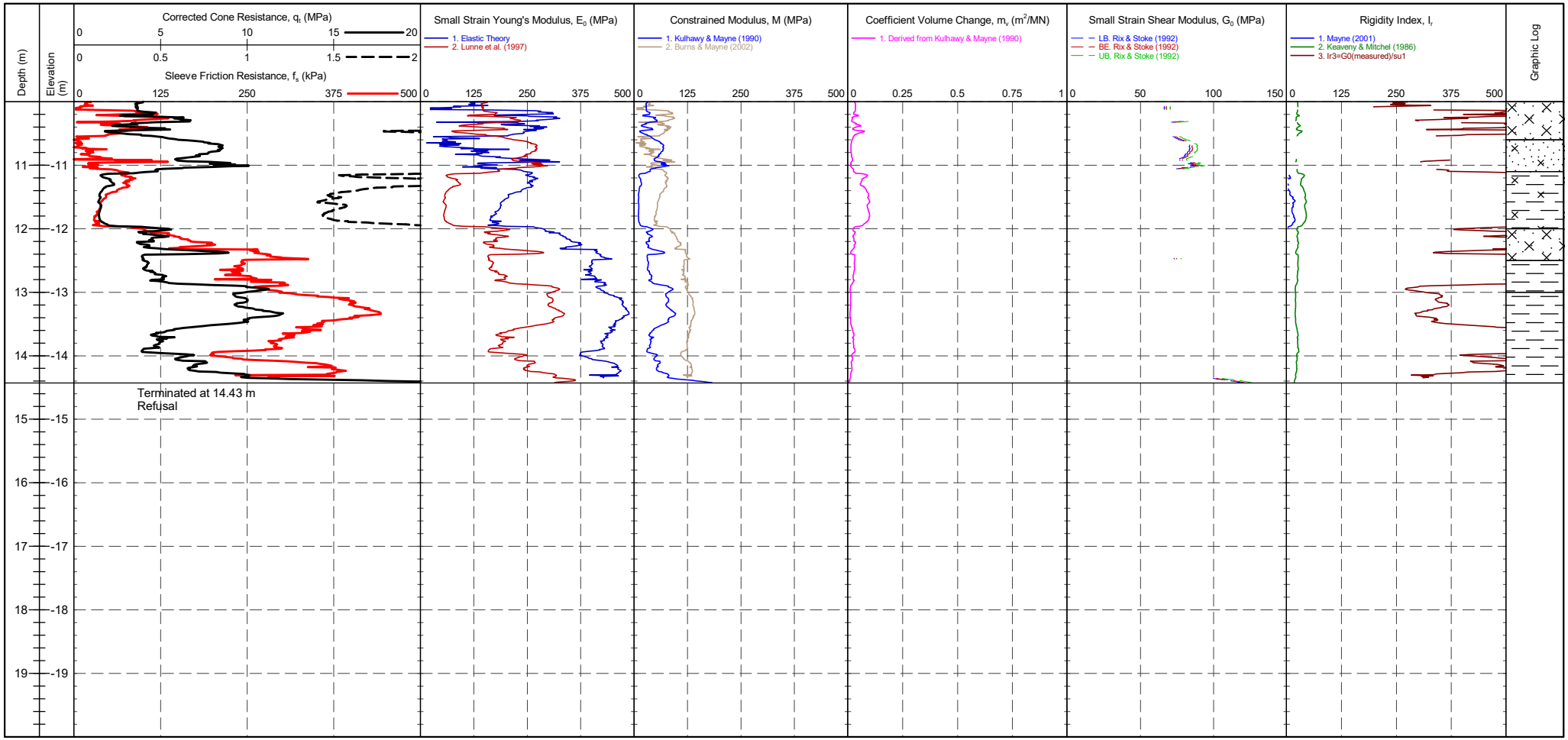
Dissipation Test

IN SITU SITE INVESTIGATION Working with: e3p

CPT LOG 05

PointID: **CPT116**

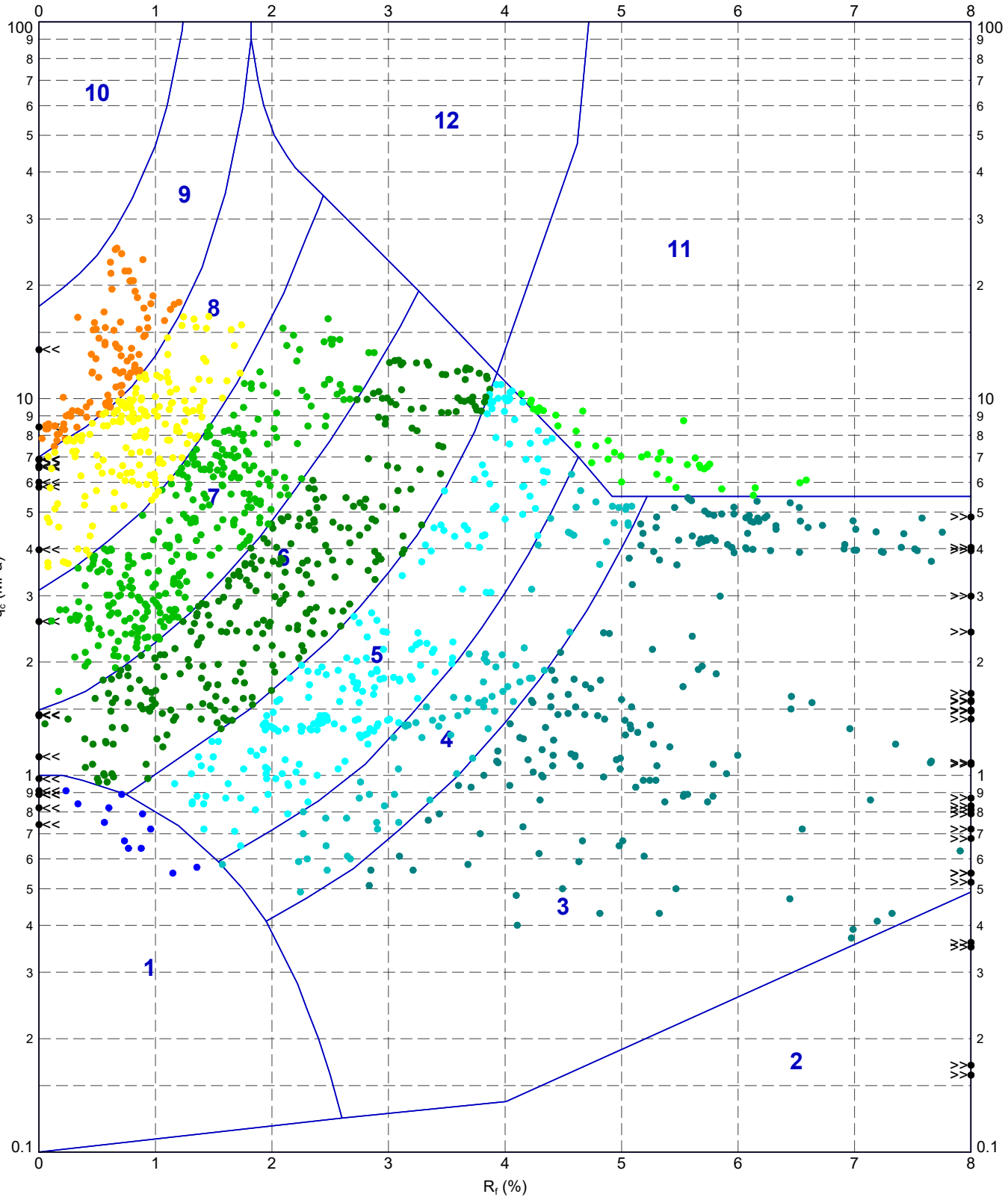
CLIENT : E3P	EASTING : 0.000 m	Remark:	SHEET : 2 OF 2
PROJECT : Ryebank Fields	NORTHING : 0.000 m	Test stopped due to buckling rods.	STATUS : Final
LOCATION : Chorlton	ELEVATION : 0.000 m OD		TEST DATE : 16/07/2024
PROJECT No. : 1240280	CHECKED BY : DW		PLOT DATE : 02/08/2024
	TERMINATION REASON : Refusal		METHOD : ISO 22476-1:2022



CONE ID	: S15-CFIP.2145	TEST TYPE	: TE2	CPTU ZERO VALUES			
CONE MODEL	: Subtraction	APPLICATION CLASS	: 2	Transducer	Pre	Post	Difference
CONE AREA	: 15cm^2	RIG	: CPT 025 - Toni	Tip	299 mV	300 mV	0.011 MPa
CONE AREA RATIO	: 0.79	OPERATOR	: R Shepherd	Sleeve	245 mV	240 mV	-0.004 kPa
FILTER POSITION	: u2	FRICTION REDUCER	: None	Pore Pressure 2	281 mV	321 mV	0.009 kPa
FILTER TYPE	: HDPE	WEATHER	: Raining & Mild	X-Y Inclinometer	2476 mV	2484 mV	

Groundwater Level

Dissipation Test



METHOD: Robertson et al. 1986 qc Rf

- 1 - Sensitive fine grained material
- 2 - Organic material
- 3 - CLAY
- 4 - Silty CLAY to CLAY
- 5 - Clayey SILT to silty CLAY
- 6 - Sandy SILT to clayey SILT
- 7 - Silty SAND to sandy SILT
- 8 - SAND to silty SAND
- 9 - SAND
- 10 - Gravelly SAND to SAND
- 11 - Very stiff fine grained
- 12 - SAND to clayey SAND

IN SITU SITE INVESTIGATION

TITLE

E3P
Georgia Calvert
Chorlton
Ryebank Fields
Robertson et al. 1986 q_c vs. R_f - CPT116

DRAWN	DATE 02/08/2024
CHECKED	DATE 02/08/2024
SCALE Not To Scale	A4
PROJECT No 1240280	FIGURE No

220629-ADVANCED REPORT INSITUSI 2.02.1.LIB - CHLOE.GLB Graph CPT ROBERTSON ET AL. 86 QC VS. RF A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:14 10.03.00.09 DatgeLab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10

DISSIPATION TEST

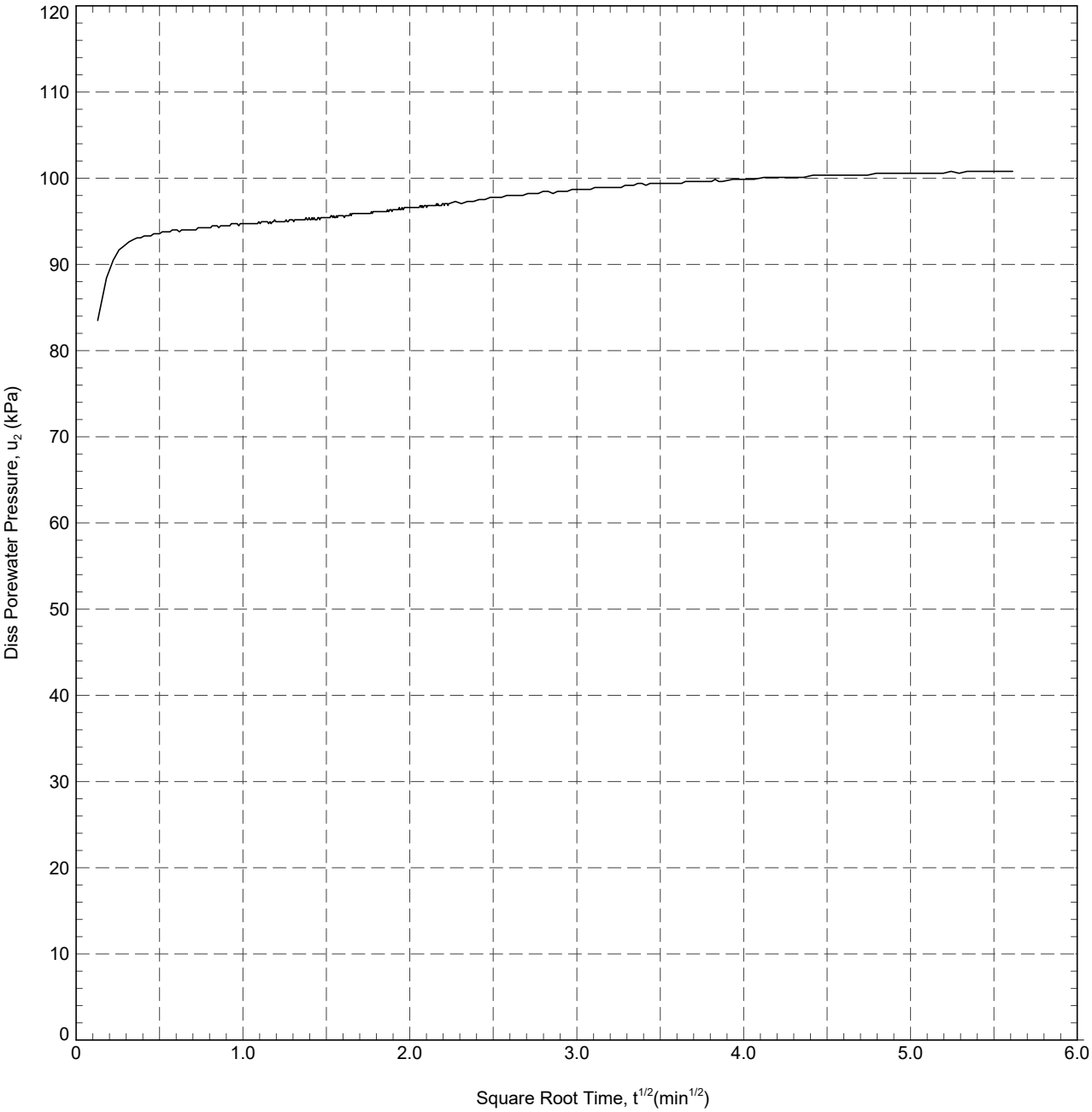
IN SITU SITE INVESTIGATION

Working with: e3p

Test ID

CPT116 - 11.00 m

CLIENT	: E3P	AREA	: Ryebank Fields Chorlton	SHEET	: 1 OF 1
ENGINEER	: Georgia Calvert	EASTING	: 0.0 m	STATUS	: Final
PROJECT	: Ryebank Fields	NORTHING	: 0.0 m	DATE	: 16/07/24
LOCATION	: Chorlton	COORD. SYS.:			
PROJECT No.	: 1240280	ELEVATION	: 0.00 m		



Final Pore Pressure: 100.8 kPa

RIG	: CPT 025 - Toni	ANALYSED BY	: ZJ	DATE:	23/07/2024
CONE TYPE	: Subtraction	CHECKED BY	: DW	DATE:	23/07/2024
CONE ID	: S15-CFIP.2145	APPROVED BY	: DW	DATE:	23/07/2024
OPERATOR	: RS				

REMARK

T50 not reached.

220629-ADVANCED REPORT INSITUSI 2.02.1 LIB - CHLOE.GLB Graph ISSI DISS. PORE PRESSURE VS. SQR T A4P 1240280 RYEBANK FIELDS CHORLTON E3P.GPJ <<DrawingFile>> 02/08/2024 16:14 10.03.00.09 Datgel Lab and In Situ Tool - DGD | Lib: In Situ SI 2.02.0 2017-07-10 Prj: In Situ SI 2.02.0 2017-07-10



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